



NASA
Space Shuttle Discovery STS-31

Wingspan:	78.04 ft
Launches:	29
Active:	August 30, 1984 - March 9, 2011
Orbital Velocity:	17,500 mph
Max Altitude:	350 miles
Earth Orbits:	6,830
Time in Space:	1 year, 22 hours, 29 minutes, 33 seconds



NASA **esa**
Hubble Space Telescope

Launch:	April 24, 1990
Launch Mass:	24,290 lbs
Velocity:	6.72 miles
Deploy Altitude:	350 miles

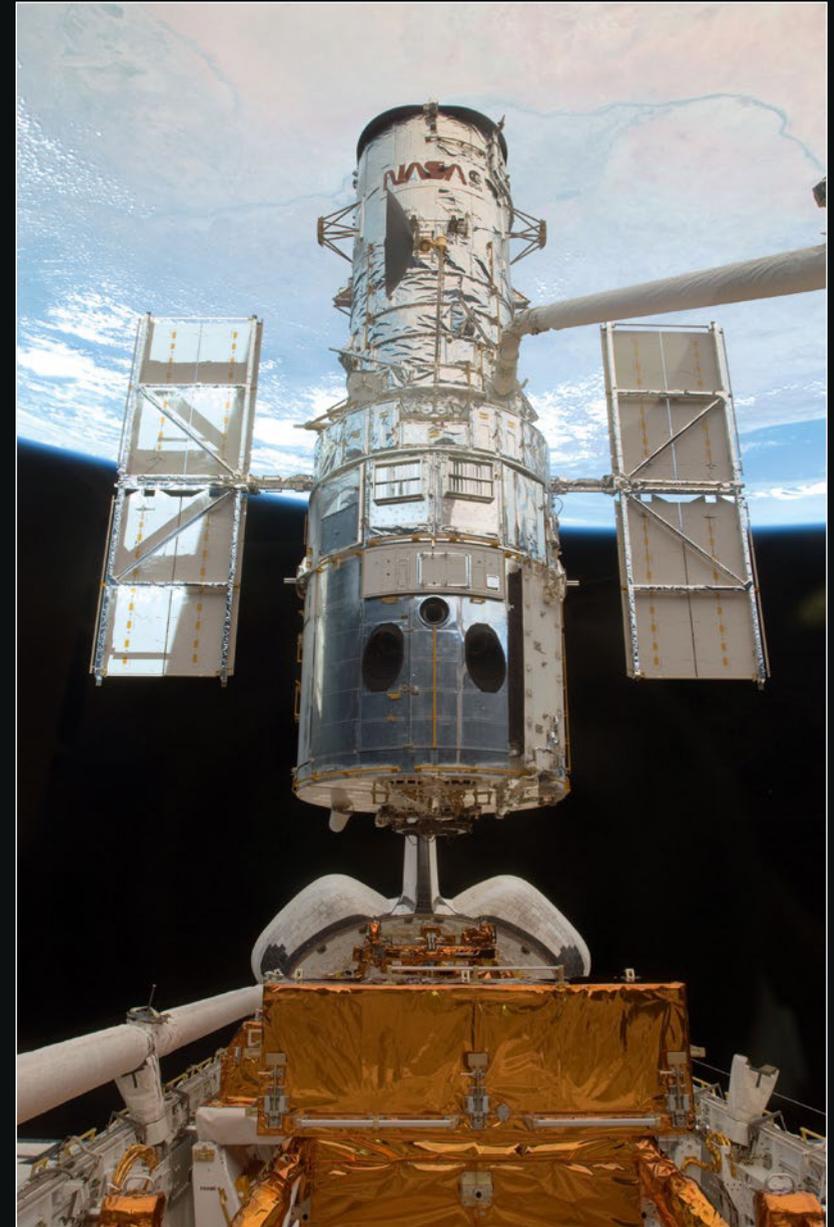
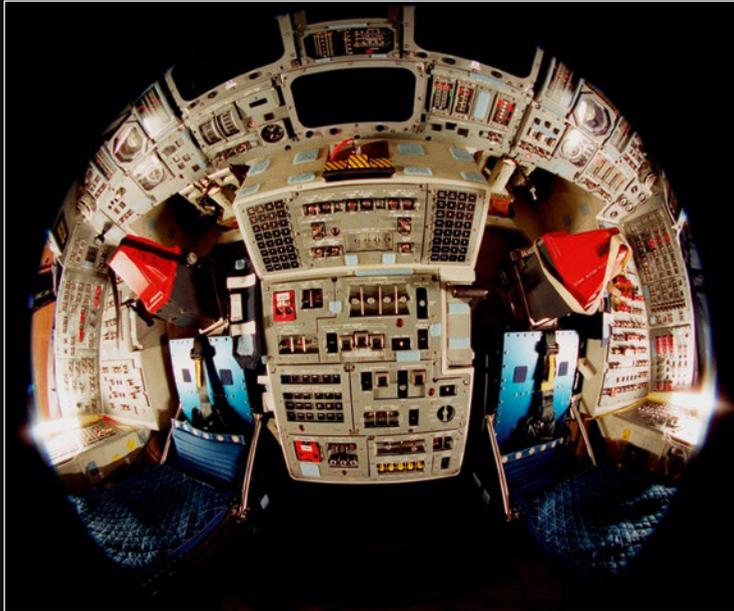


EINE IKONE DER RAUMFAHRT

Die Orbiterflotte der NASA für Missionen mit dem Space Transportation System (STS) bestand einst aus den Spaceshuttles Columbia, Challenger, Discovery, Atlantis und Endeavour. Insgesamt flogen die Raumfähren 135 Missionen und beförderten 355 Menschen ins All. Die Discovery brachte es auf die meisten Missionen, transportierte die meisten Passagiere und flog höher und weiter als die anderen 4 Orbiter. Der Discovery war es auch vorbehalten, im April 1990 im Rahmen der Mission STS-31 das Hubble-Weltraumteleskop im Weltraum auszusetzen. Aus Anlass des 40-jährigen Jubiläums des Spaceshuttle-Programms im Jahr 2021 möchten wir an diese berühmte Mission erinnern.

DIE MISSION

Das Aussetzen des Hubble-Weltraumteleskops im April 1990 war einer der wichtigsten Fortschritte in der Astronomie seit Galileos Teleskop. Erstmals wurde ein größeres optisches Teleskop im Weltraum platziert – und somit deutlich höher als auf jedem Berggipfel. Ohne atmosphärische Verzerrungen, Regenwolken und Lichtverschmutzung hat Hubble einen ungehinderten Blick aufs Universum. Wissenschaftler konnten mit Hubble die entferntesten Sterne und Galaxien sowie die Planeten unseres Sonnensystems beobachten.



ANMERKUNGEN DES DESIGNTAMS

Das Spaceshuttle zählt zu den komplexesten Luft- und Raumfahrzeugen, die jemals gebaut wurden. Deshalb war es eine mehr als anspruchsvolle Herausforderung, diesen Orbiter als LEGO® Modell darzustellen. Wir mussten eine glatte Außenhülle gestalten – und einen geeigneten Frachtraum für die Nutzlast. Am kniffligsten war es jedoch, ein funktionierendes Fahrwerk zu integrieren. Front- und Hauptfahrwerk zu koppeln, ohne die Nutzlastbucht zu verkleinern und ohne die Konstruktion des Modells zu beeinträchtigen, war echte Puzzlearbeit! Die komplexe Technik und die ungebändigte Kraft dieser Raumfahrzeuge ist absolut überwältigend. Das Faszinierendste an der Raumfahrt sind jedoch die beförderten Menschen. Deshalb gefallen mir an diesem Modell auch die winzigen blauen Sitze am besten, auf denen die 5 Teilnehmer dieser speziellen Mission ins All gebracht wurden. Als Kind habe ich viele Stunden damit verbracht, meine eigenen Versionen der Mondlandefähre und des Spaceshuttles „Discovery“ aus LEGO Steinen zu bauen. An diesem aufregenden Projekt mitwirken zu dürfen, war ein echtes Privileg.

LEGO® Designer Milan Madge



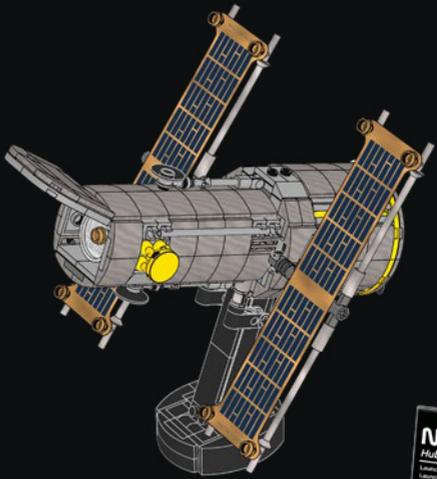
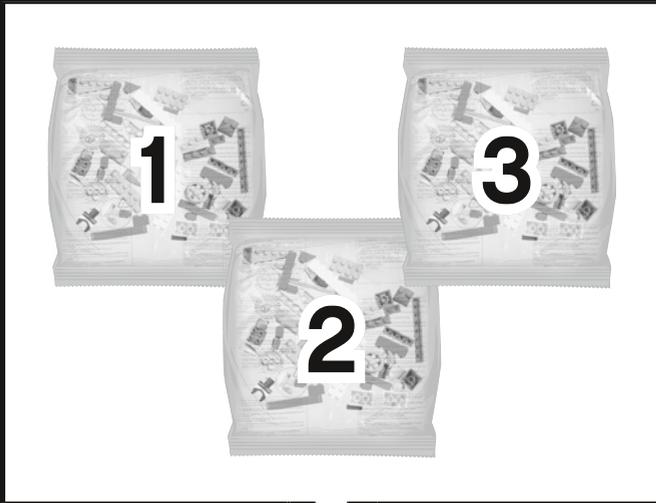


KÜNFTIGE UNTERFANGEN

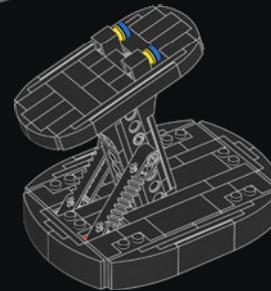
Seit der Außerdienststellung der Spaceshuttles im Jahr 2011 ist die NASA öffentlich-private Partnerschaften mit Unternehmen wie Boeing und SpaceX eingegangen, um eine neue Generation von Raumschiffen und Startsystemen zu entwickeln, die Astronauten in niedrige Erdumlaufbahnen und zur Internationalen Raumstation bringen. Während die Luft- und Raumfahrtindustrie jetzt an Transportsystemen für erdnahe Umlaufbahnen arbeitet, kann sich die NASA verstärkt auf den Bau von Raumschiffen und Raketen für den nächsten riesigen Sprung konzentrieren – genauer gesagt auf Mond- und Marsmissionen.



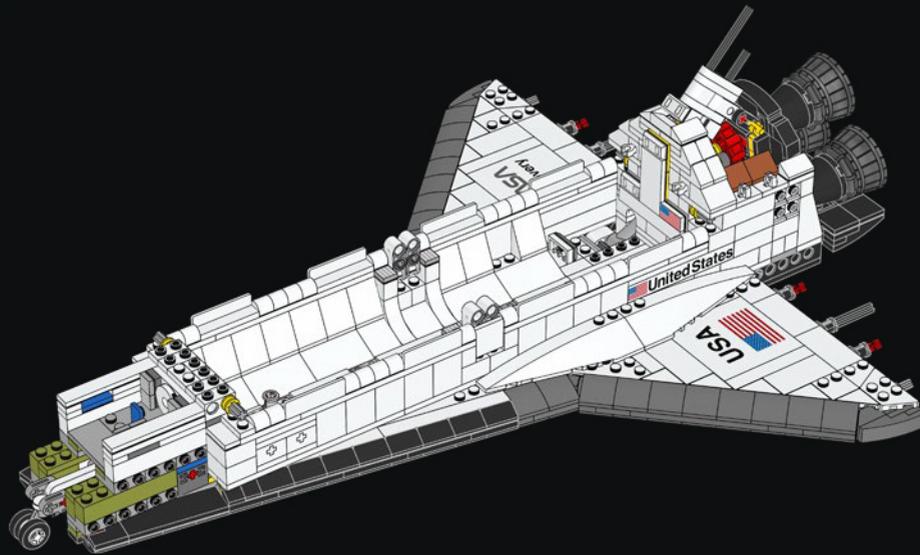
LEGO.com/brickseparator

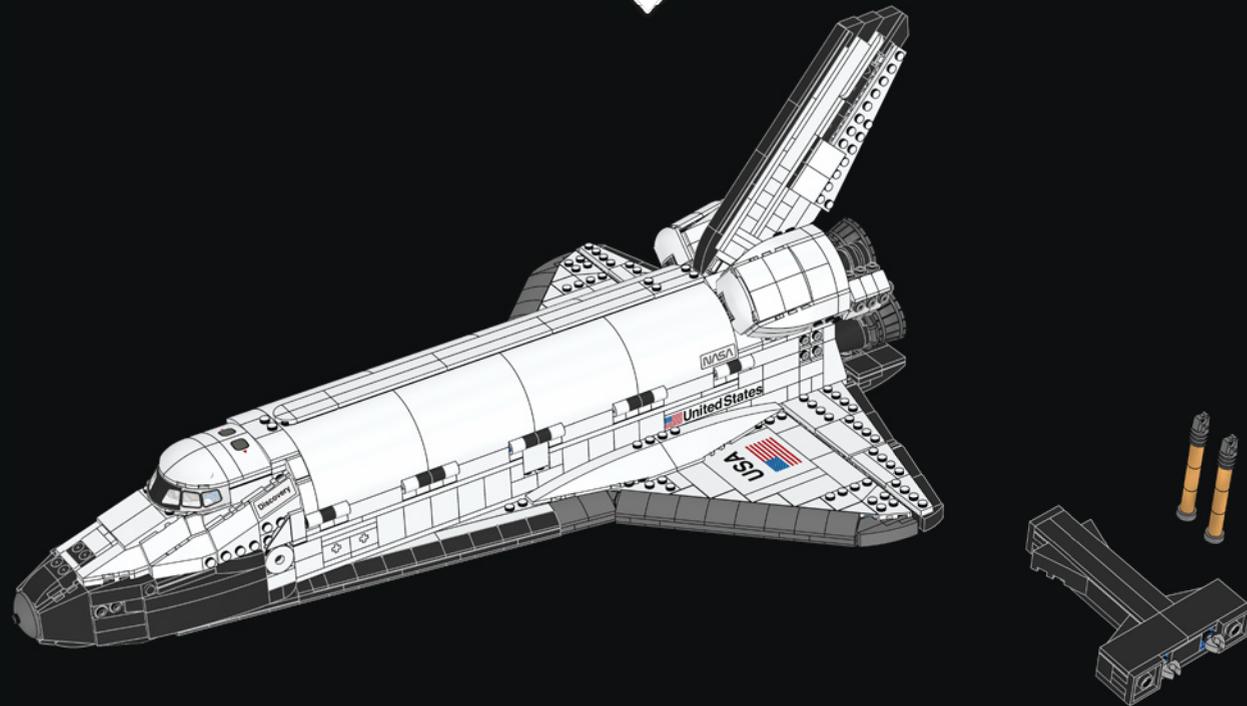


NASA **esa**
Hubble Space Telescope
Launched: April 24, 1990
Launch Weight: 12,400 lbs
Orbiting Altitude: 340 miles



NASA
Space Shuttle Discovery STS-31
Launched: February 24, 1984
Launch Weight: 24,000 lbs
Orbiting Altitude: 200 miles





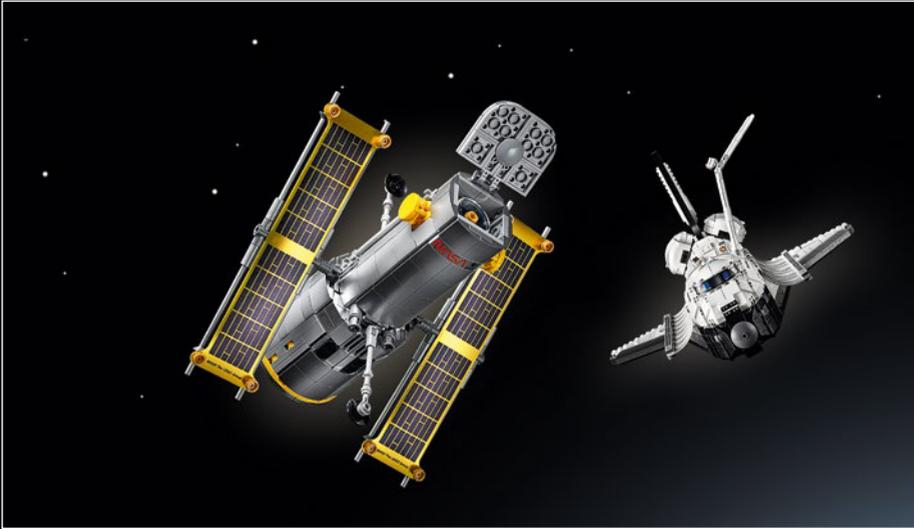
HUBBLE-WELTRAUMTELESKOP

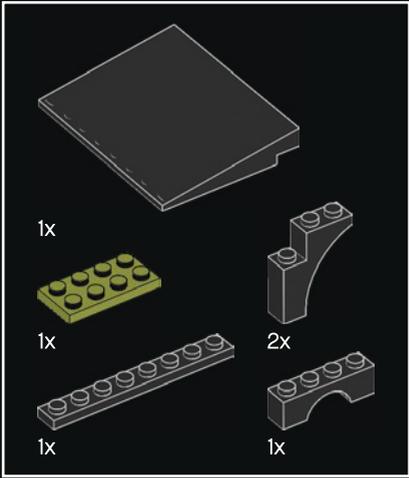
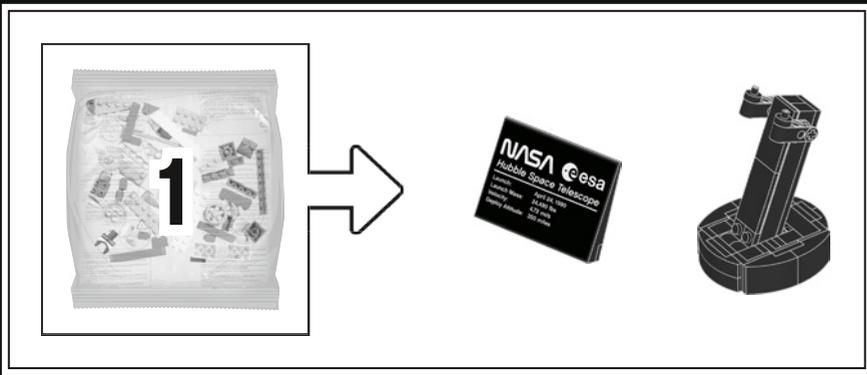
Das Hubble-Weltraumteleskop ist ein Gemeinschaftsprojekt von NASA und ESA, der Europäischen Weltraumorganisation. Von ihrer „hohen Warte“ ungefähr 550 km über der Erde kann das 13,2 Meter lange und 4,2 Meter breite Teleskop Licht derzeit 20 Mal schärfer erkennen als die besten terrestrischen Teleskope.



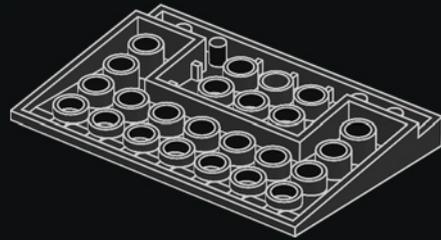
DIE ERSTE GRÖßERE STERNWARTE IM ALL

Hubble sollte mindestens 15 Jahre im Weltall bleiben und die entlegensten Winkel des Kosmos erforschen. Zwischen 1993 und 2009 wurden fünf Wartungsmissionen mit dem Spaceshuttle geflogen. So war es möglich, die geplante Verweildauer deutlich zu verlängern und das Universum mehr als 30 Jahre lang zu beobachten. Während seiner Zeit in der Erdumlaufbahn hat das Teleskop mehr als 1,4 Mio. Beobachtungen gemacht. Astronomen haben diese Daten für mehr als 17.000 Publikationen zu einem breiten Themenspektrum verwendet.

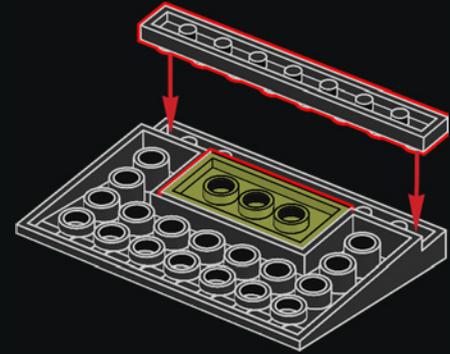




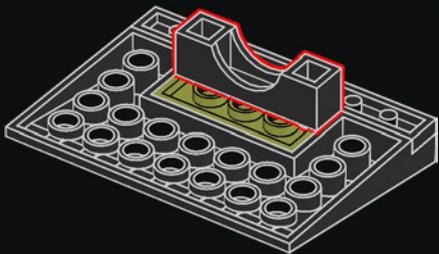
1



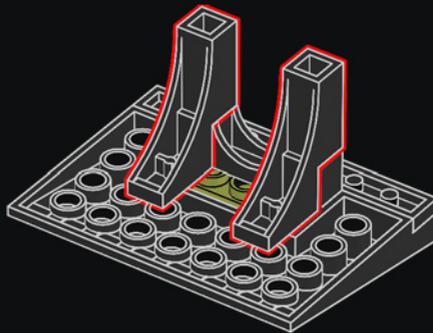
2



3

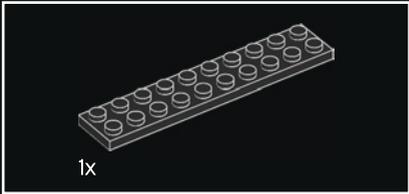
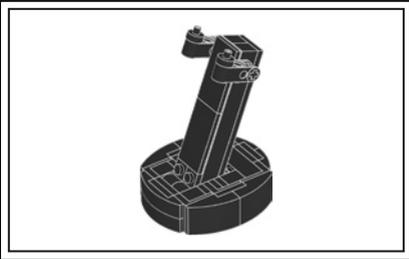


4



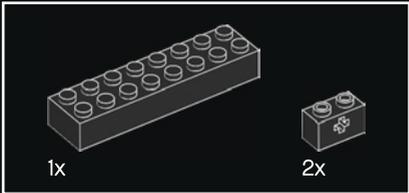
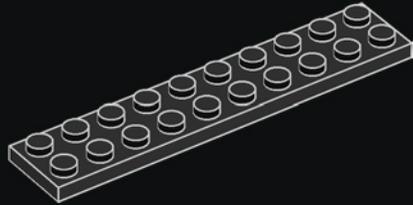
5





1x

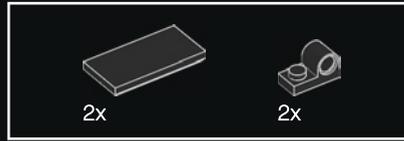
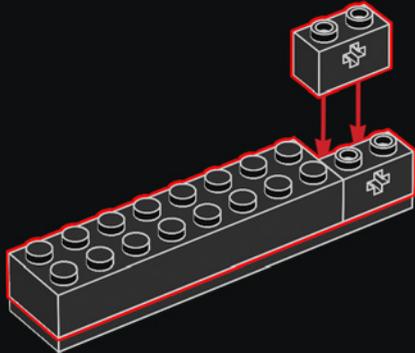
1



1x

2x

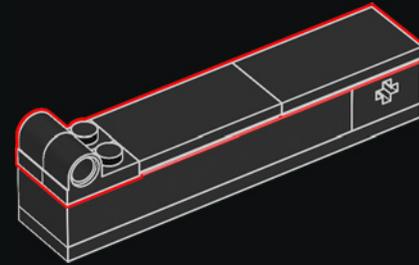
2



2x

2x

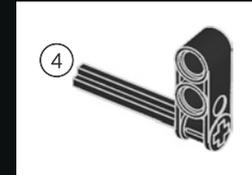
3



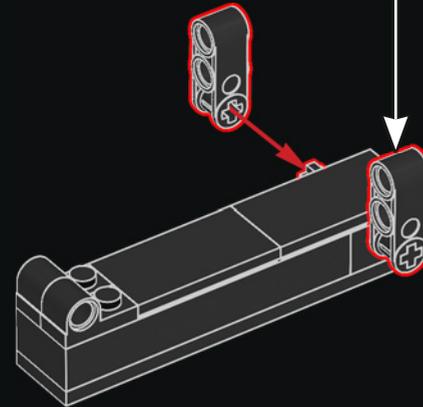
1x

2x

4

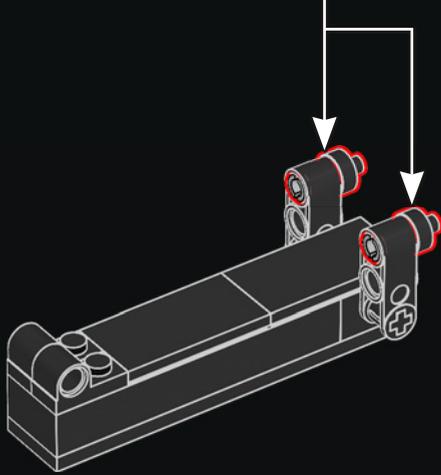
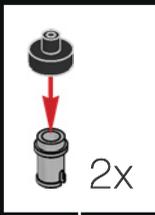


4

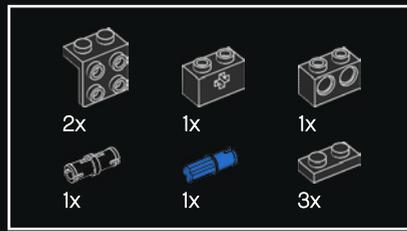
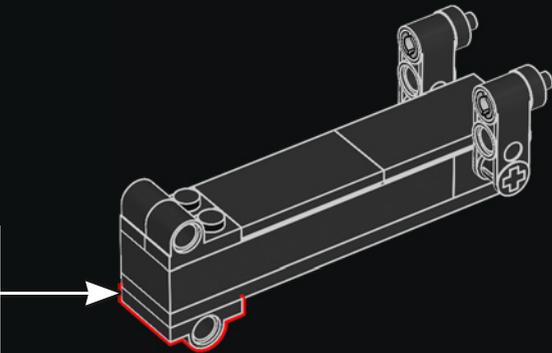




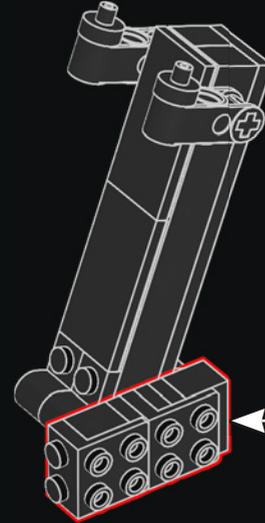
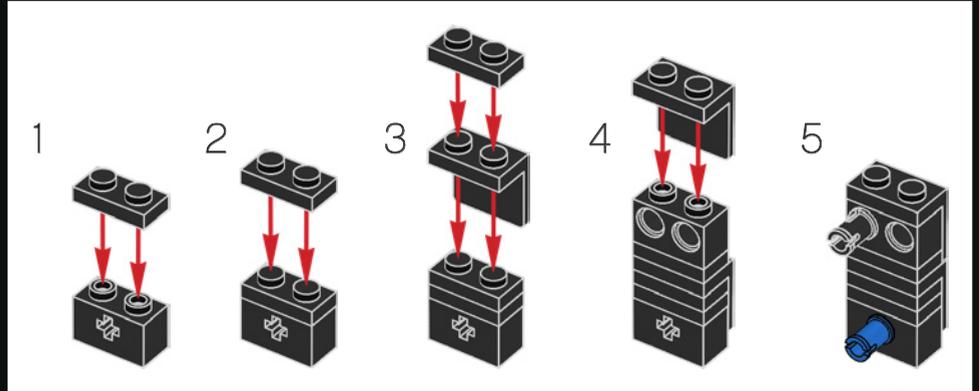
5

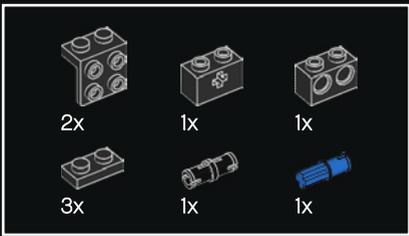


6

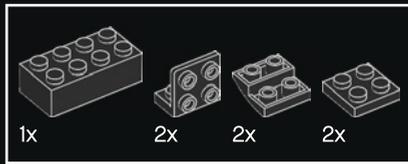
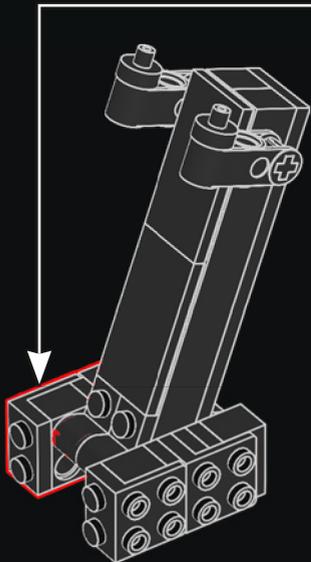
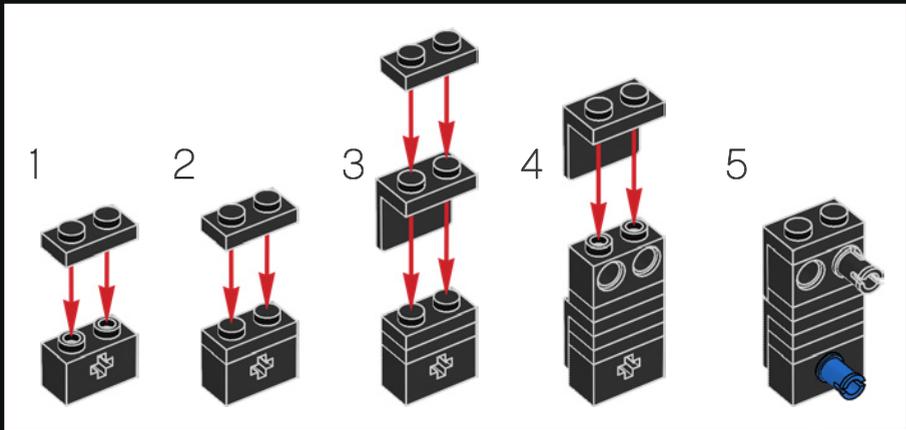


7

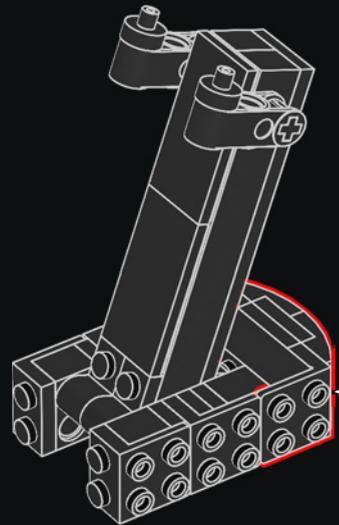
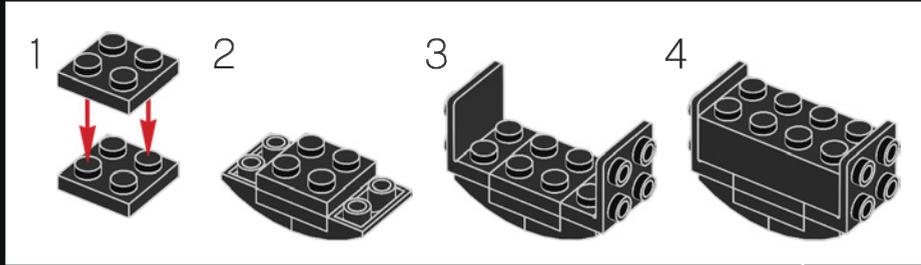




8

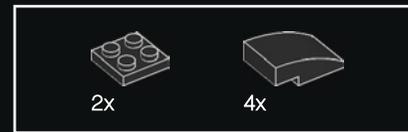
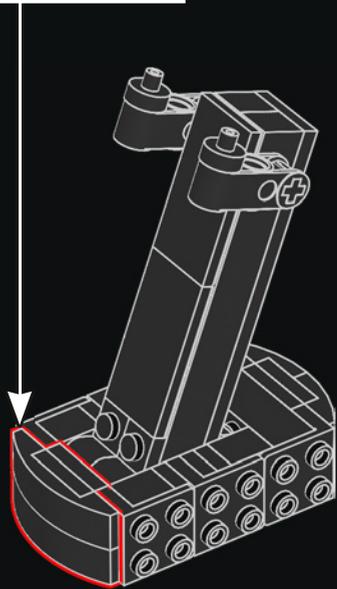
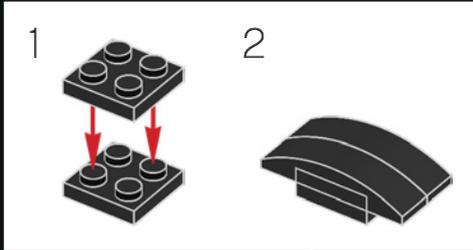


9

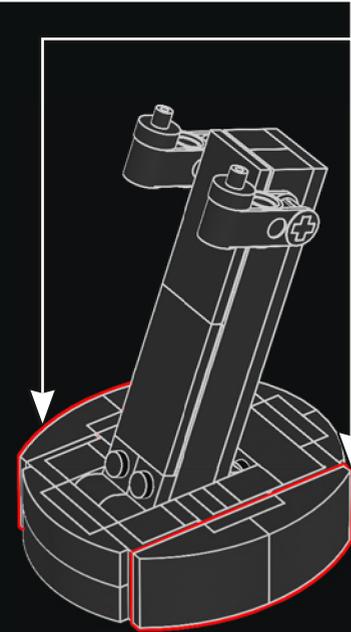
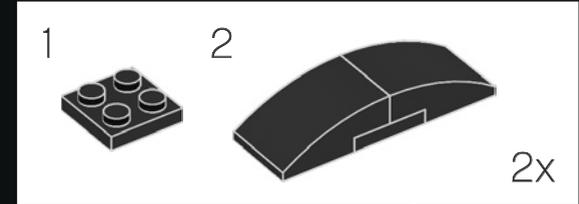




10

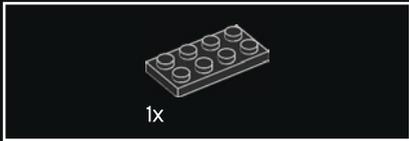
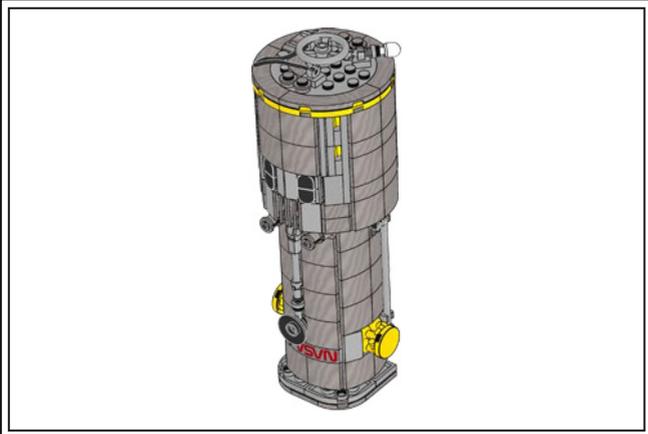
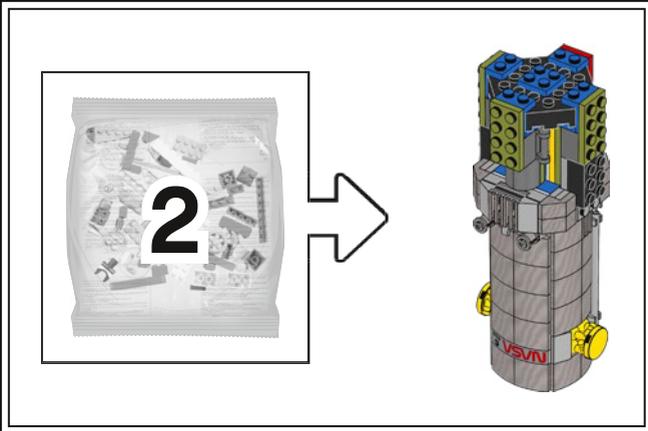


11

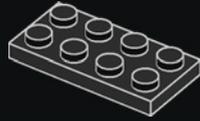


SCHON GEWUSST?

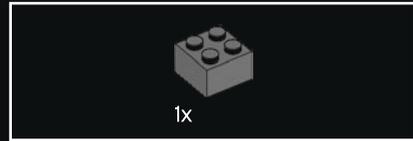
Das Hubble-Weltraumteleskop wurde bereits in den 1940er-Jahren konzipiert. Bis zu seinem Start im Jahr 1990 waren jedoch noch jahrzehntelange Planungen erforderlich.



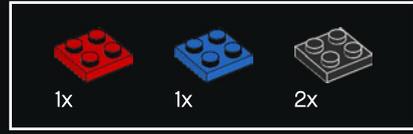
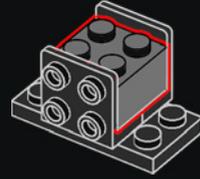
1



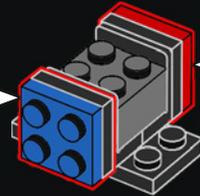
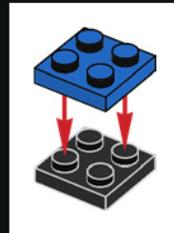
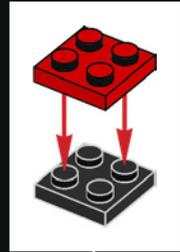
2



3

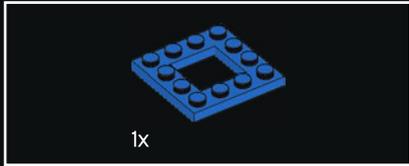
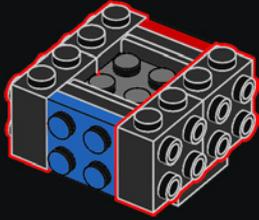


4

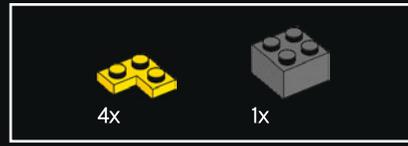
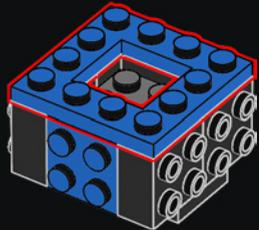




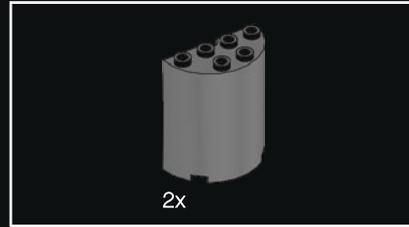
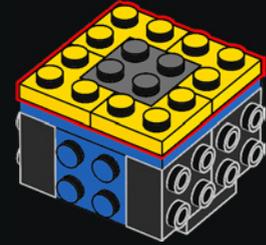
5



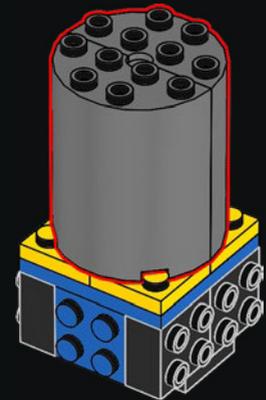
6

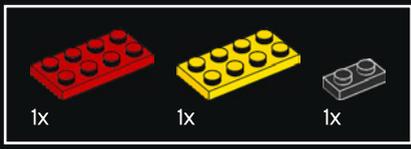


7

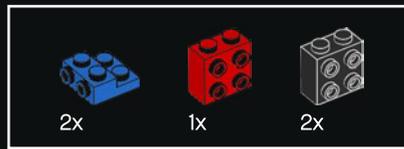
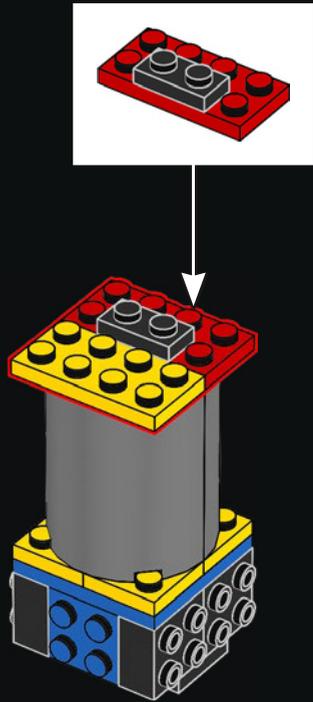


8

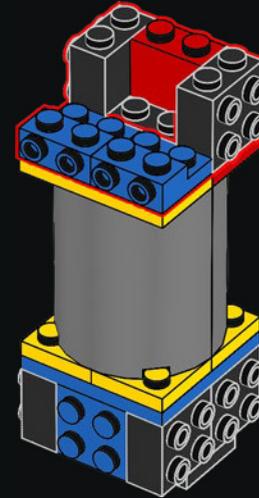




9

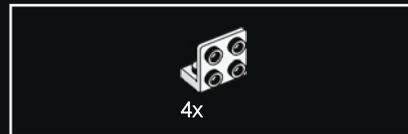
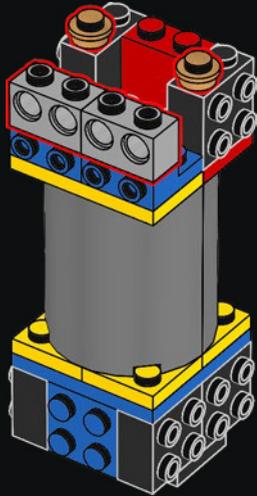


10

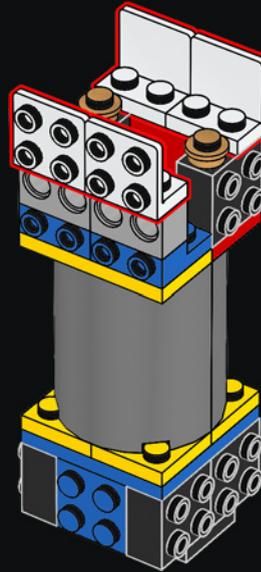


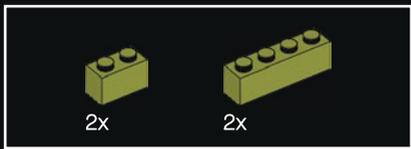


11

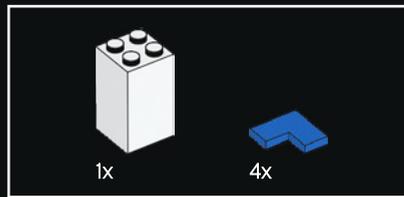
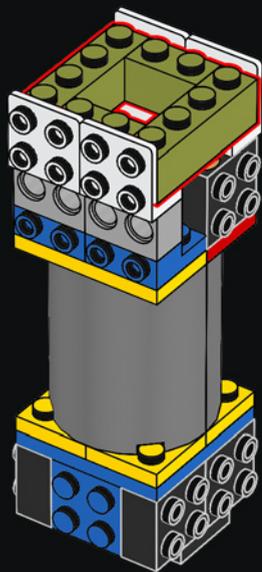


12

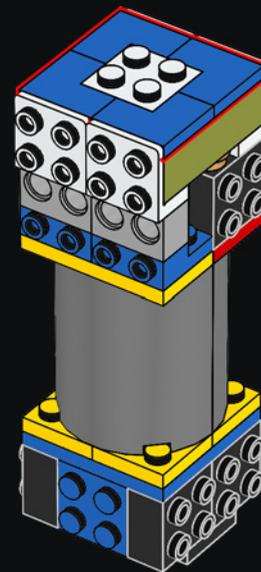




13

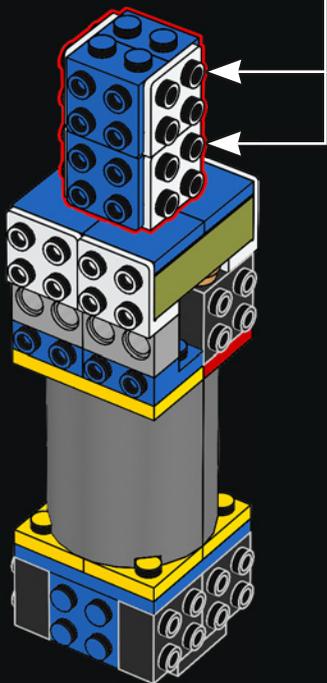
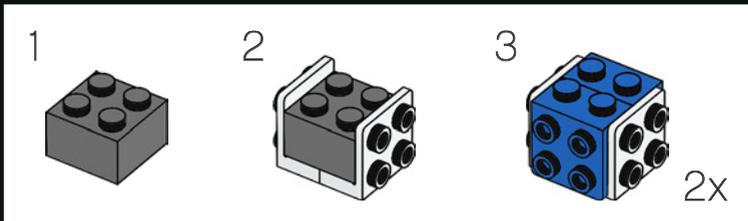


14

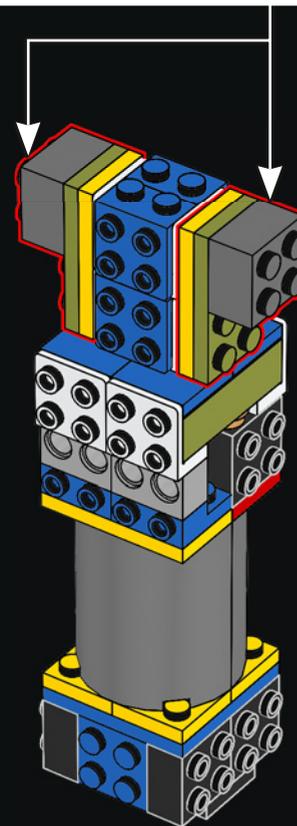
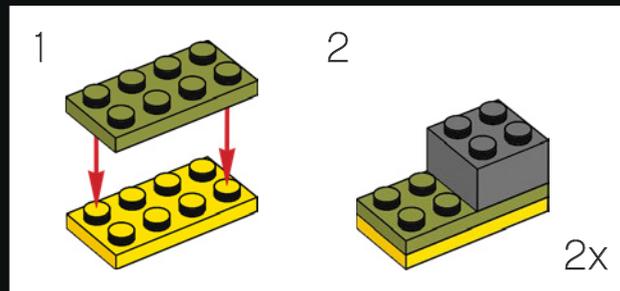


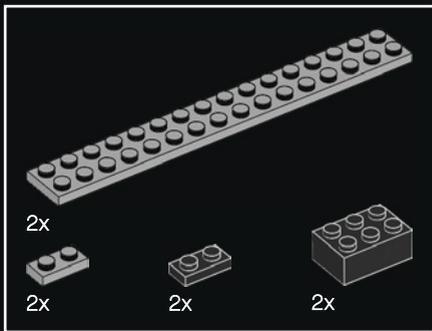


15

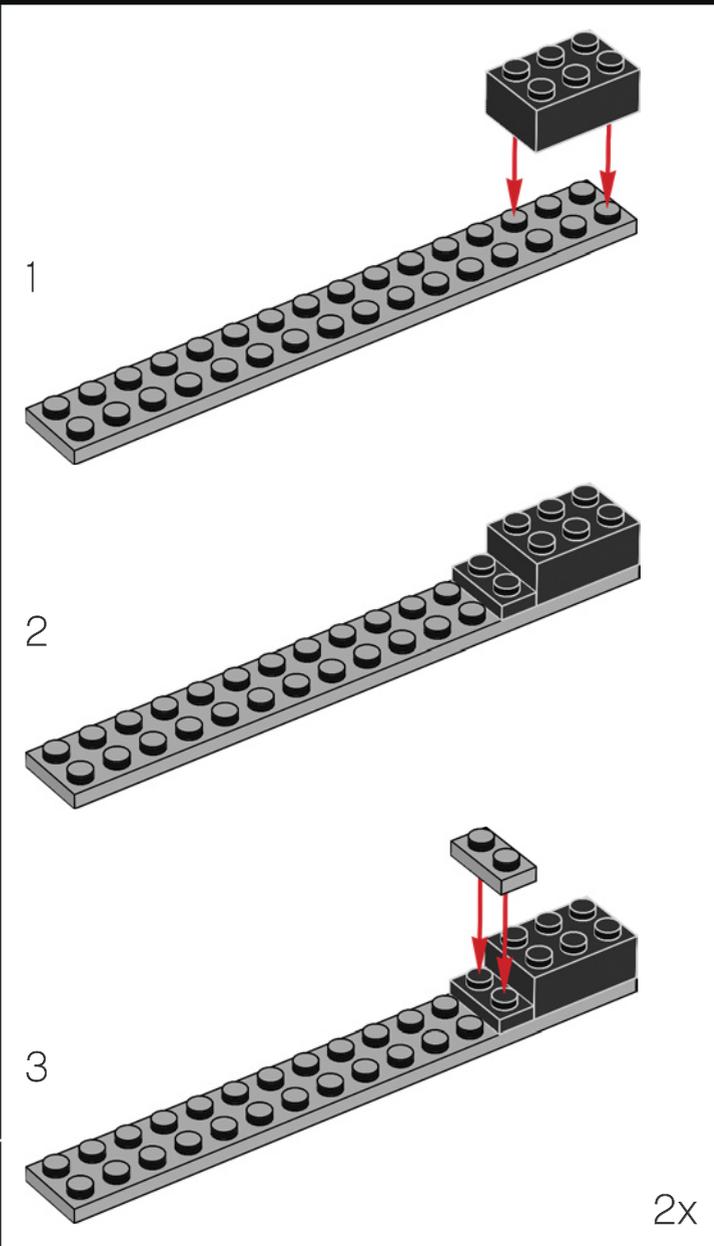
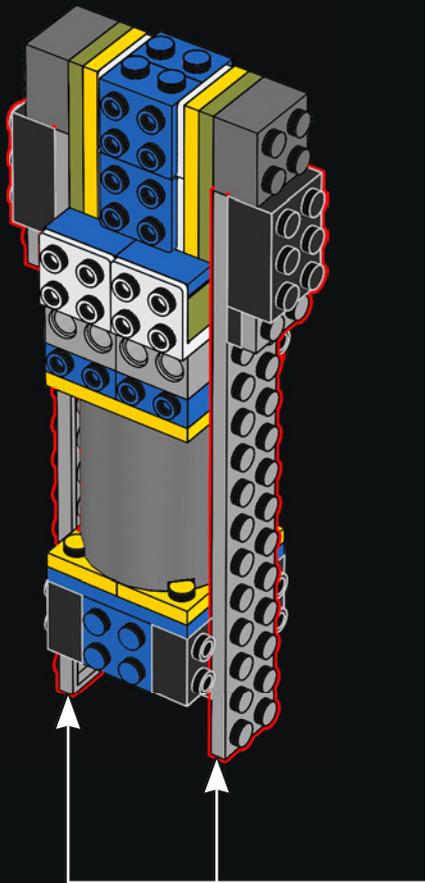


16



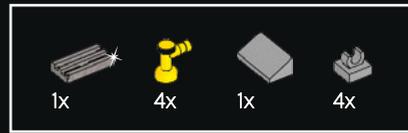
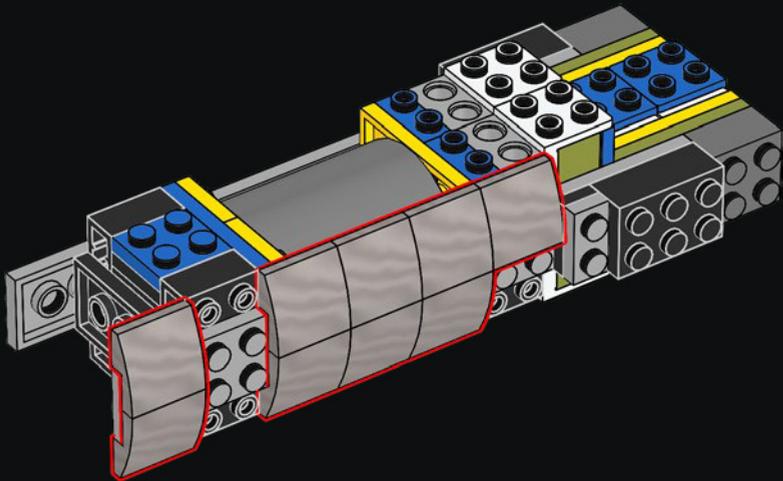


17

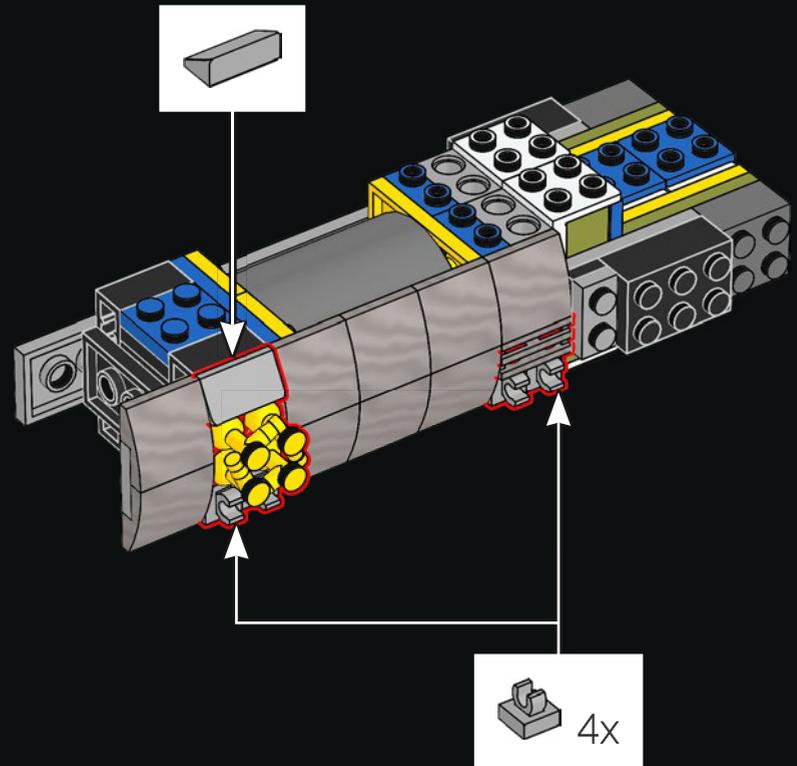




18

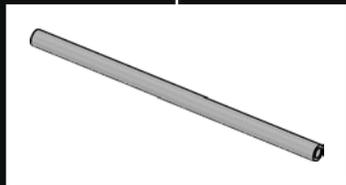
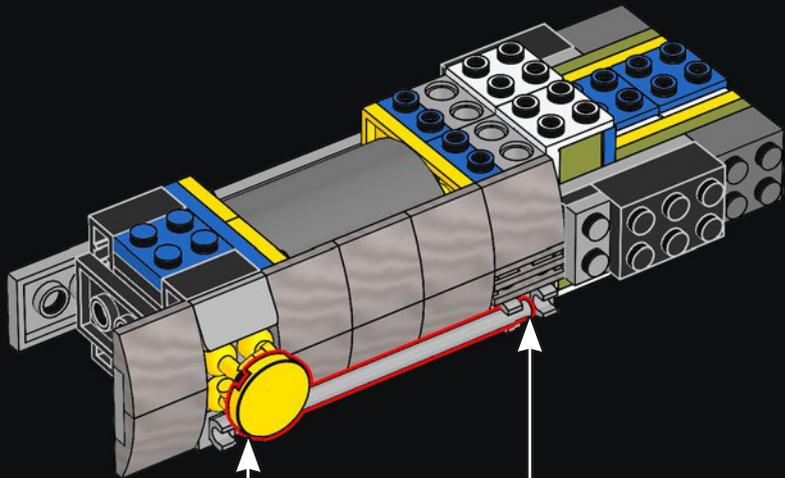


19

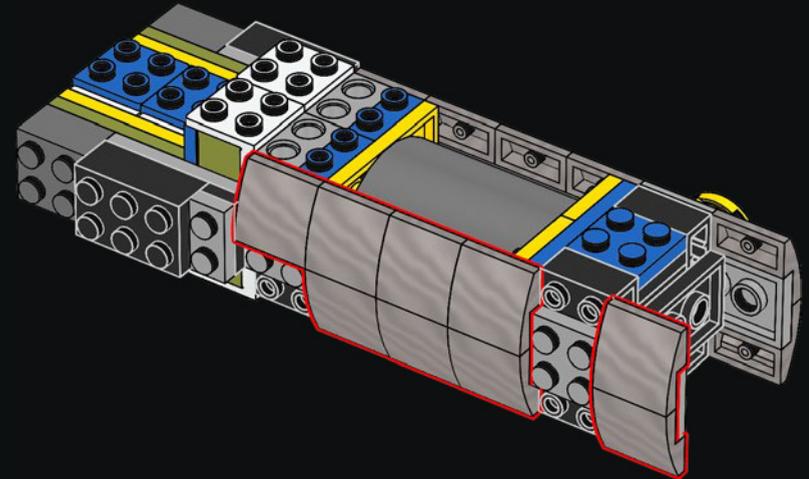


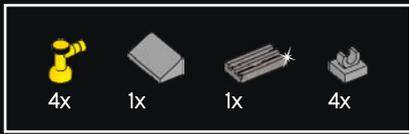


20

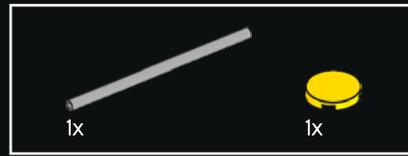
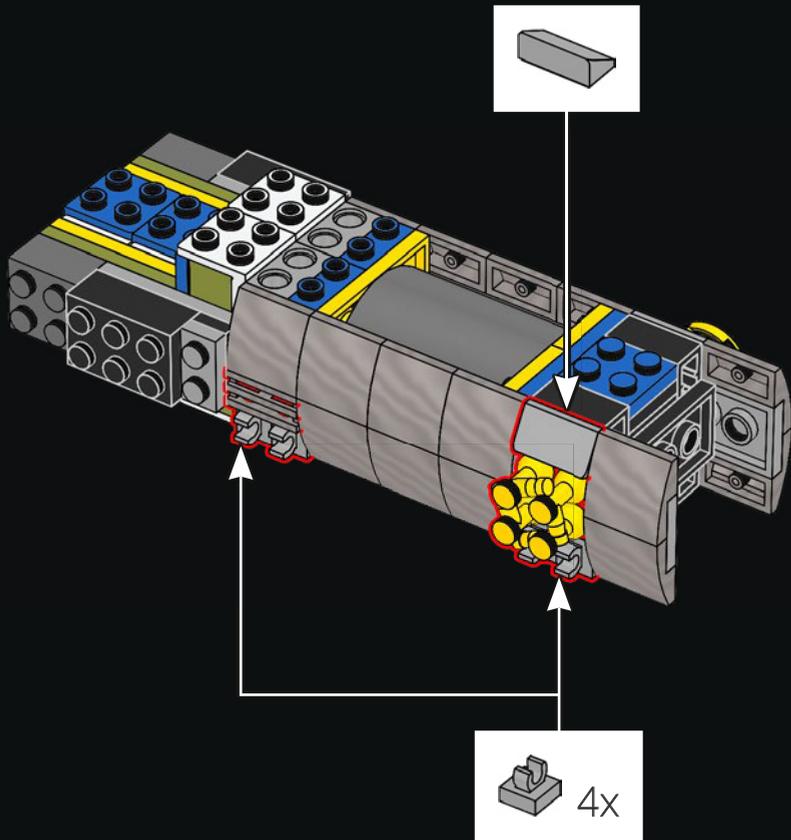


21

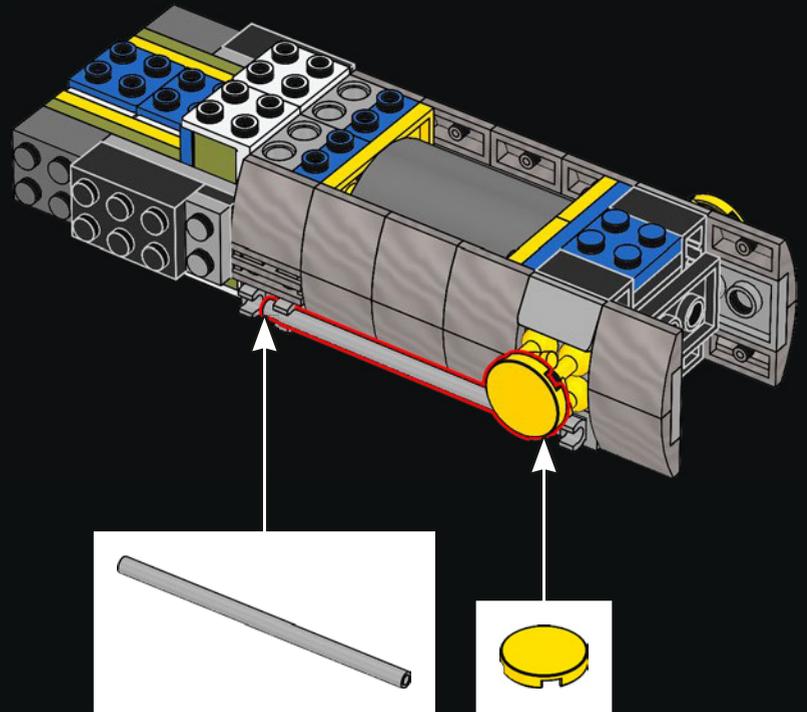


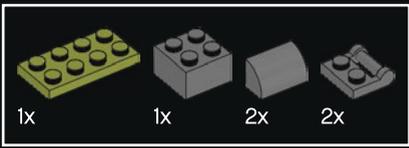


22

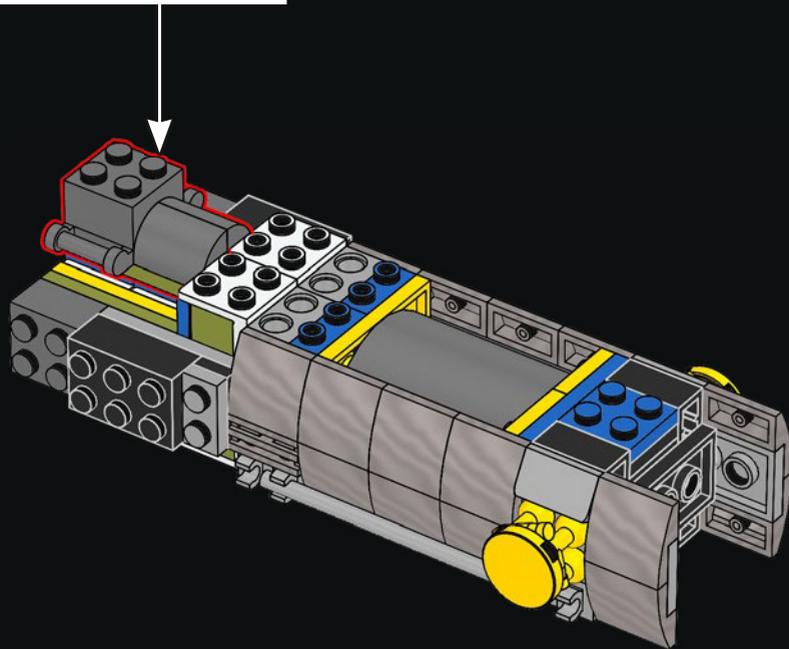
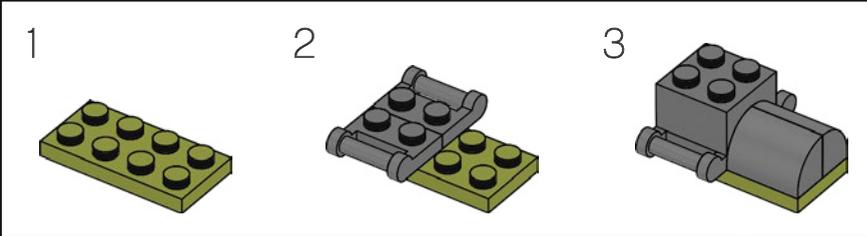


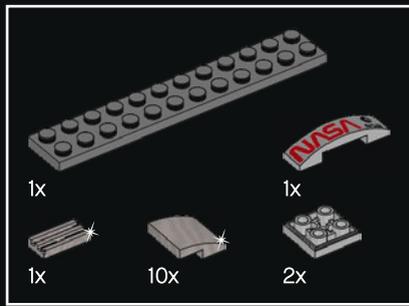
23



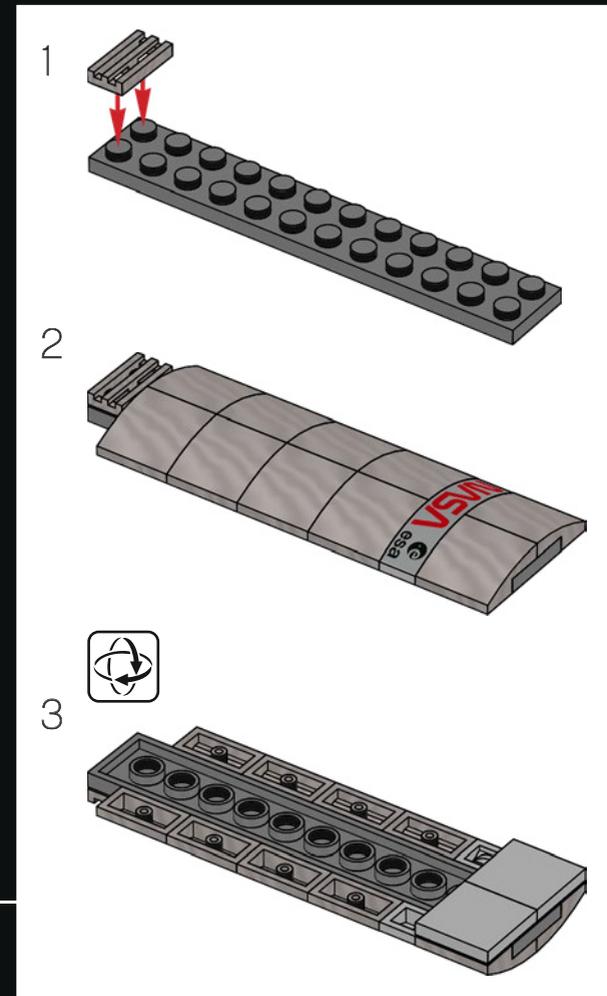
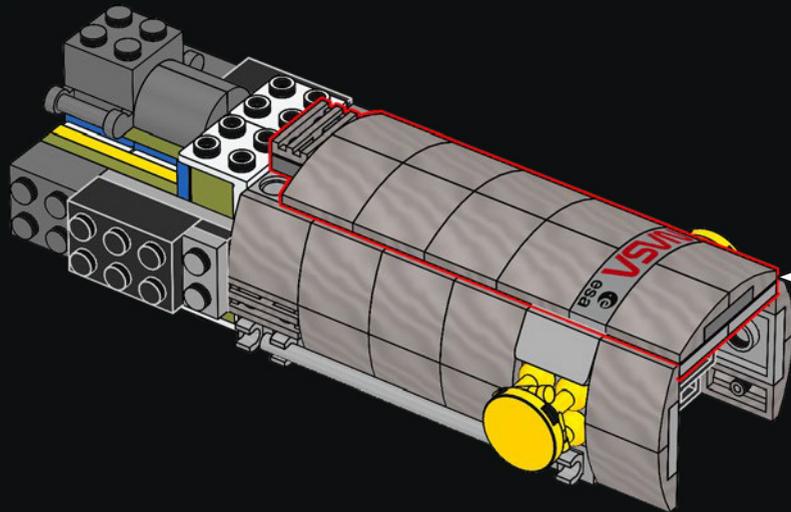


24



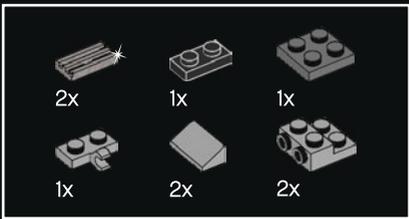


25

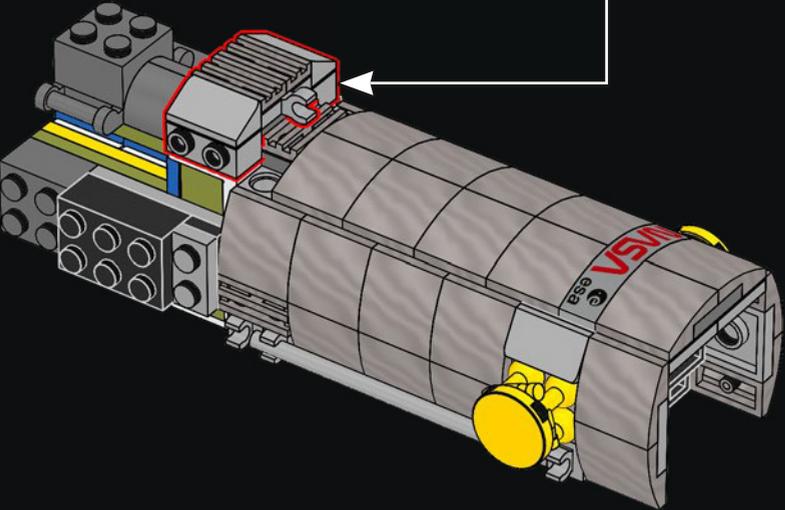
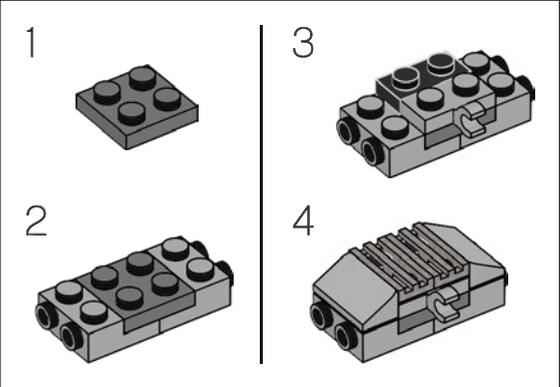


SCHON GEWUSST?

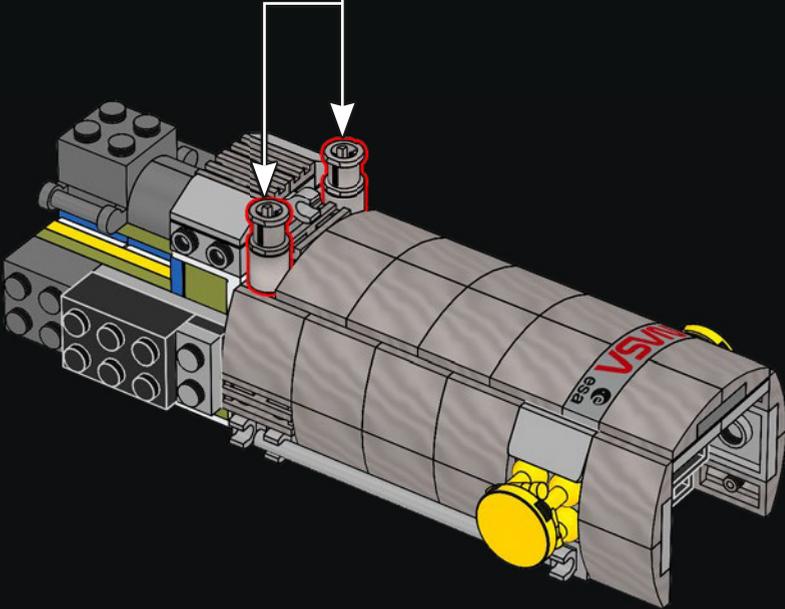
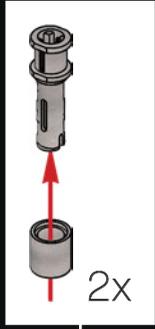
Das Weltraumteleskop wurde nach dem amerikanischen Astronomen Edwin Hubble (1889-1953) benannt.

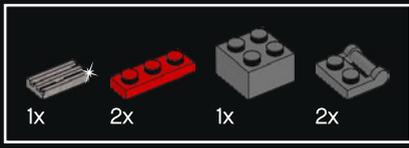


26

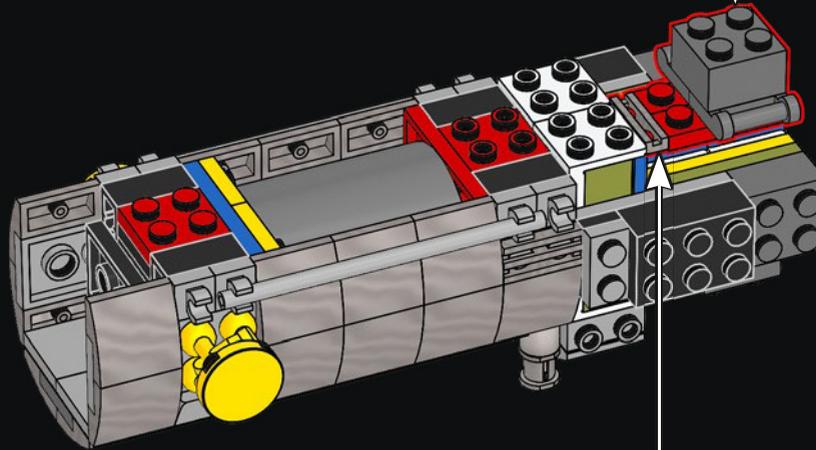
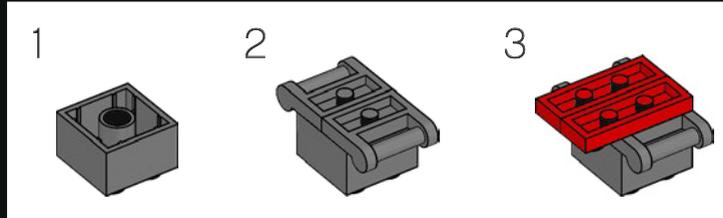


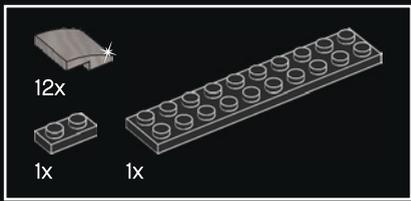
27



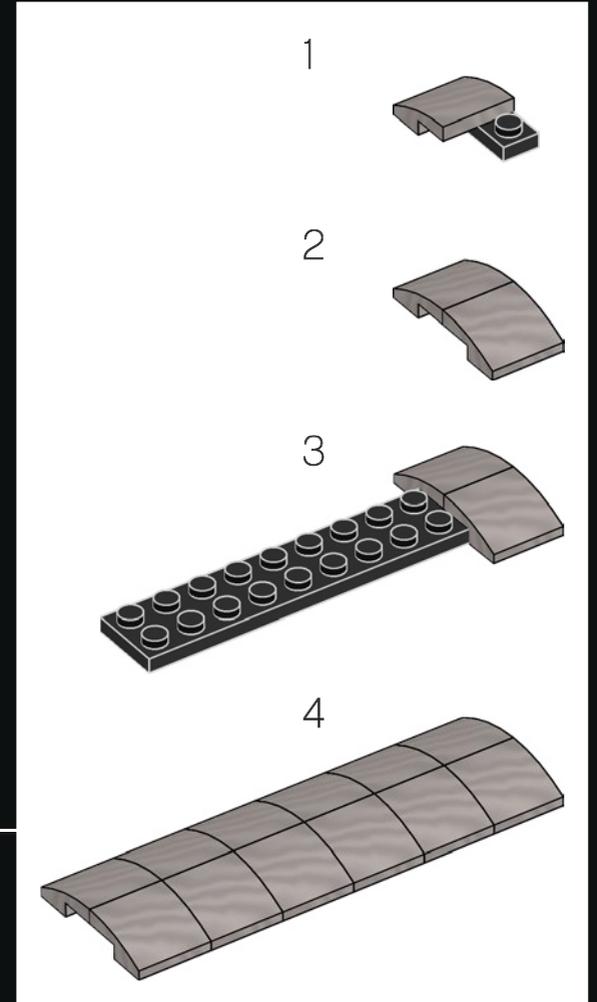
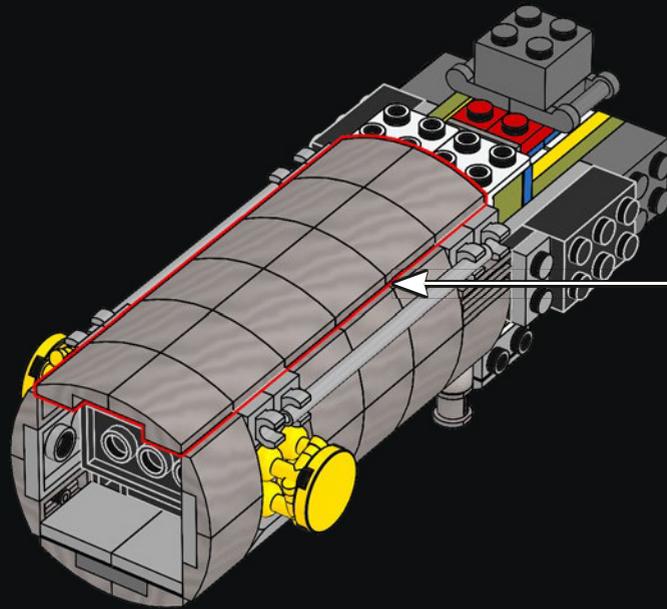


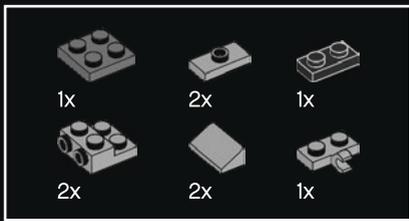
28



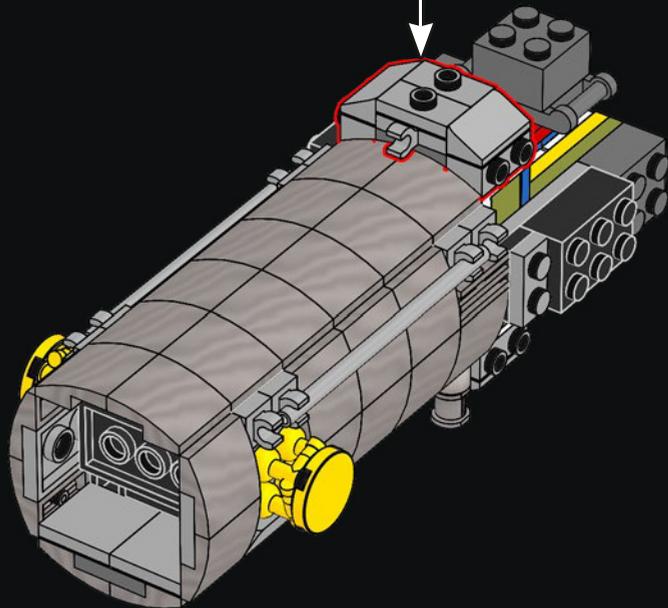
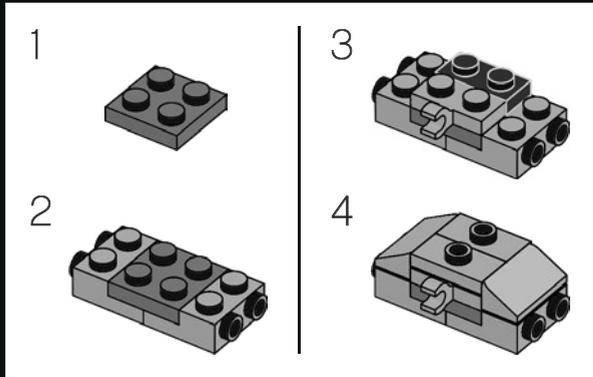


29

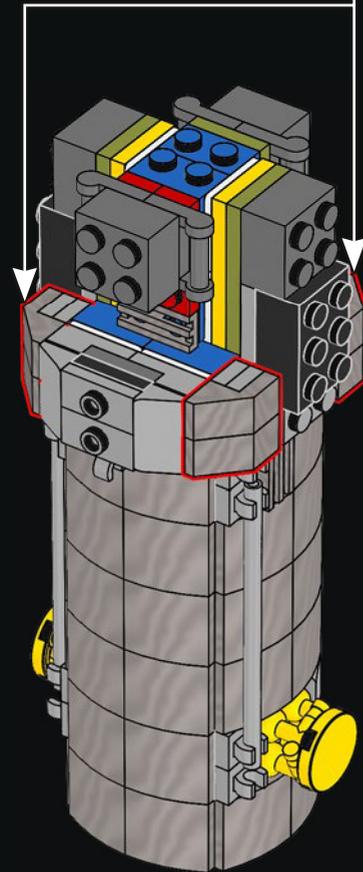
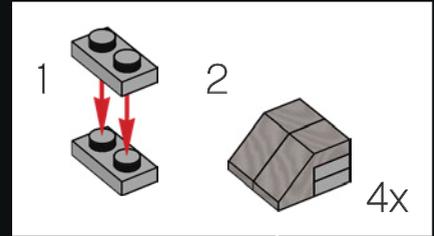


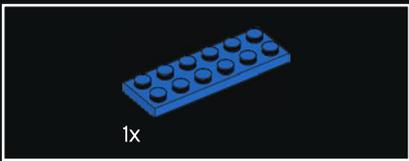


30

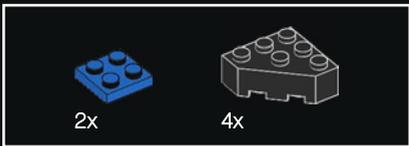
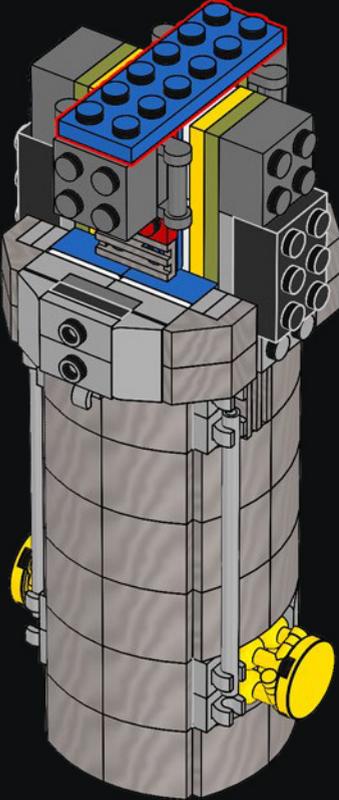


31

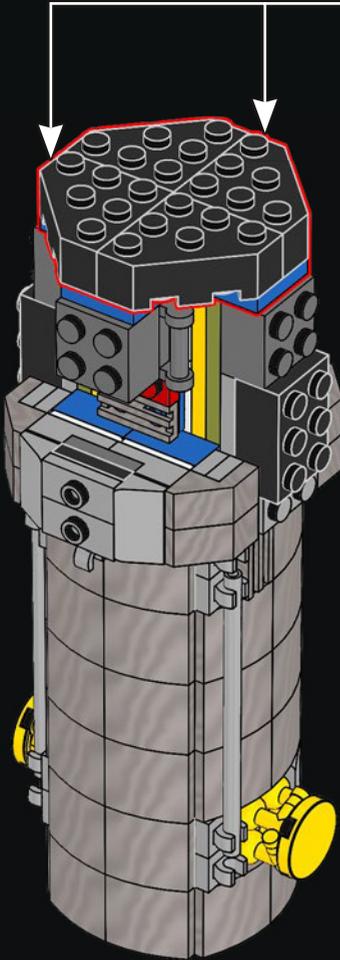
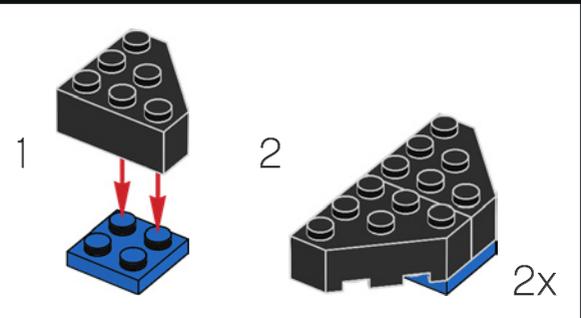




32

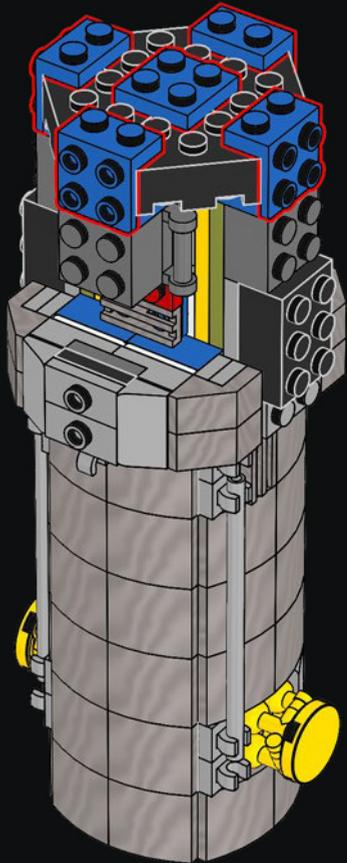


33

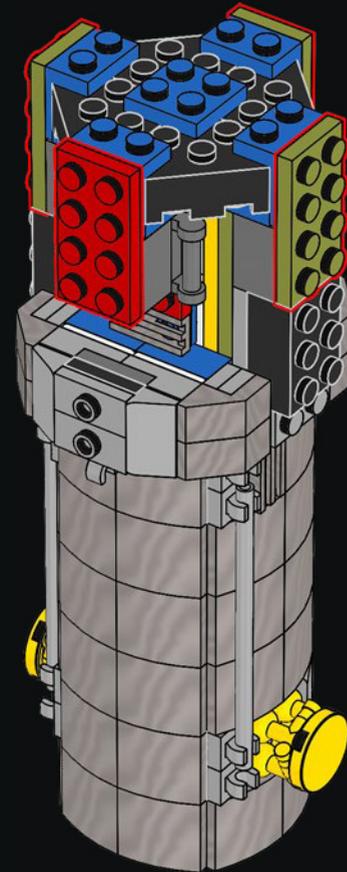




34

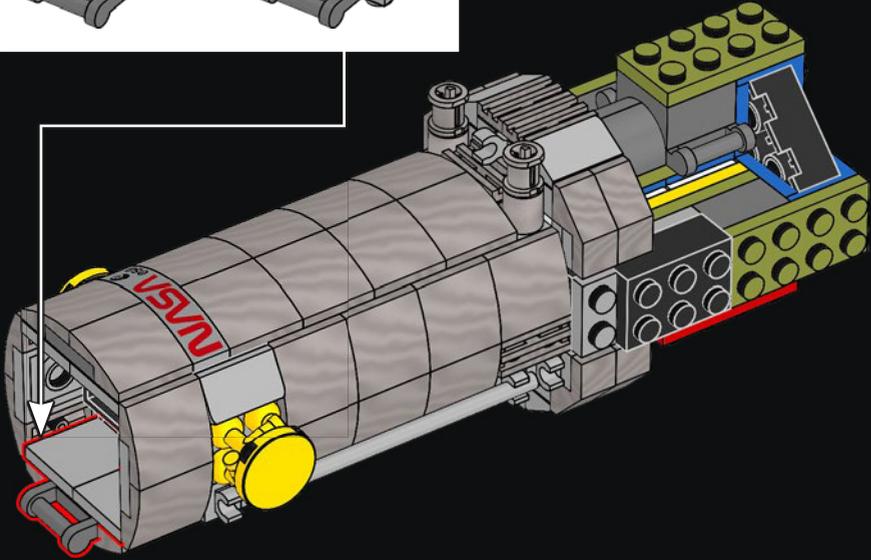
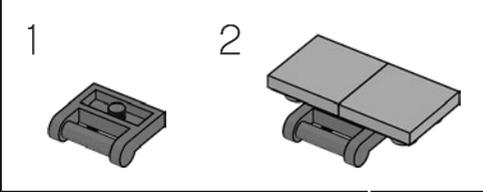


35

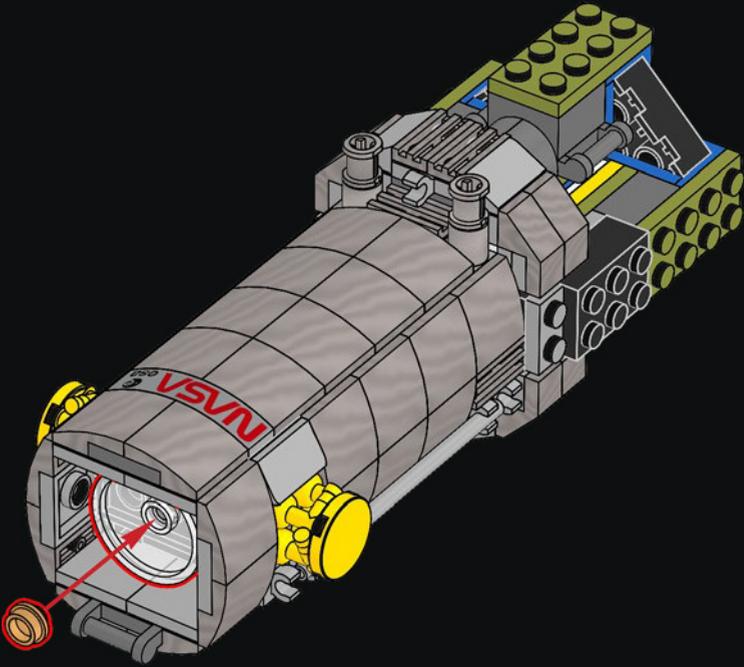


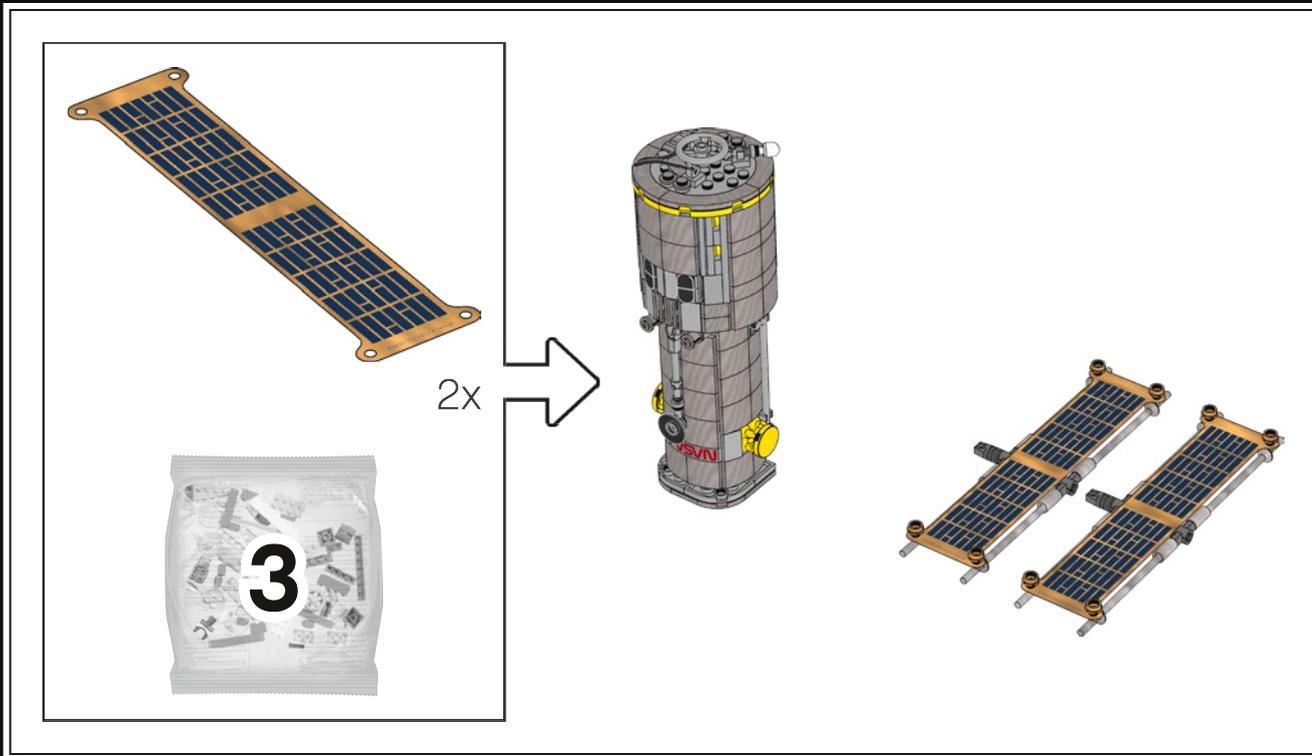


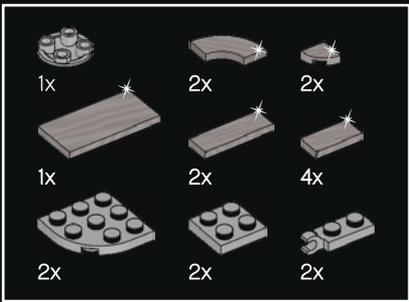
36



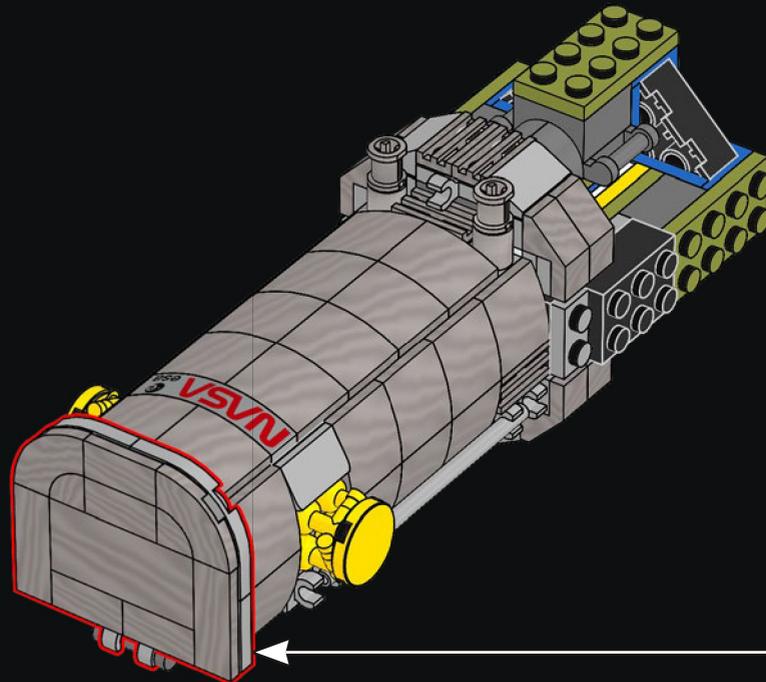
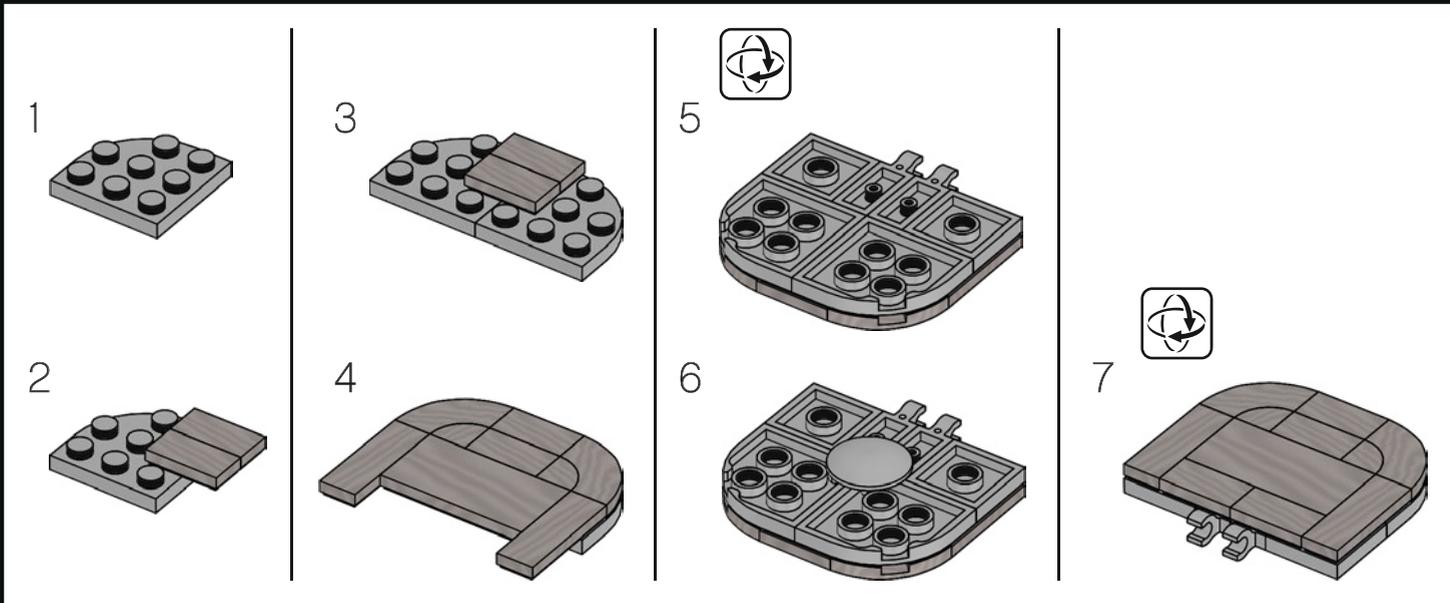
37





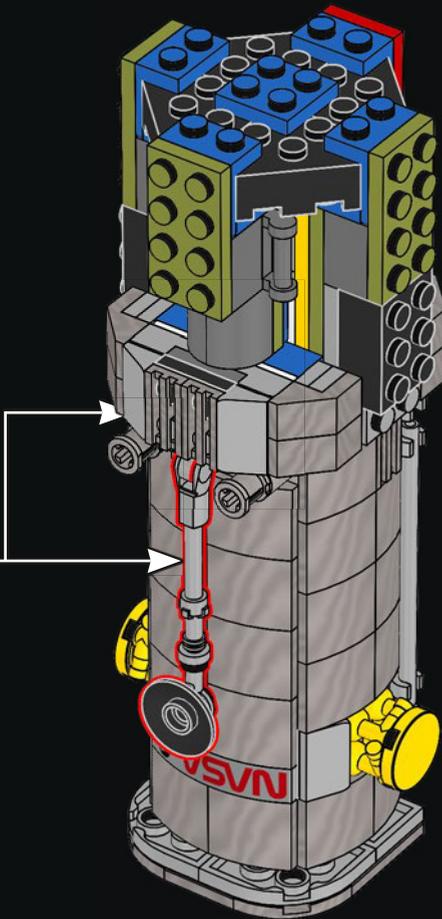
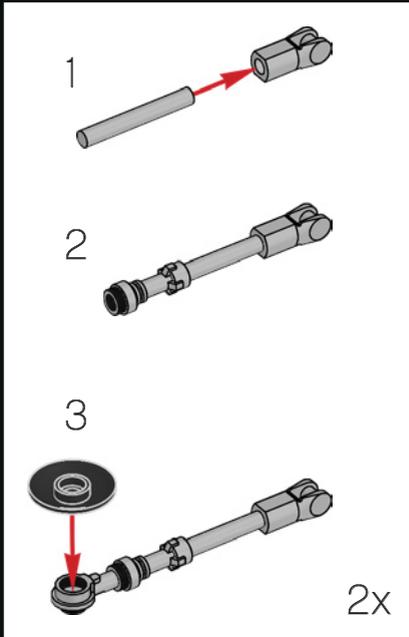


38

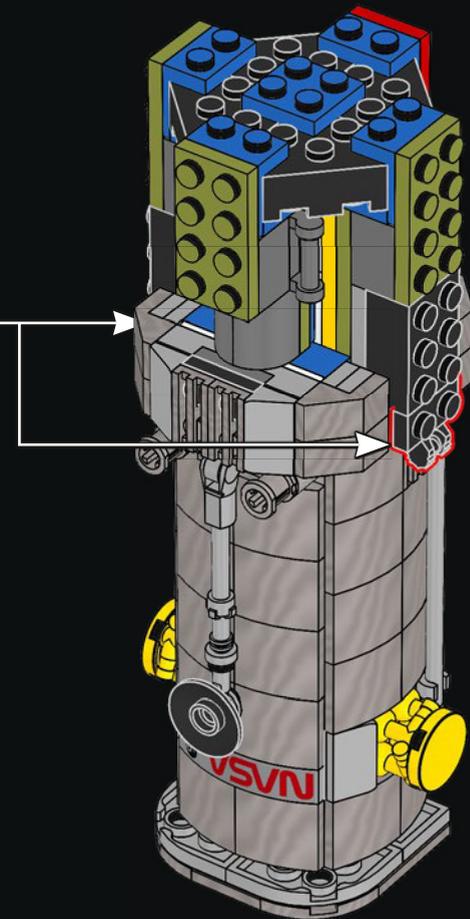


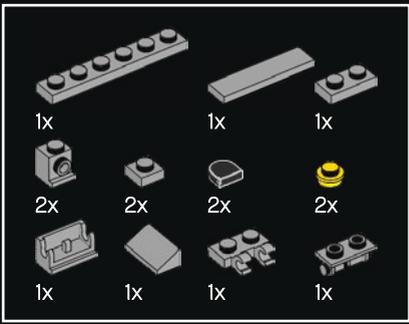


39



40



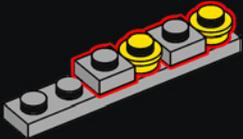


41

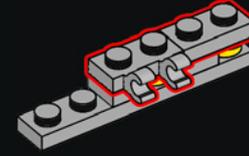
1



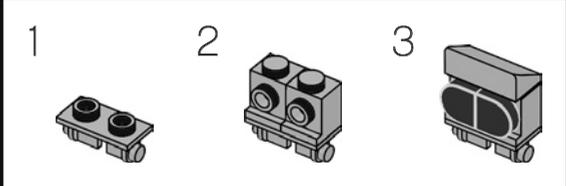
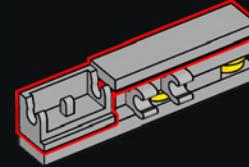
2



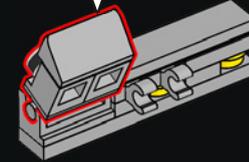
3

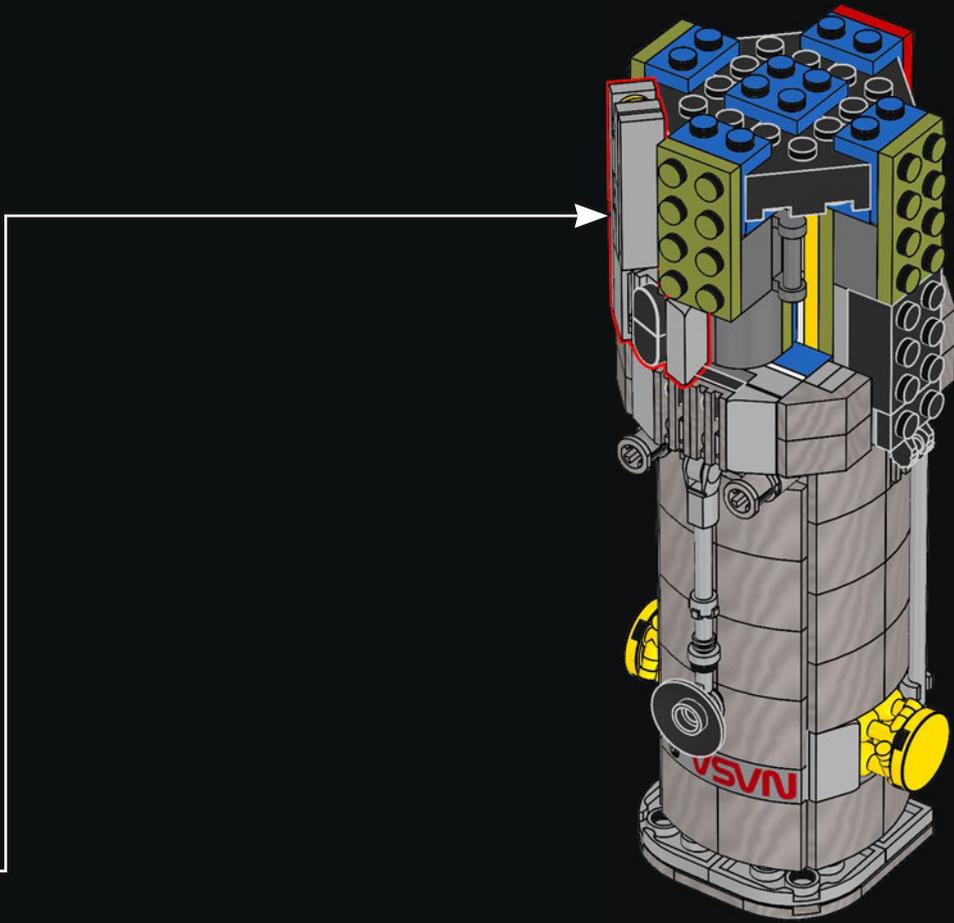


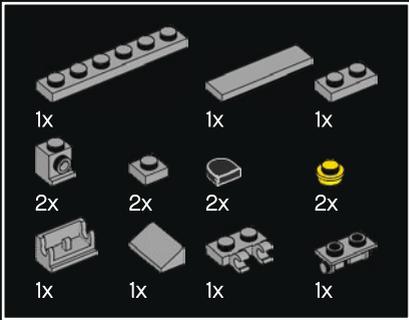
4



5





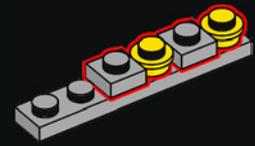


42

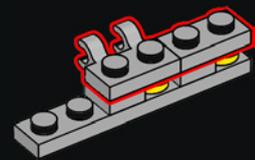
1



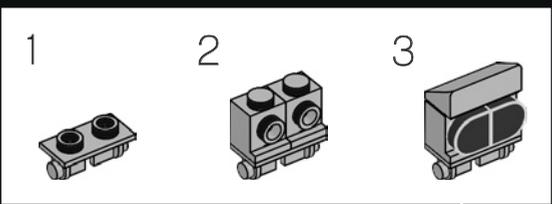
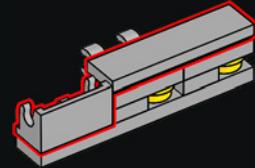
2



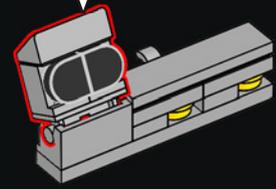
3

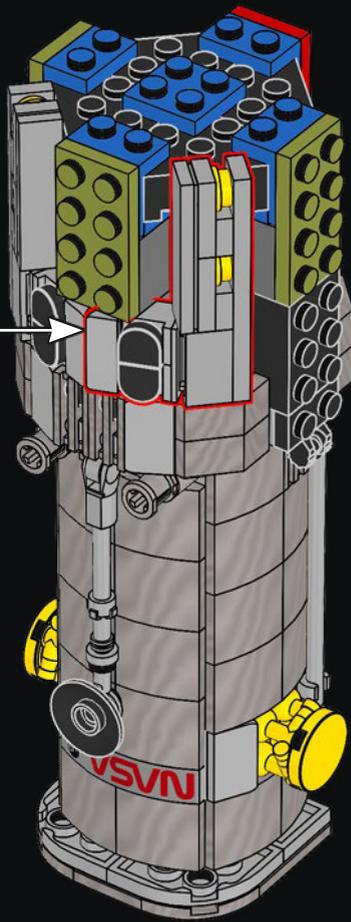


4



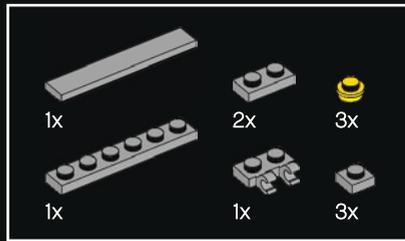
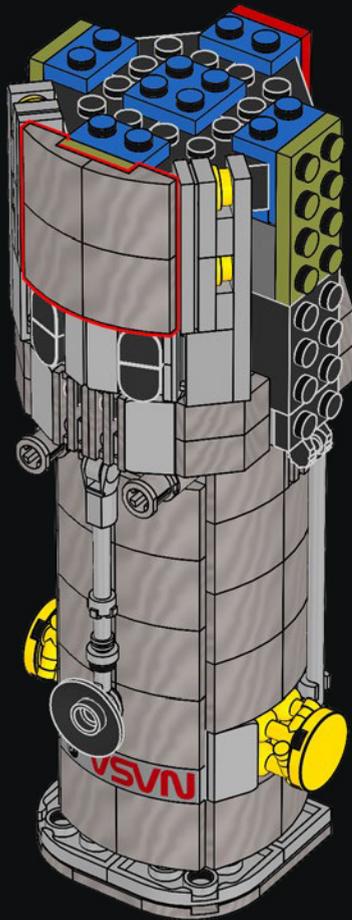
5



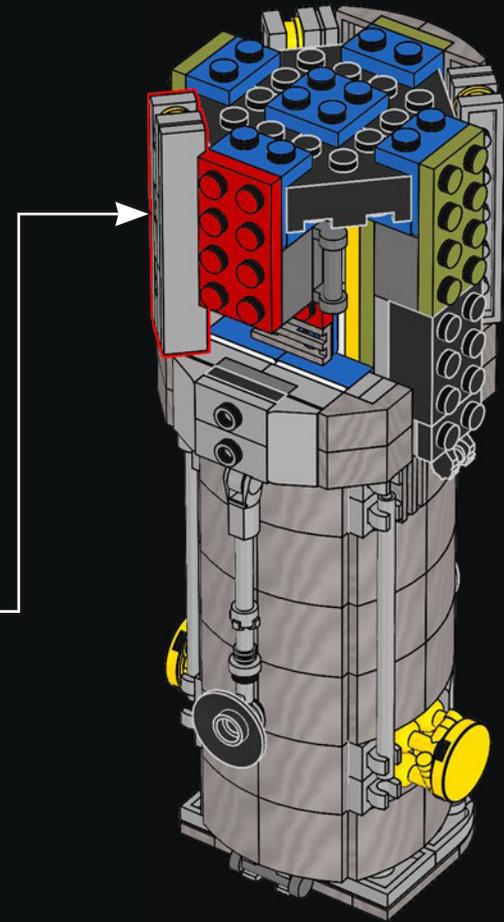
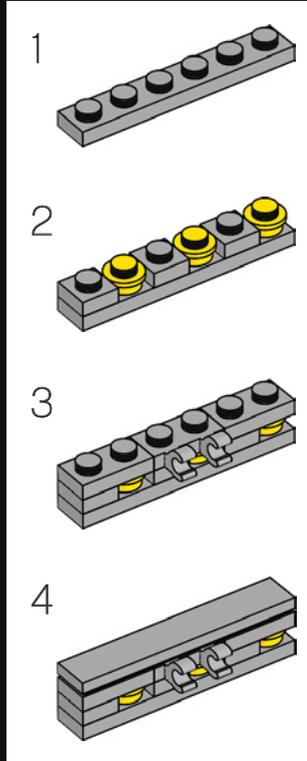


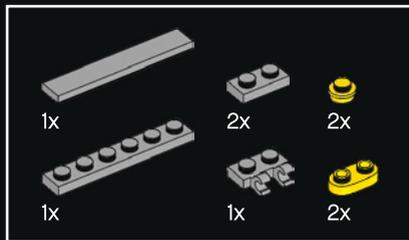


43

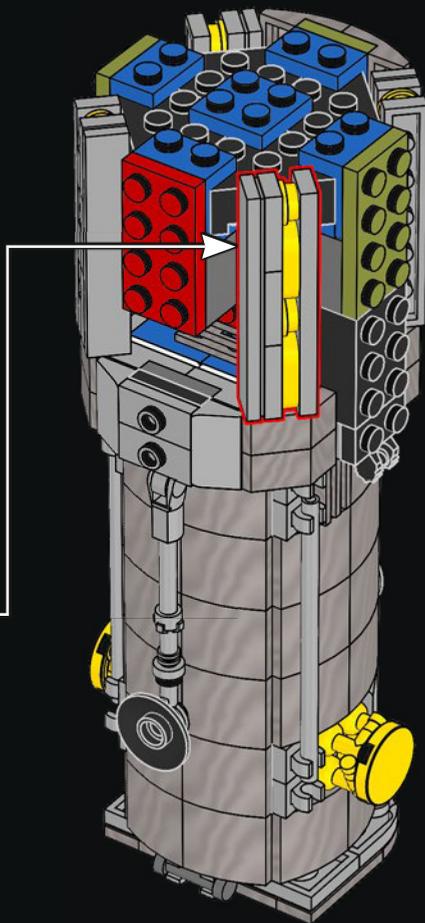
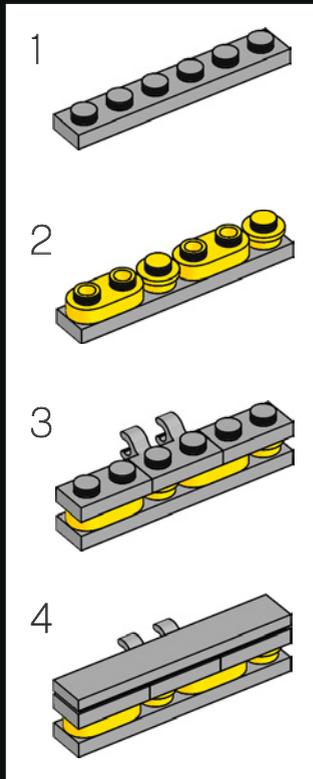


44

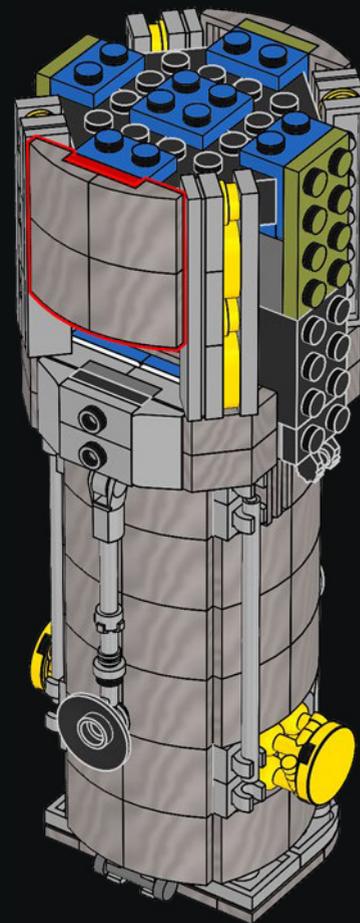


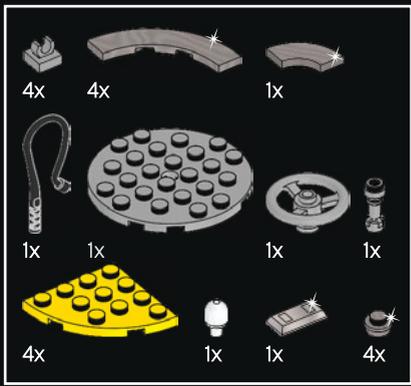


45



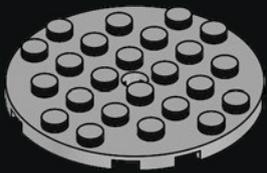
46





47

1



2



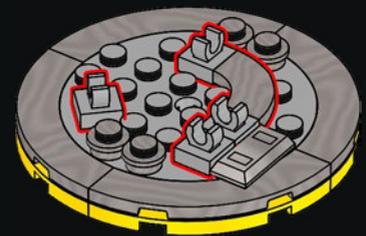
3



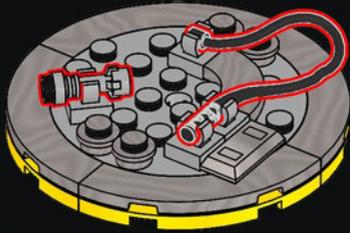
4



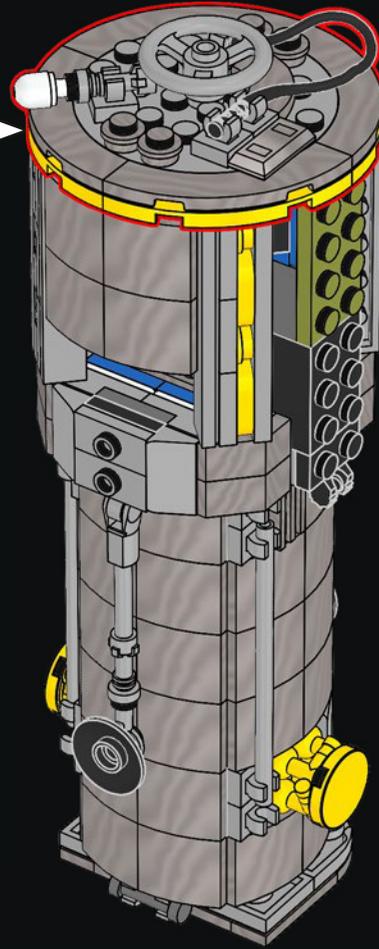
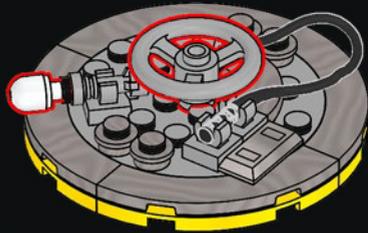
5



6

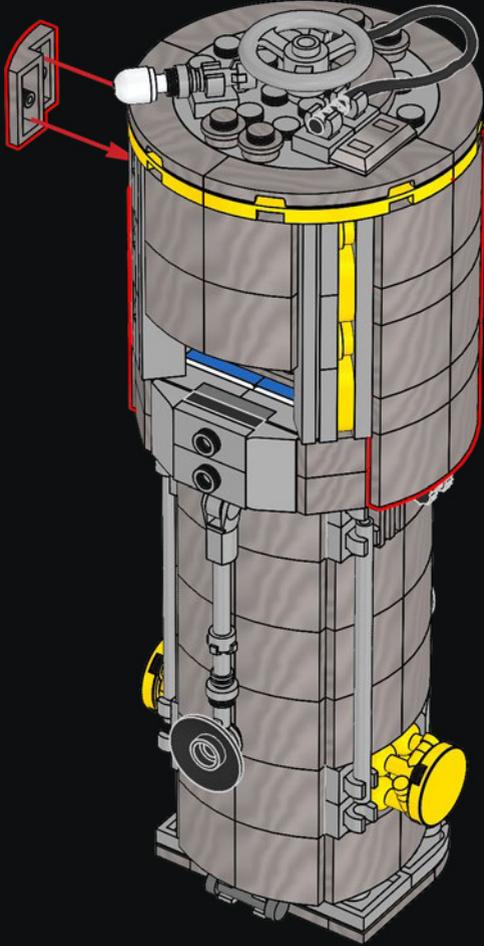


7



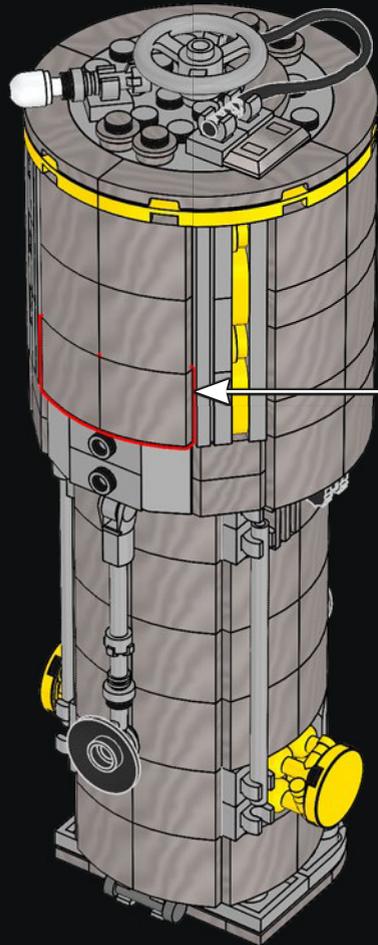
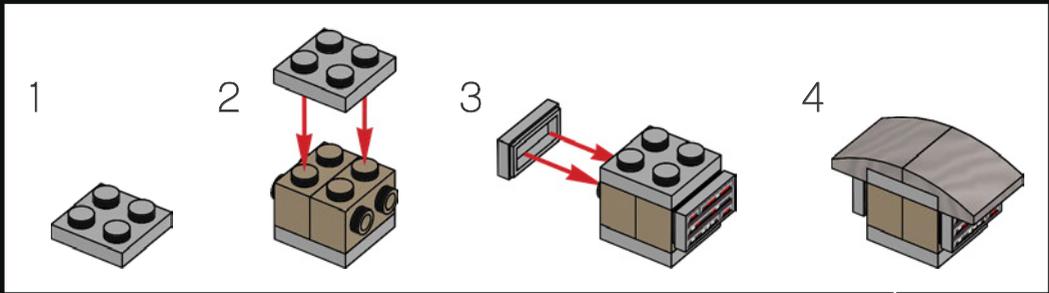


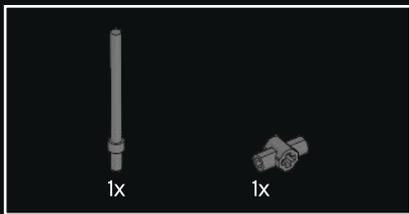
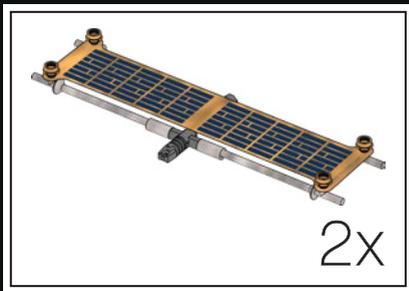
48



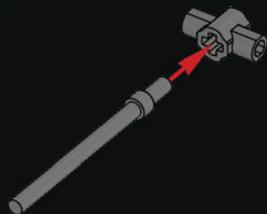


49

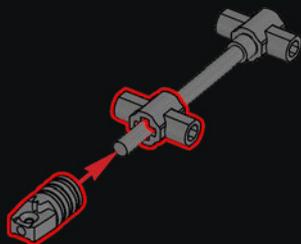




50



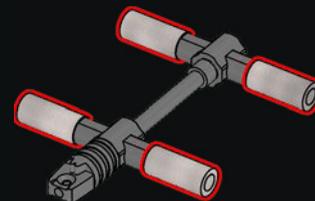
51



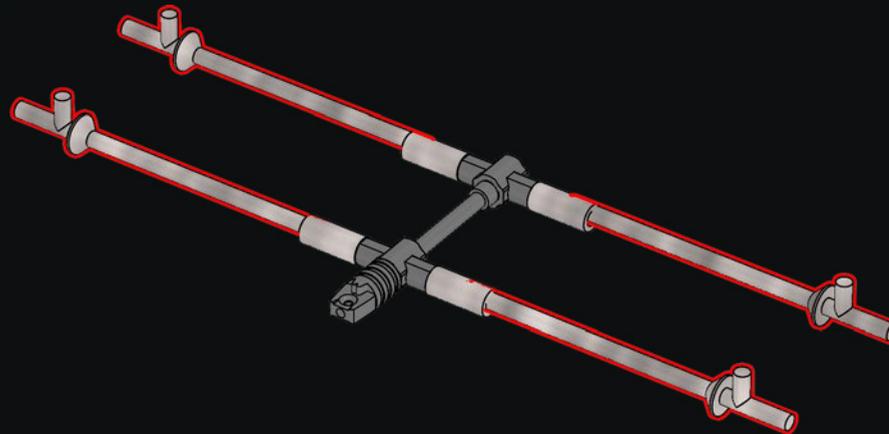
50

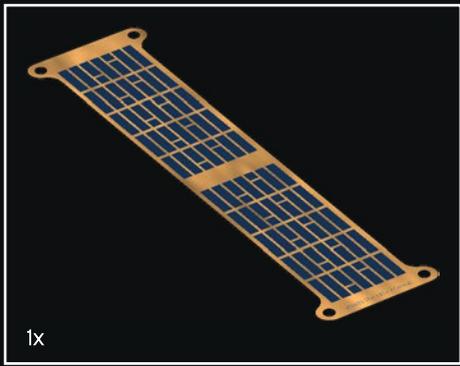


52

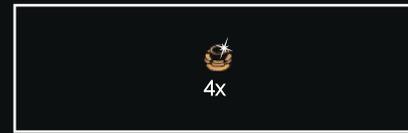
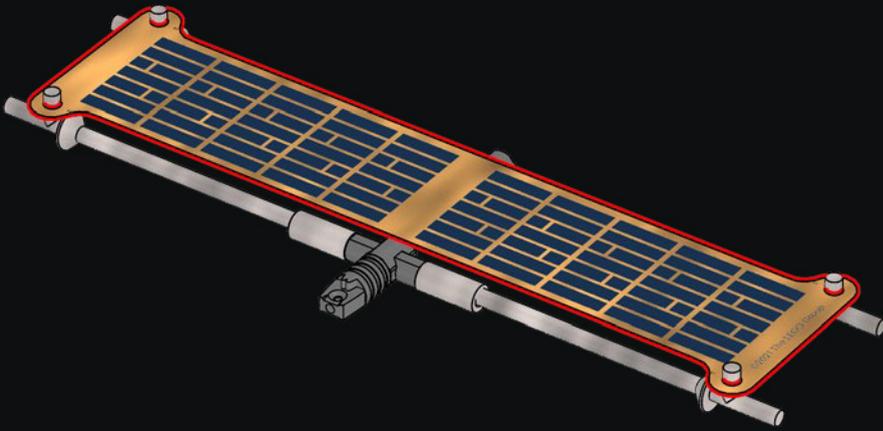


53

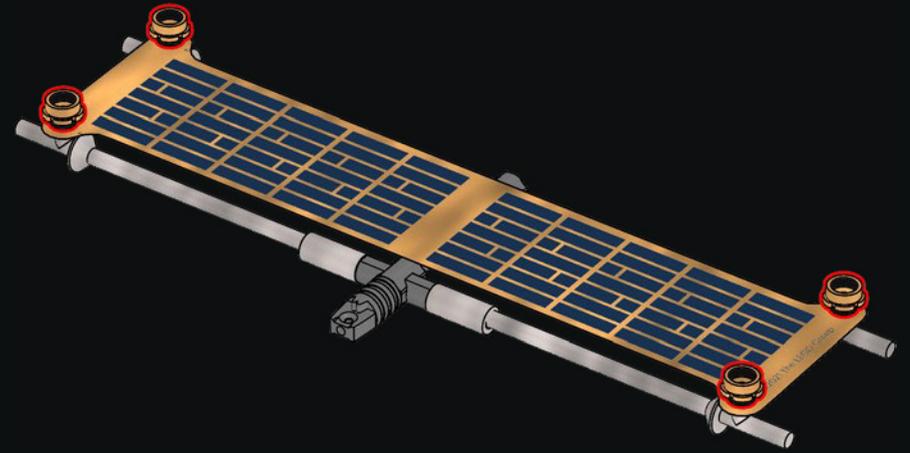




54



55

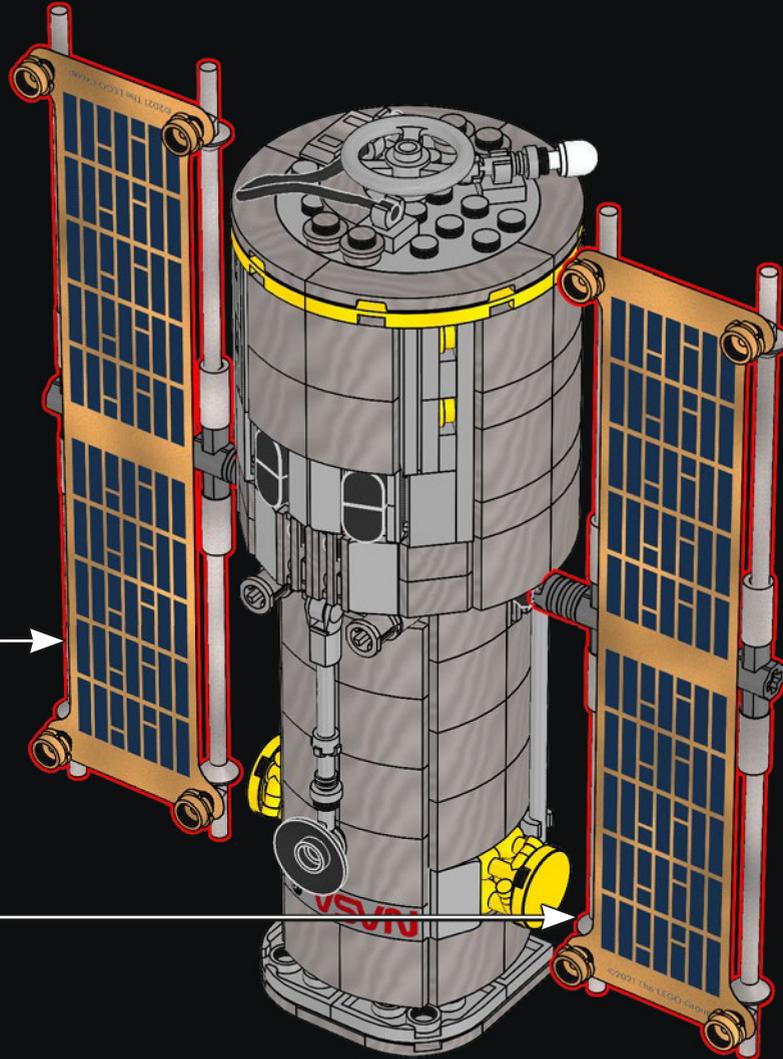


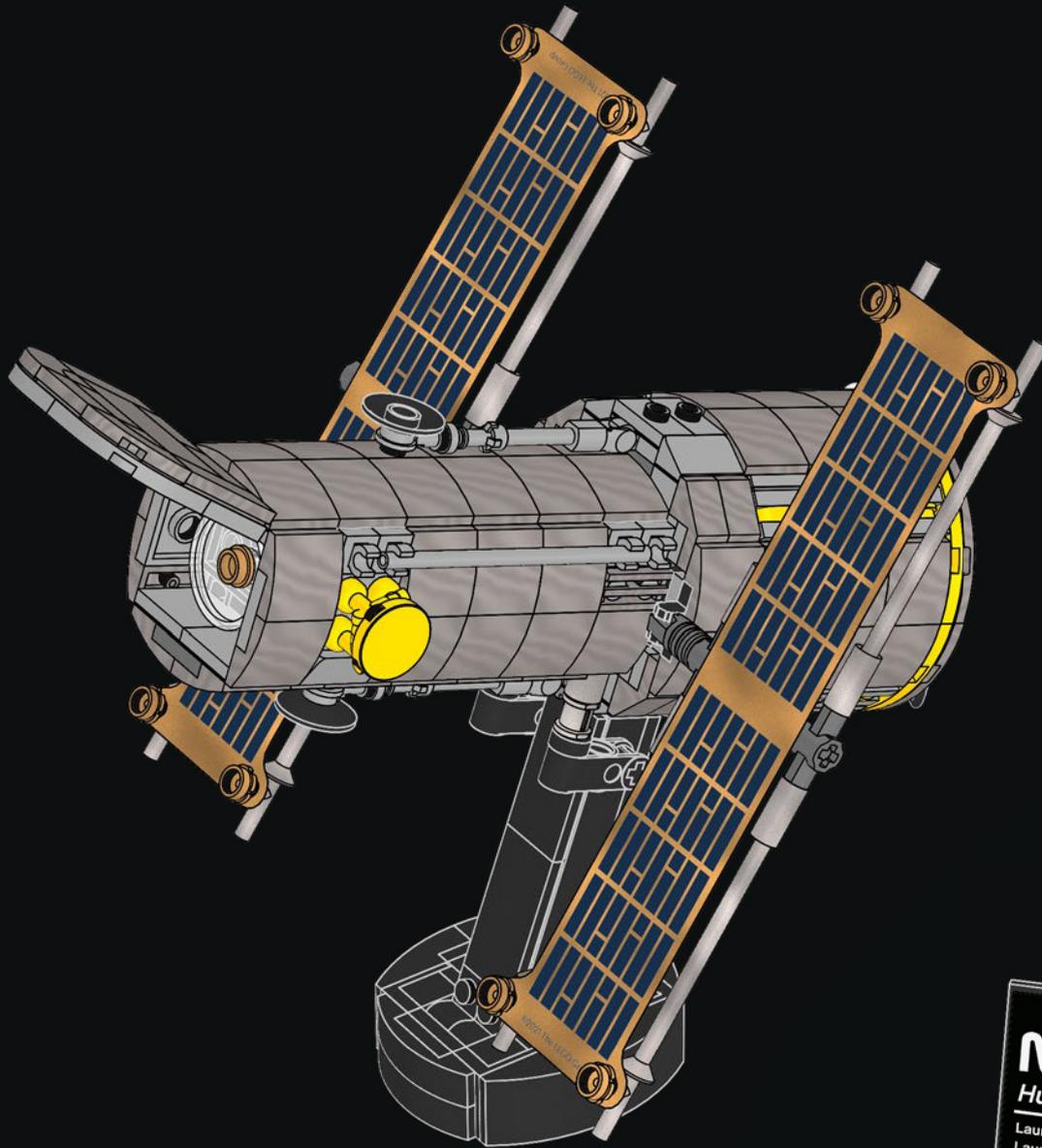
2x

SCHON GEWUSST?

Das Hubble-Weltraumteleskop gewährte die bisher tiefsten Einblicke ins Universum. Noch nie wurden Aufnahmen von ferneren „Himmelskörpern“ gemacht, etwa von Galaxien, die mehr als 13 Milliarden Lichtjahre entfernt sind.

56





NASA  **esa**
Hubble Space Telescope

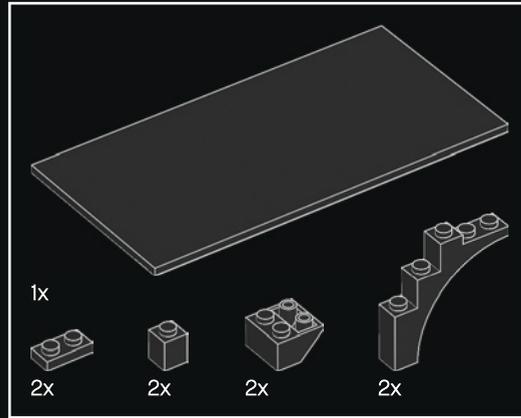
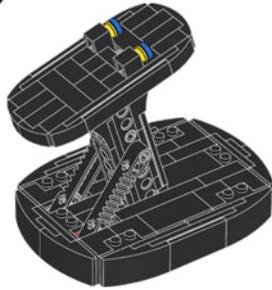
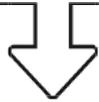
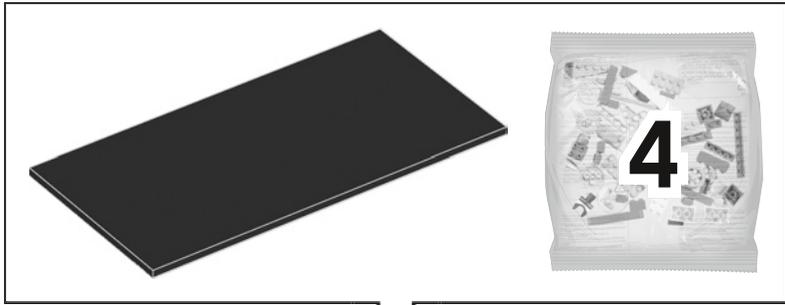
Launch: April 24, 1990
Launch Mass: 24,490 lbs
Velocity: 4.72 mi/s
Deploy Altitude: 350 miles

DAS SPACESHUTTLE „DISCOVERY“

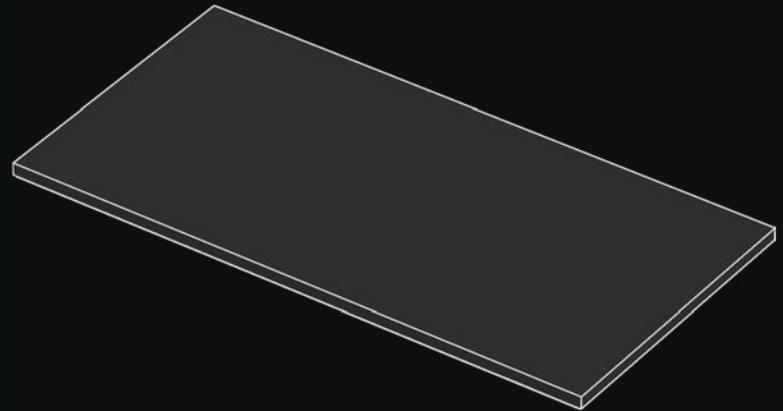
Der Bedarf an wiederverwendbaren Raumfähren, die große Nutzlasten in die Erdumlaufbahn transportieren können, war die Triebfeder des Space Shuttle-Programms. Die „Discovery“ war das dritte „Orbital Vehicle“ (OV-103) der NASA-Flotte und wurde im November 1983 in Dienst gestellt. Letztendlich sollte sie 39 Missionen fliegen, 238 Millionen Kilometer zurücklegen 5.830 Erdumrundungen absolvieren und während ihrer 27-jährigen Einsatzzeit fast 365 Tage im All verbringen. Die fünftägige Mission zur Aussetzung von Hubble startete am 24. April 1990 im Kennedy Space Center der NASA. Die Entwickler schnitten das Teleskop passgenau auf den Laderaum des Space Shuttle zu.







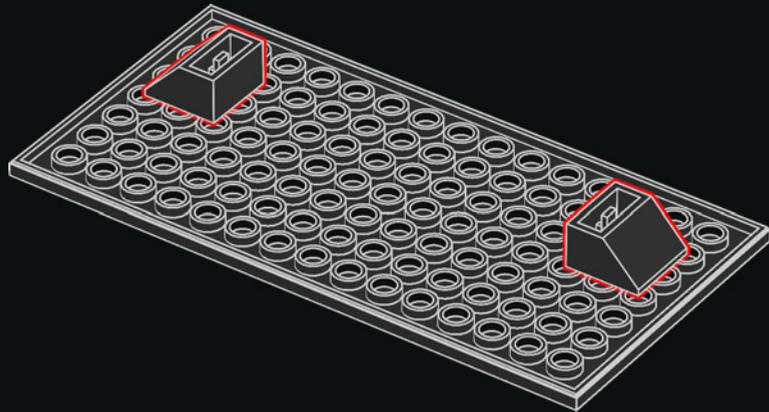
1



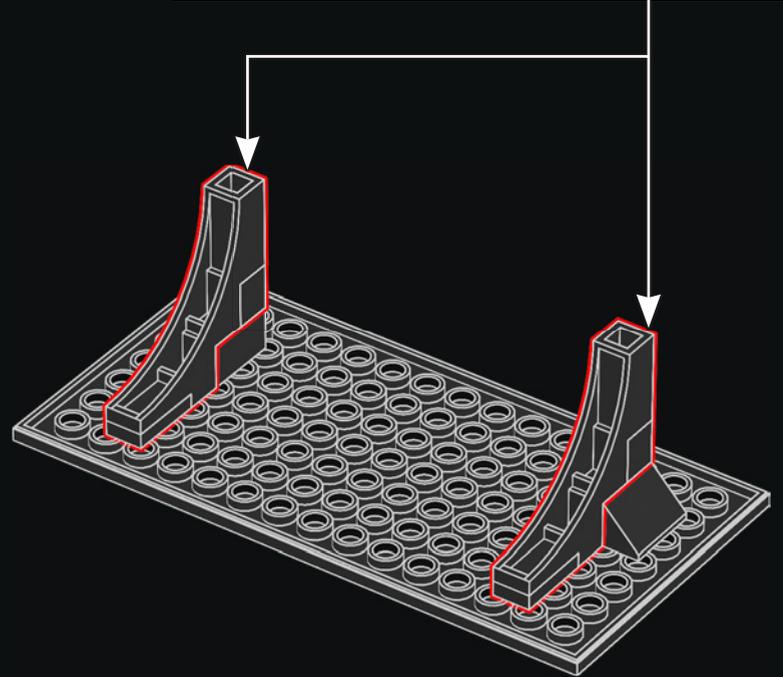
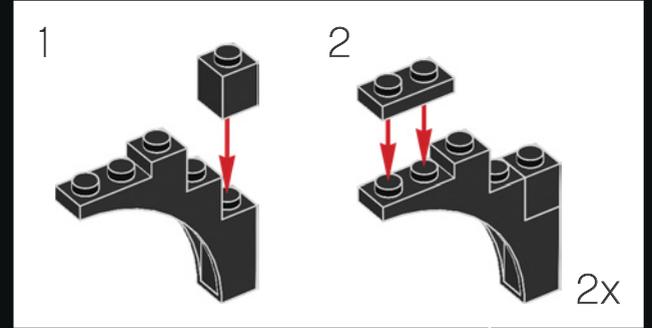
2

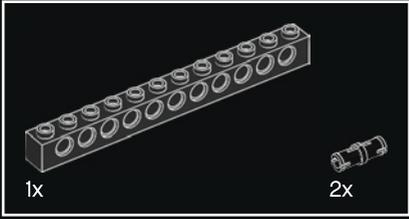
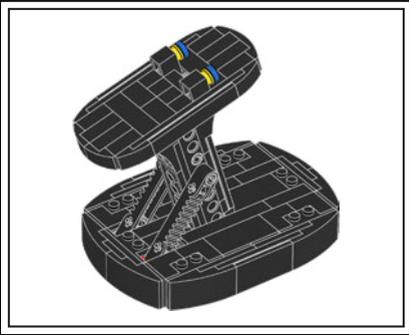


3

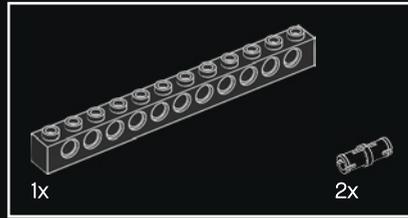
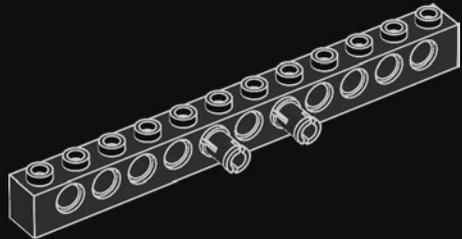


4

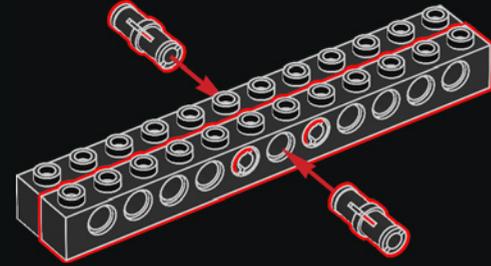




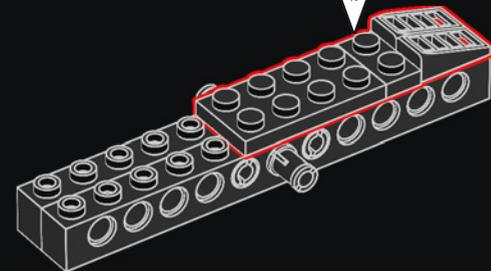
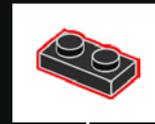
1

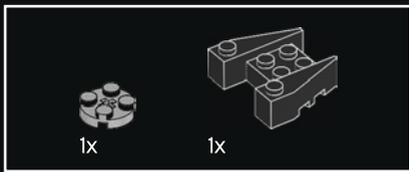


2

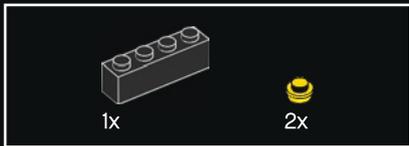
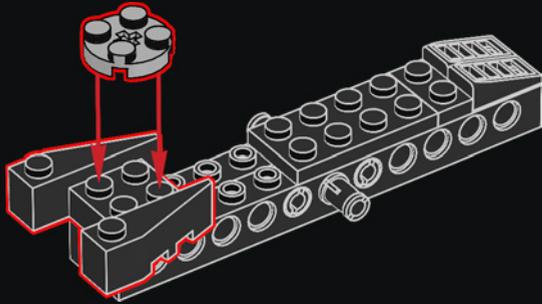


3

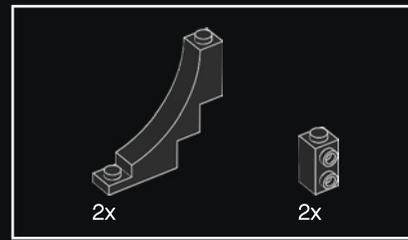
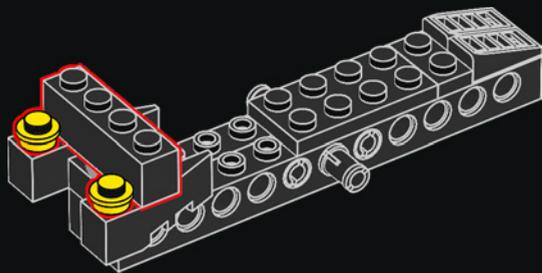




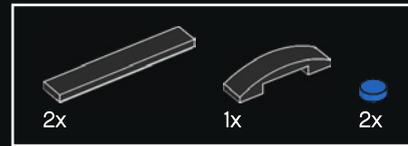
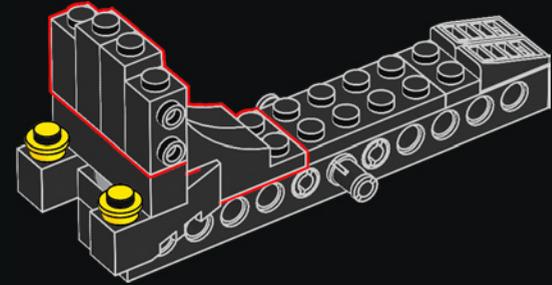
4



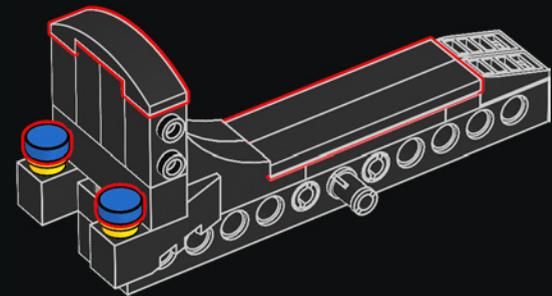
5



6

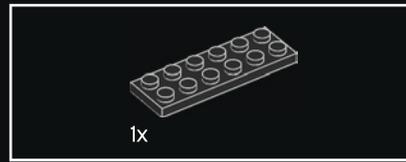
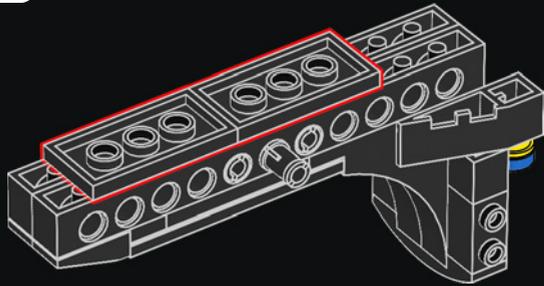


7

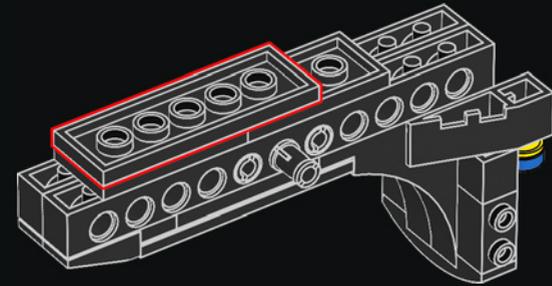


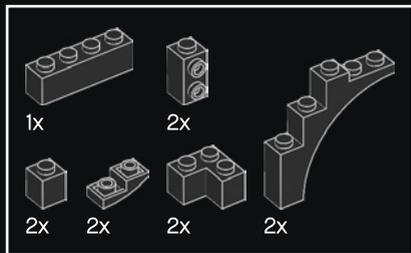


8

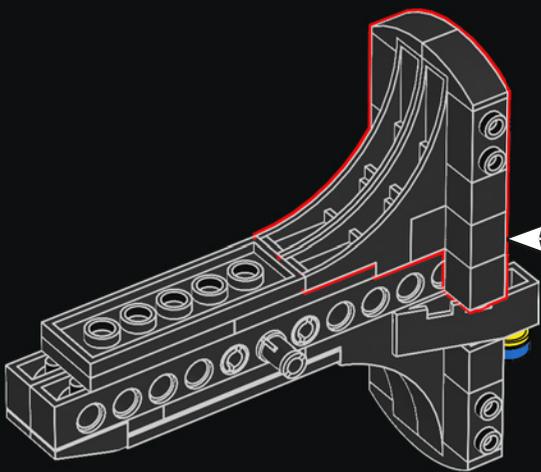
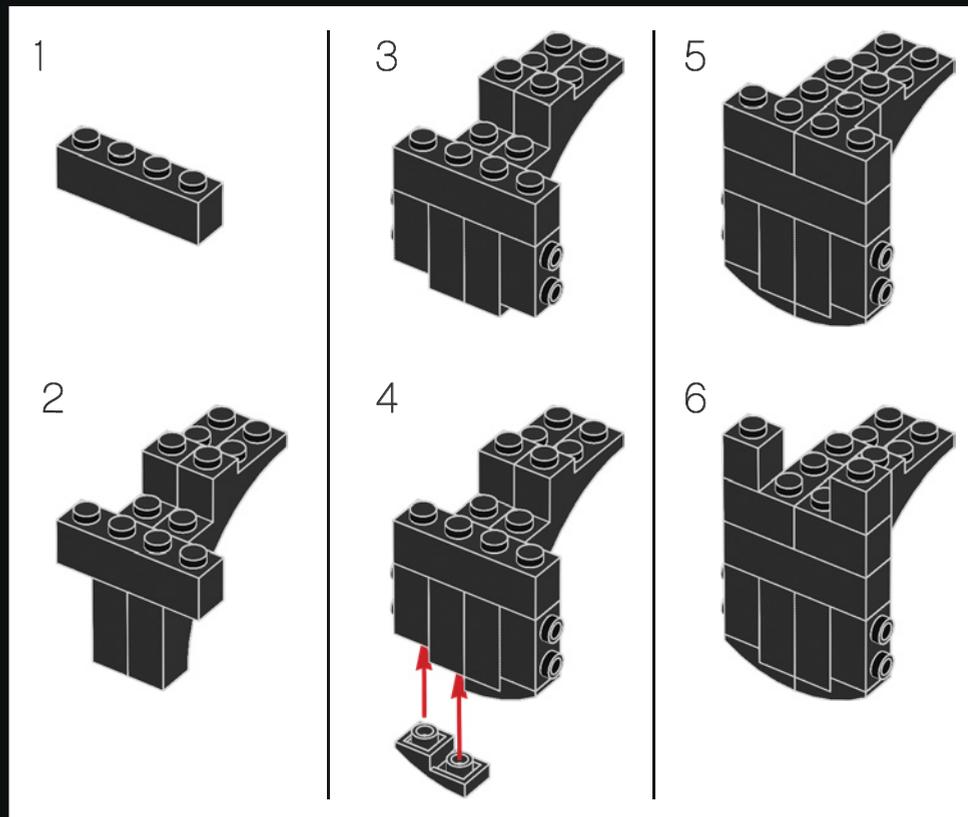


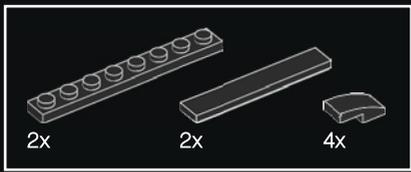
9



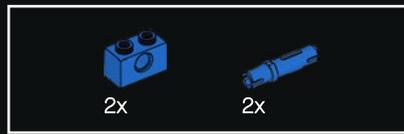
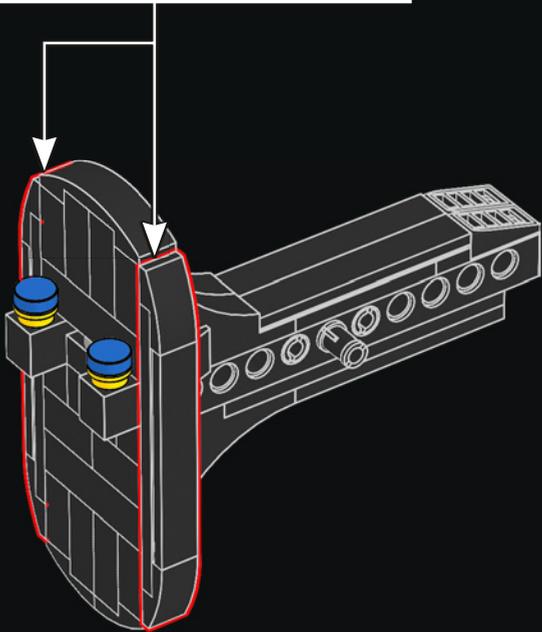
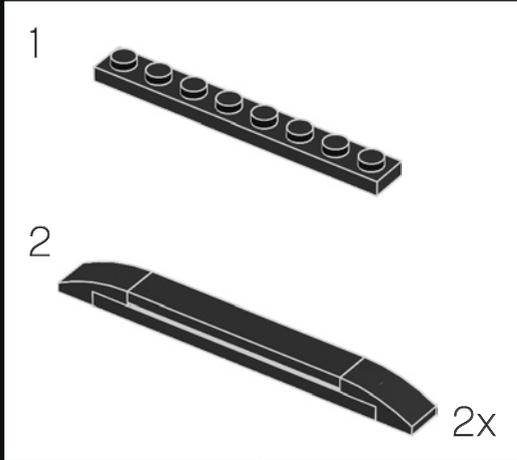


10

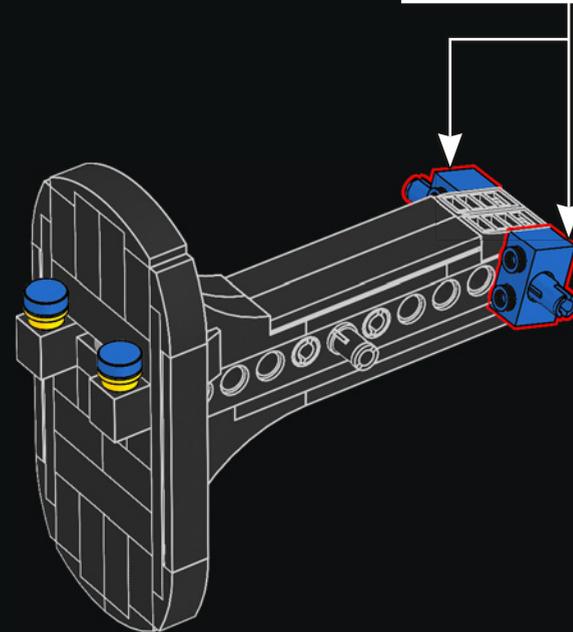
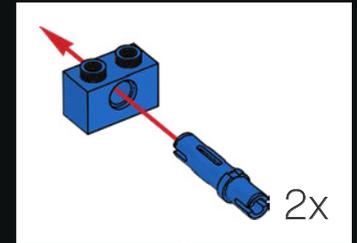


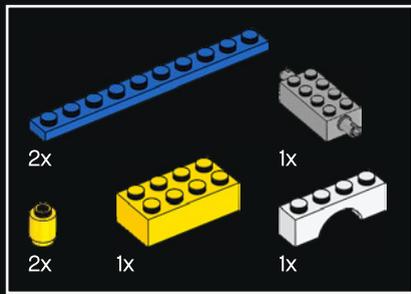


11

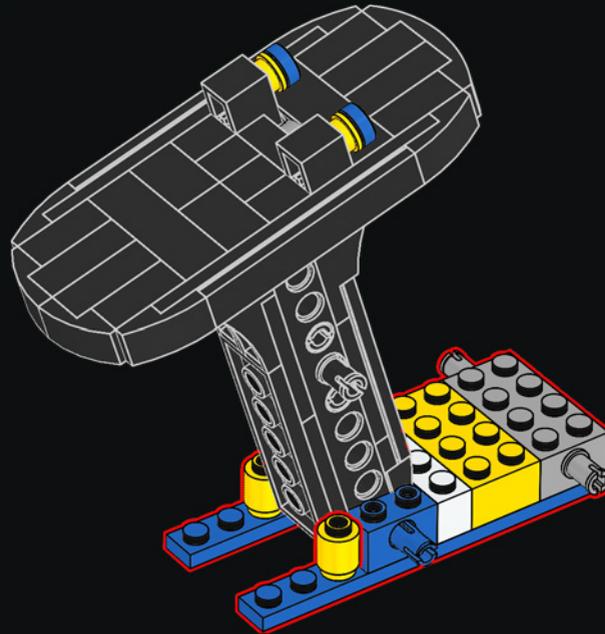
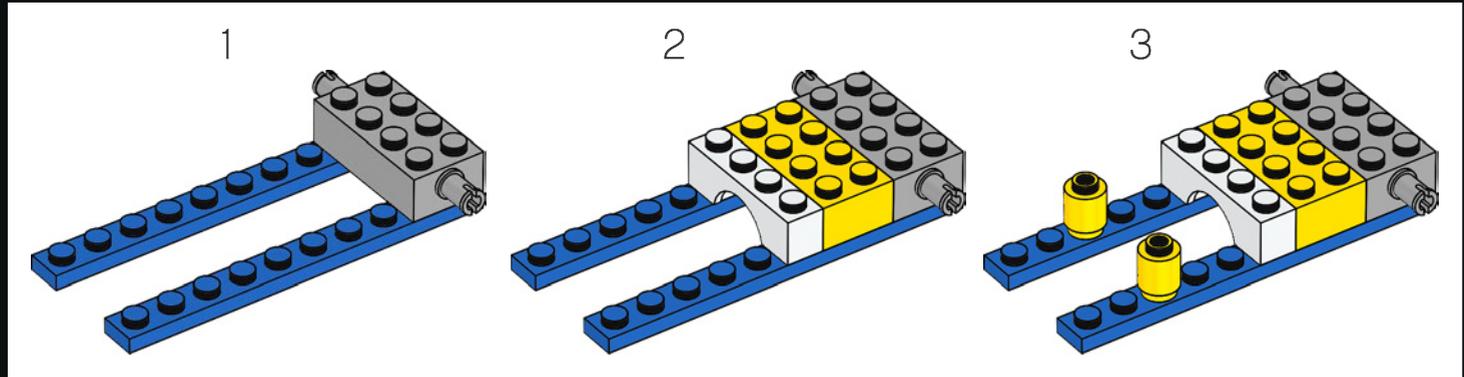


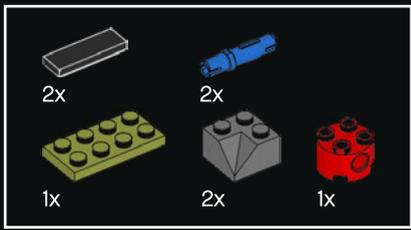
12



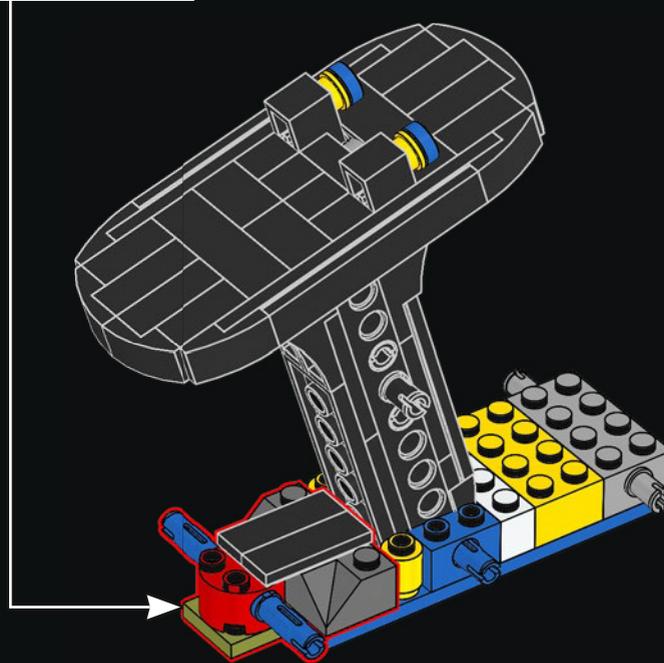
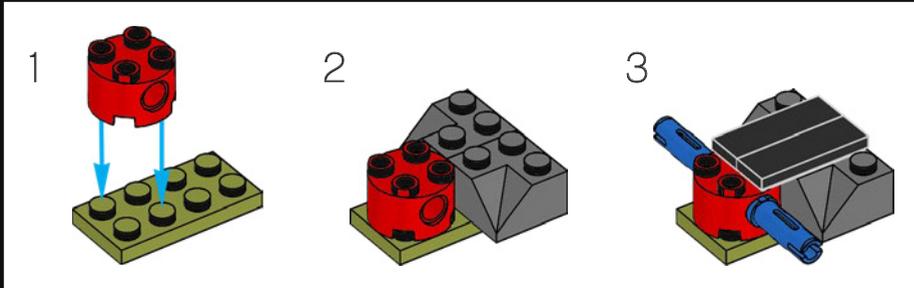


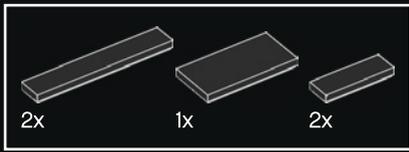
13



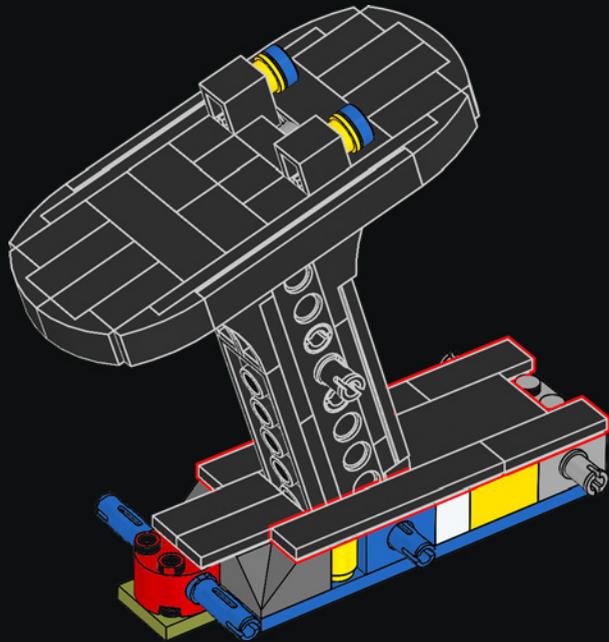


14

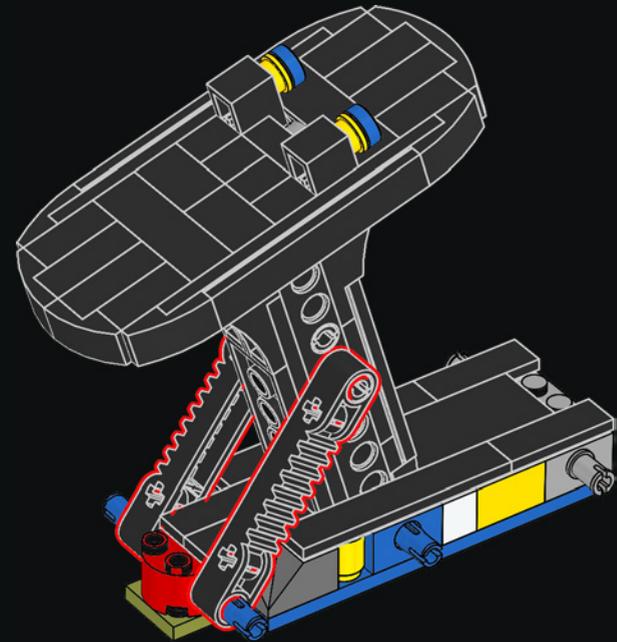


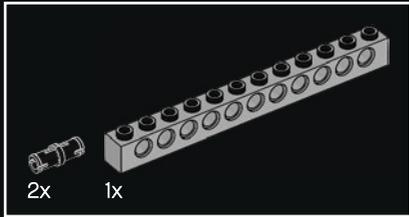
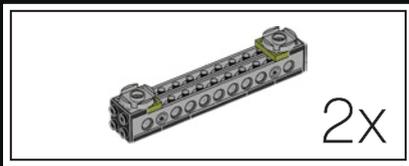


15

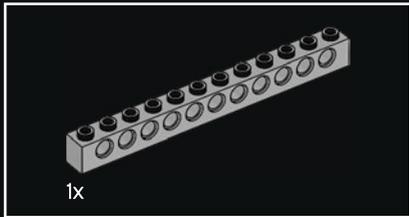
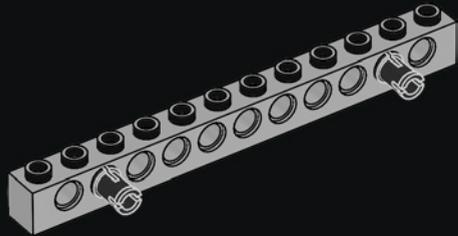


16

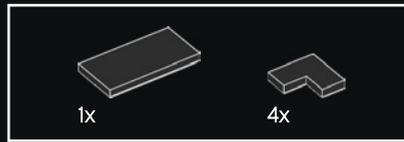
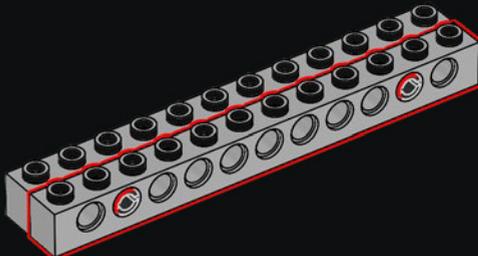




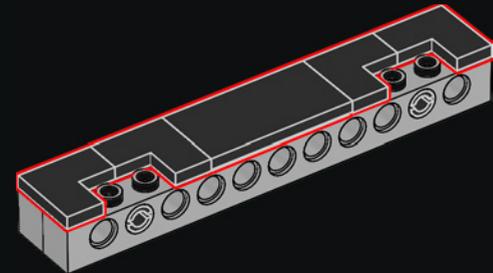
17



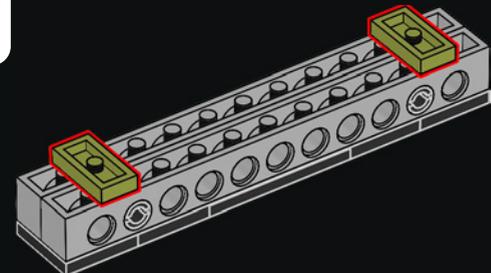
18



19

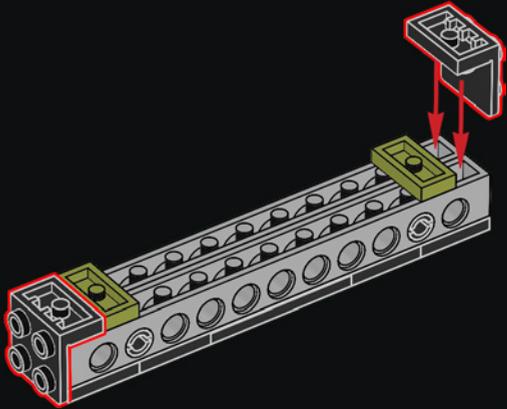


20

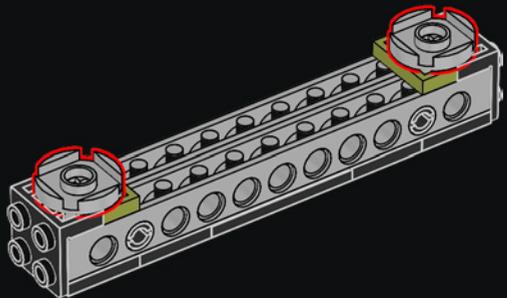




21

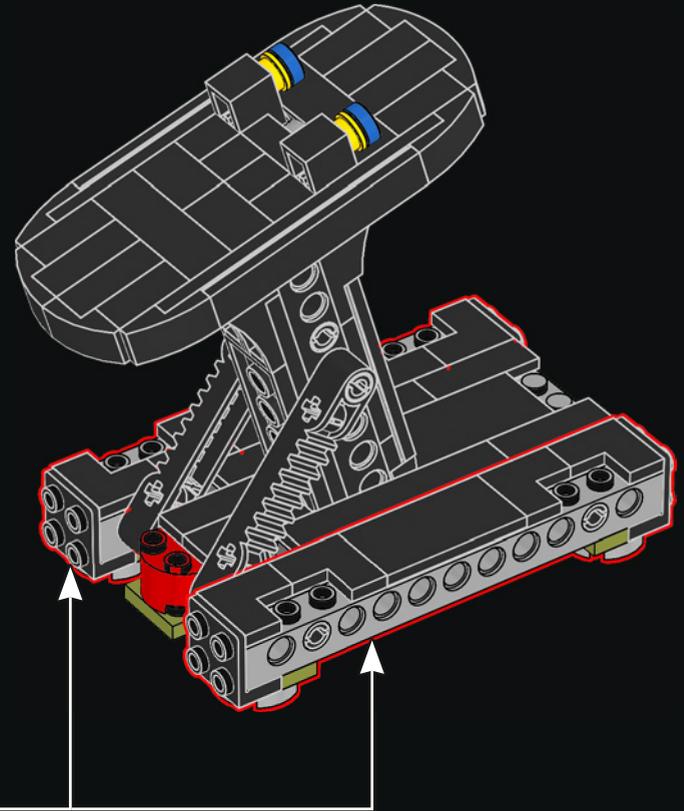


22



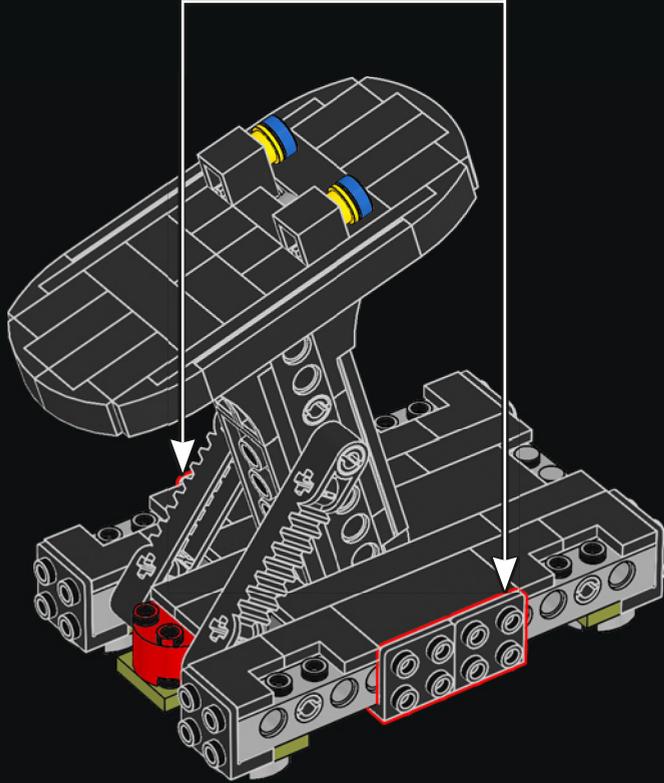
2x

23

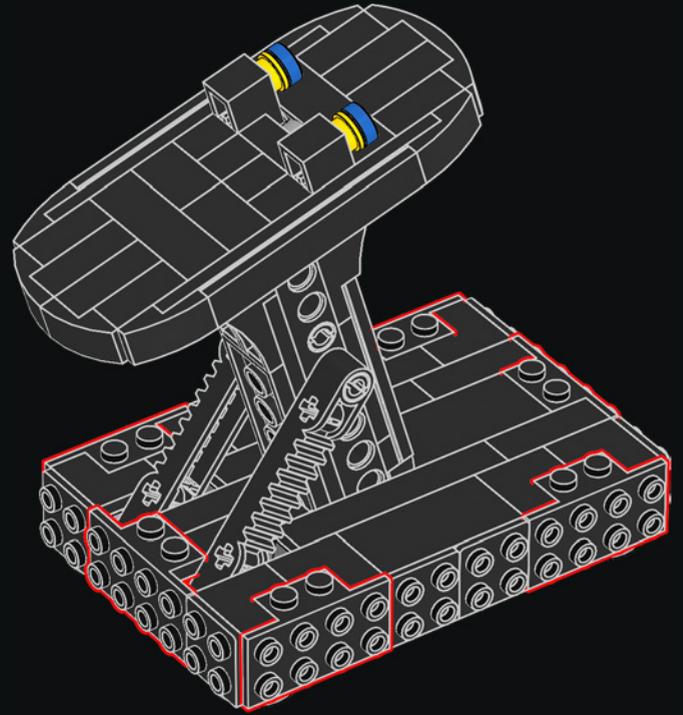


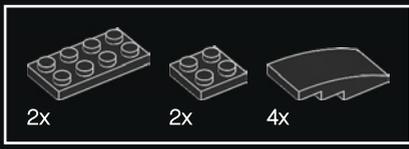


24

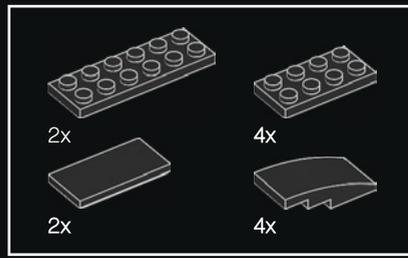
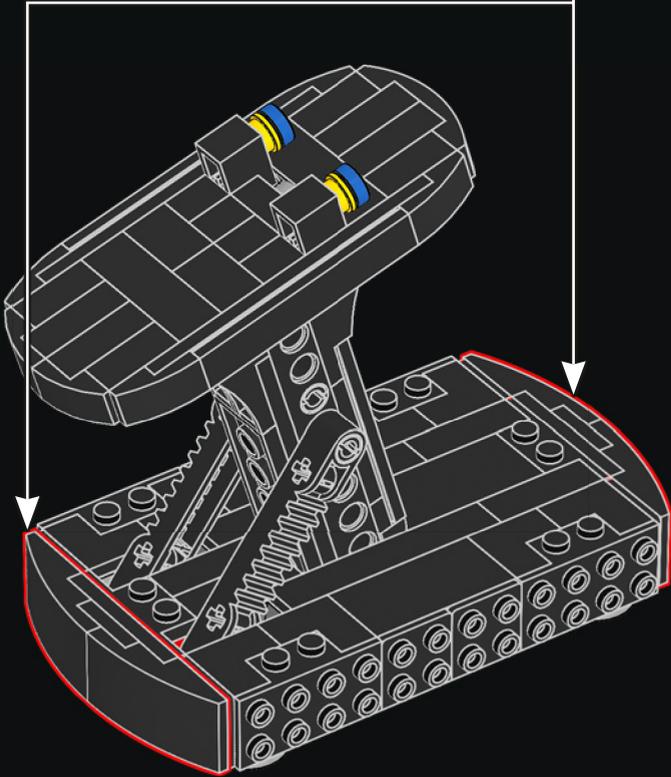
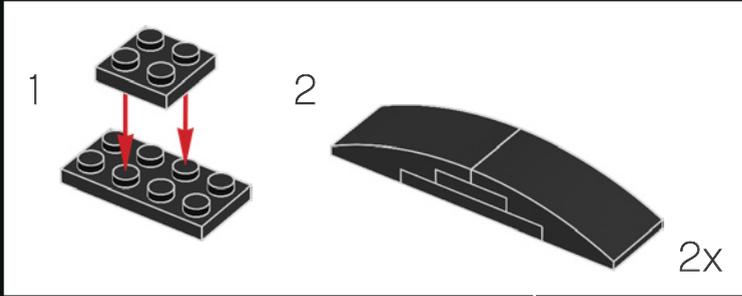


25

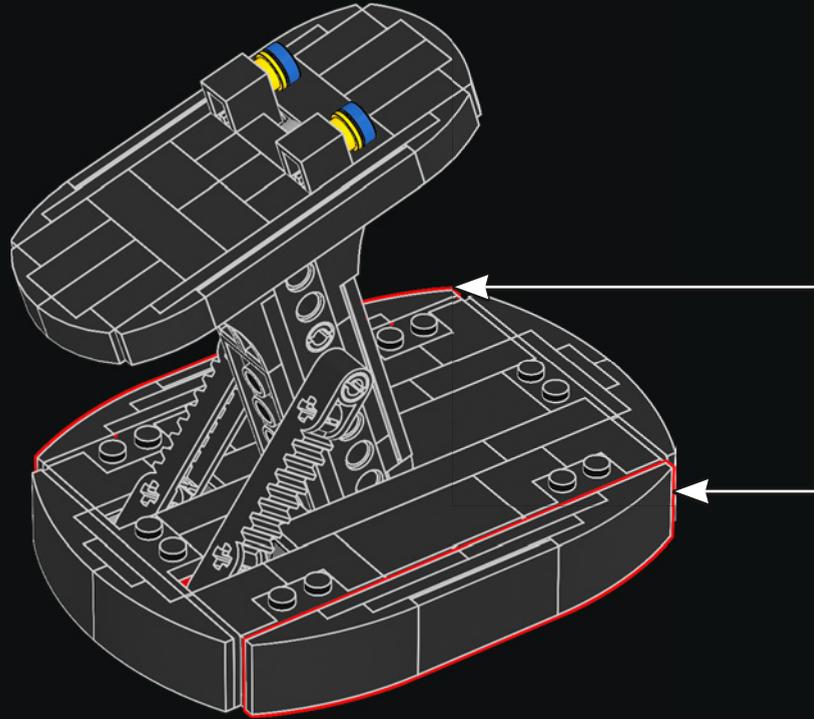
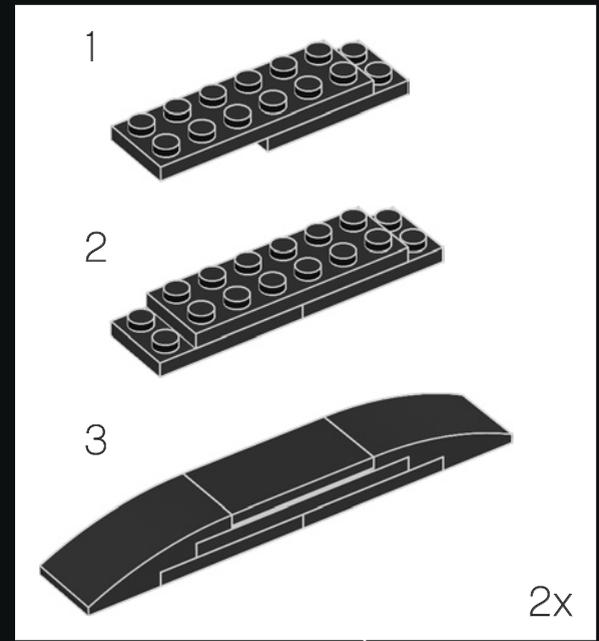


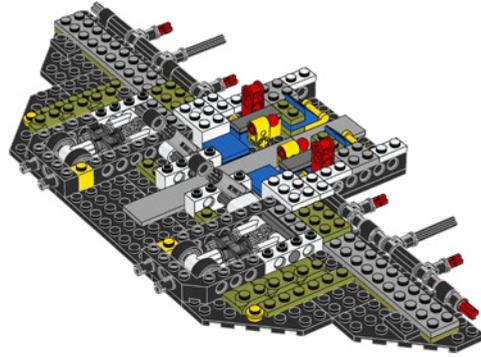
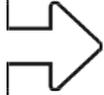


26



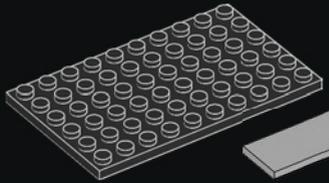
27





SCHON GEWUSST?

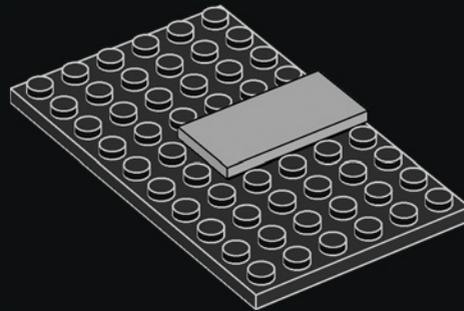
Die Discovery beförderte insgesamt 222 Personen ins All – und somit mehr als jedes andere Spaceshuttle.

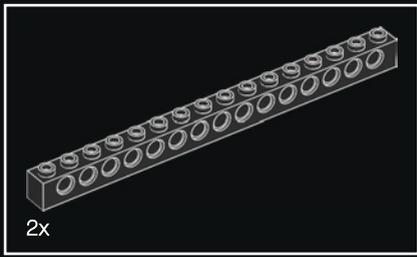


1x

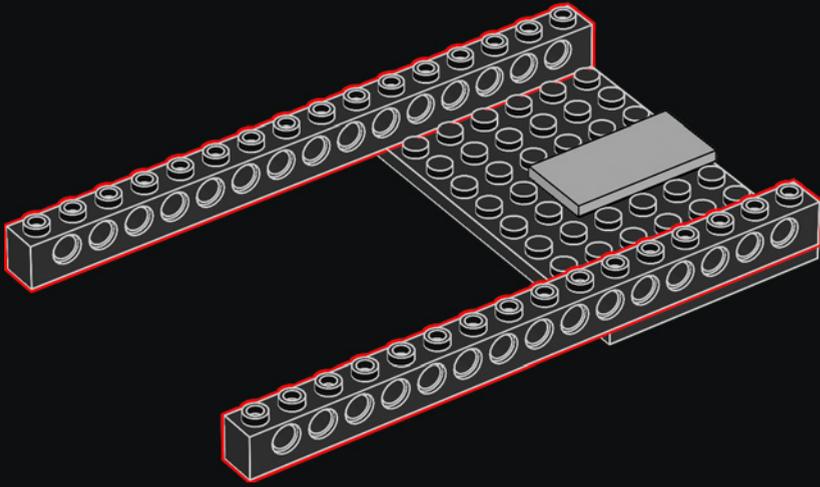
1x

1

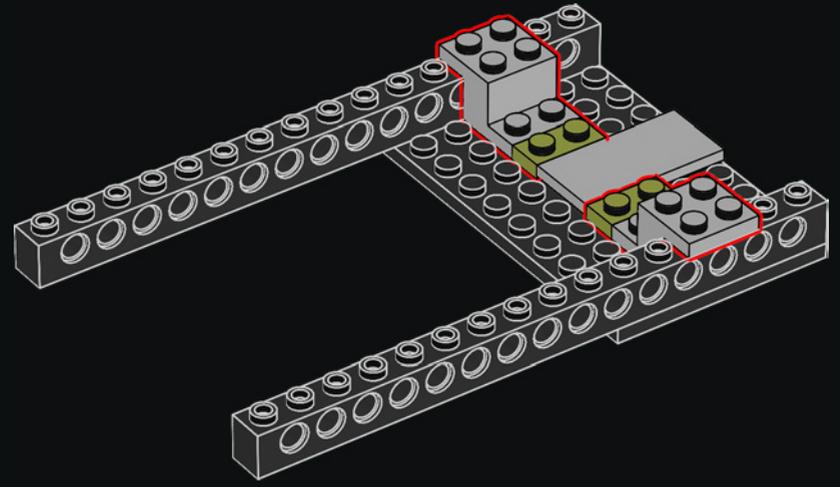


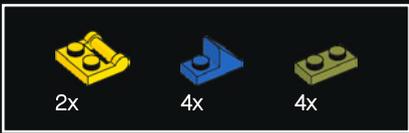


2

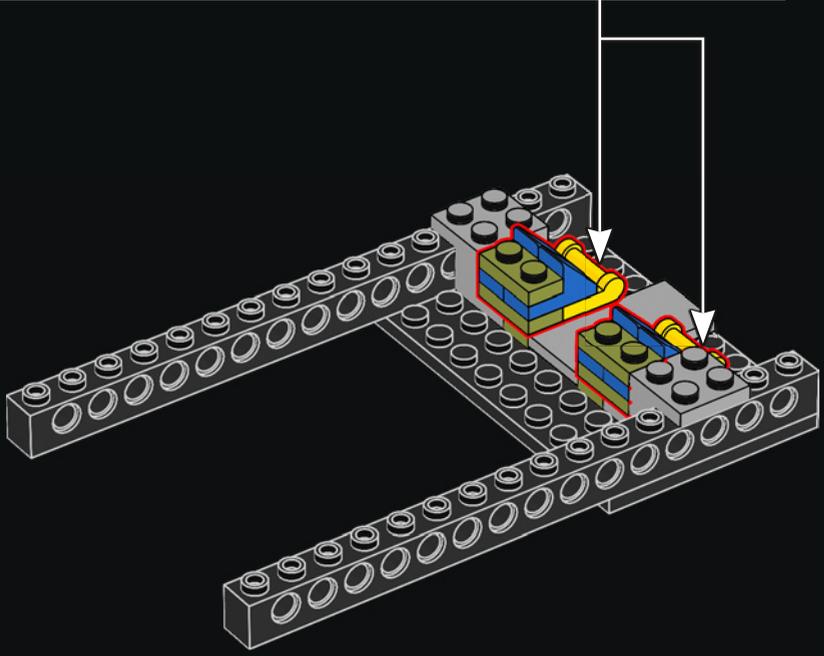
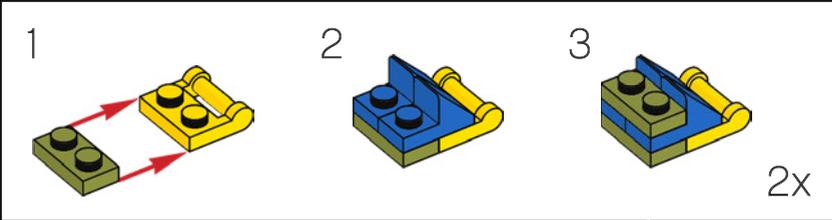


3

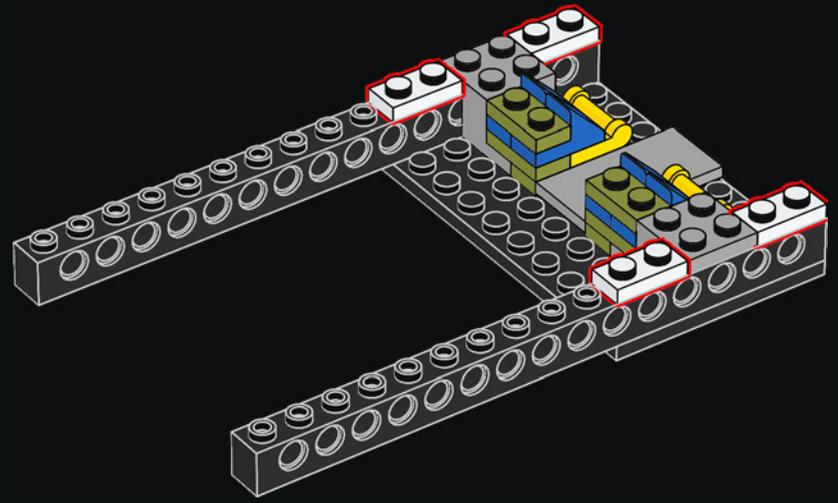




4

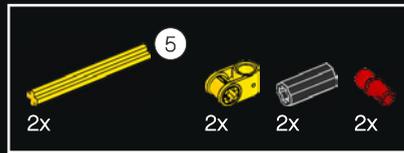
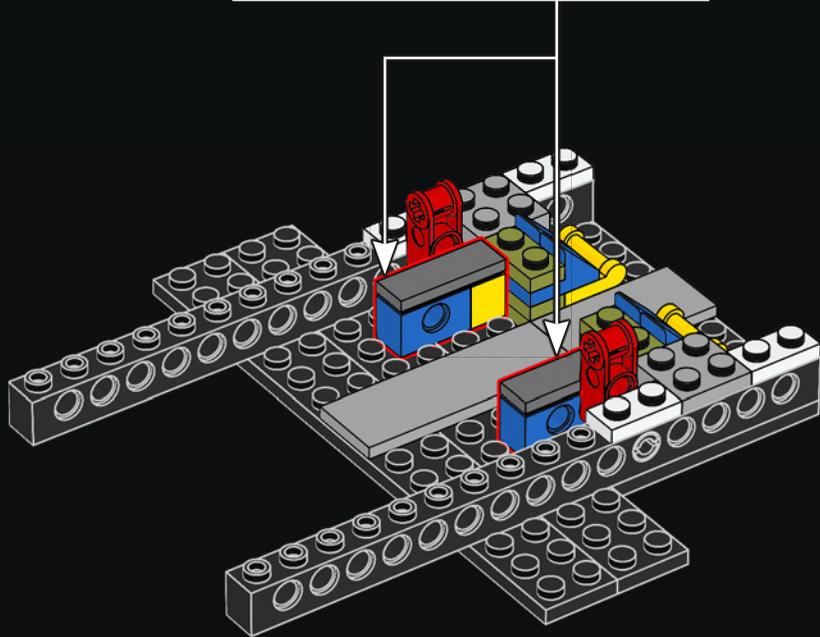
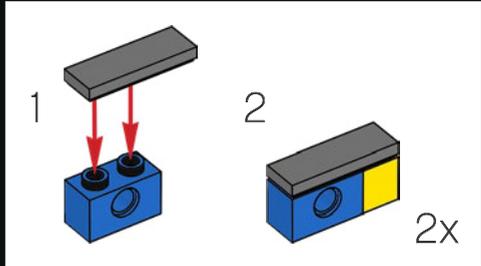


5

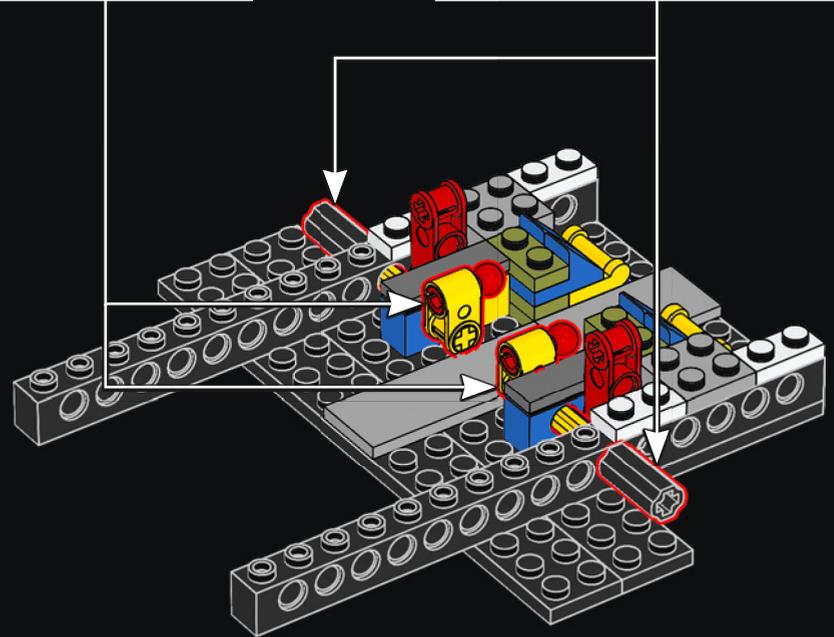
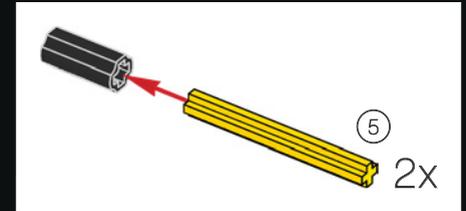
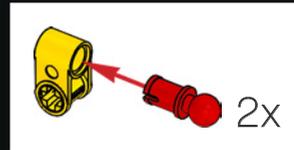


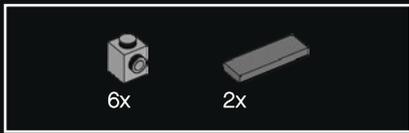


8

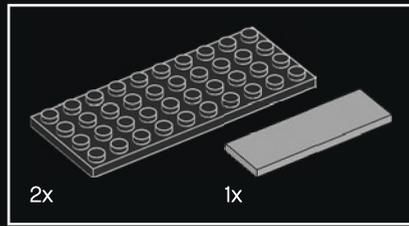
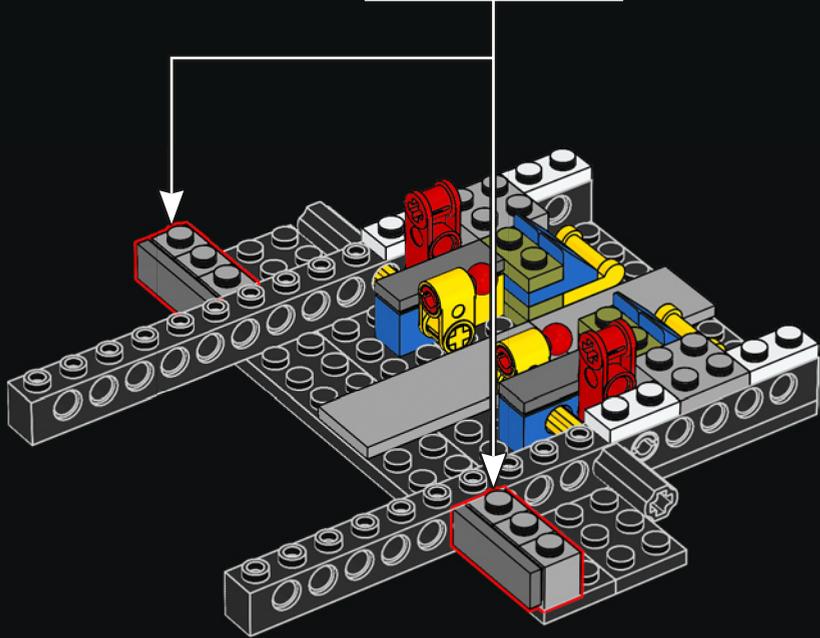
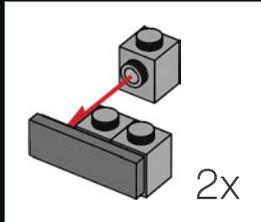


9

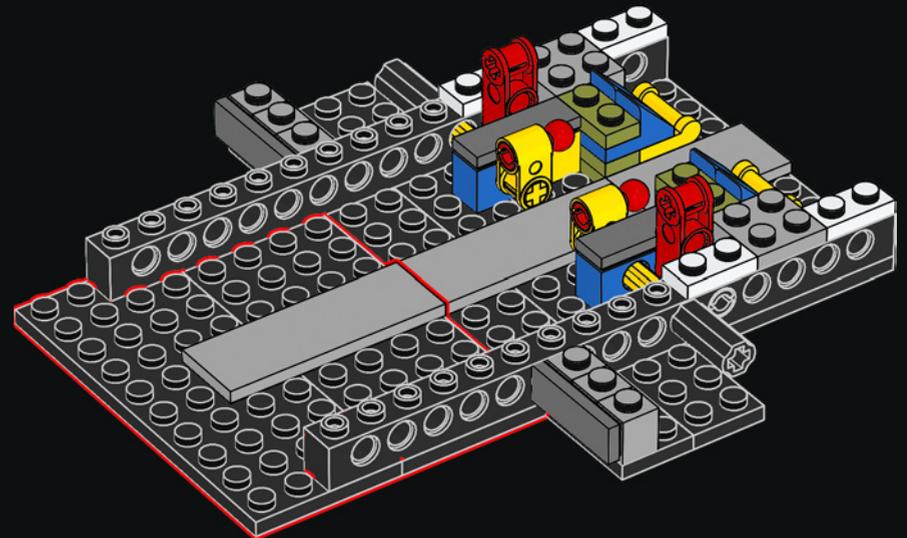


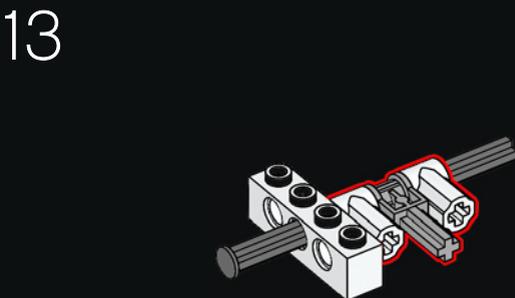
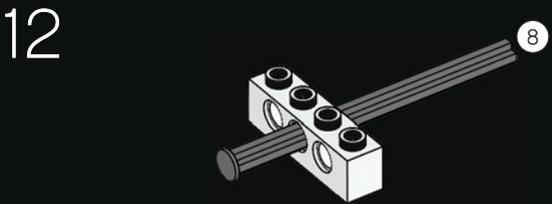
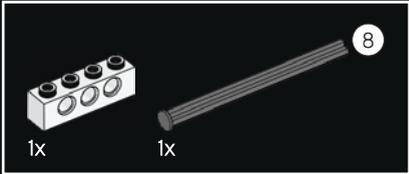
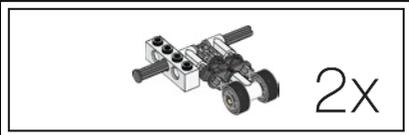


10

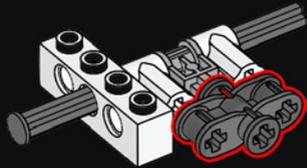


11

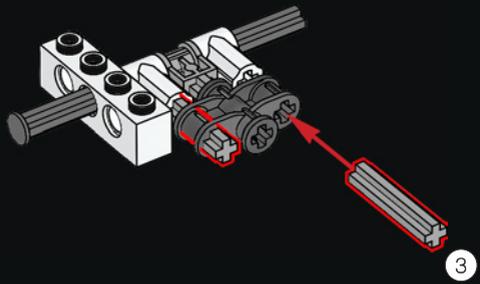




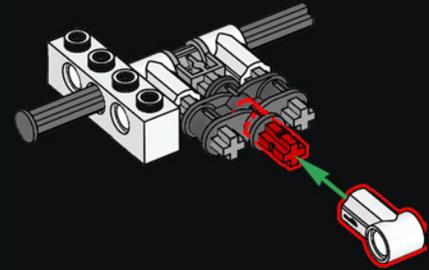
14



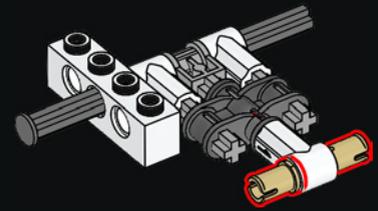
15



16

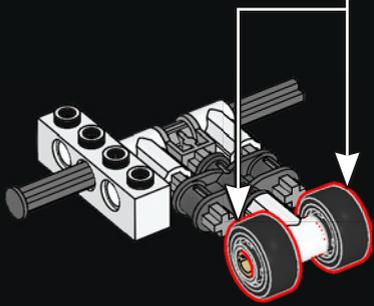
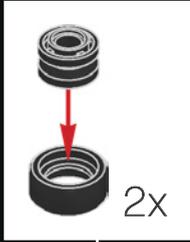


17

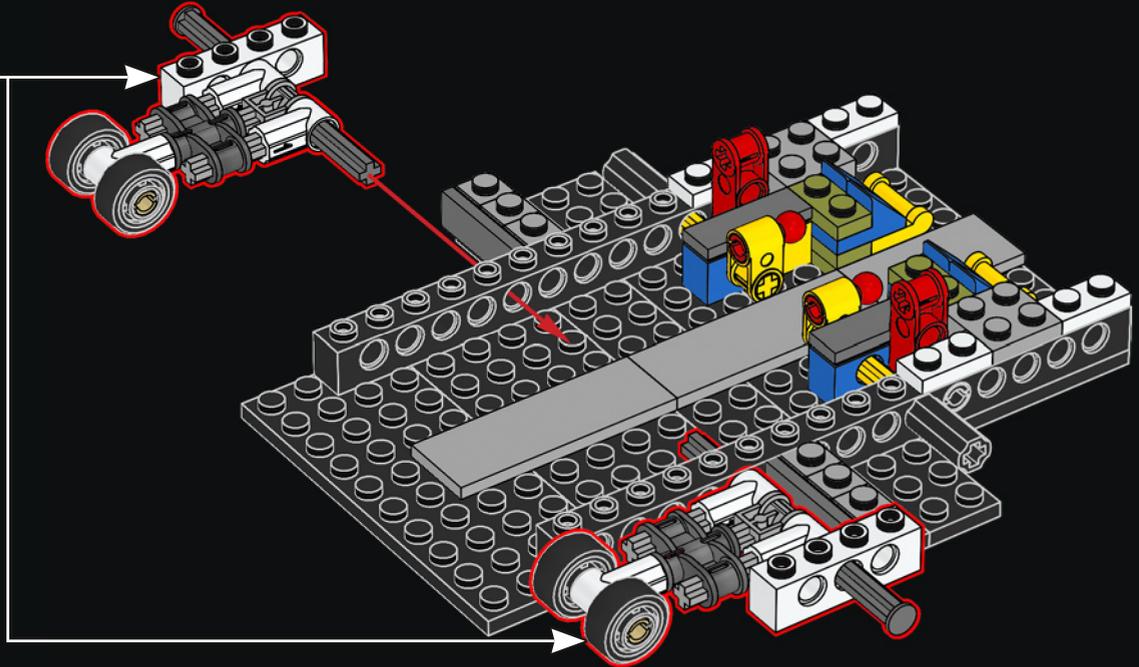




18

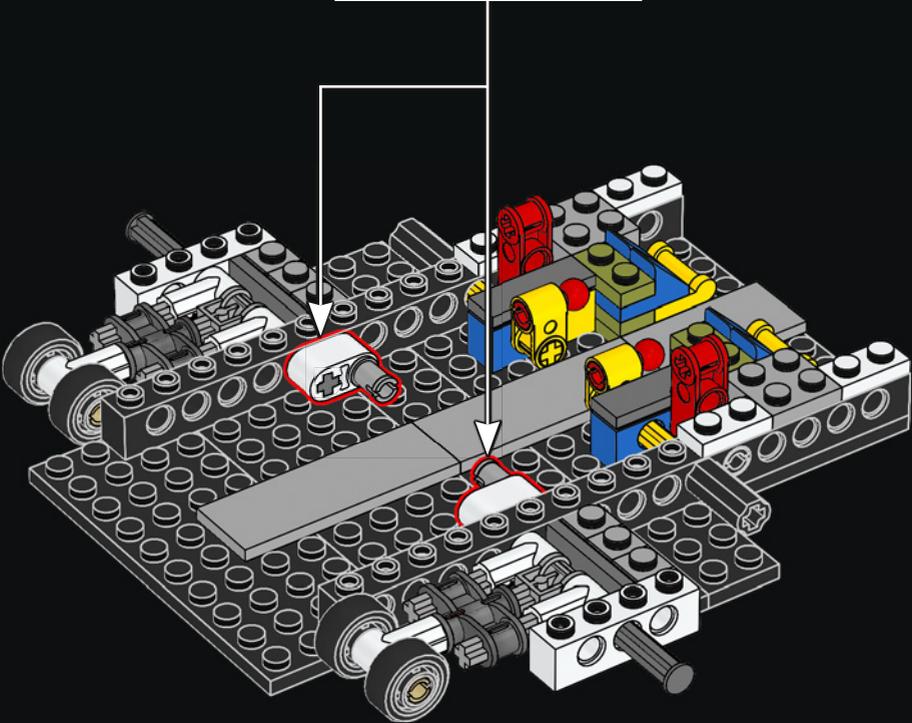
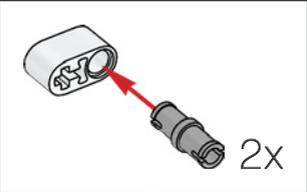


19



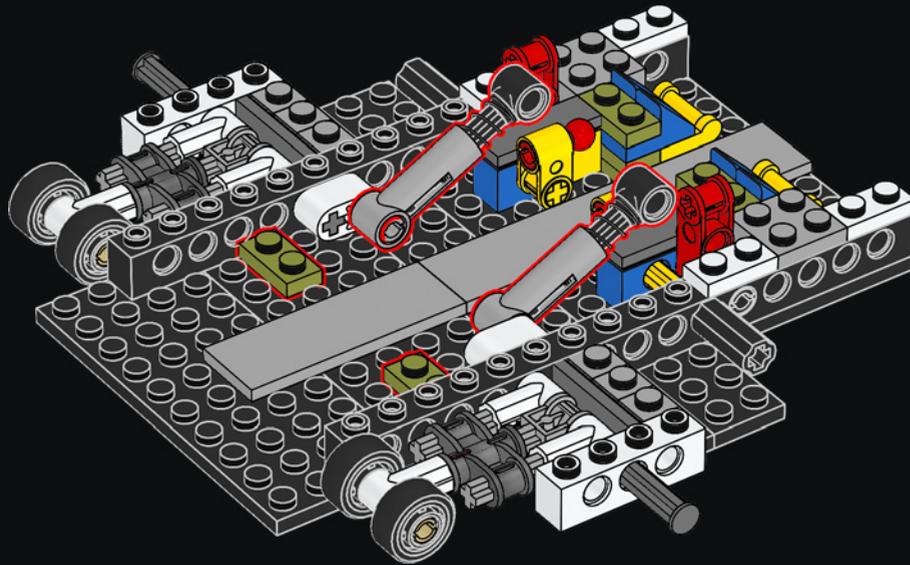


20

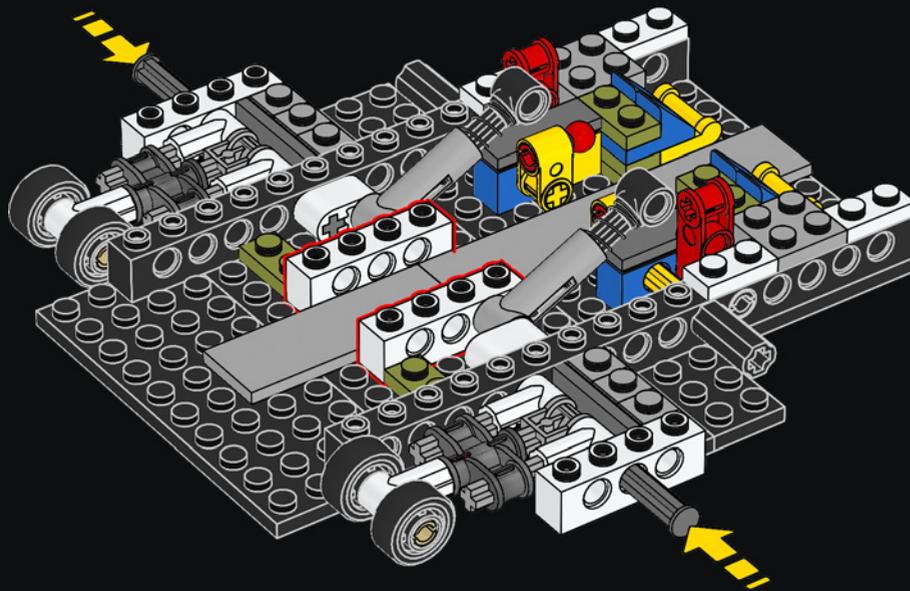


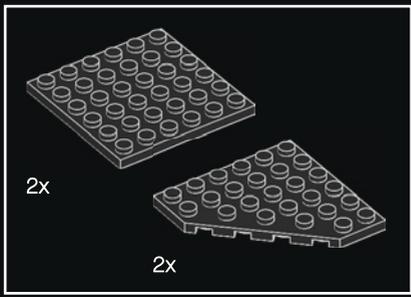


21

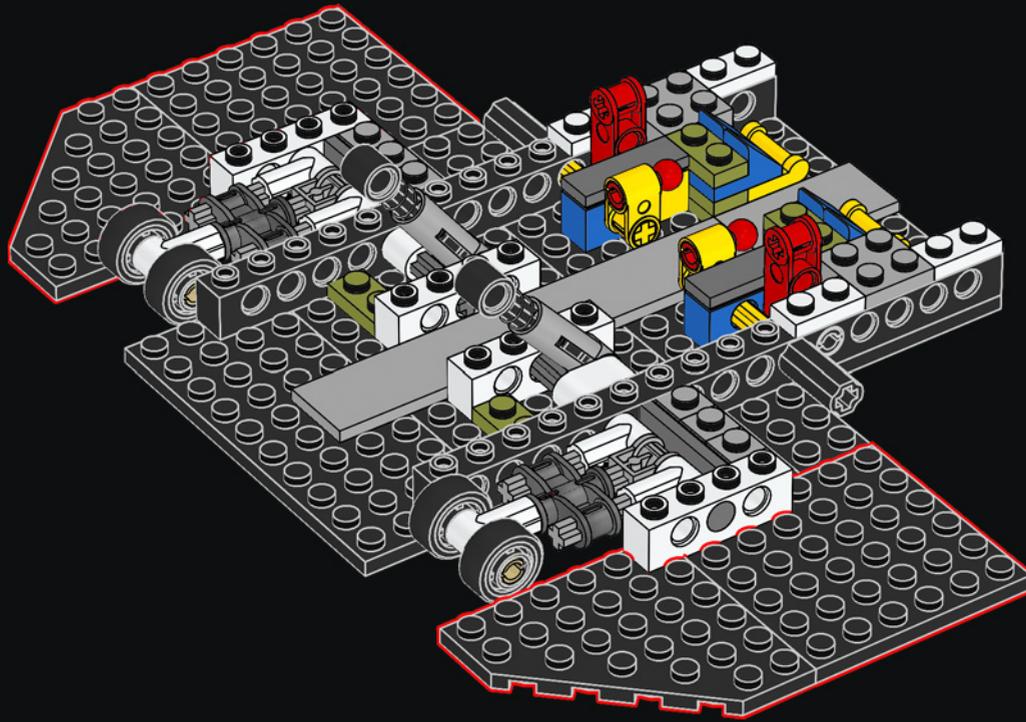


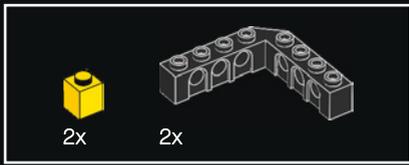
22



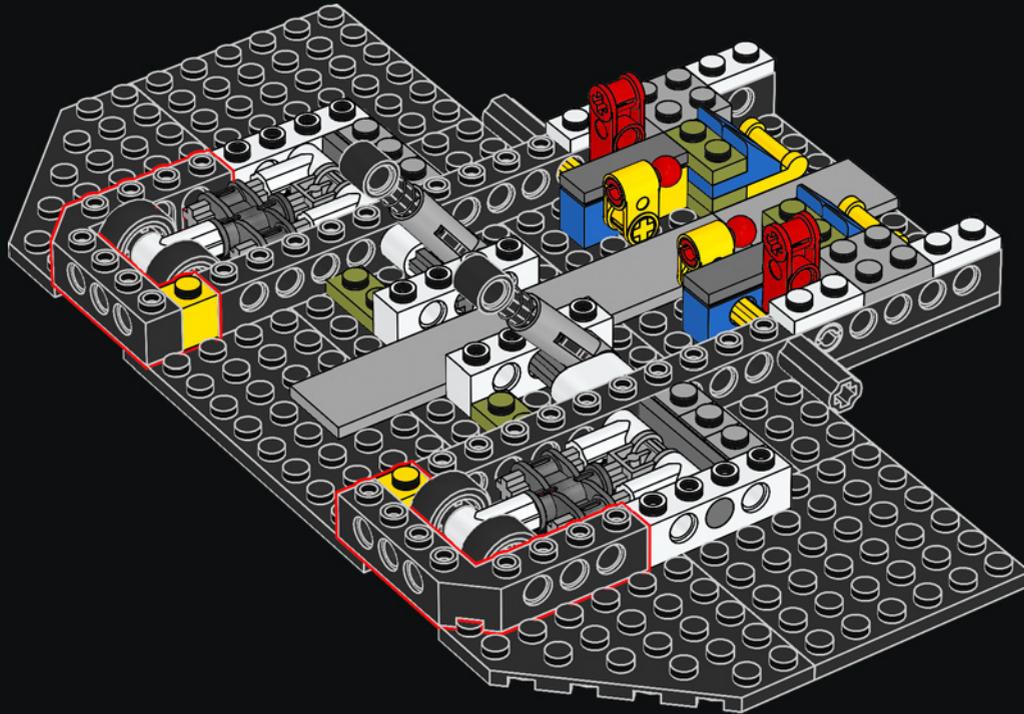


23



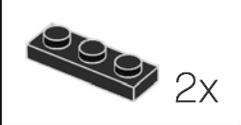
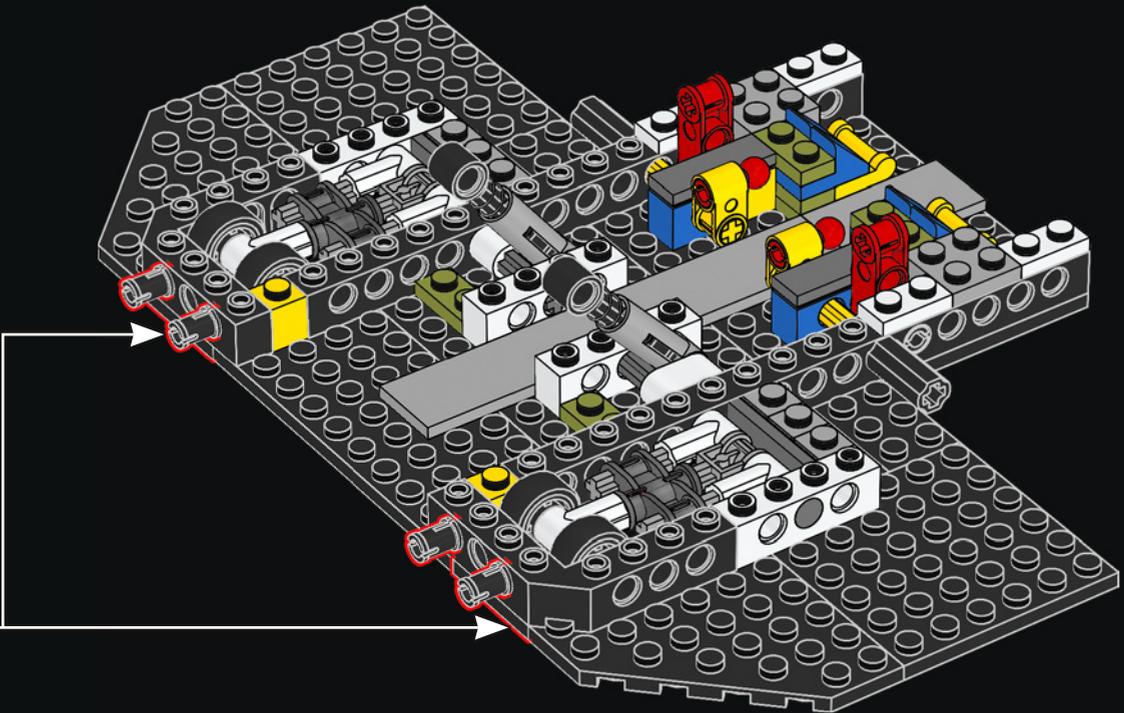


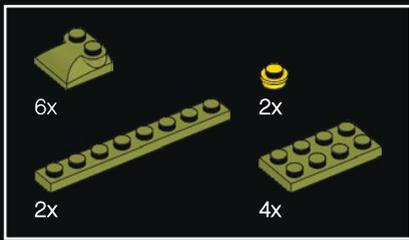
24



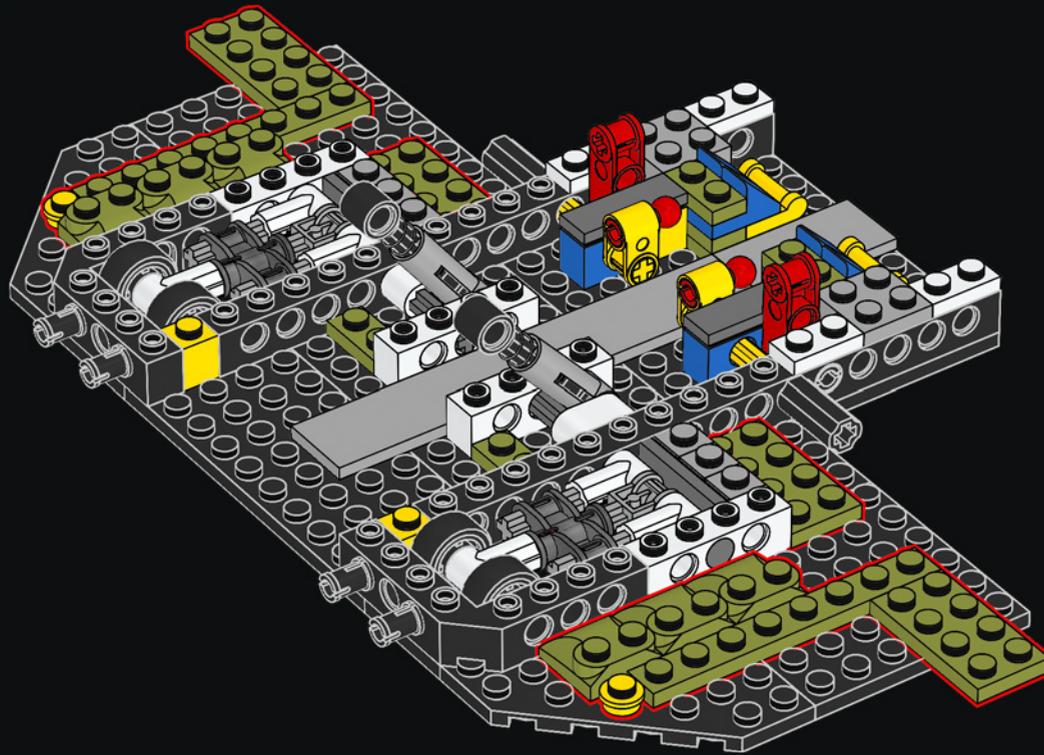


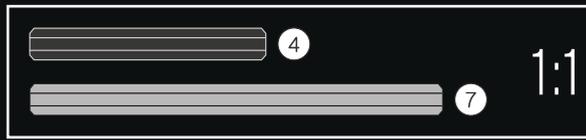
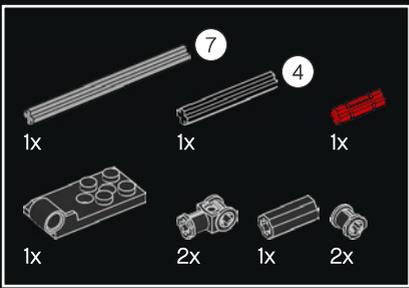
25





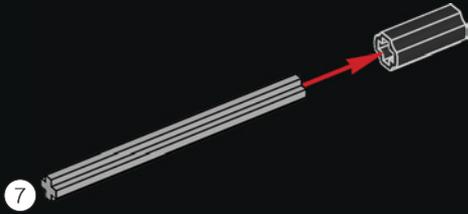
26



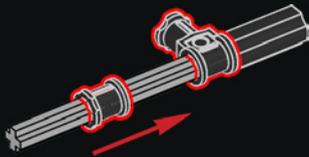


27

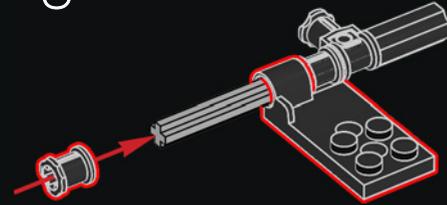
1



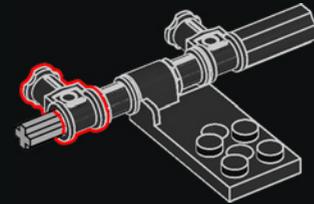
2



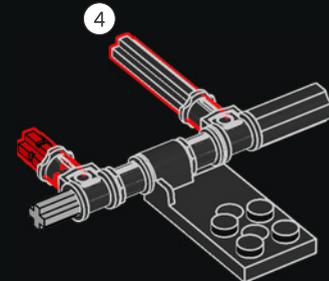
3

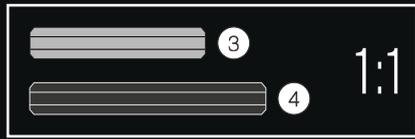
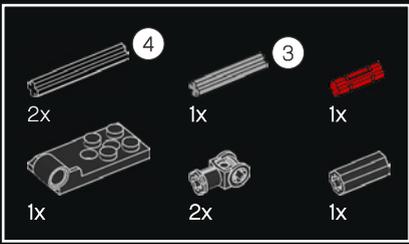


4

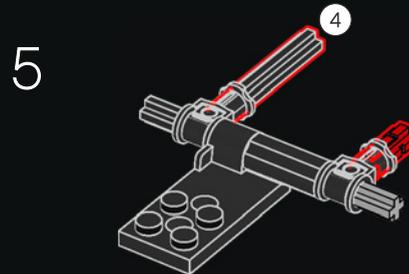
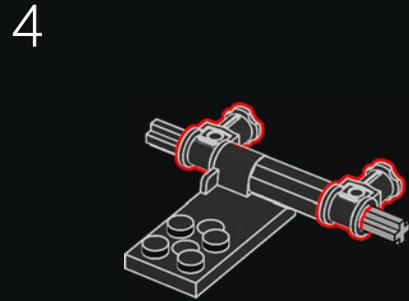
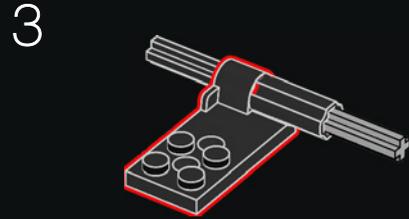
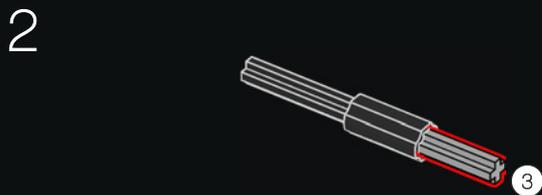
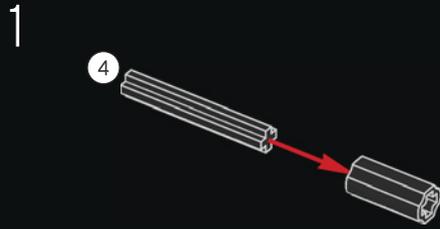


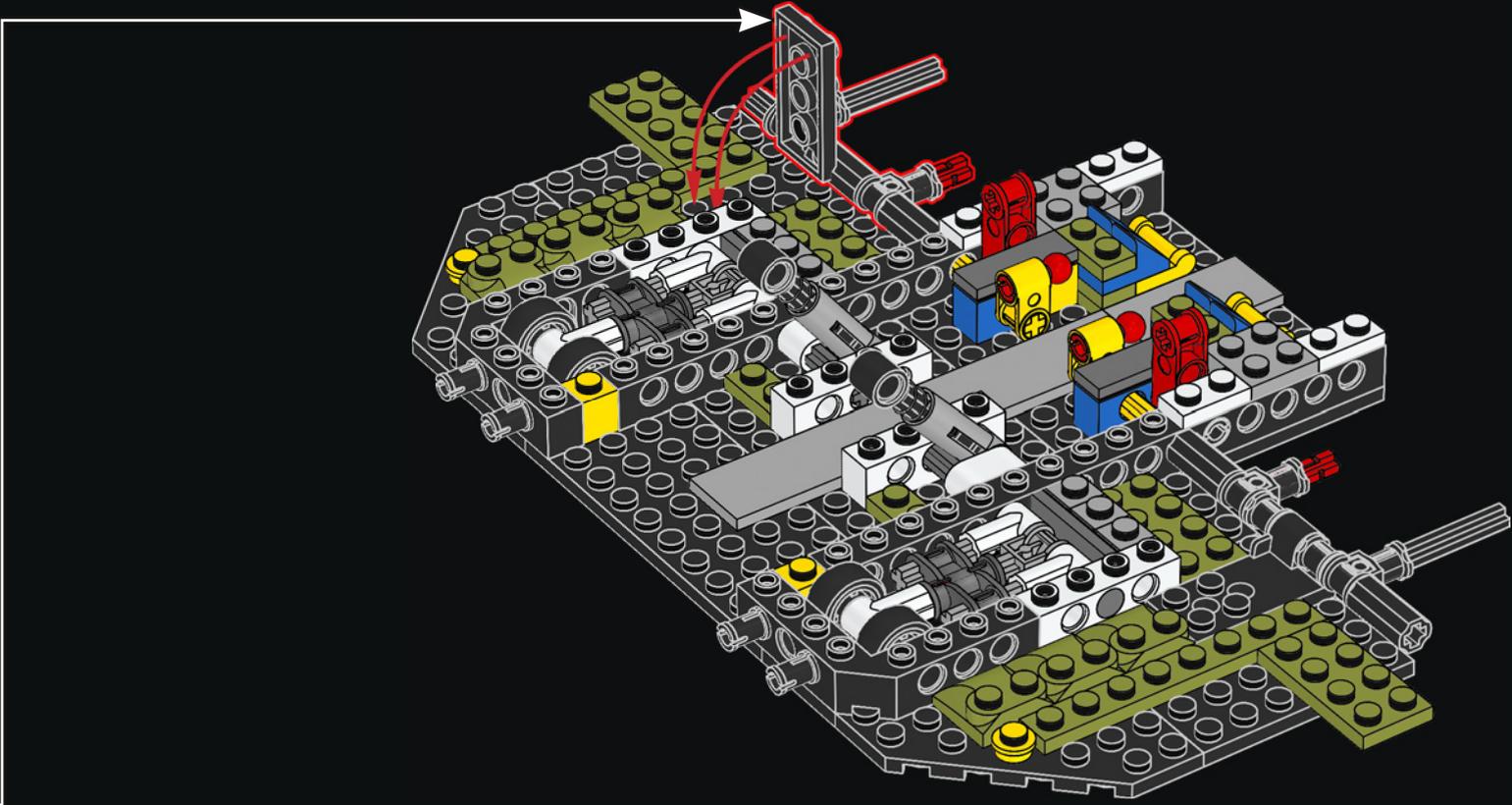
5

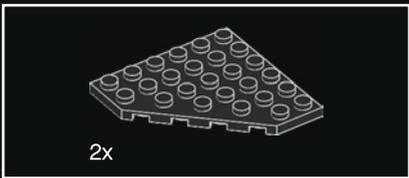




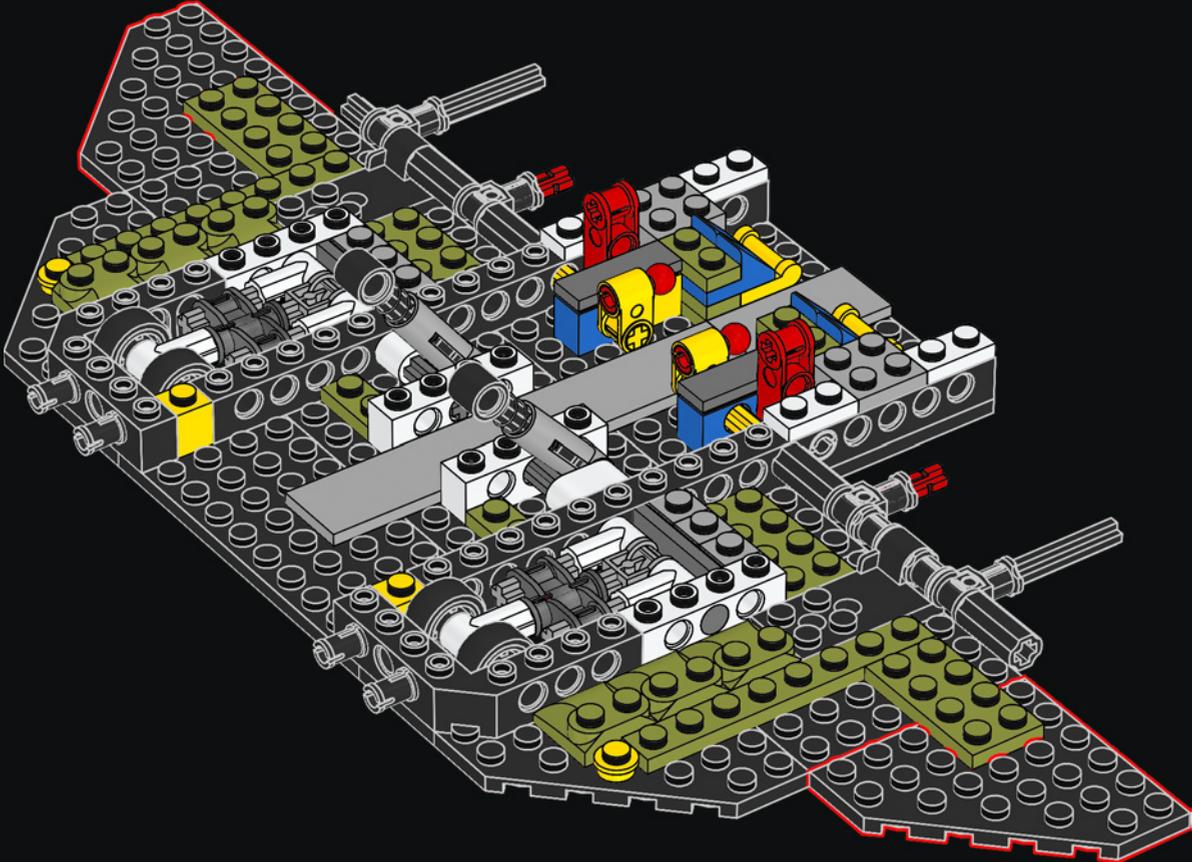
28

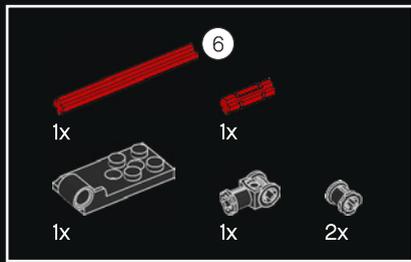




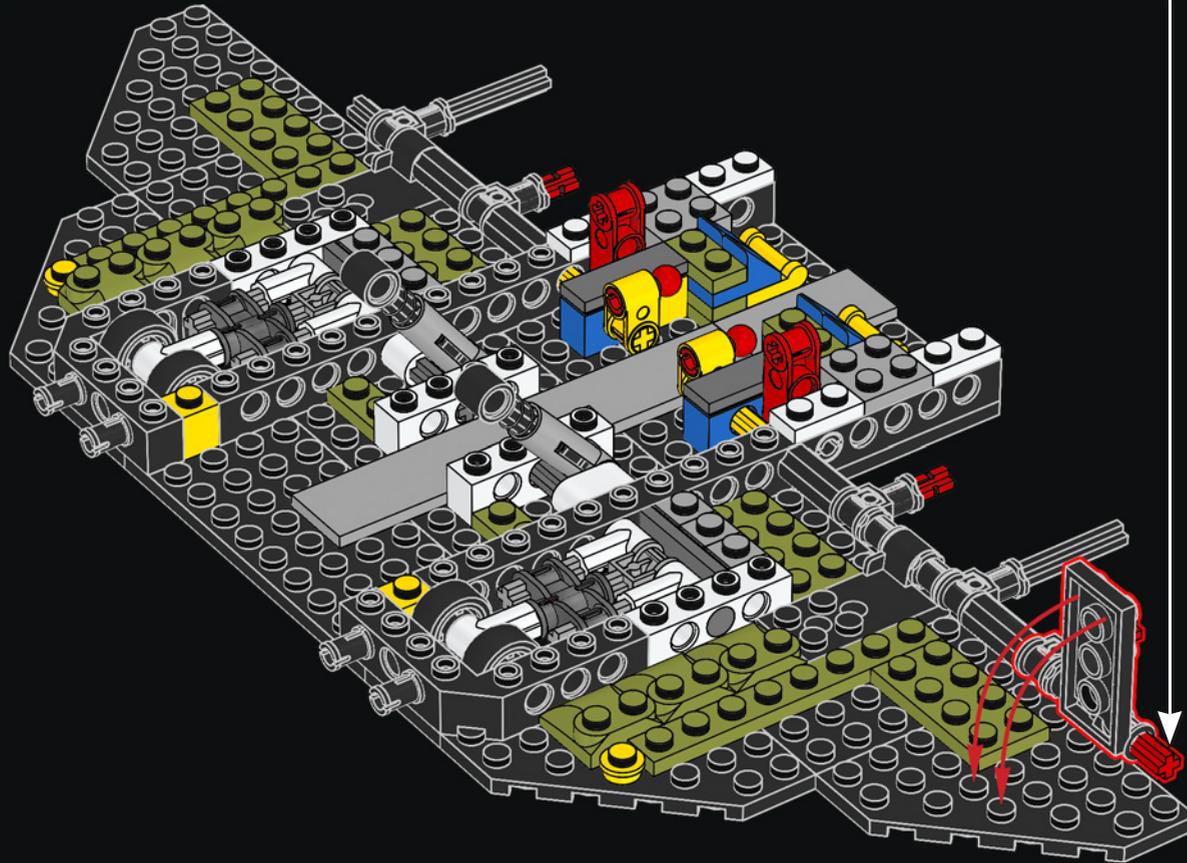
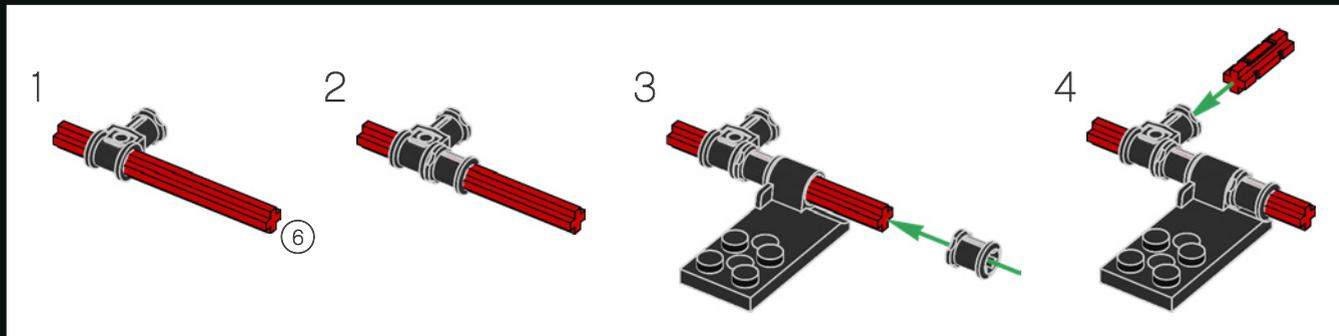


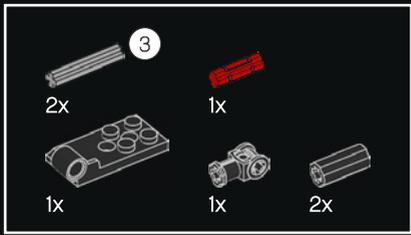
29



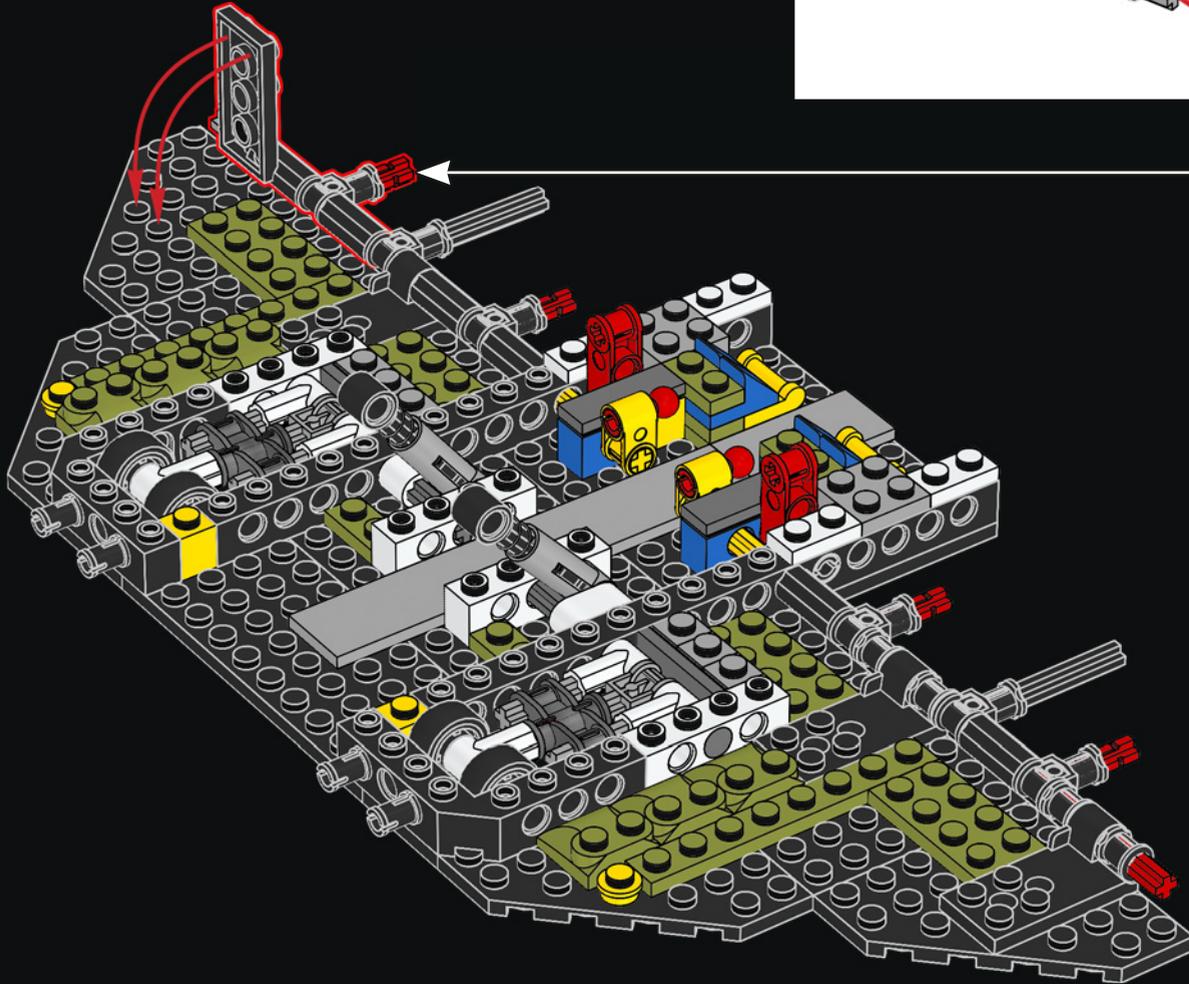
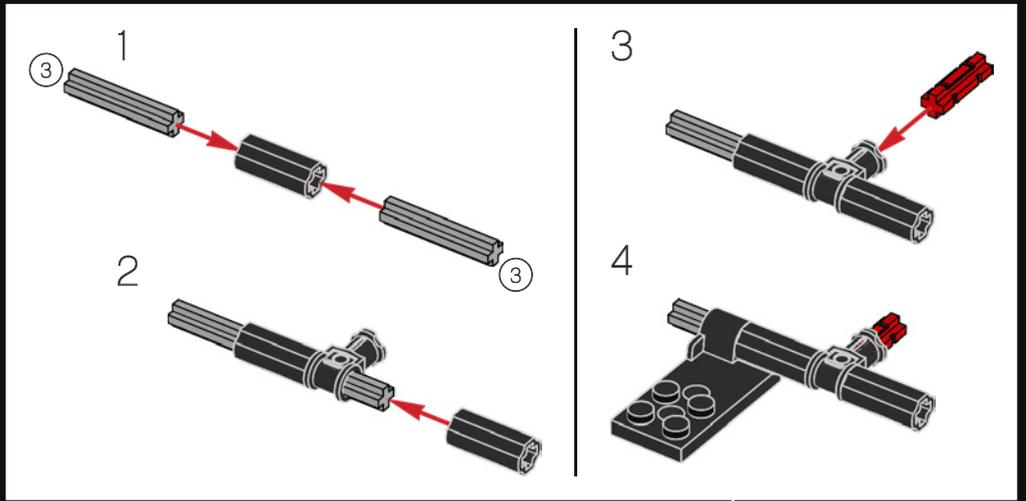


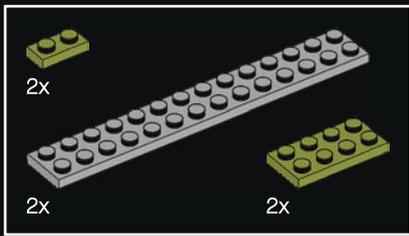
30



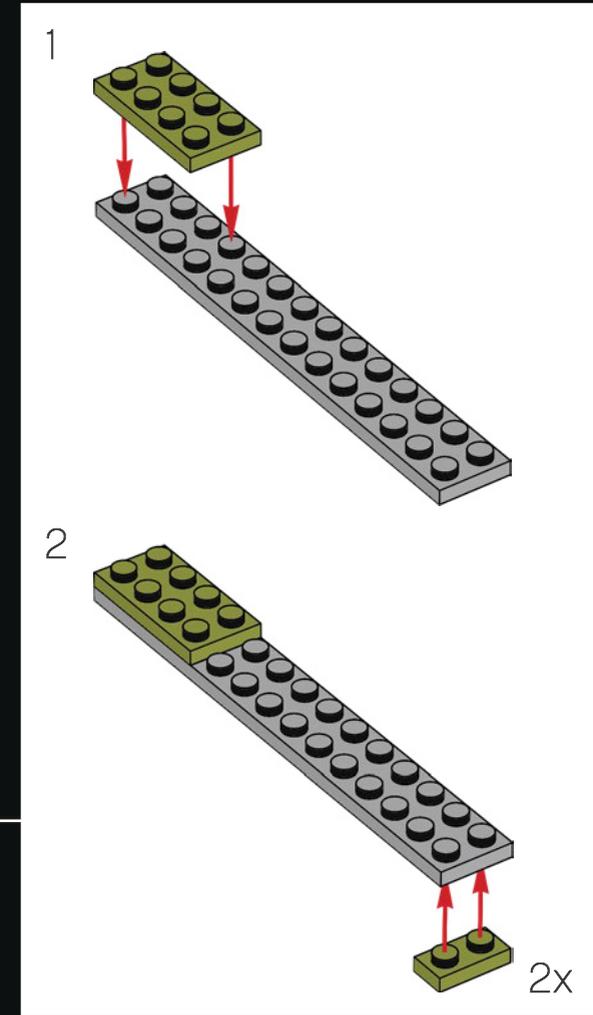
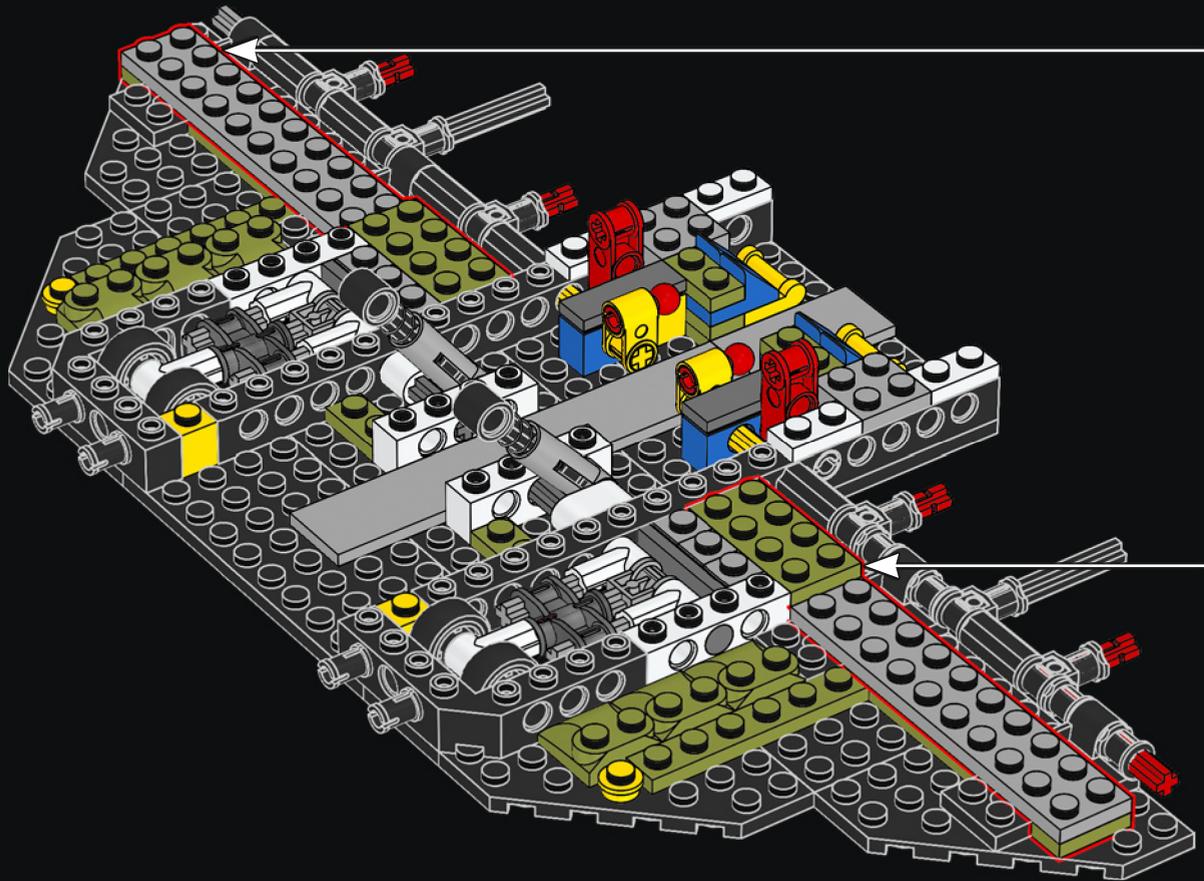


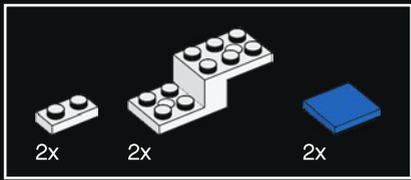
31



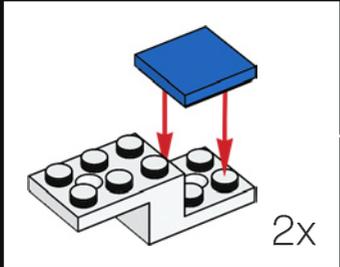
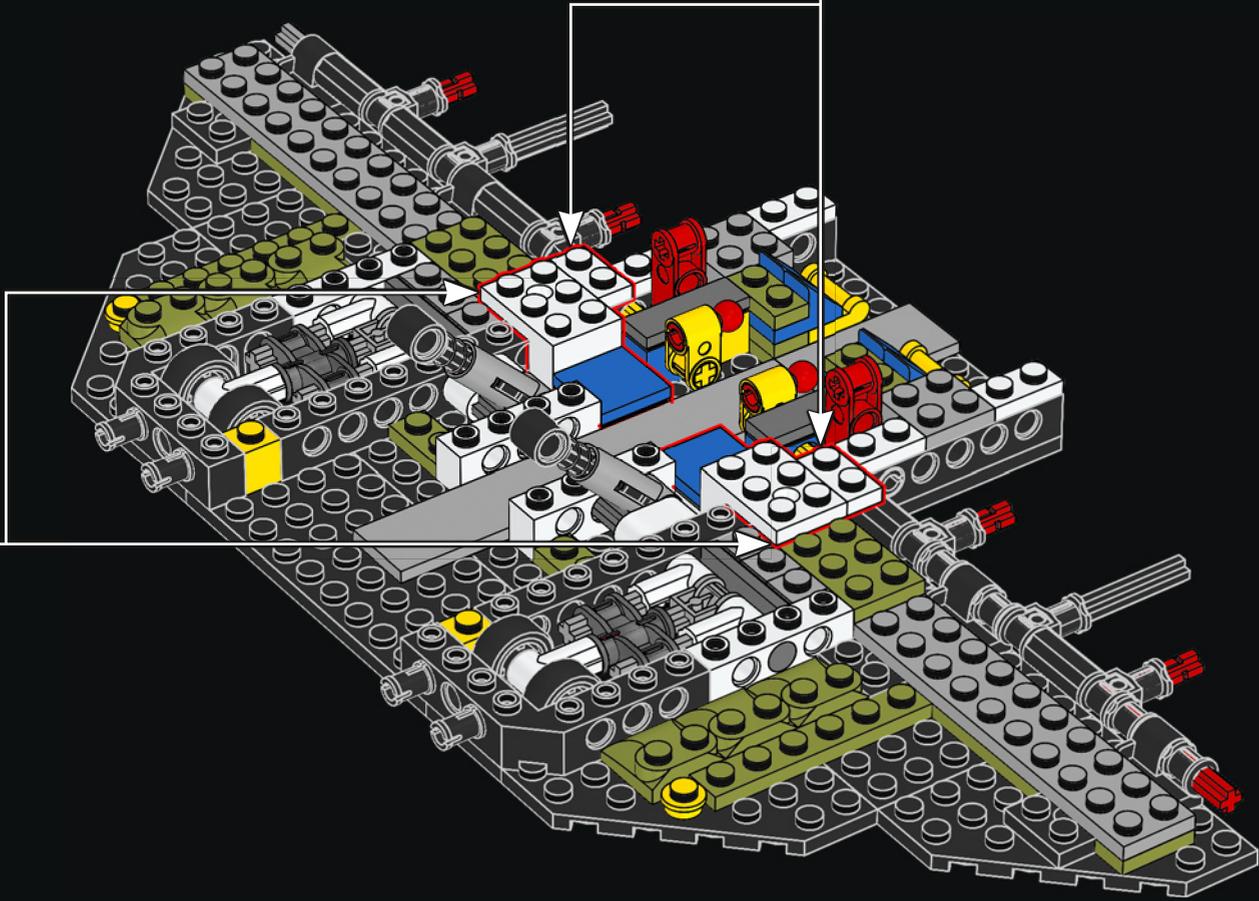
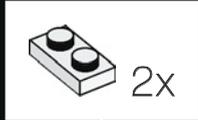


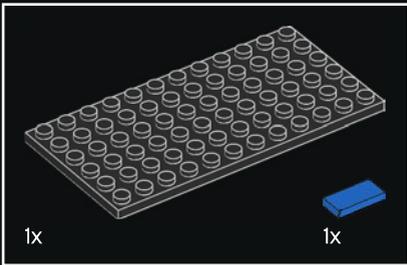
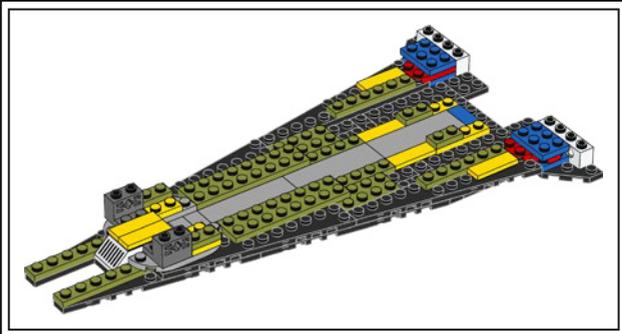
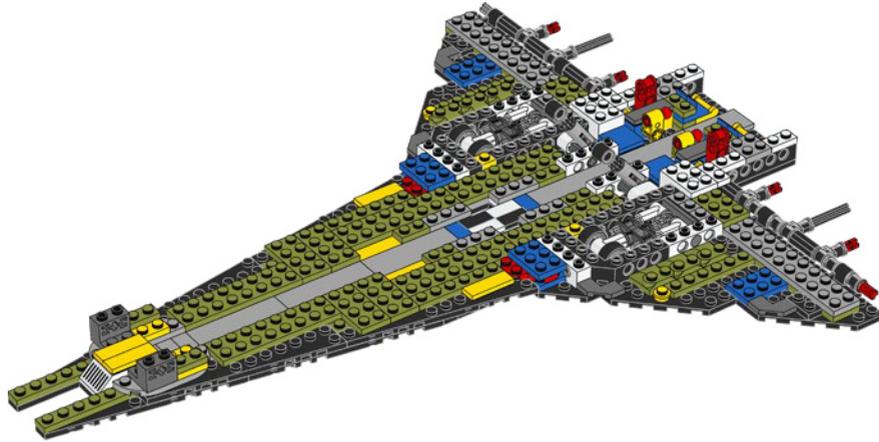
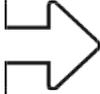
32



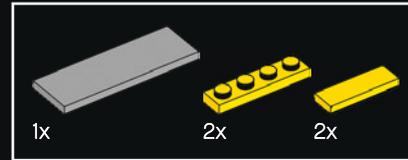
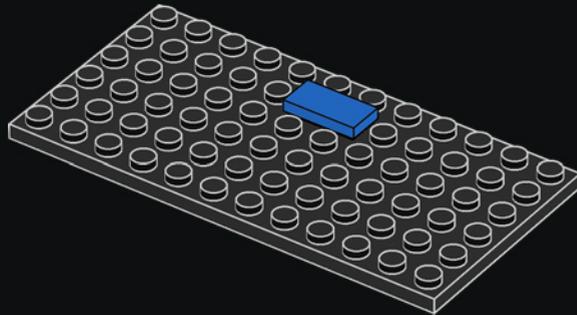


33

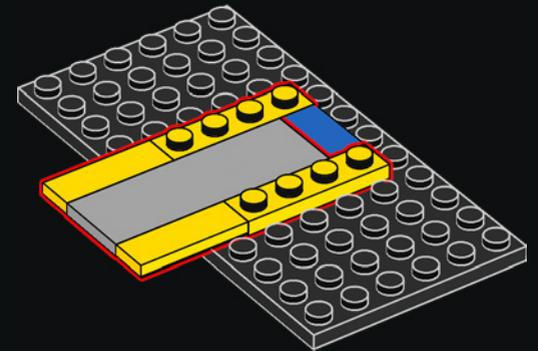


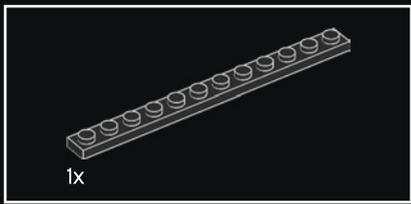


34

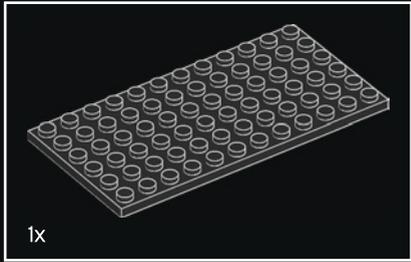
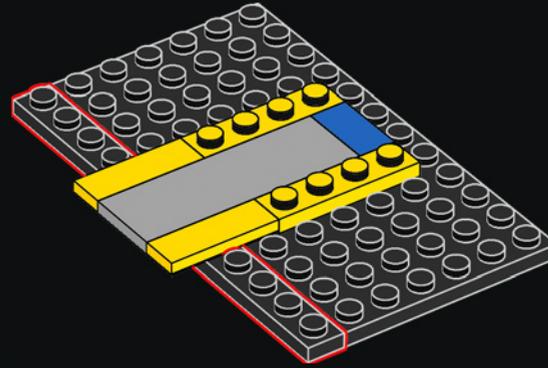


35

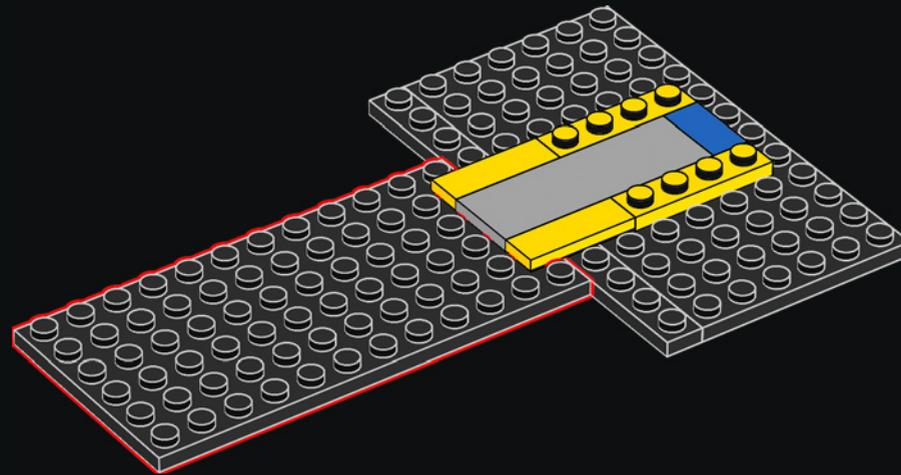


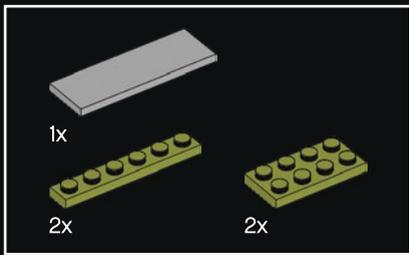


36

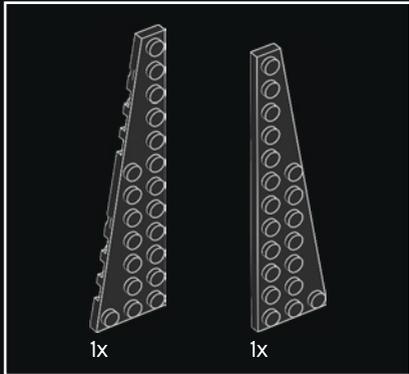
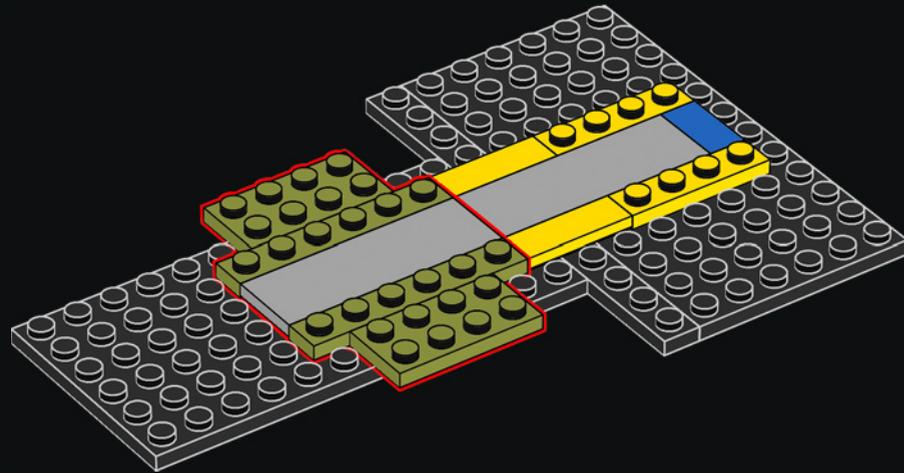


37

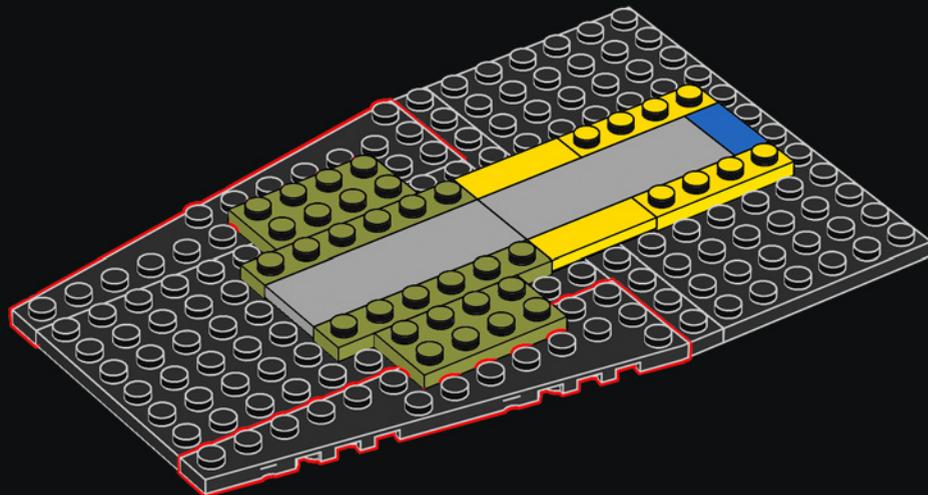


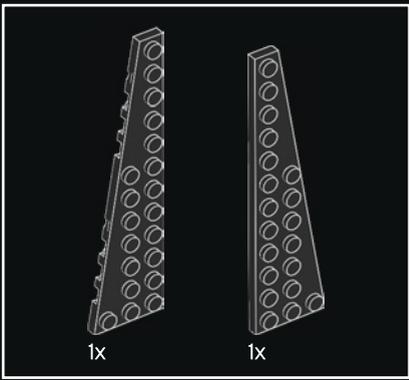


38



39

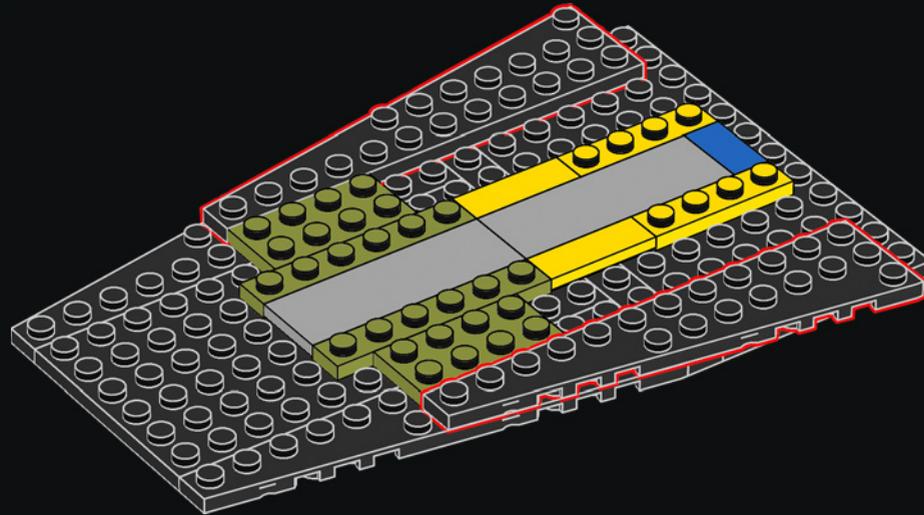


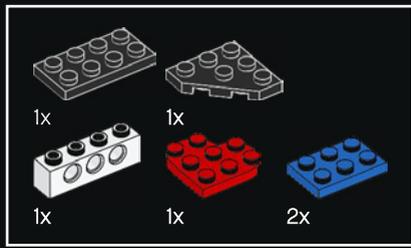


SCHON GEWUSST?

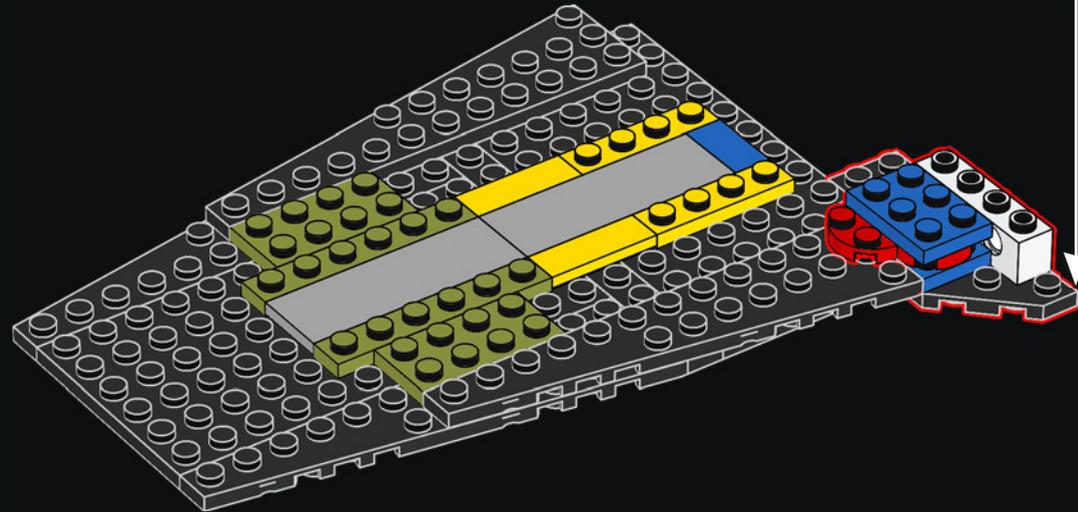
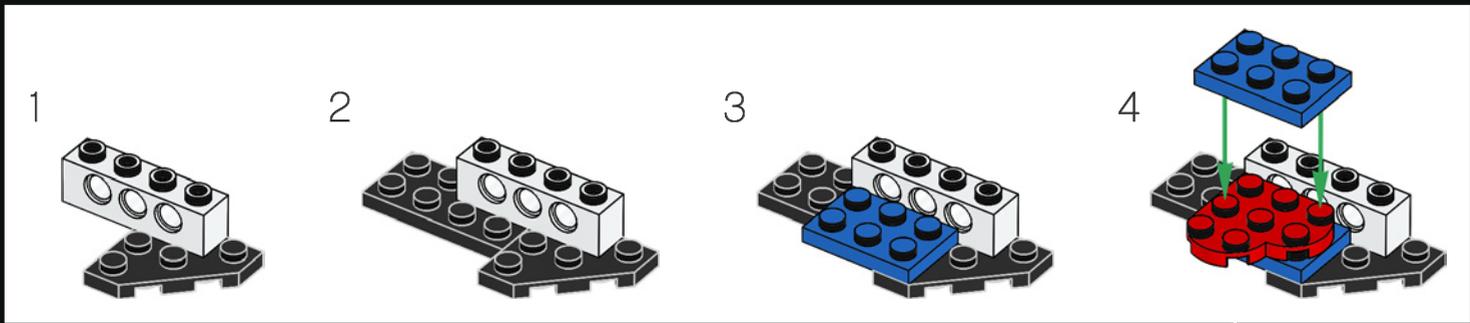
Mit einer Umlaufgeschwindigkeit von 28.158 km/h war die Spaceshuttle-Besatzung so schnell unterwegs, dass sie alle 45 Minuten einen Sonnenaufgang oder Sonnenuntergang zu sehen bekam.

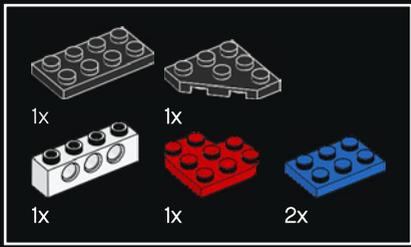
40



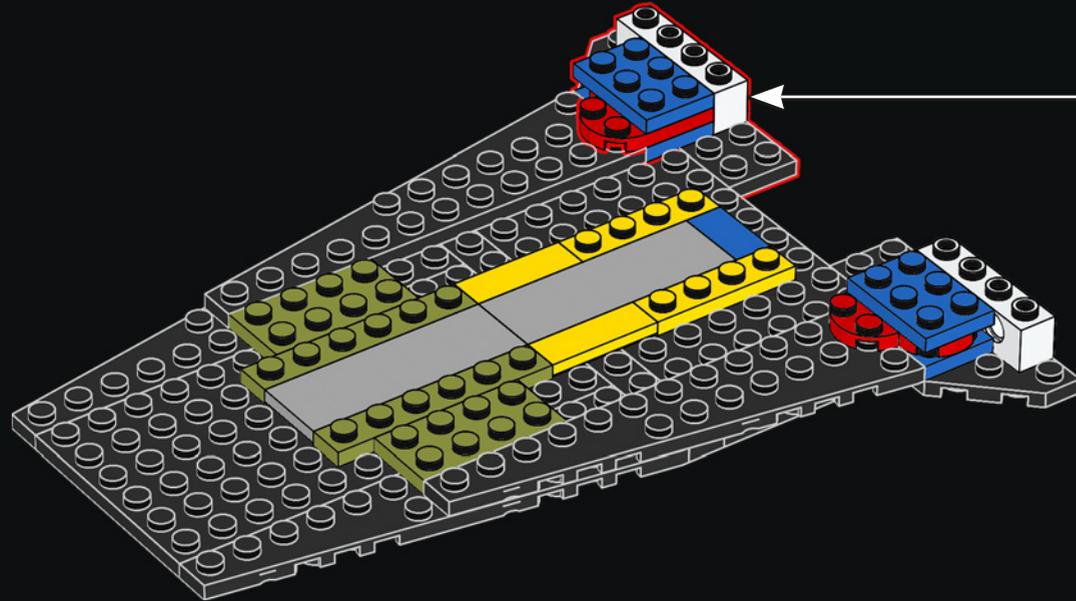
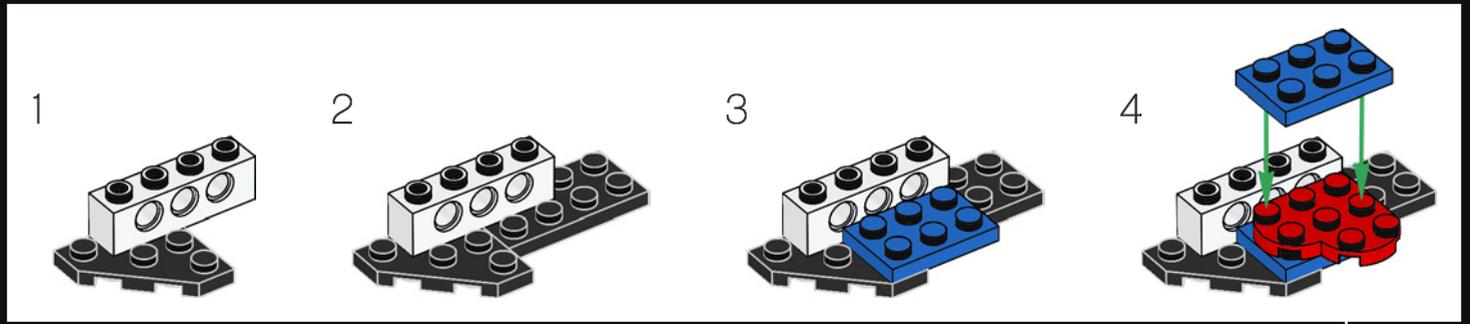


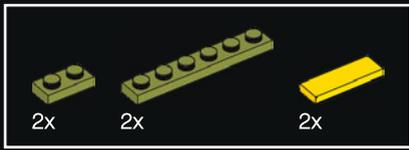
41



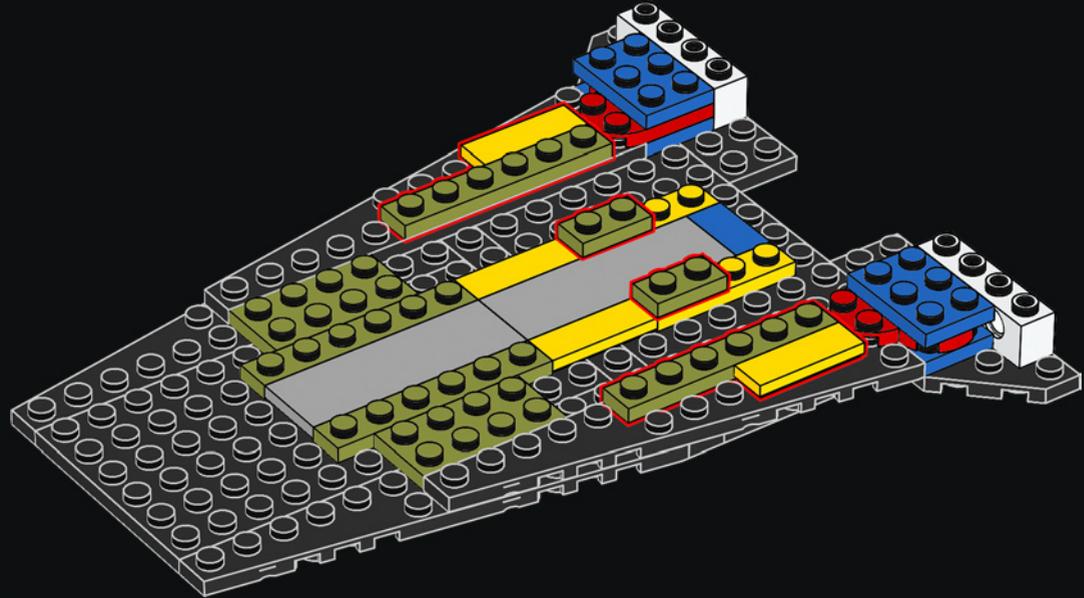


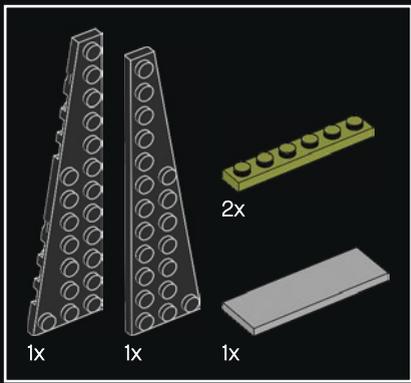
42



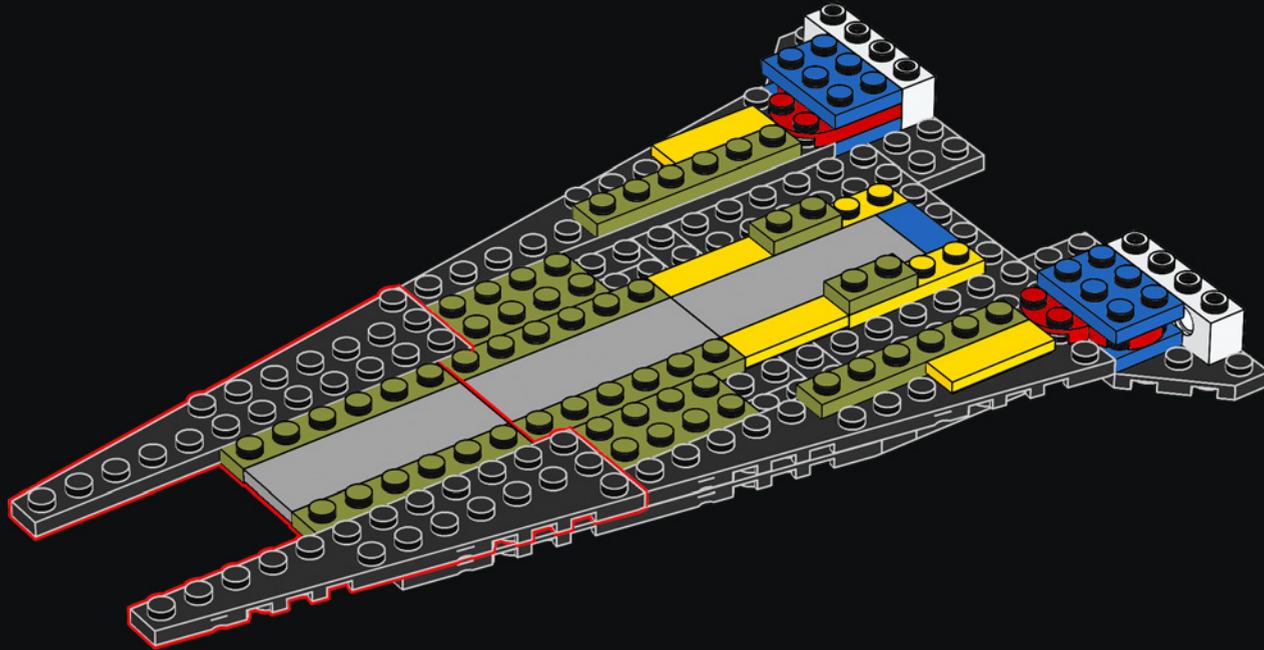


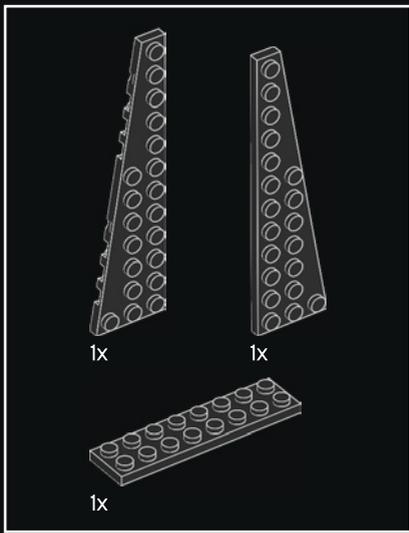
43



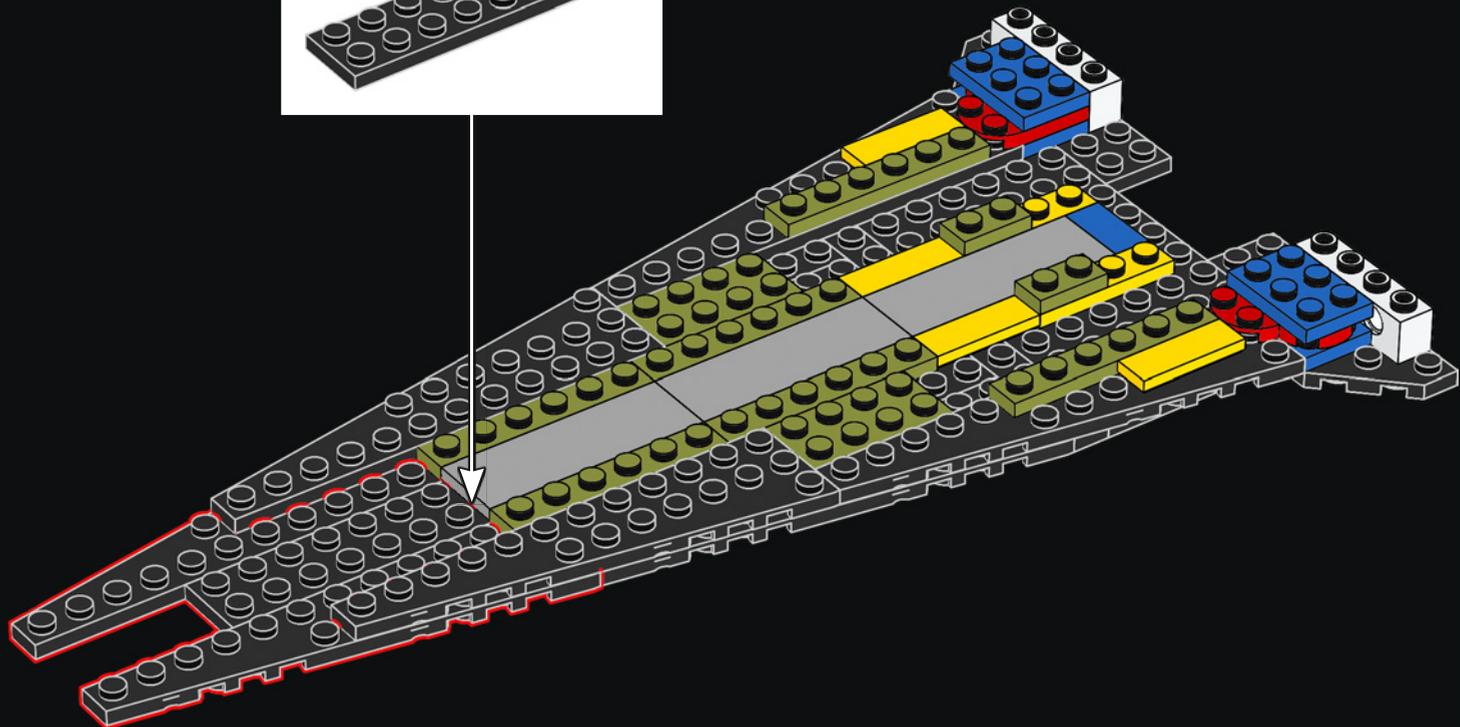
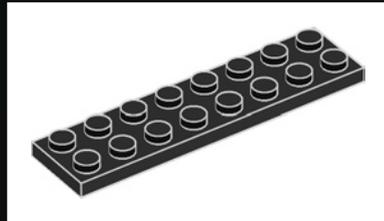


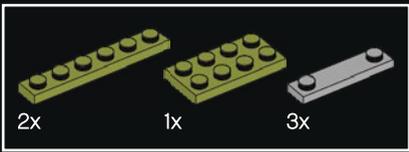
44



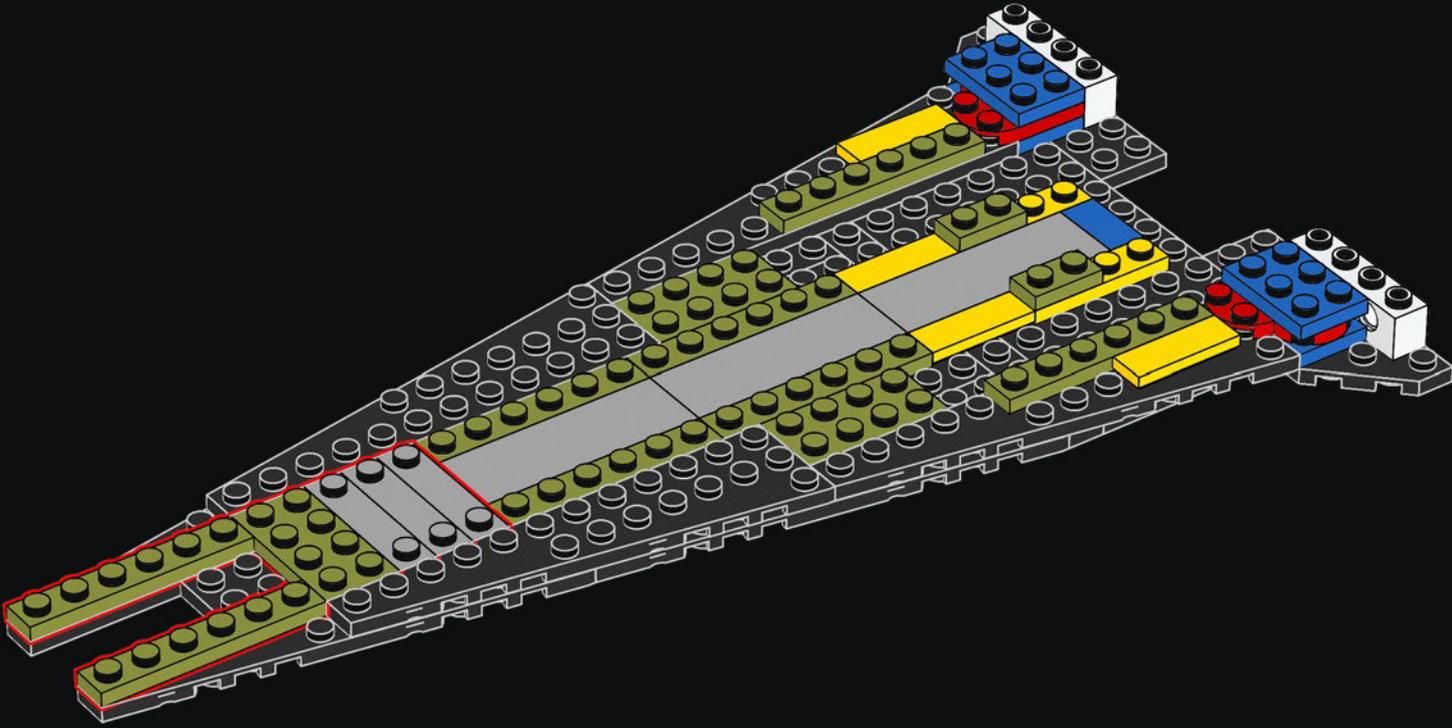


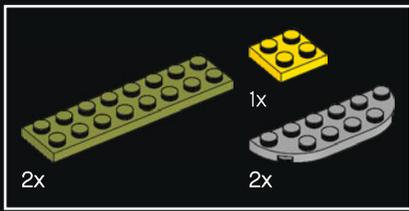
45



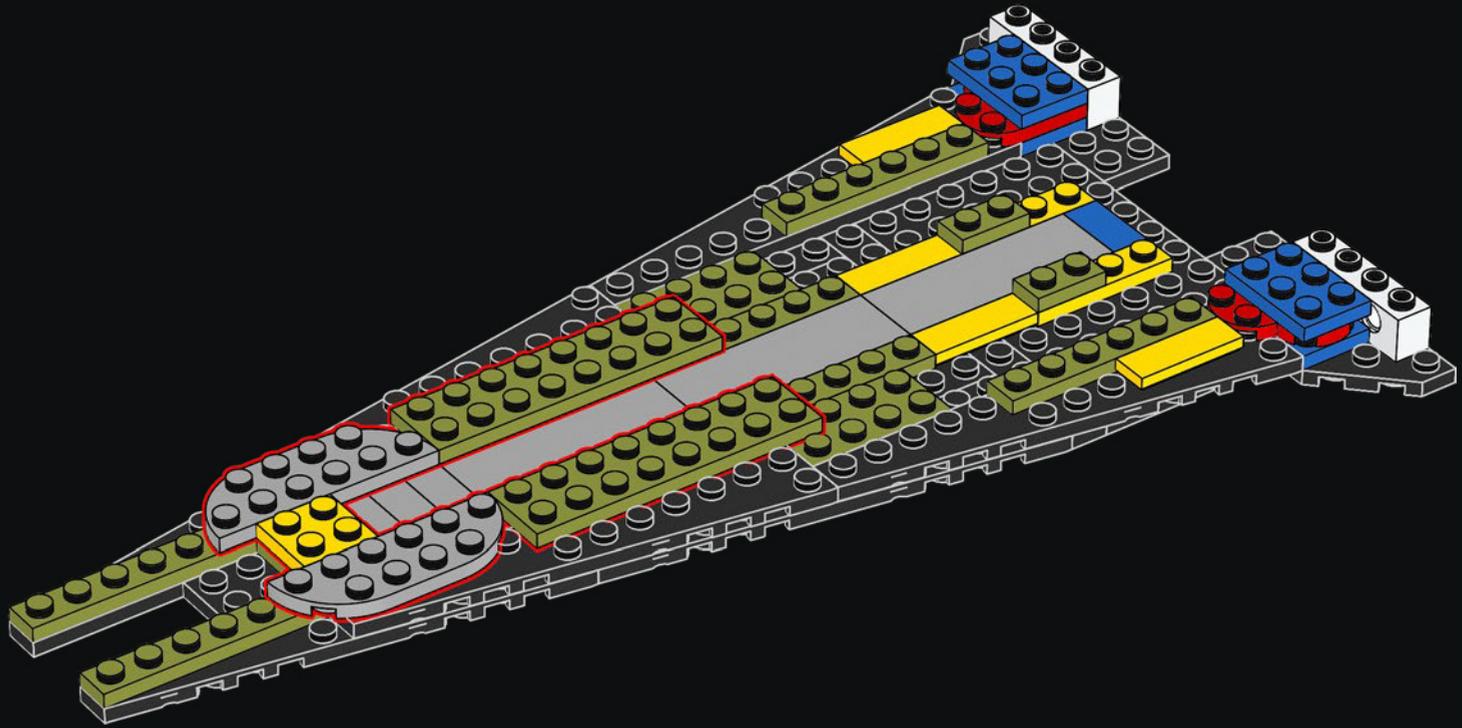


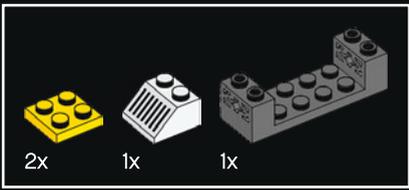
46



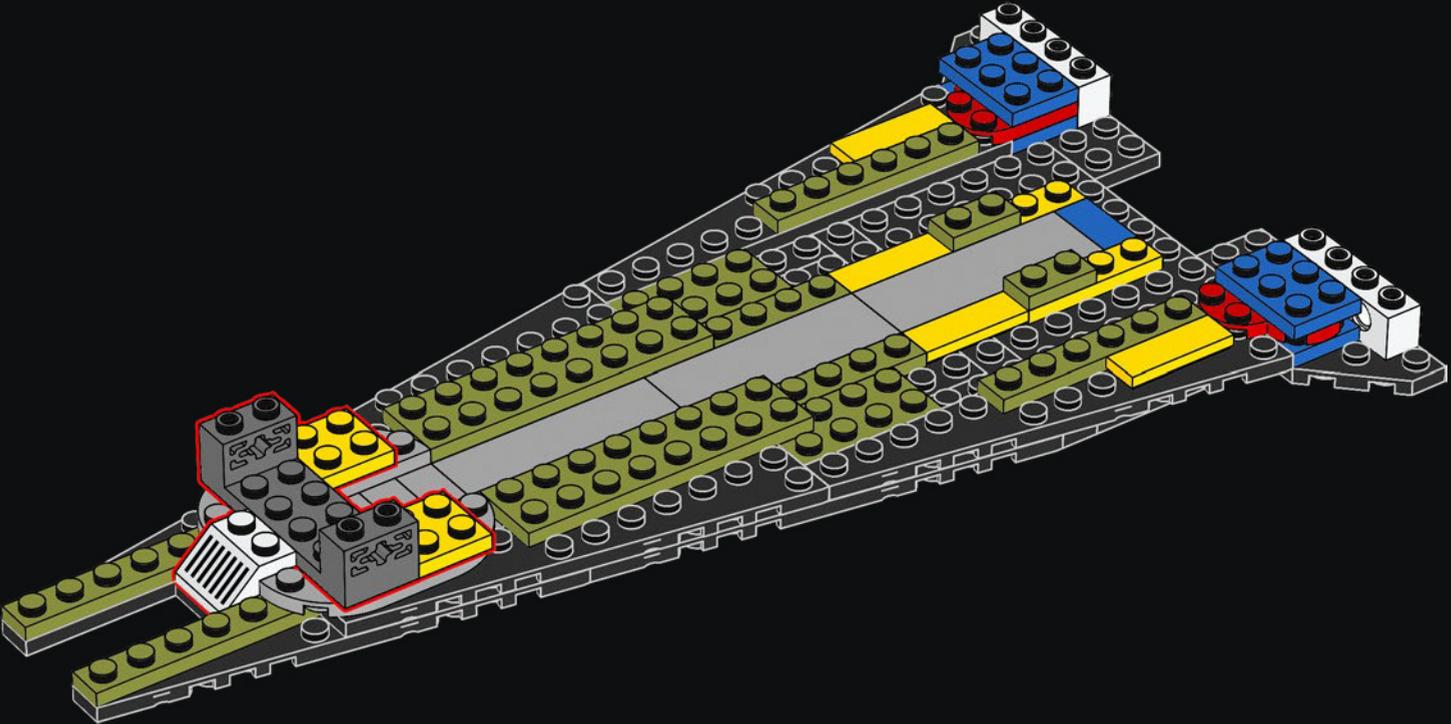


47



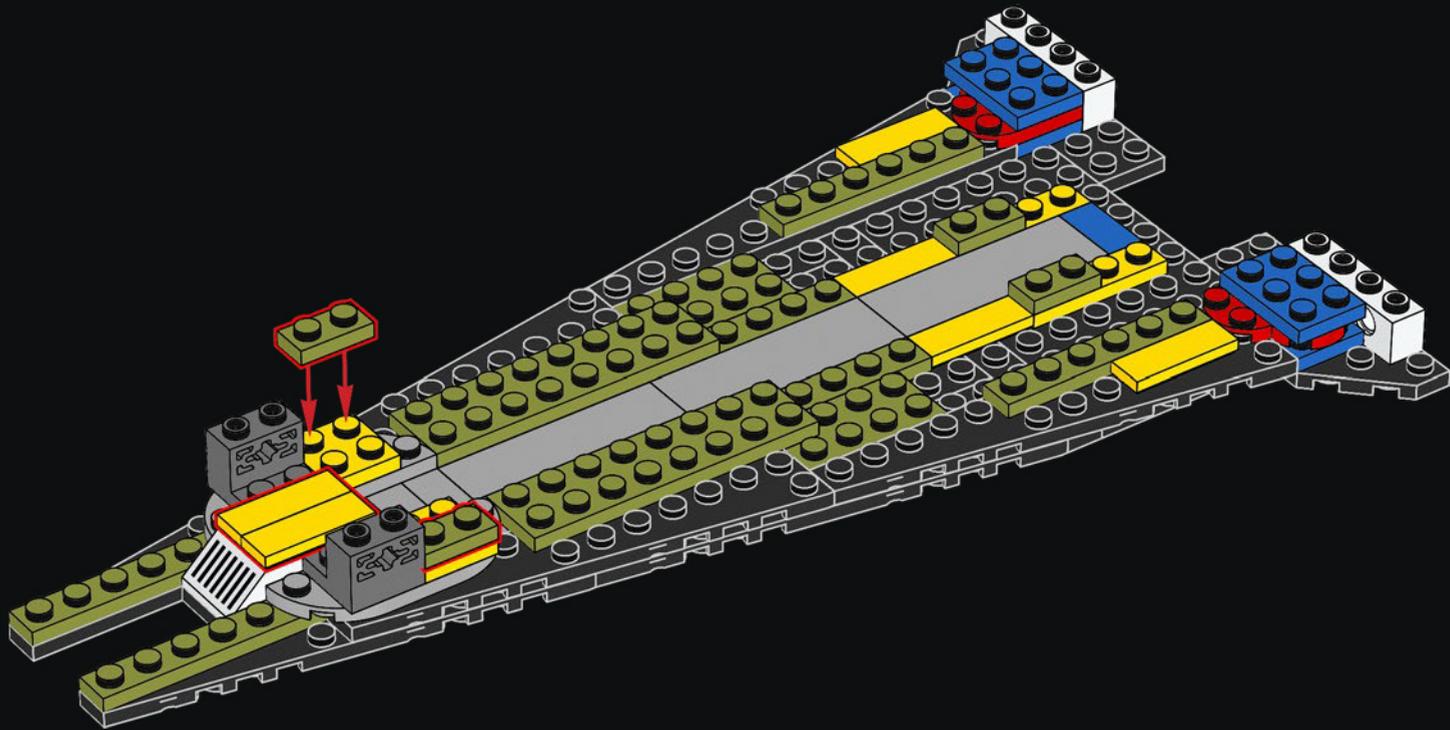


48

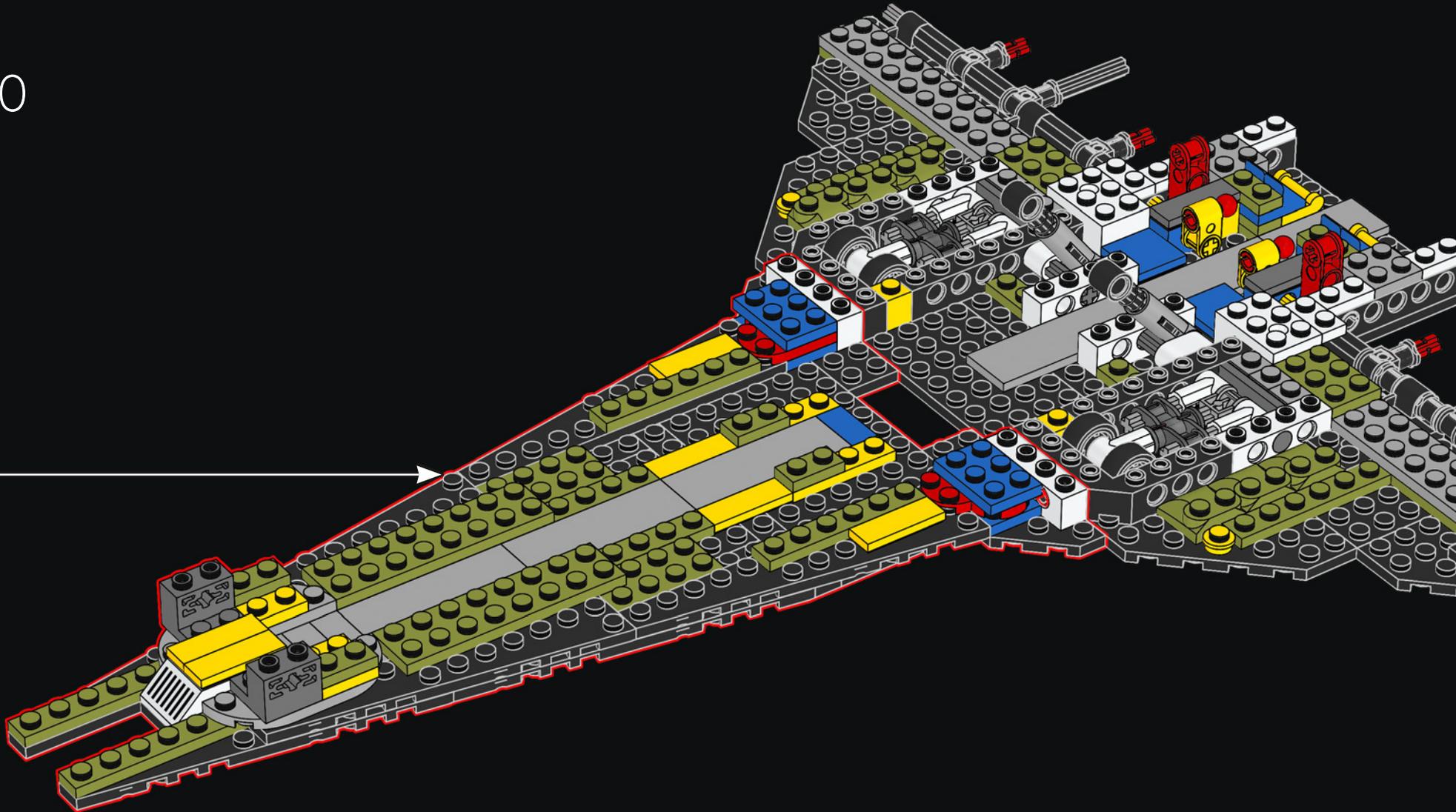


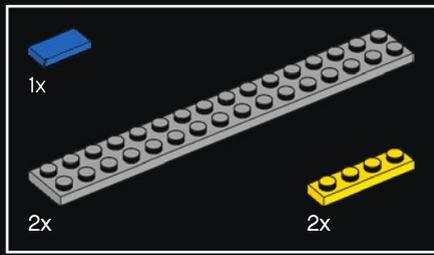


49

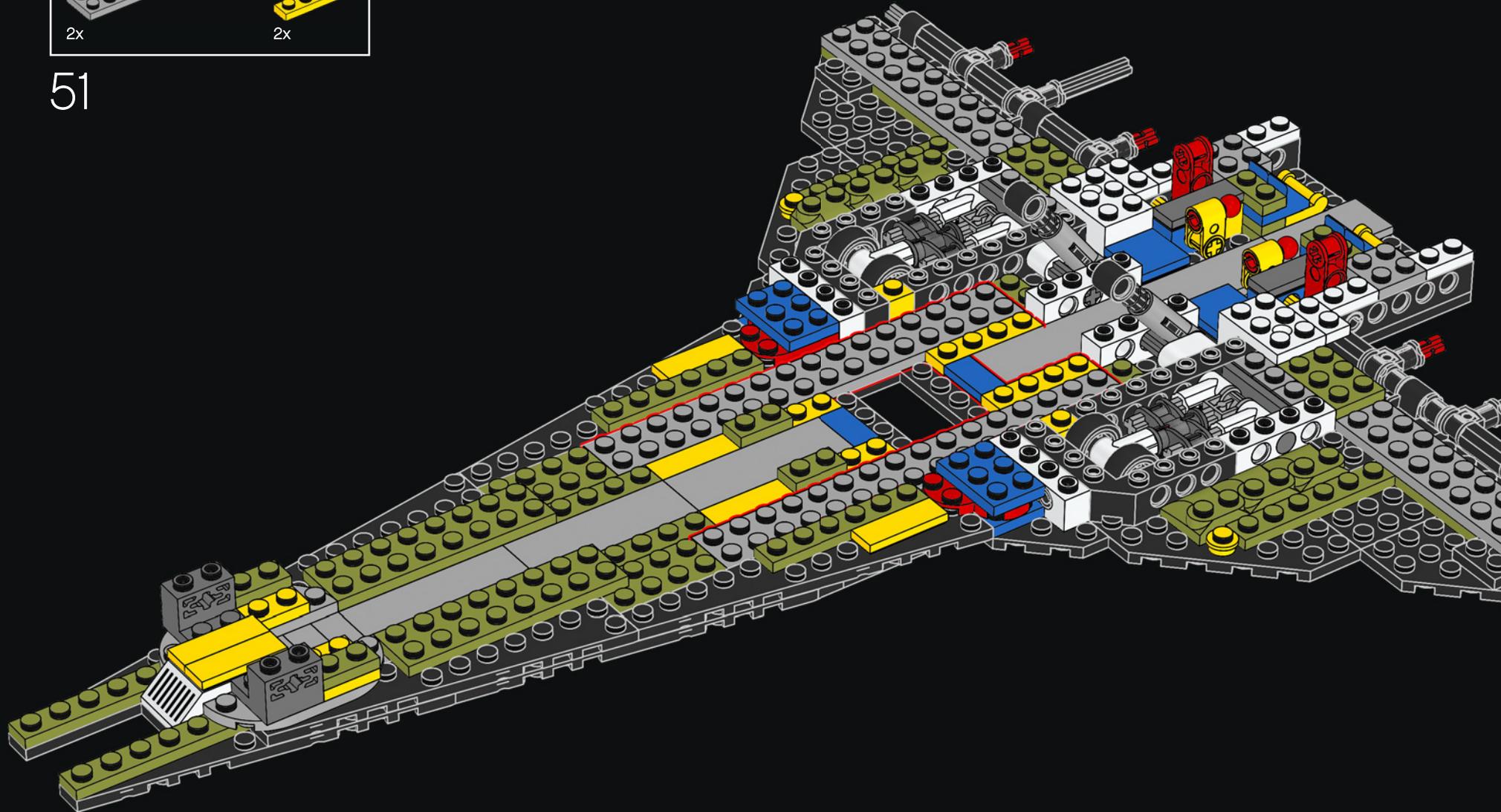


50



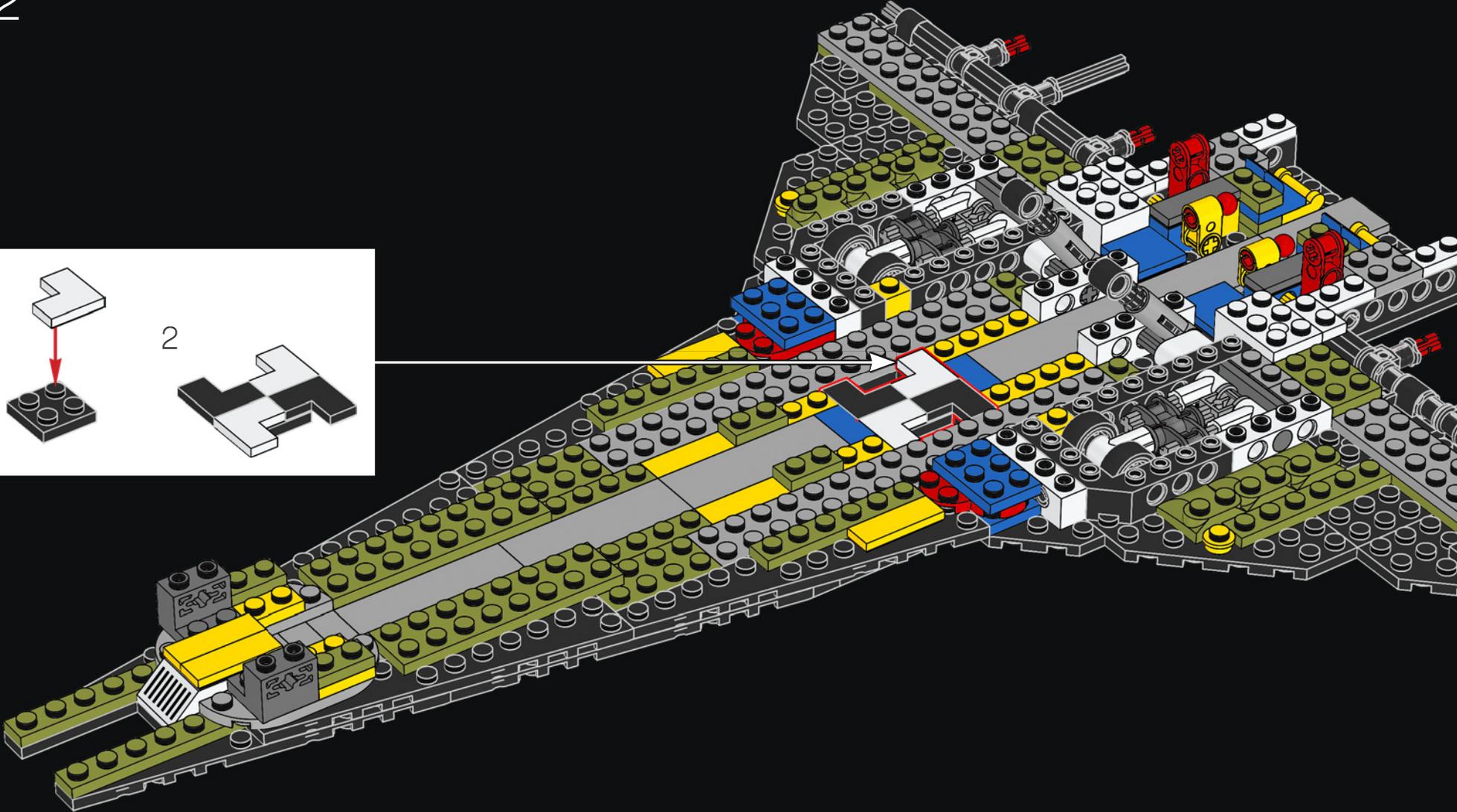
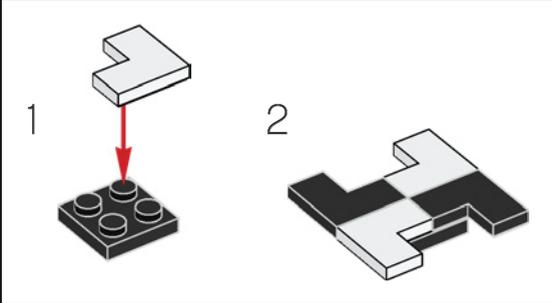


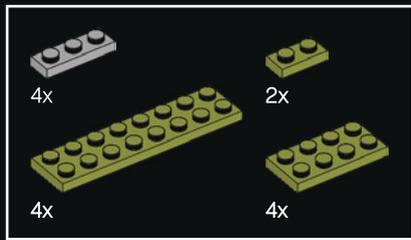
51



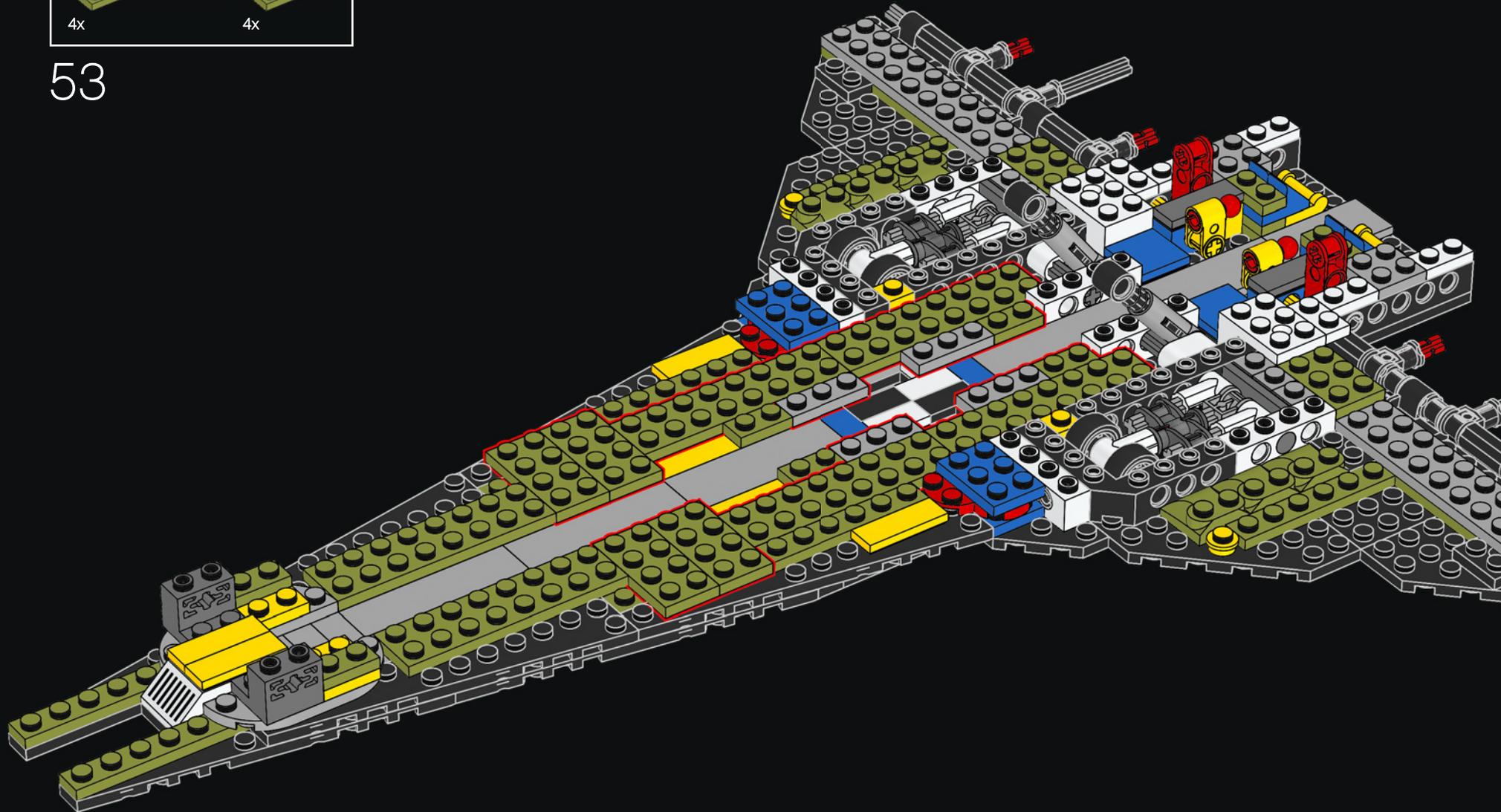


52



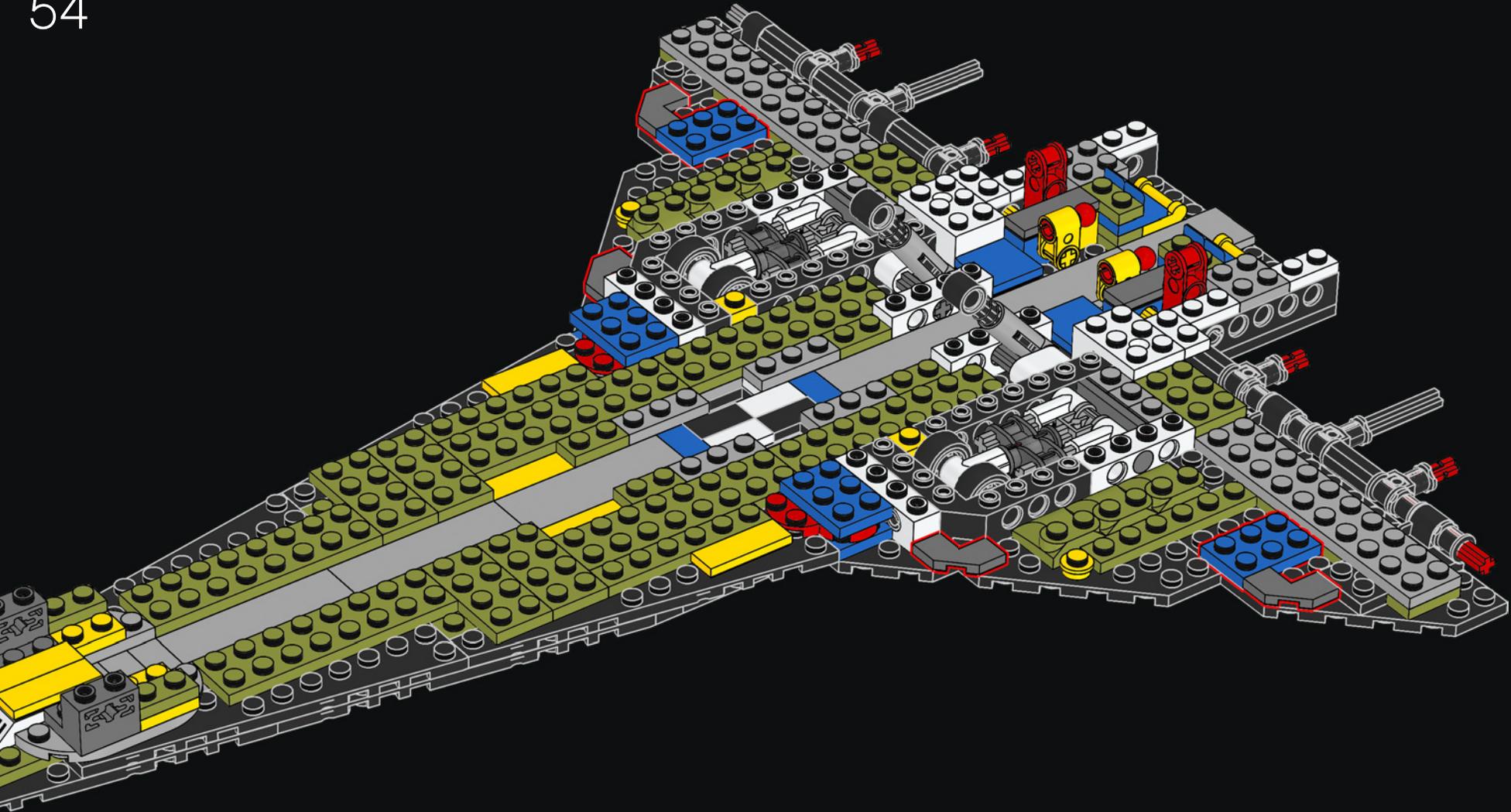


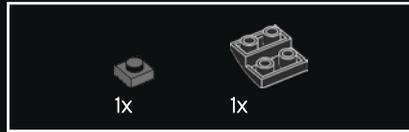
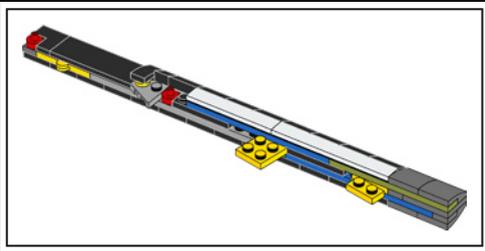
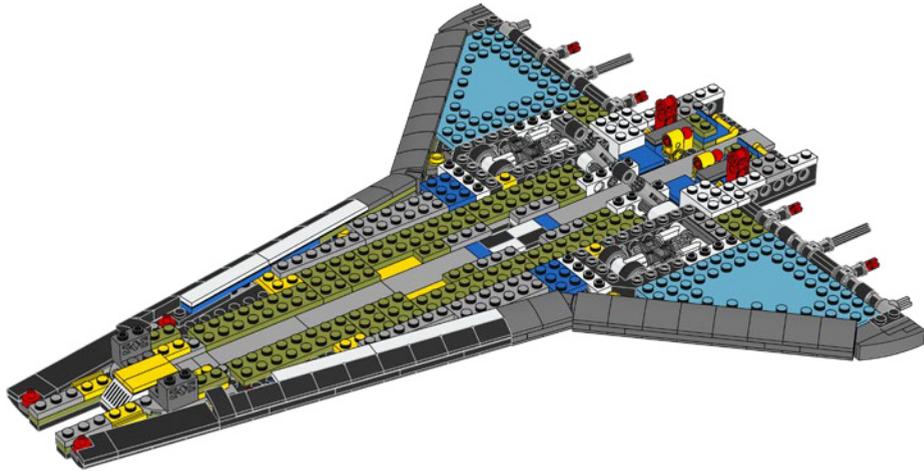
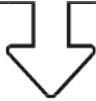
53



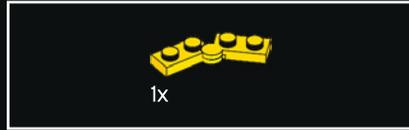
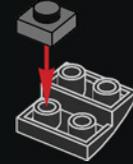


54





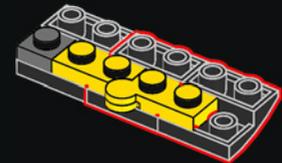
55

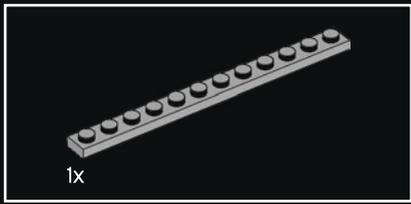


56

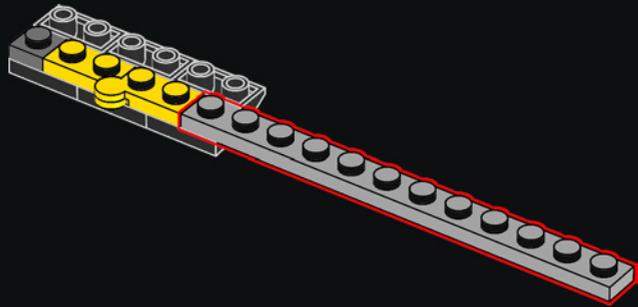


57

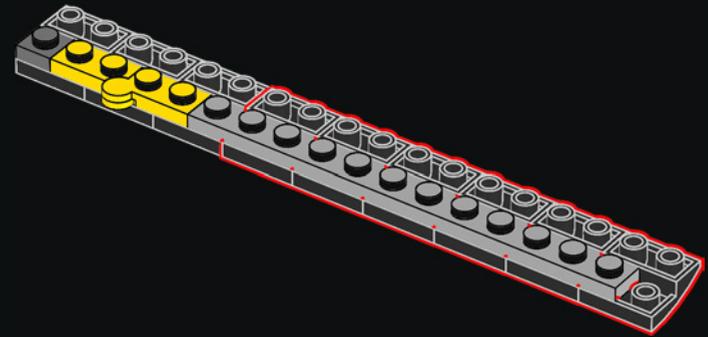


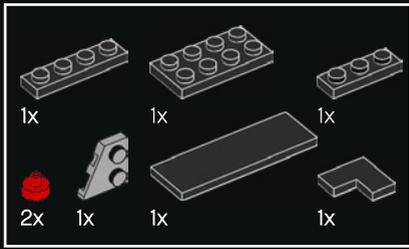


58

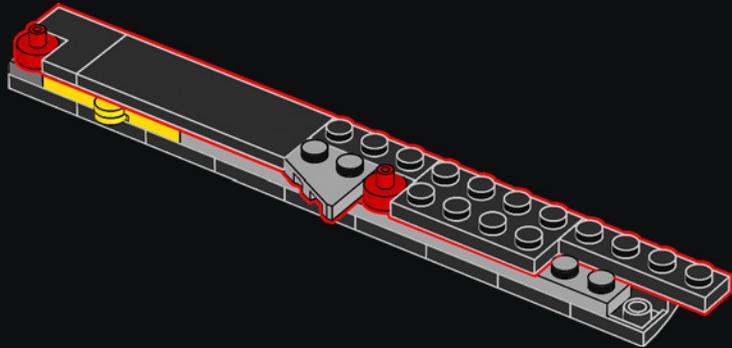


59

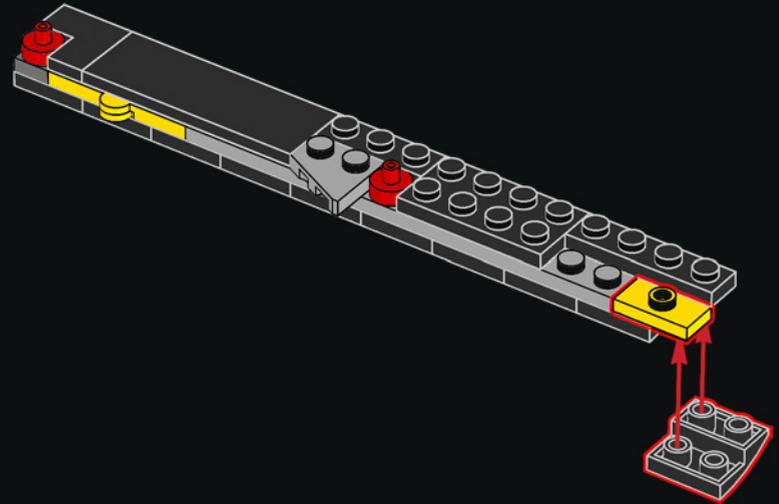


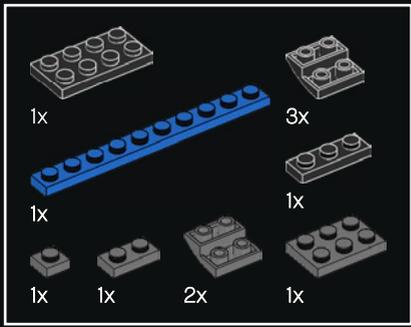


60

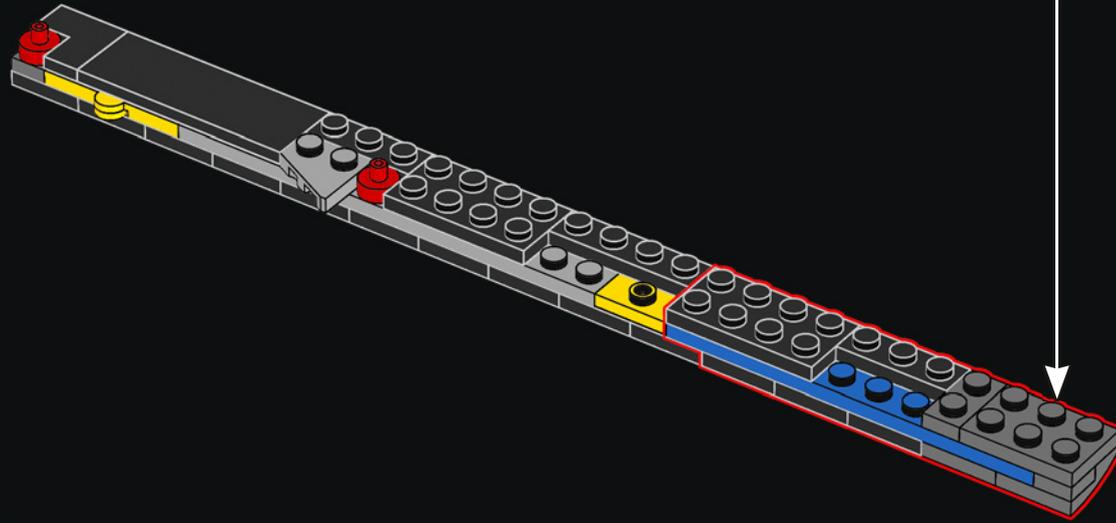
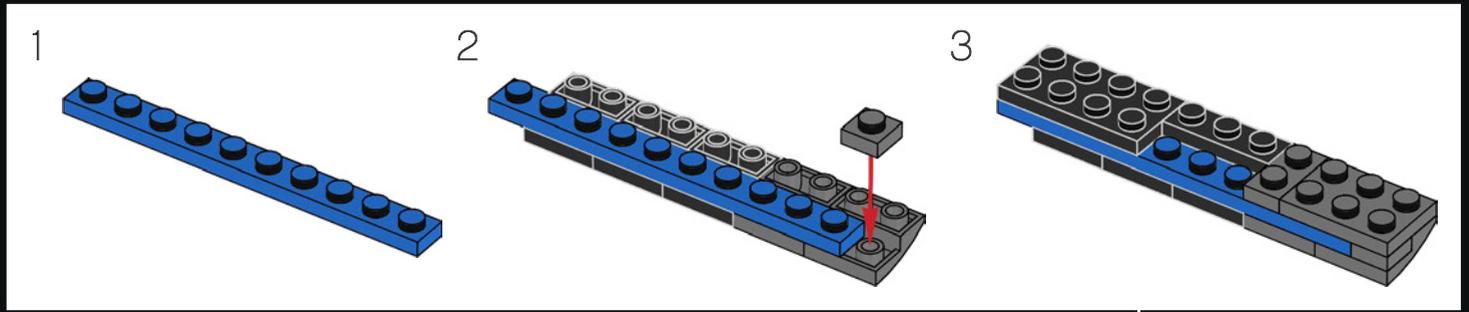


61



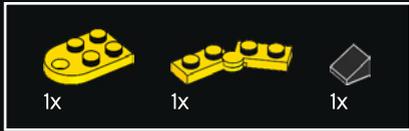
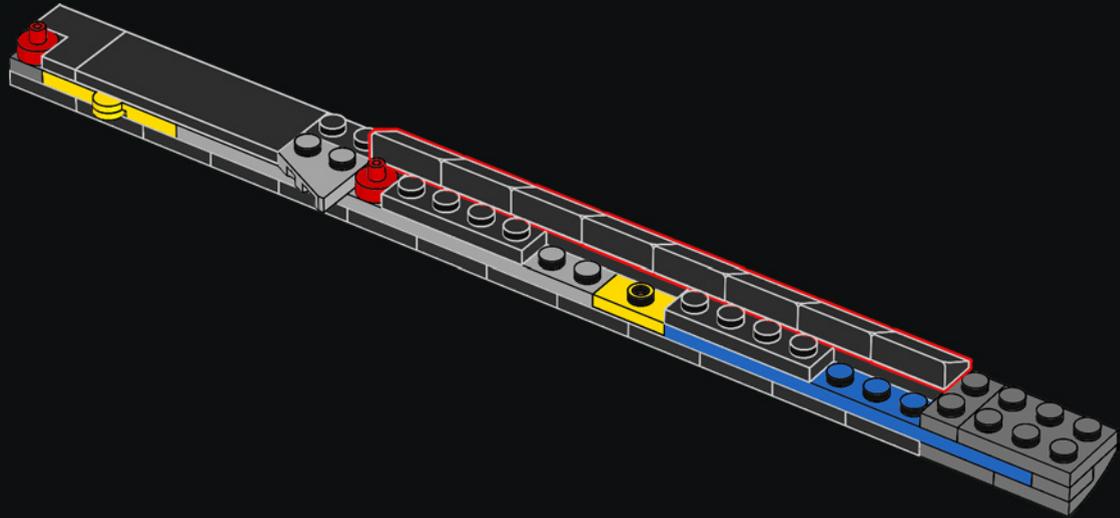


62

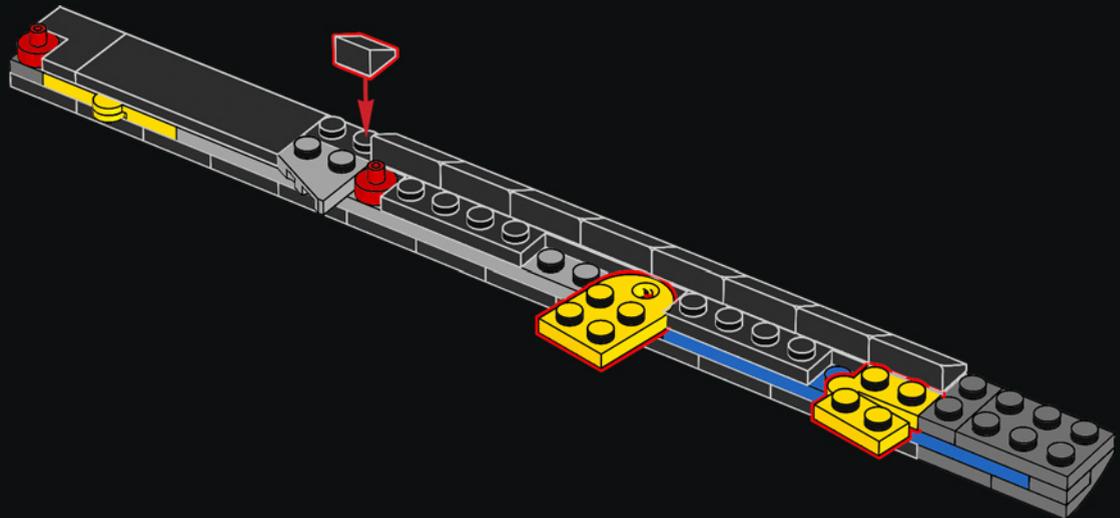


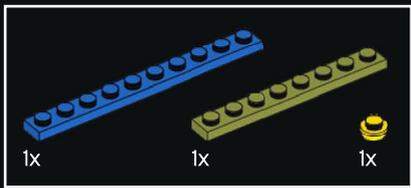


63

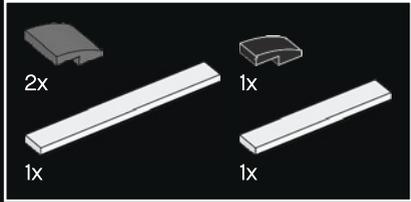
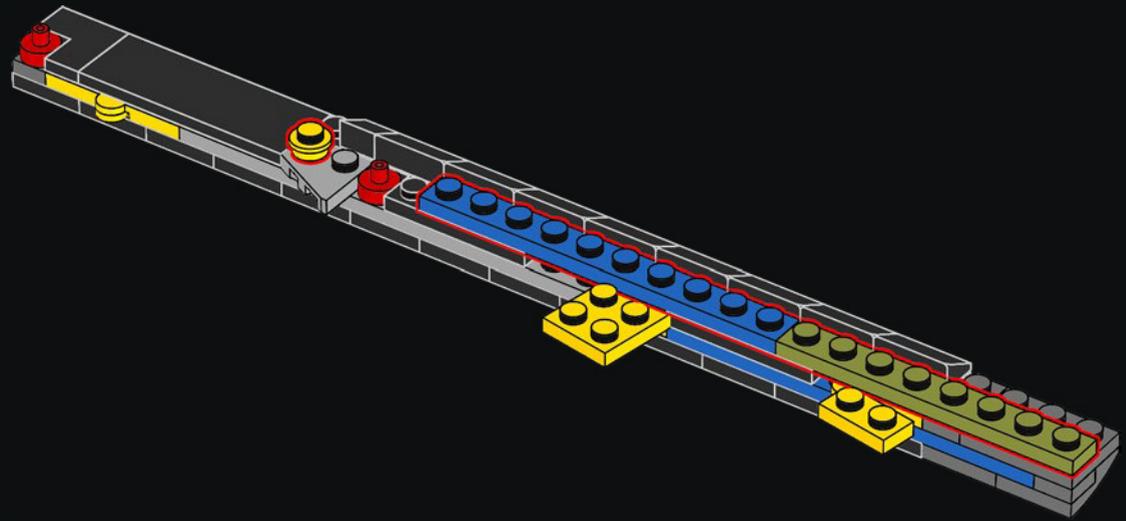


64

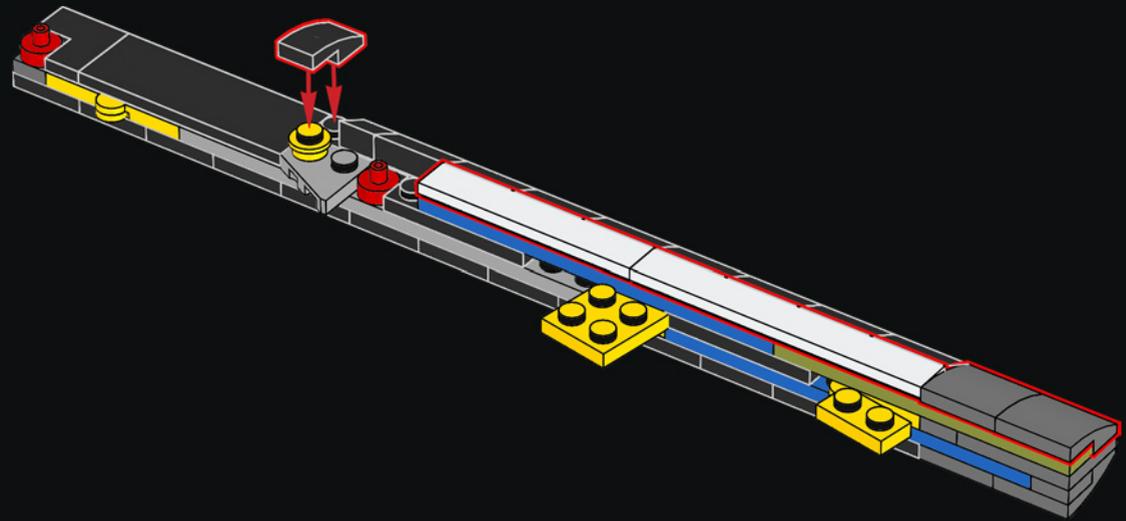




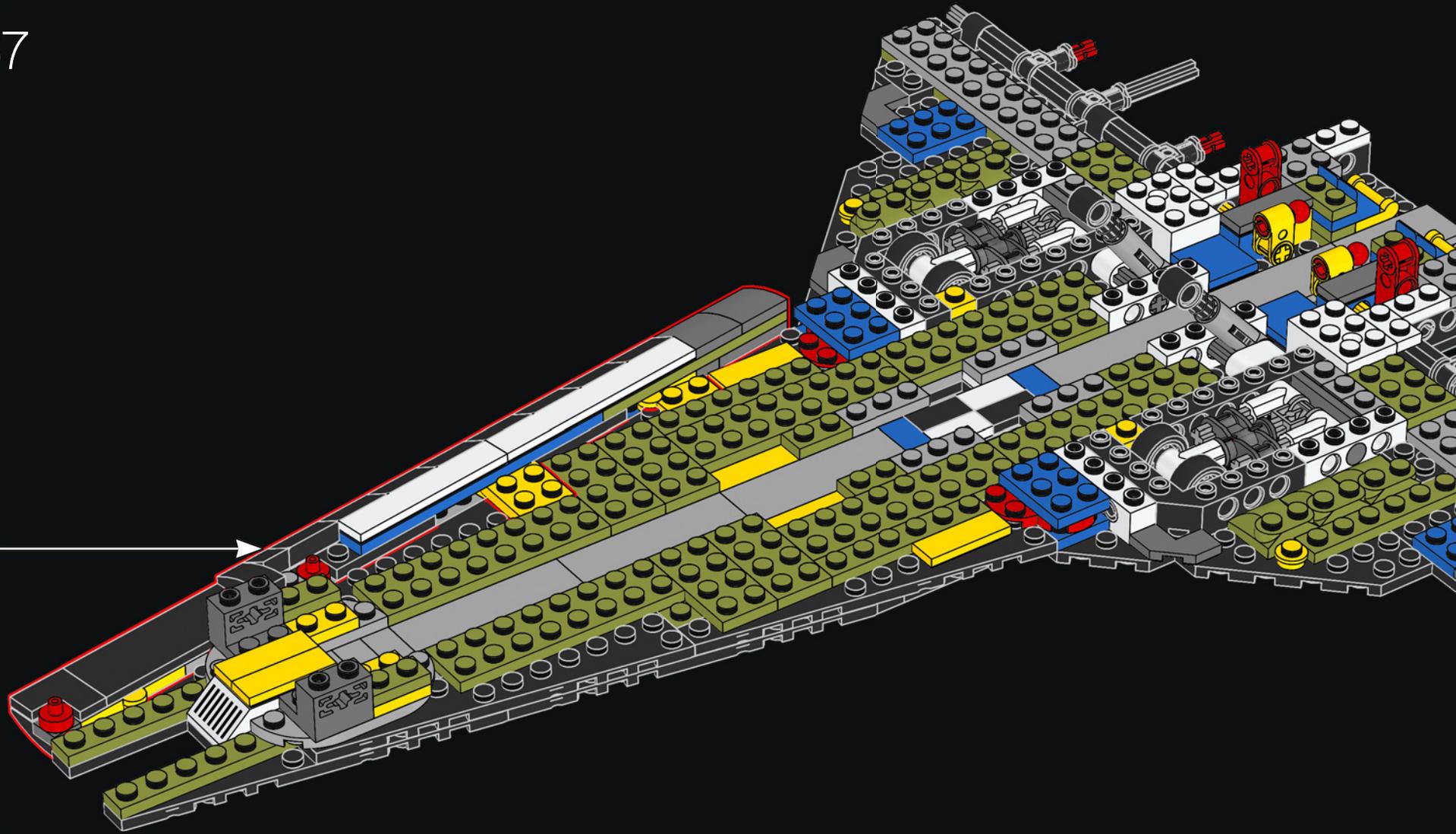
65

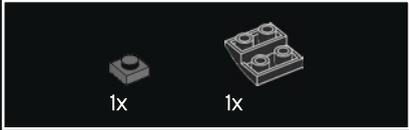
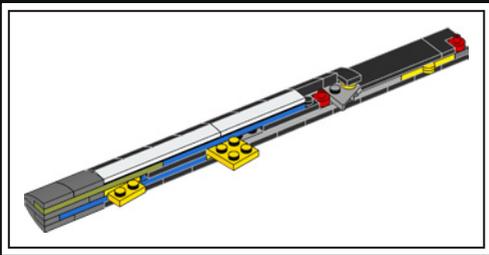


66

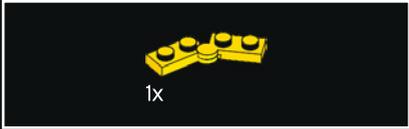
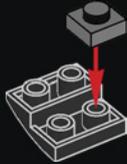


67

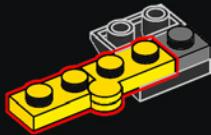




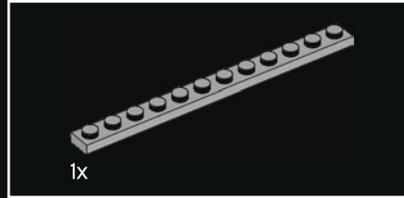
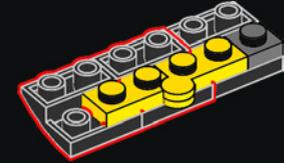
68



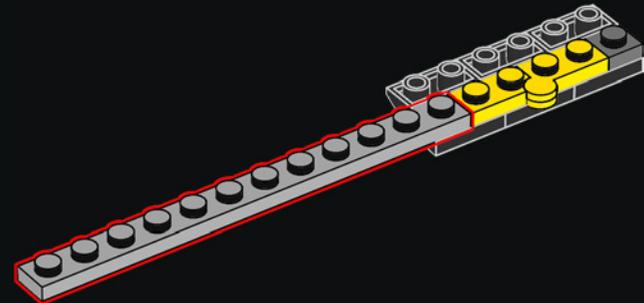
69



70

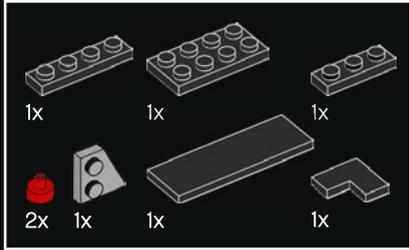
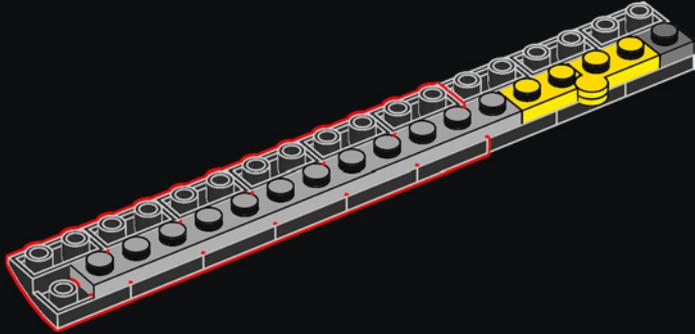


71

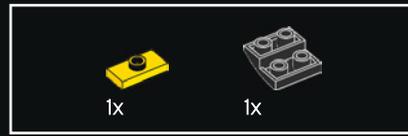
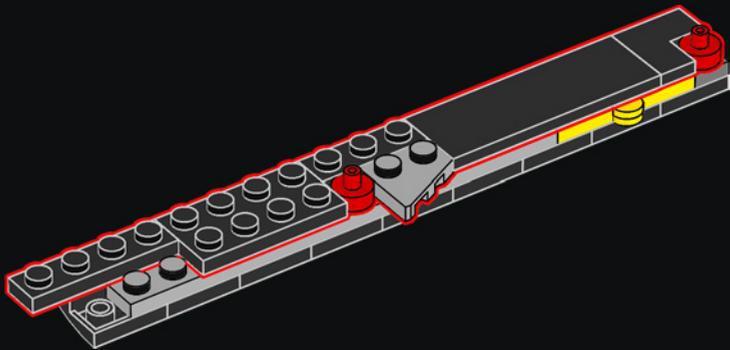




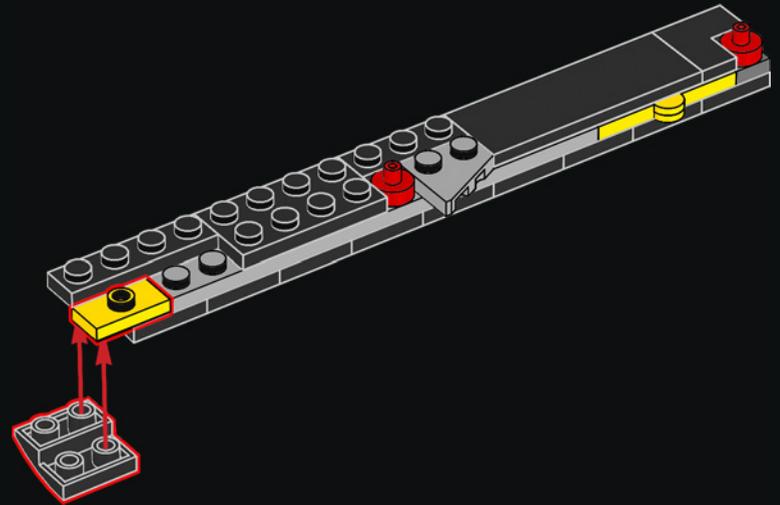
72

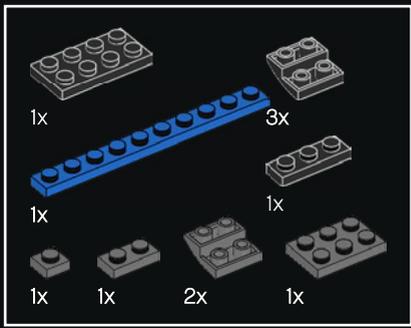


73

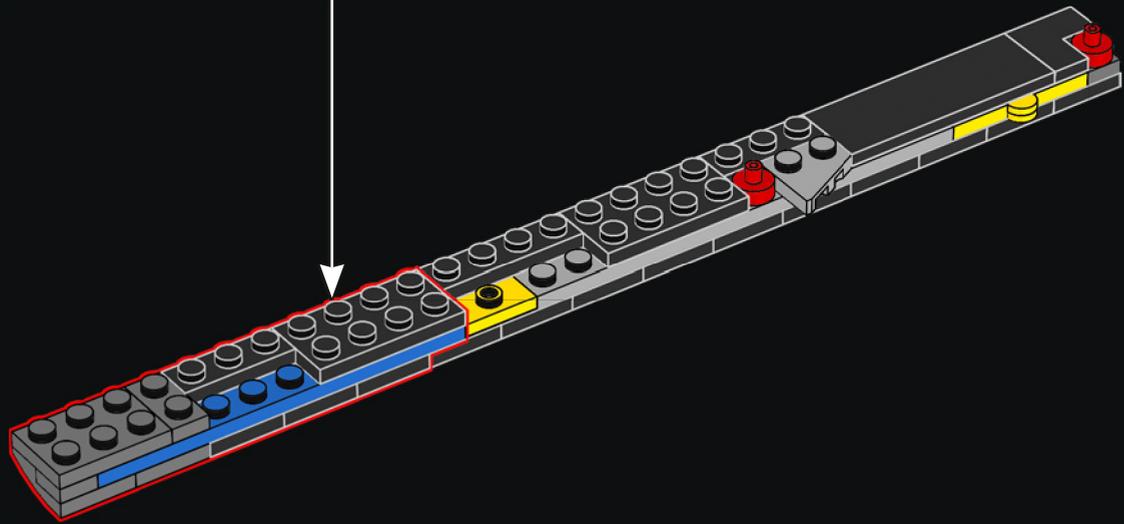
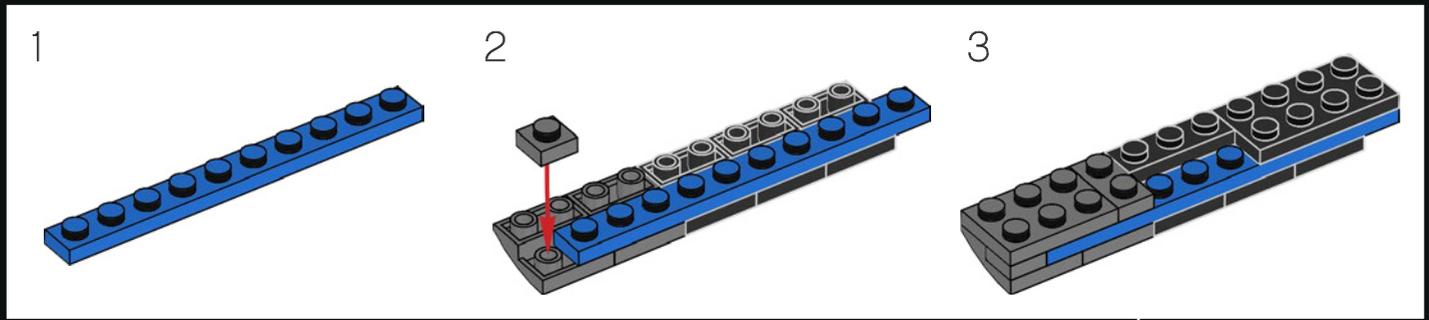


74



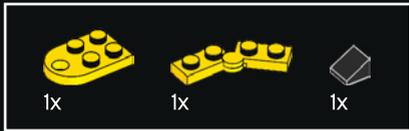
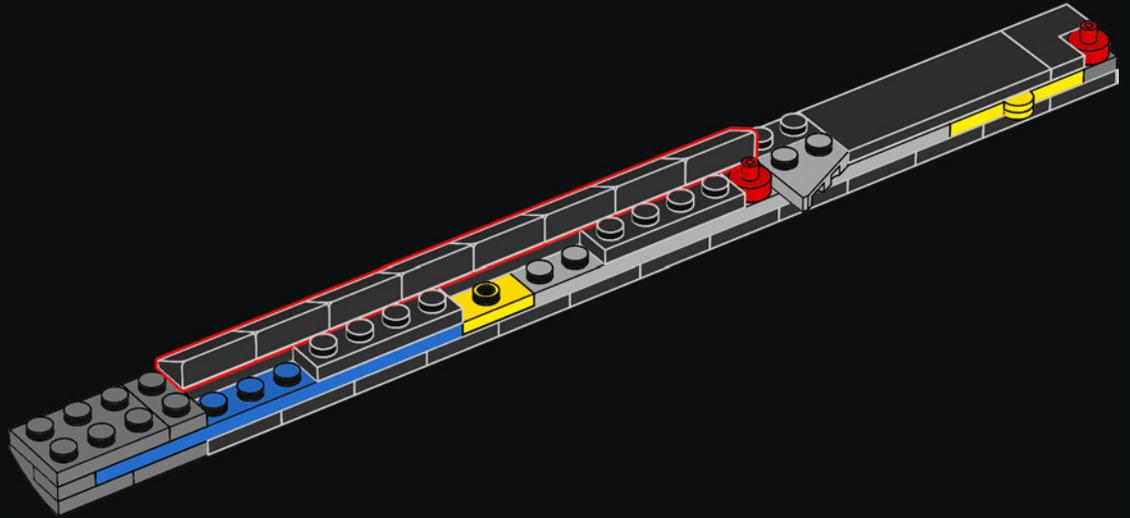


75

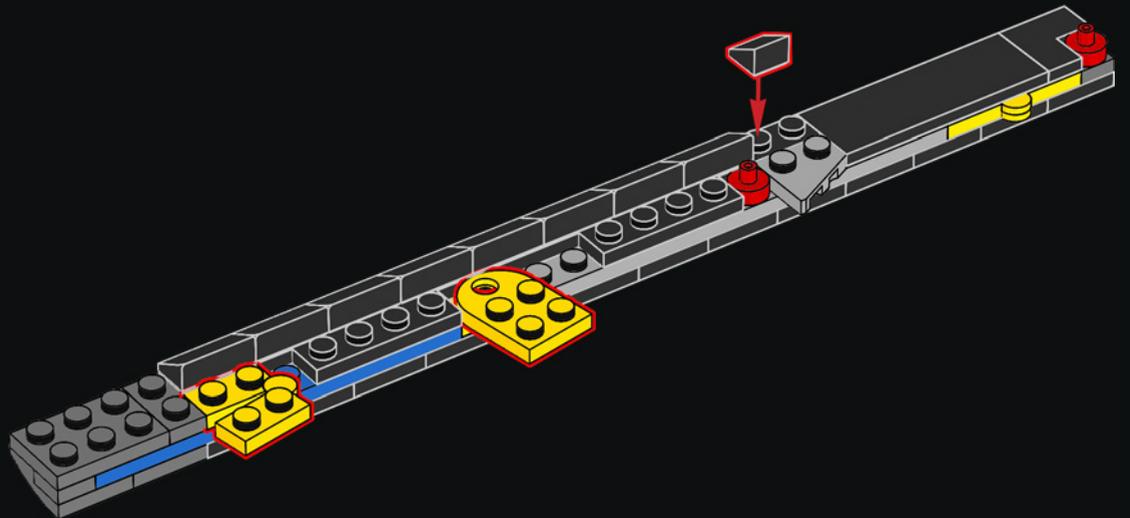




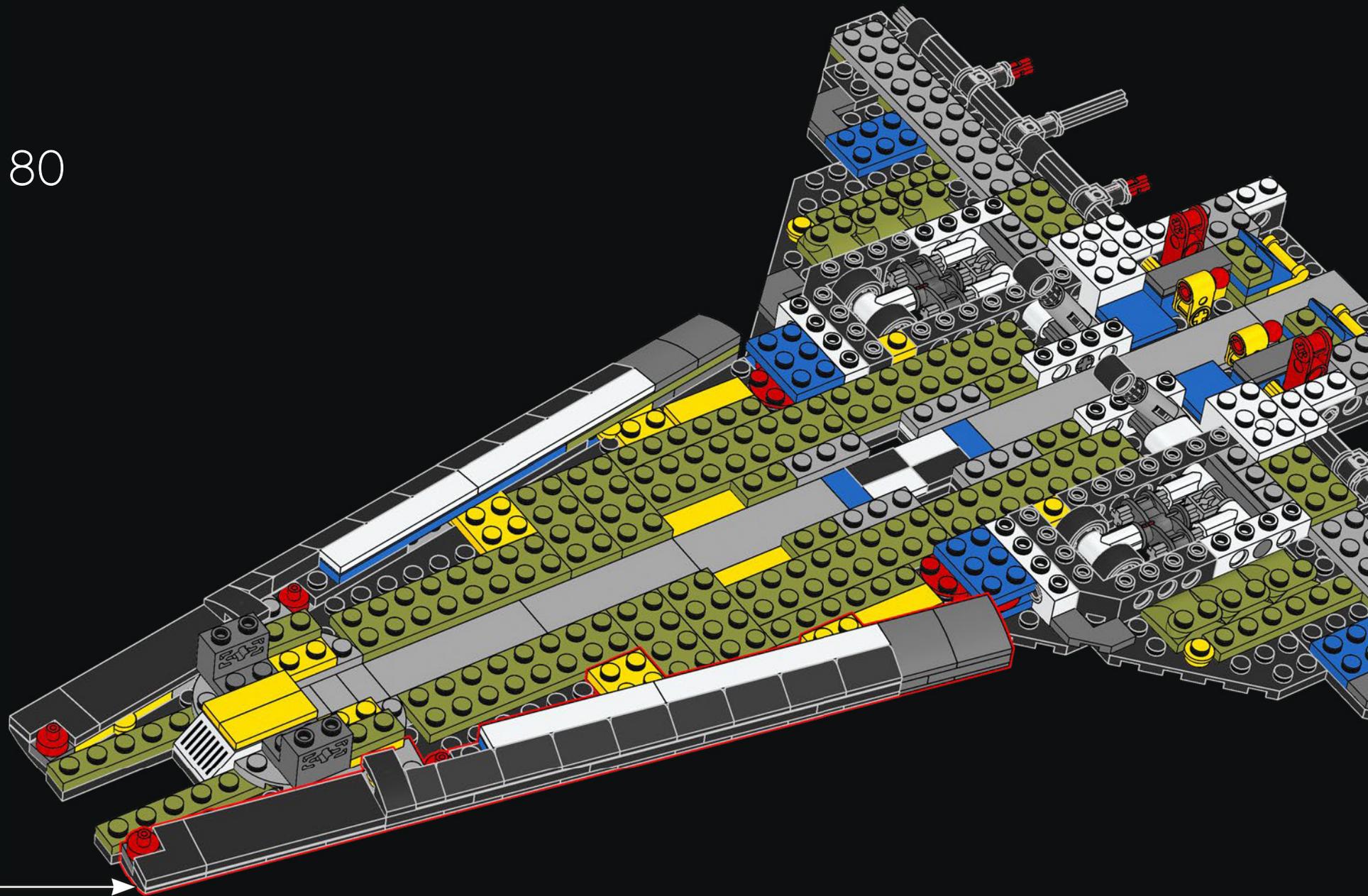
76

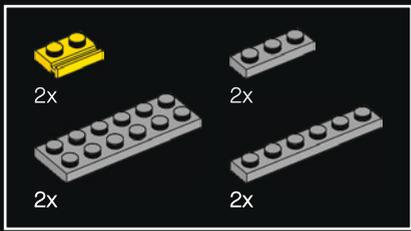


77

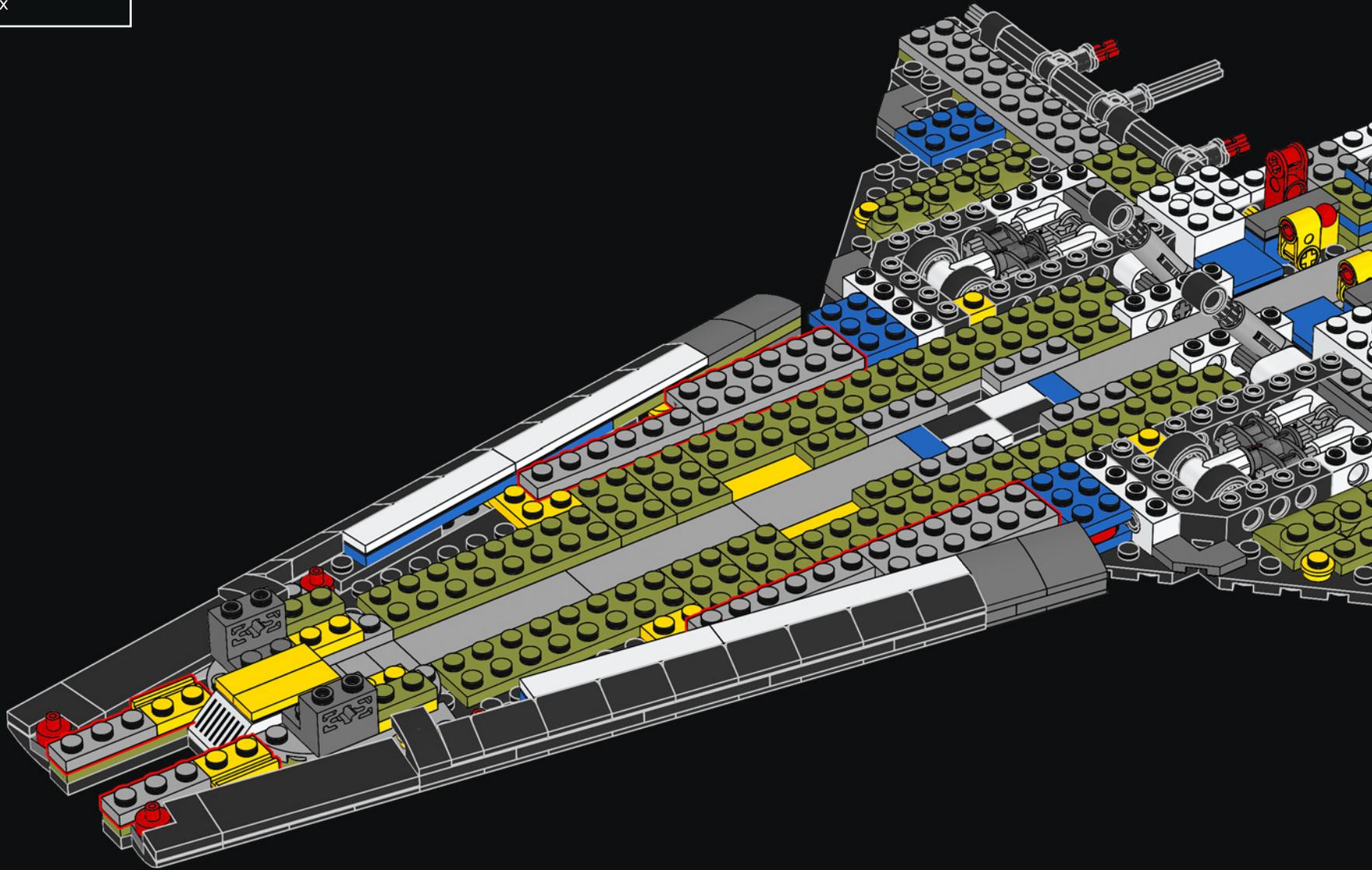


80



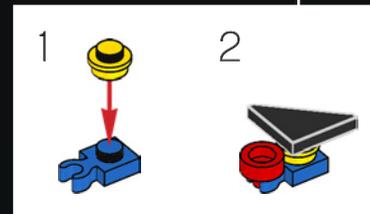
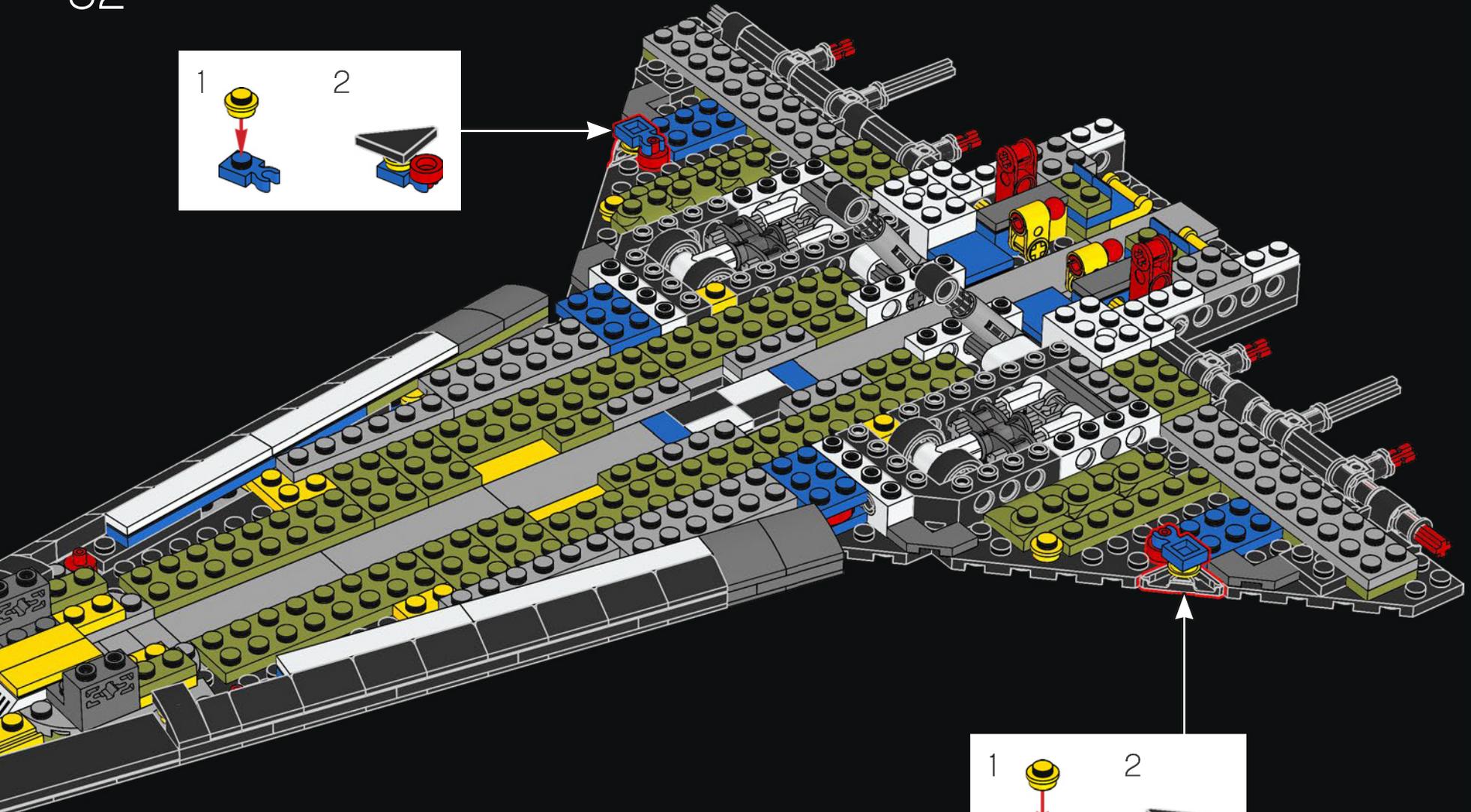
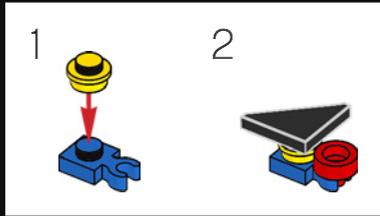


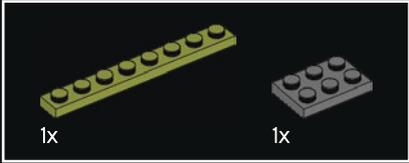
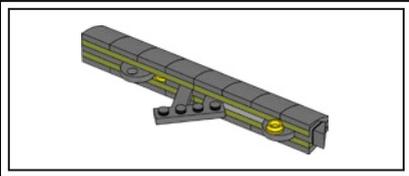
81



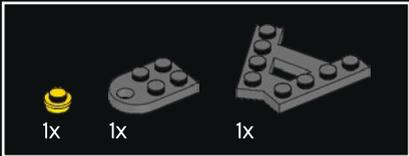
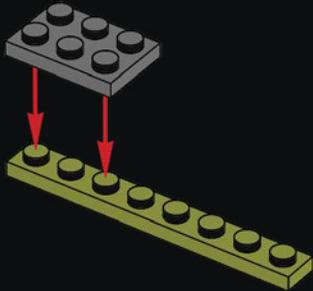
- 2x
- 2x
- 2x
- 2x

82

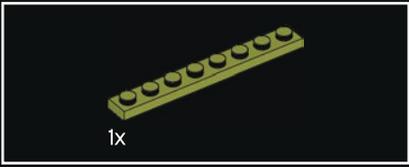
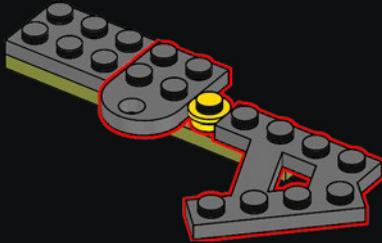




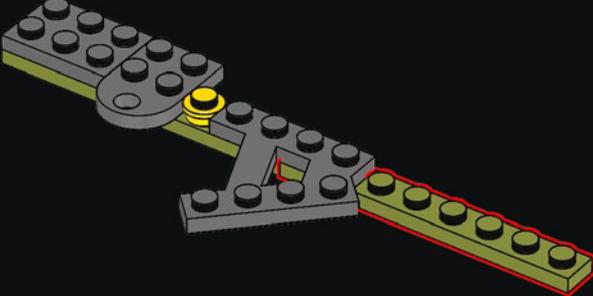
83



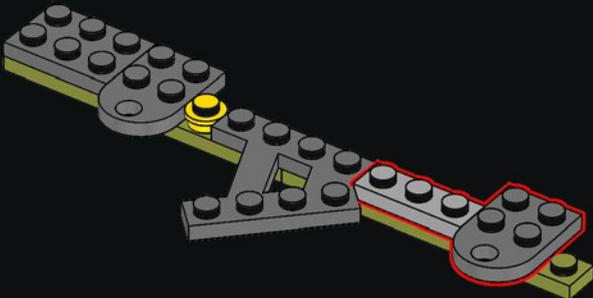
84



85

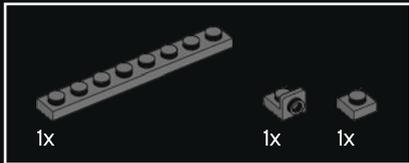
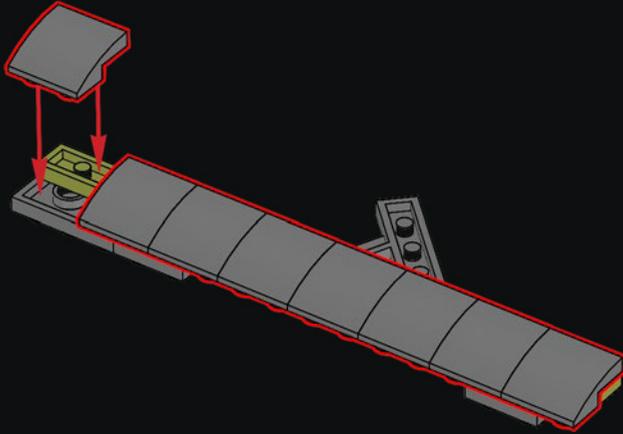


86

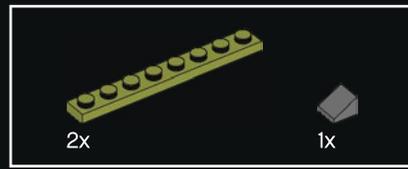
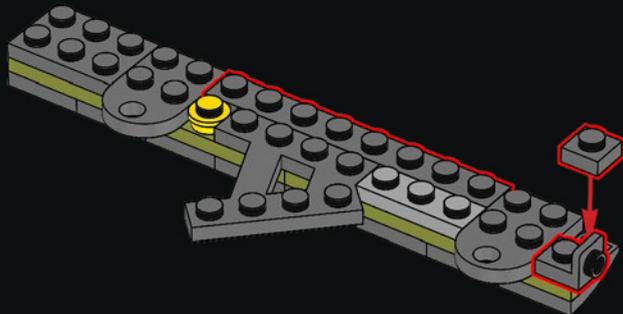




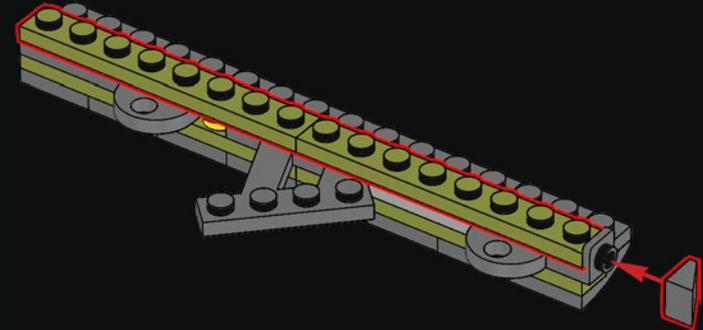
87



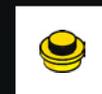
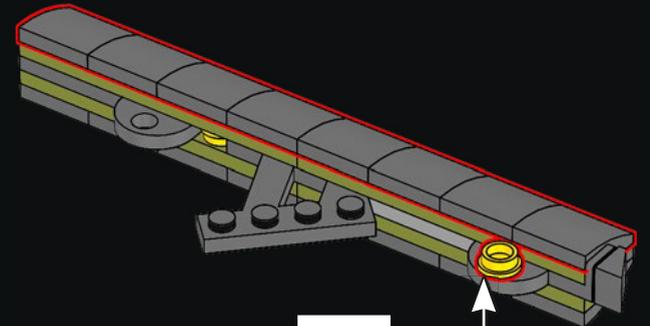
88



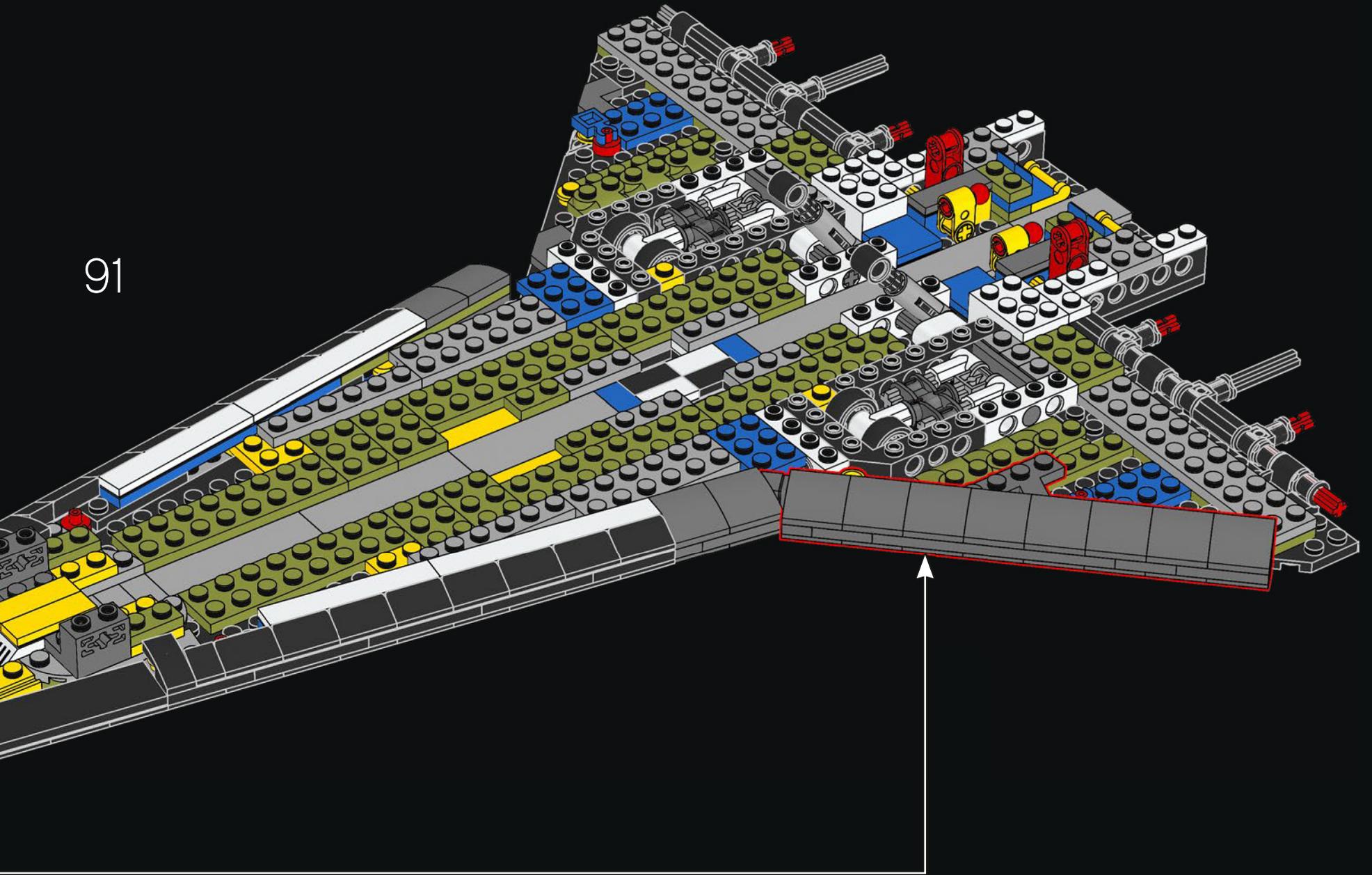
89

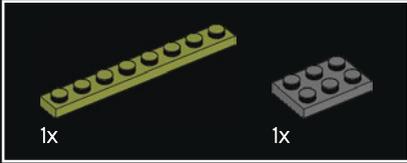
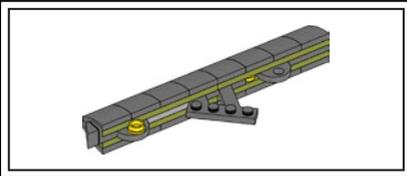


90

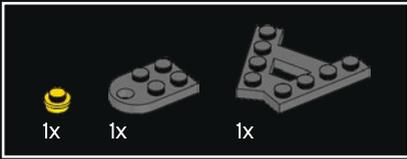
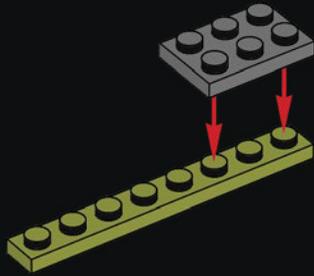


91

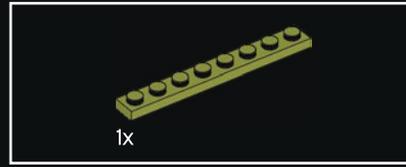
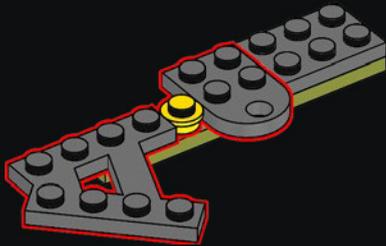




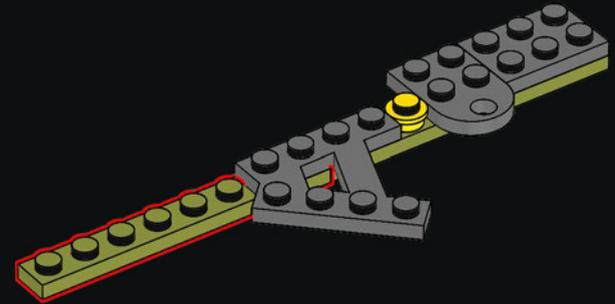
92



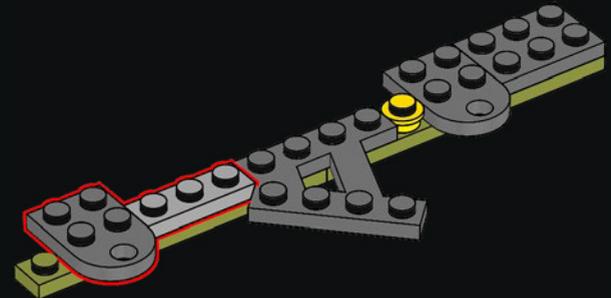
93

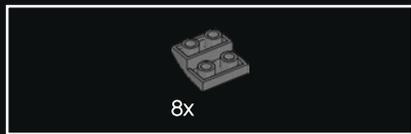


94

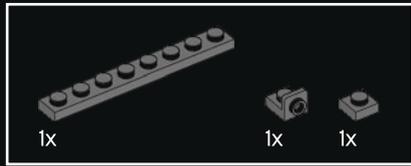
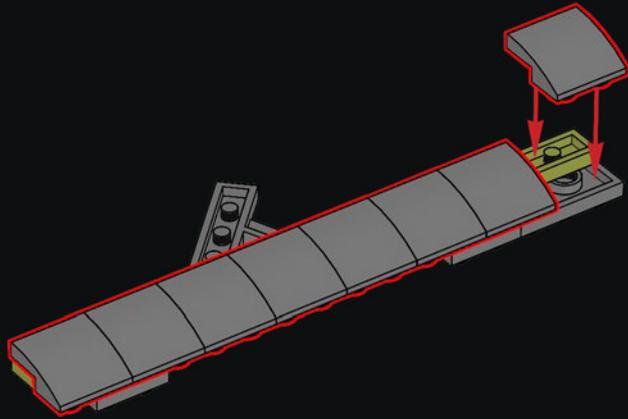


95

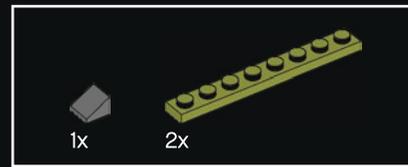
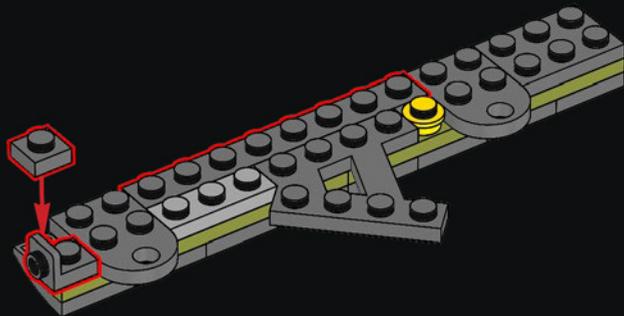




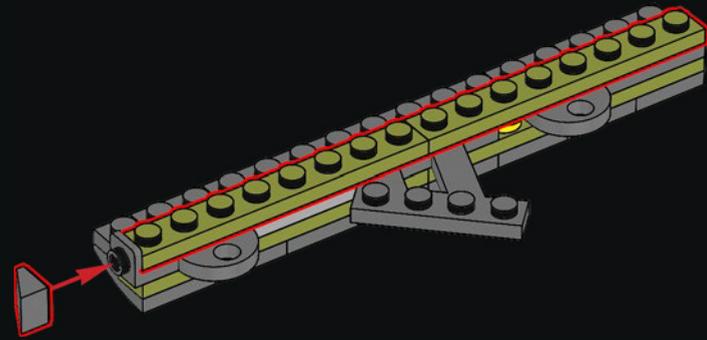
96



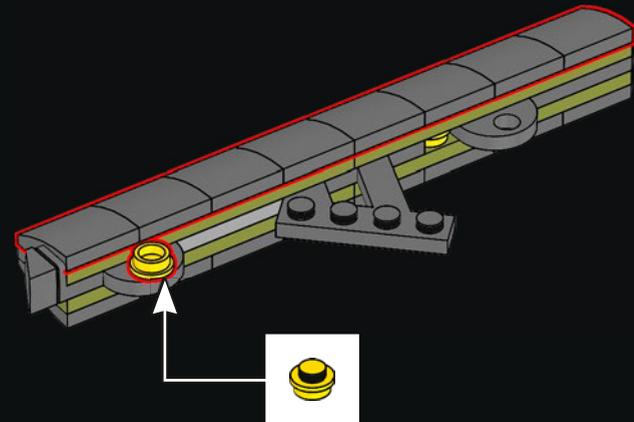
97



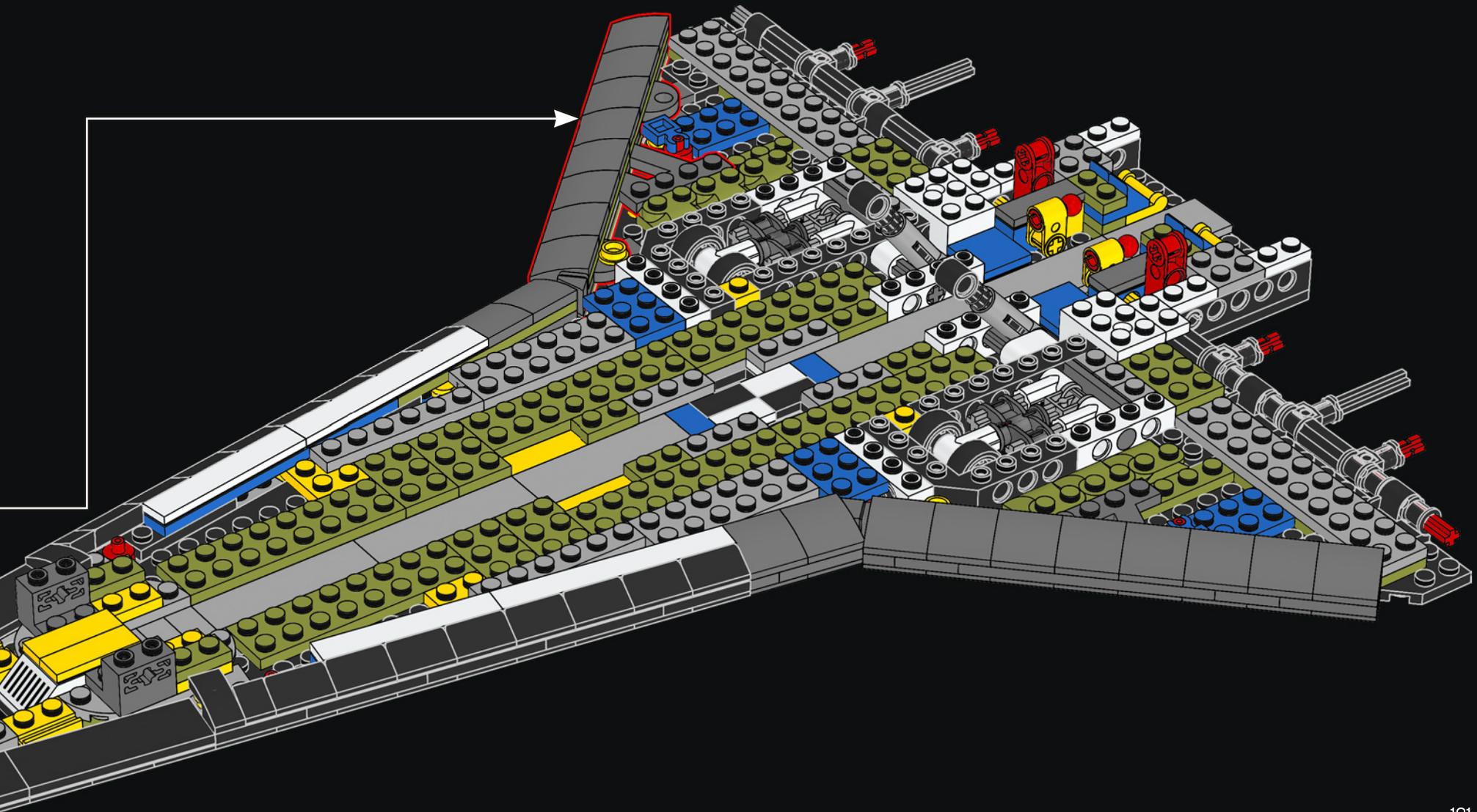
98

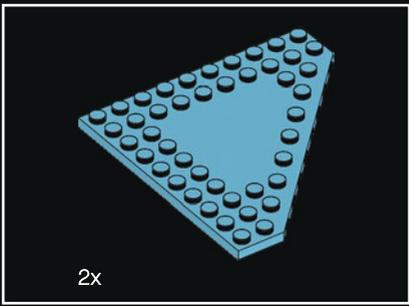


99

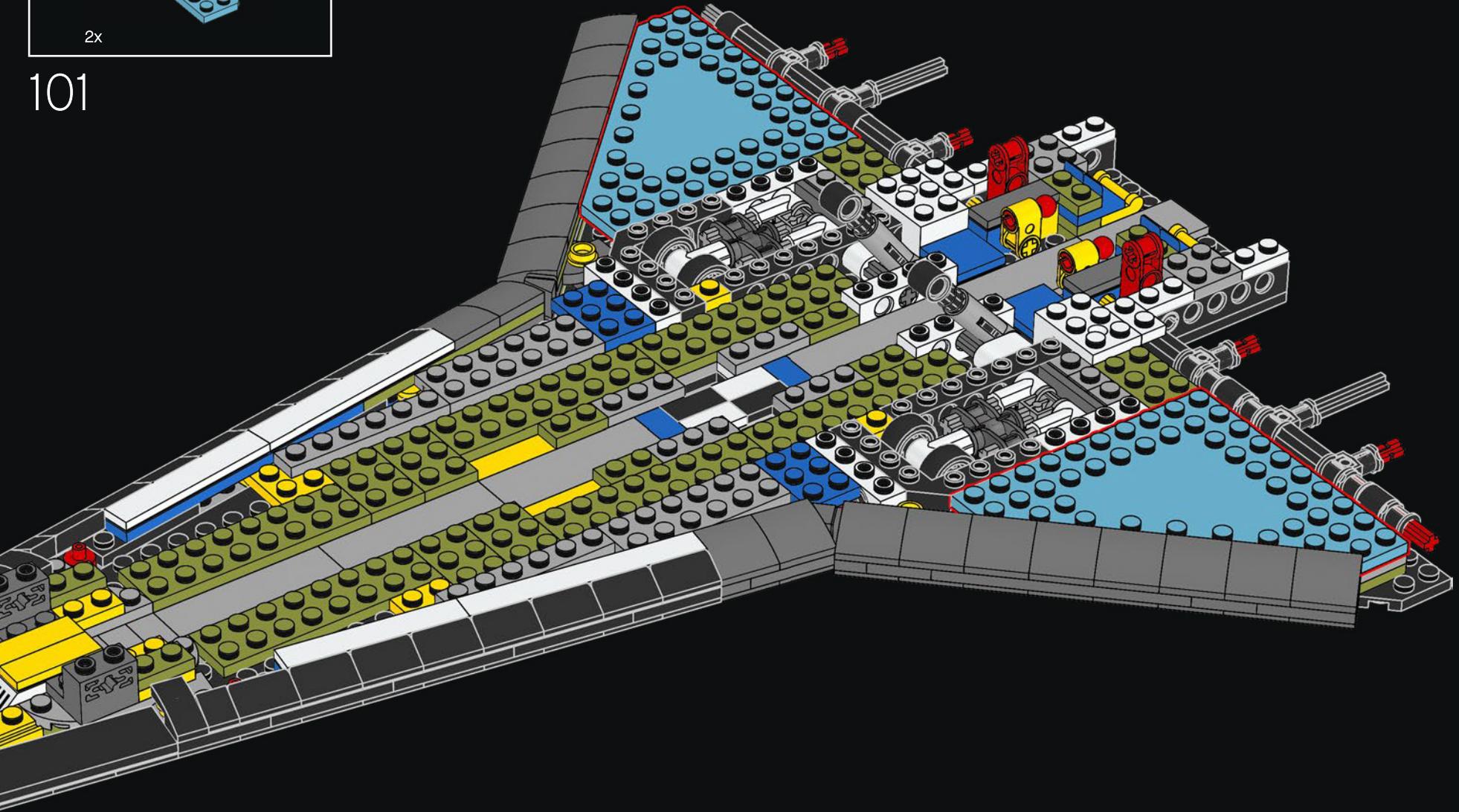


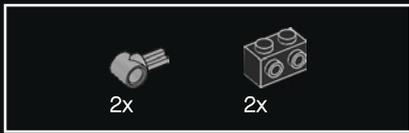
100



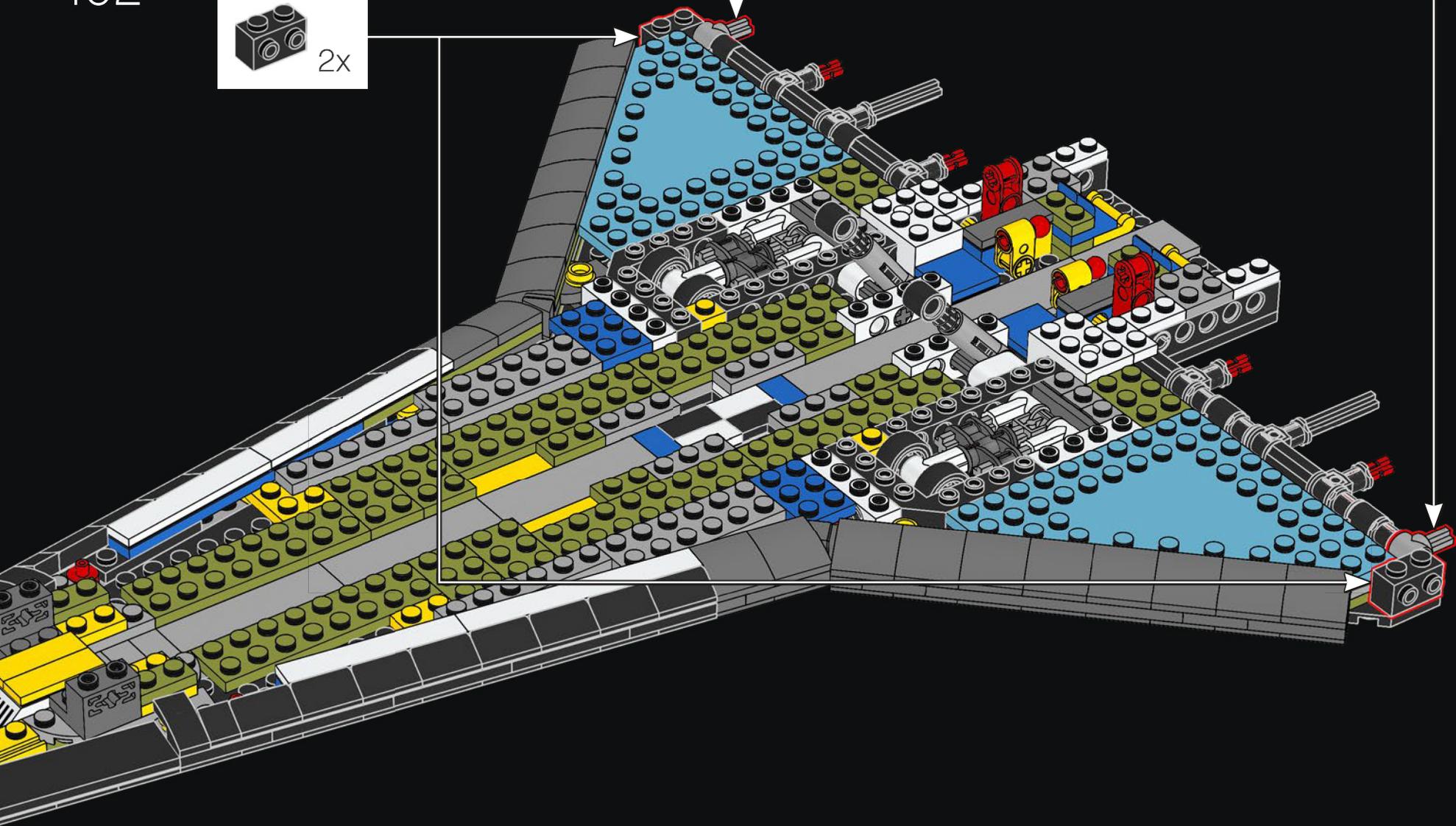
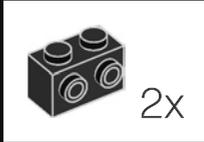


101



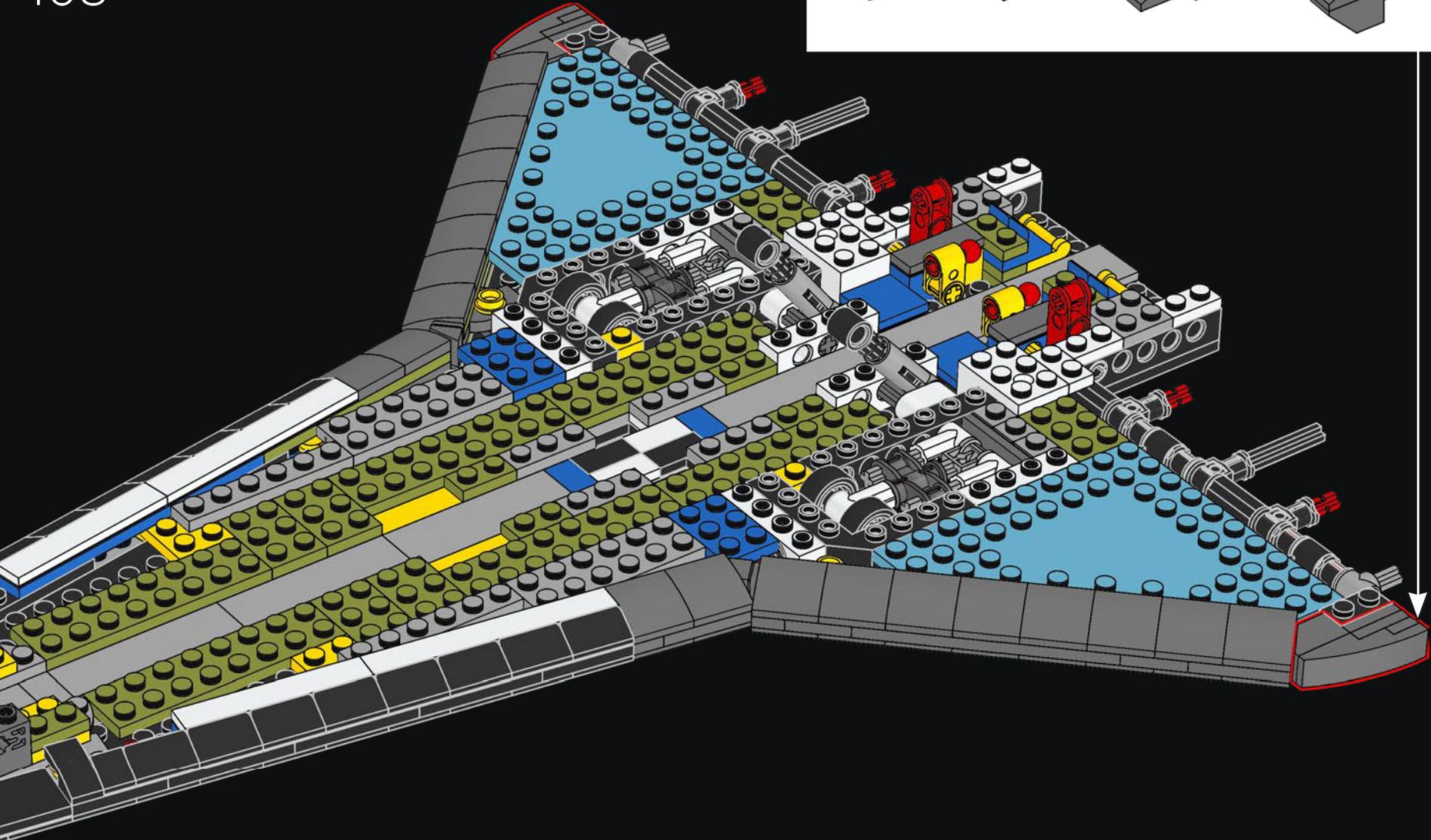
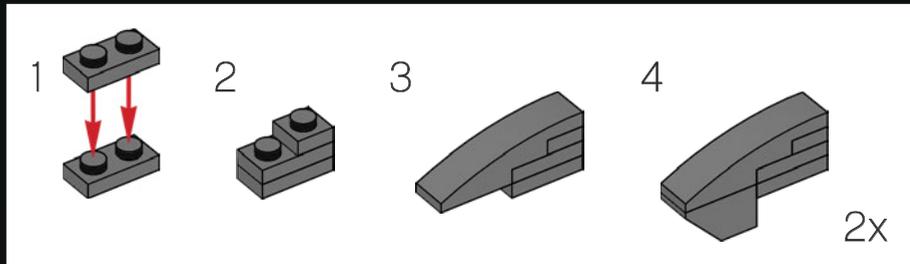


102



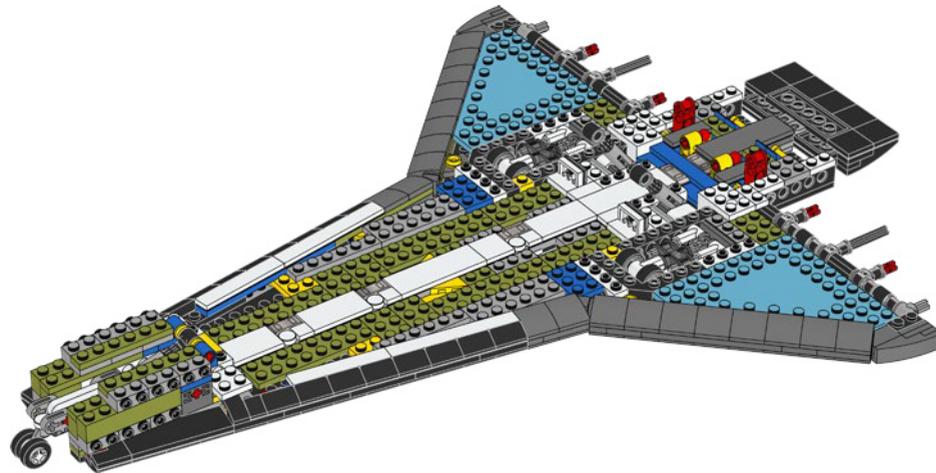
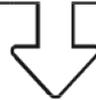


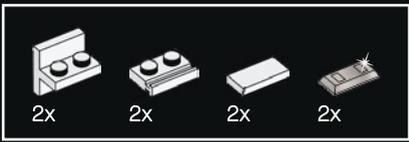
103



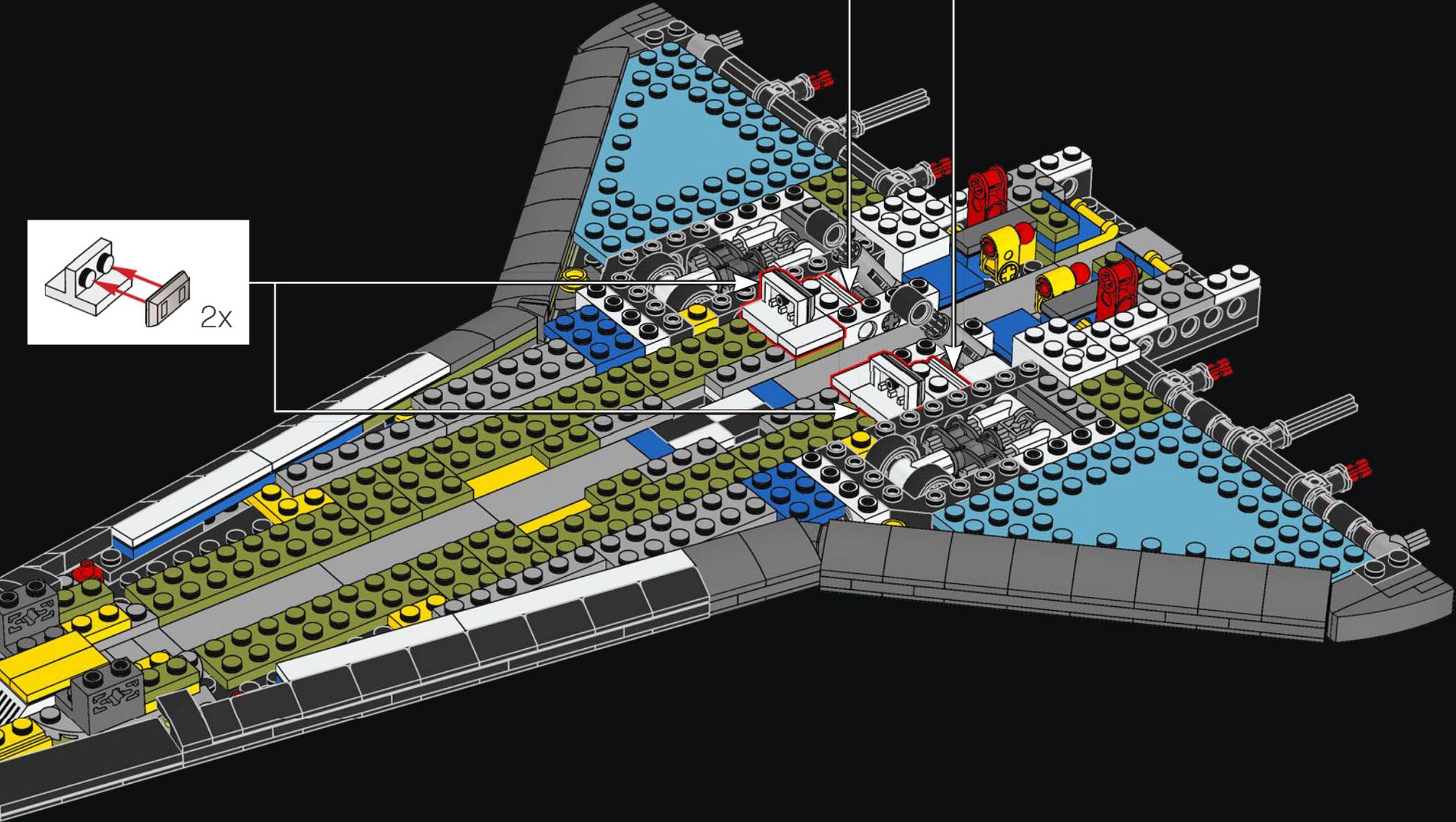
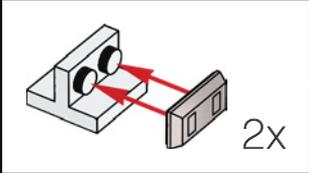
SCHON GEWUSST?

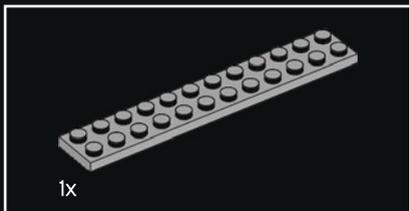
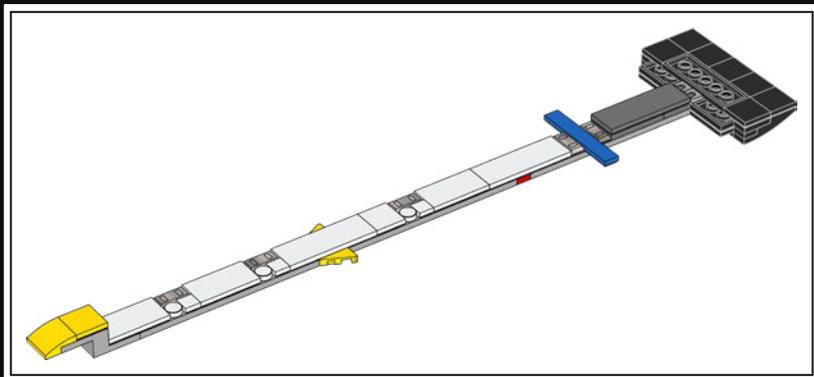
Die Nase und die Vorderkanten der Flügel bekommen die meiste Hitze beim Wiedereintritt ab
 - bis zu 1.600 Grad Celsius!





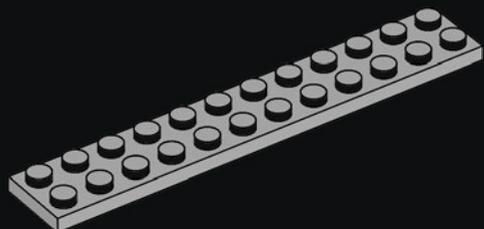
104





1x

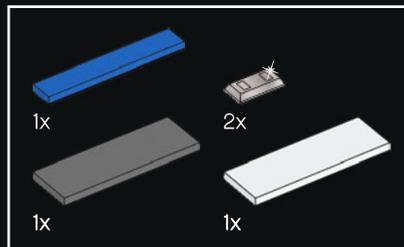
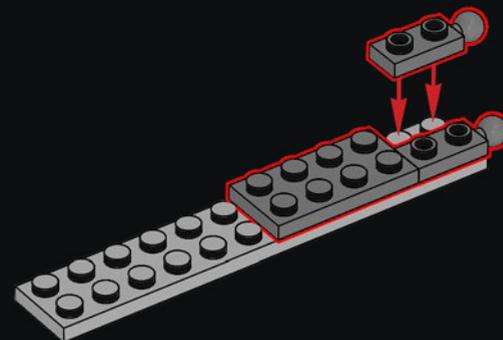
105



1x

2x

106



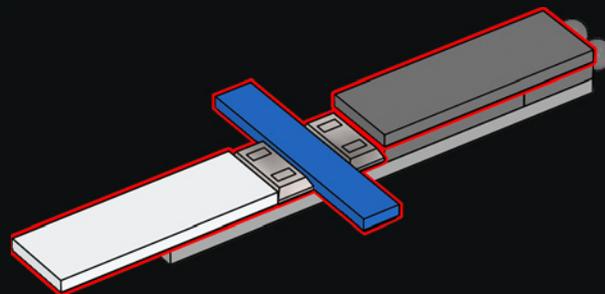
1x

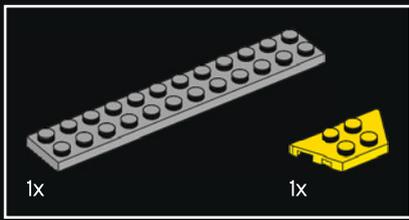
2x

1x

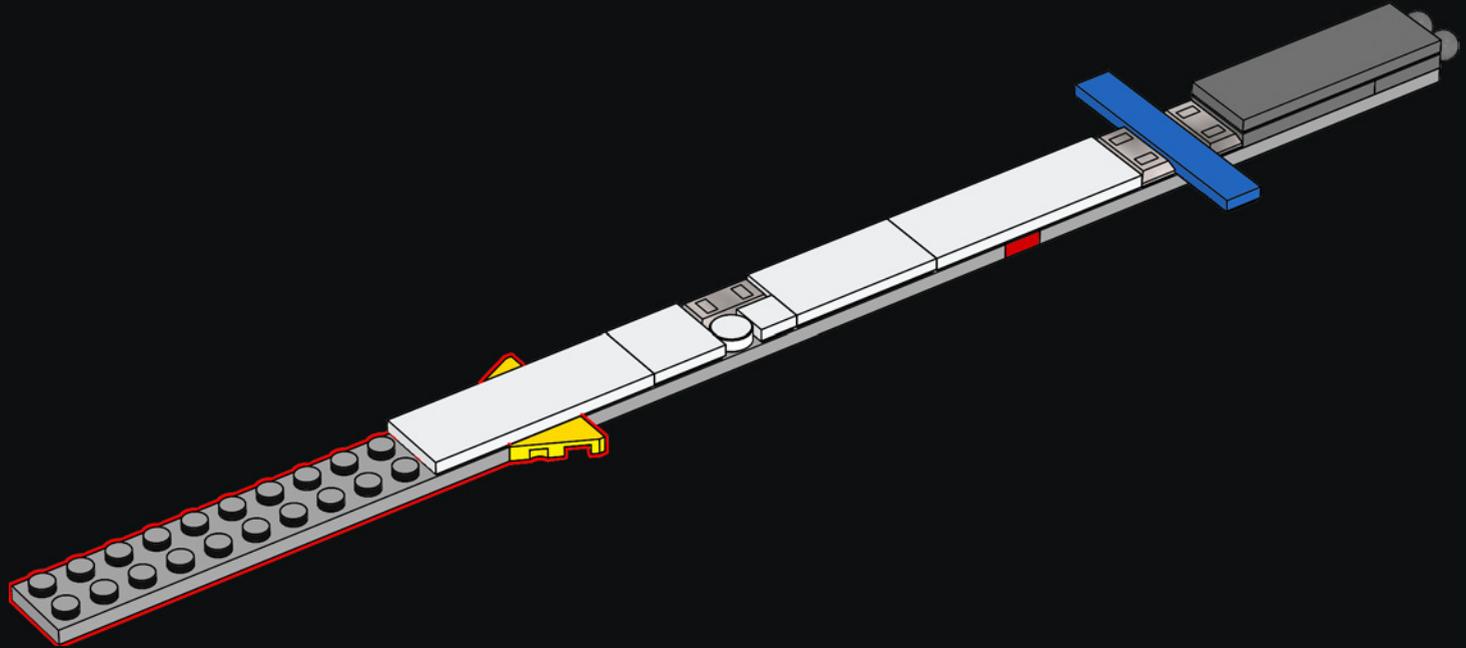
1x

107

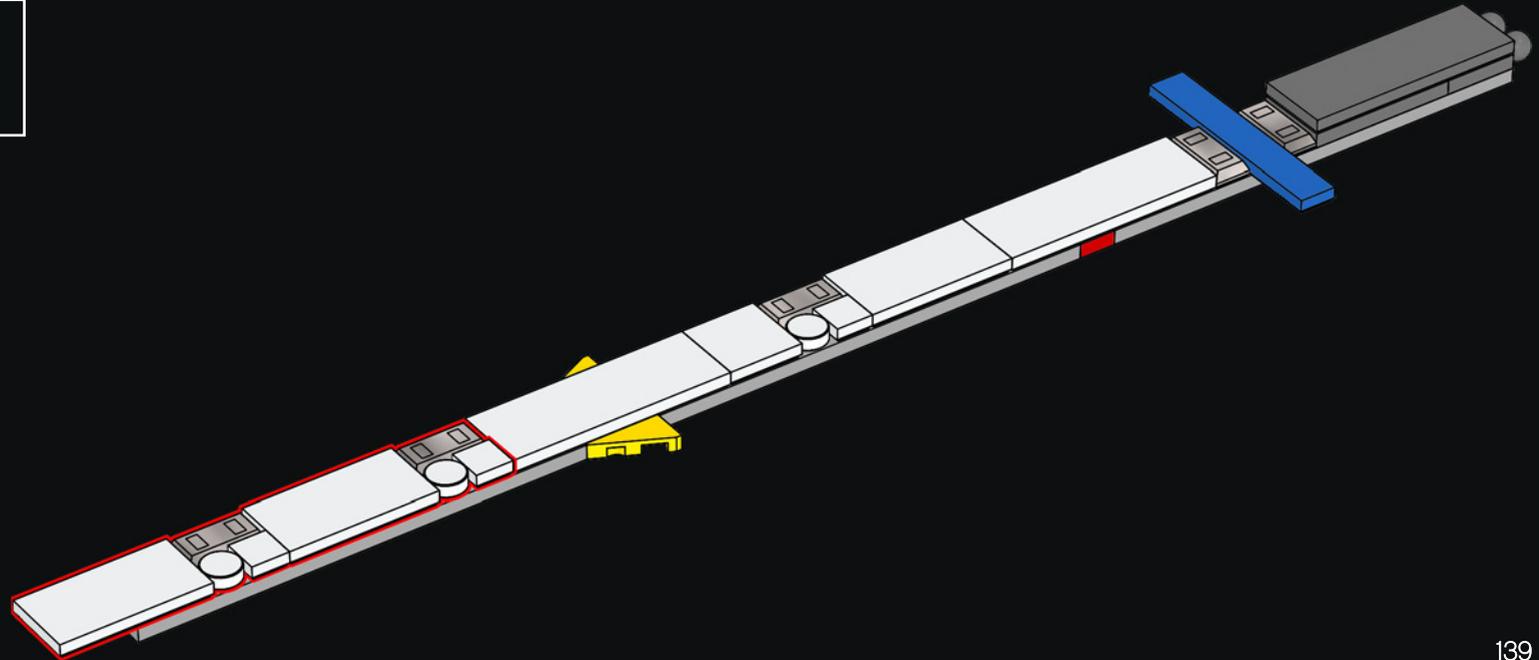


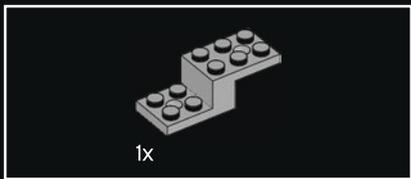


110

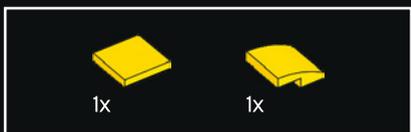
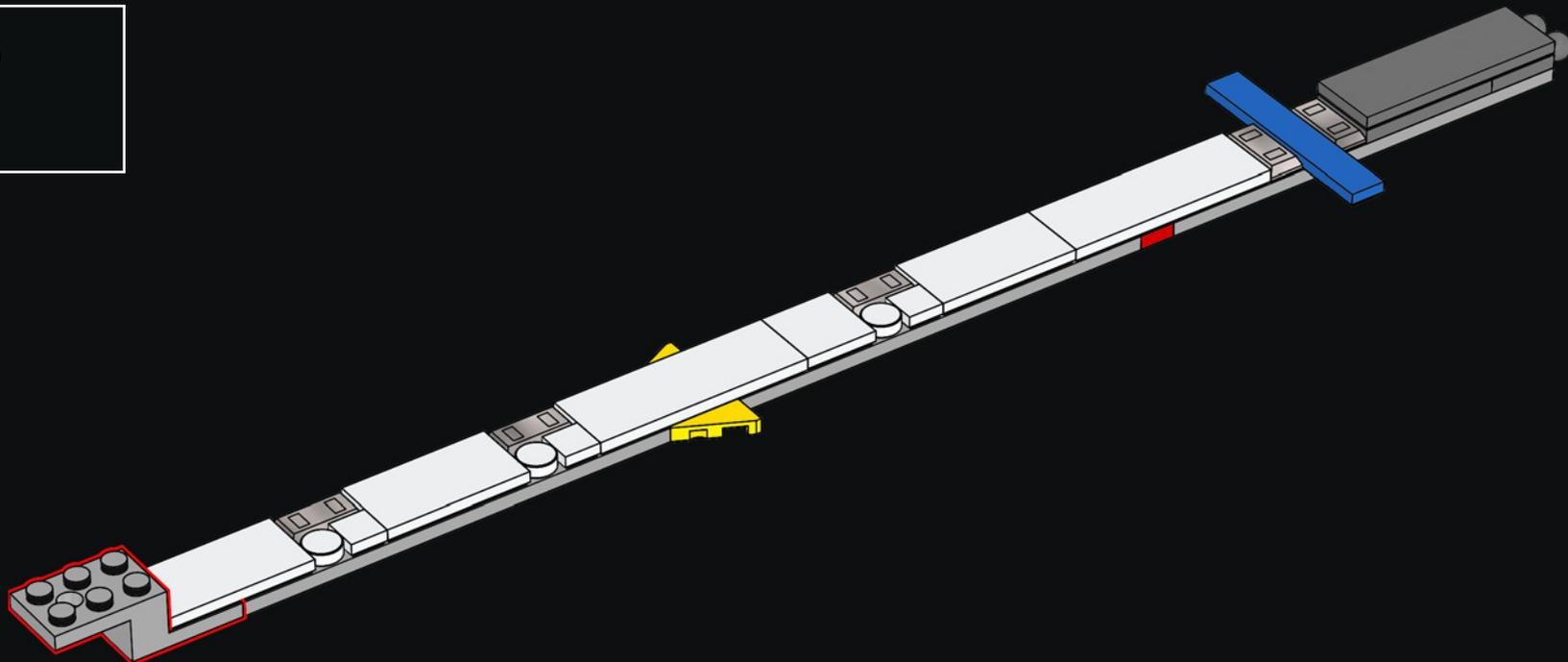


111

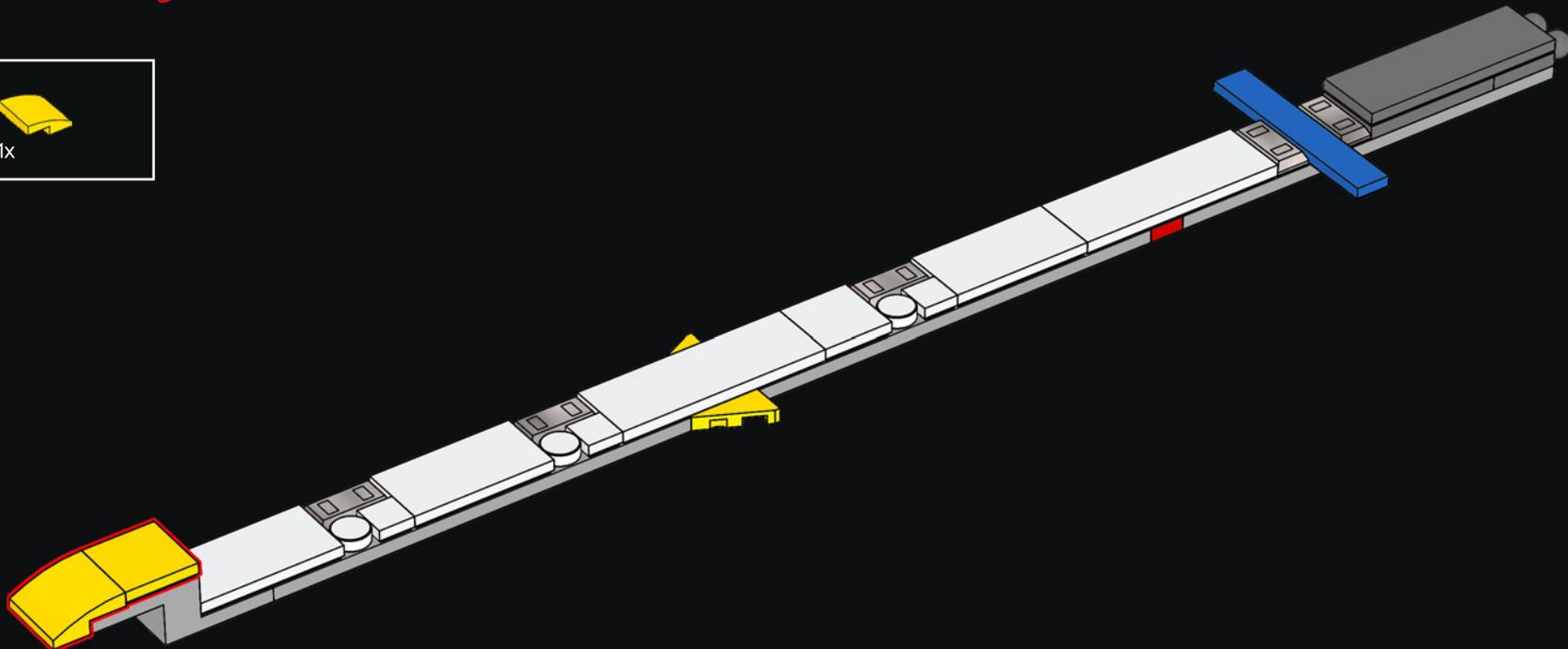


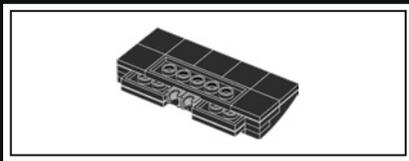


112

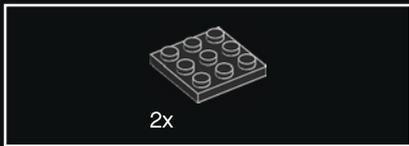


113

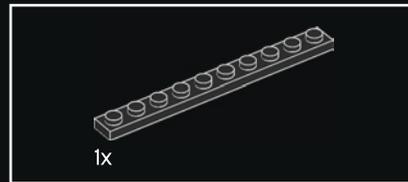
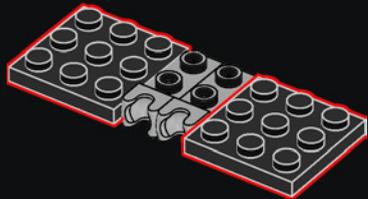




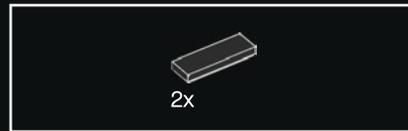
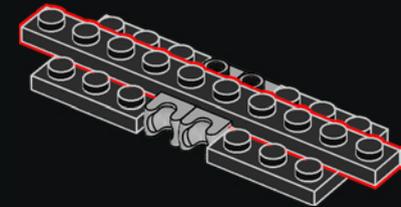
114



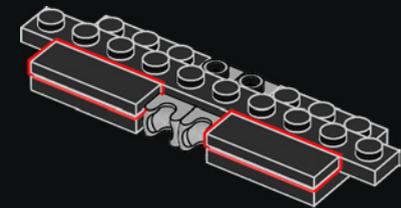
115

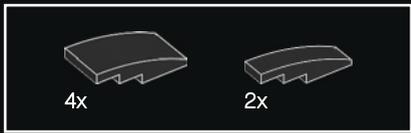


116

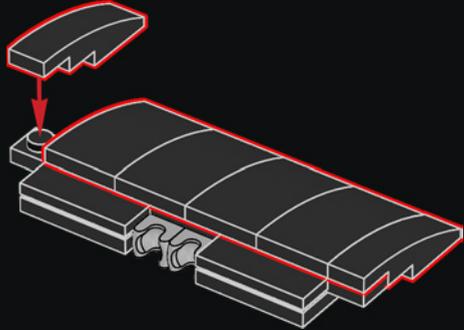


117

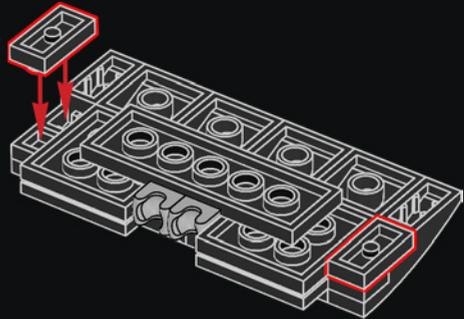




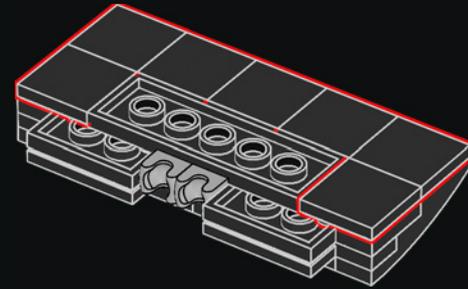
118



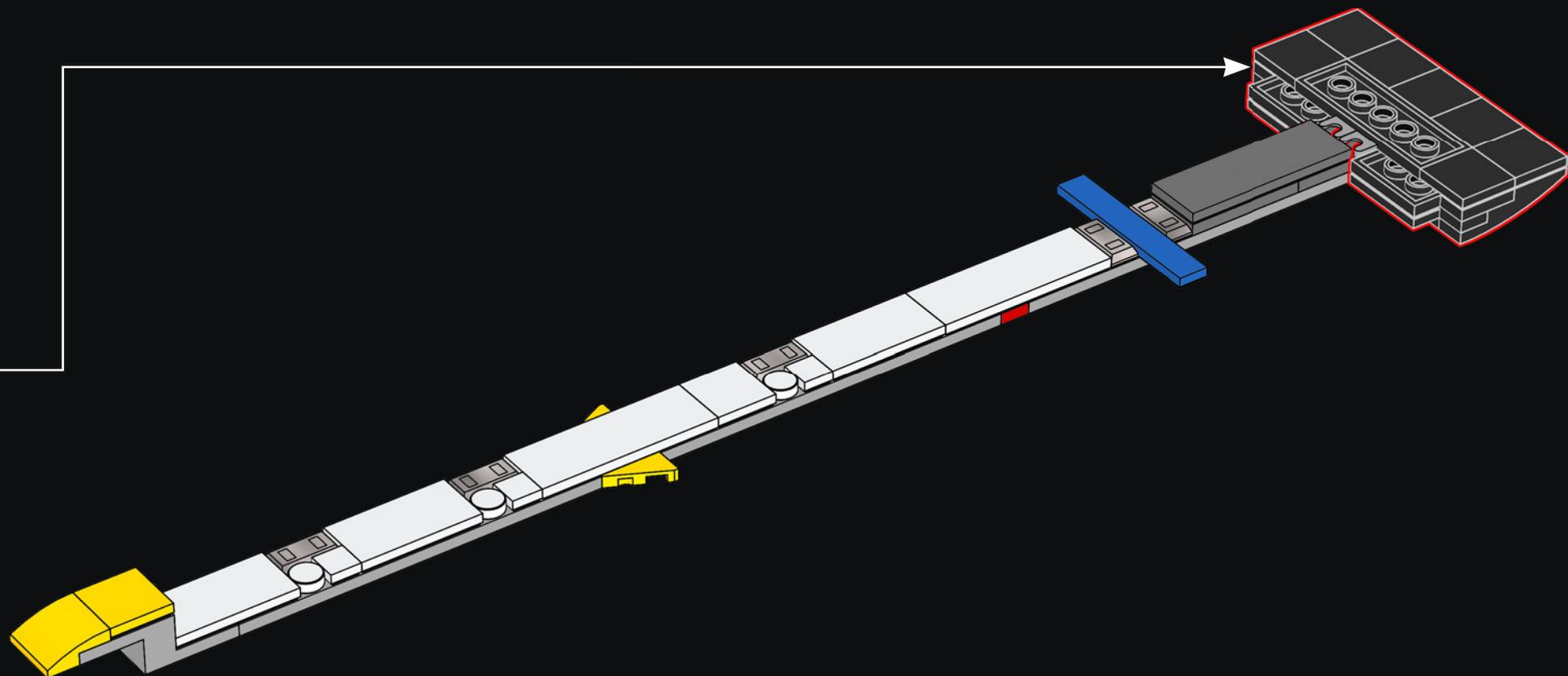
119



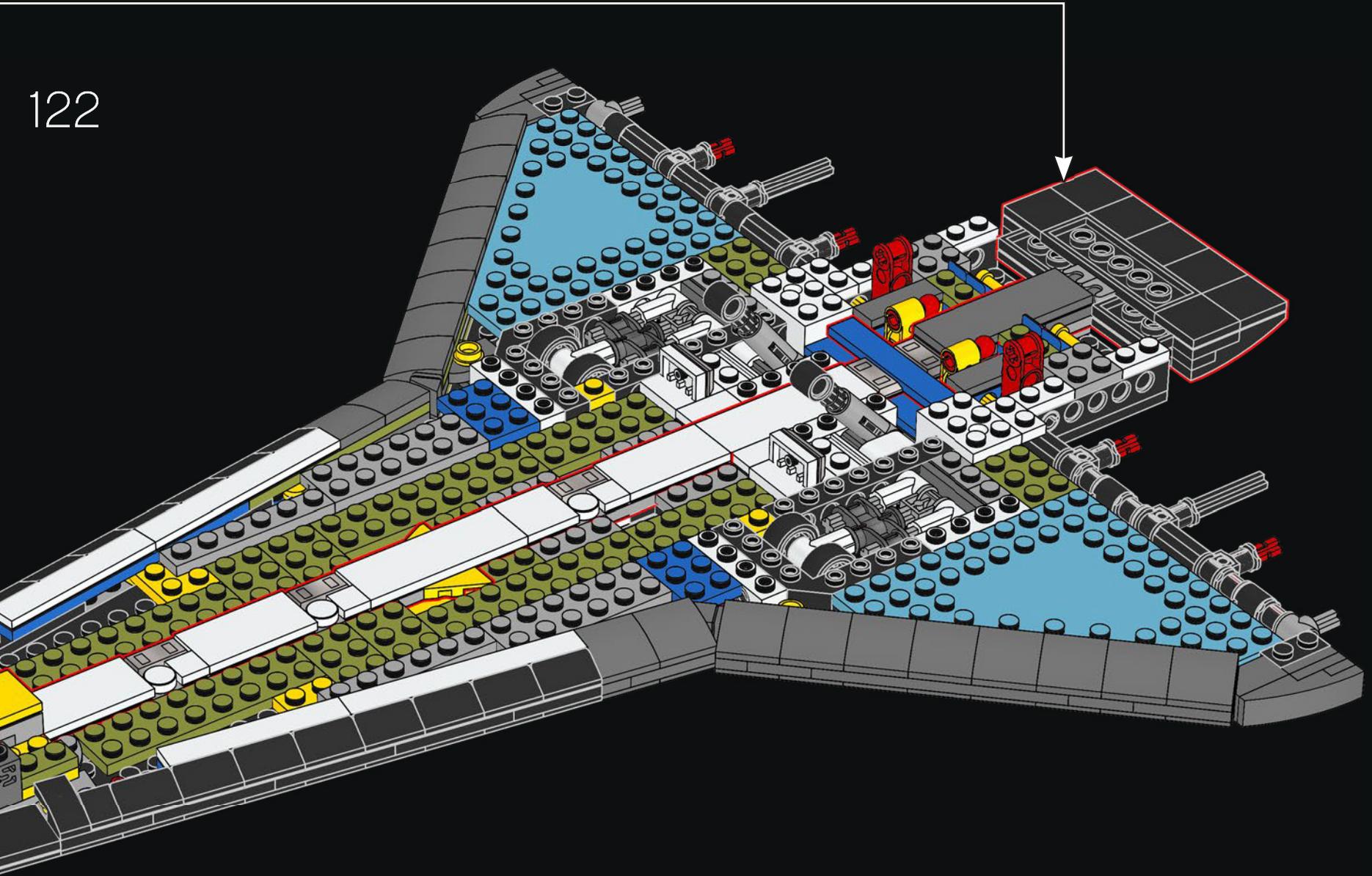
120



121

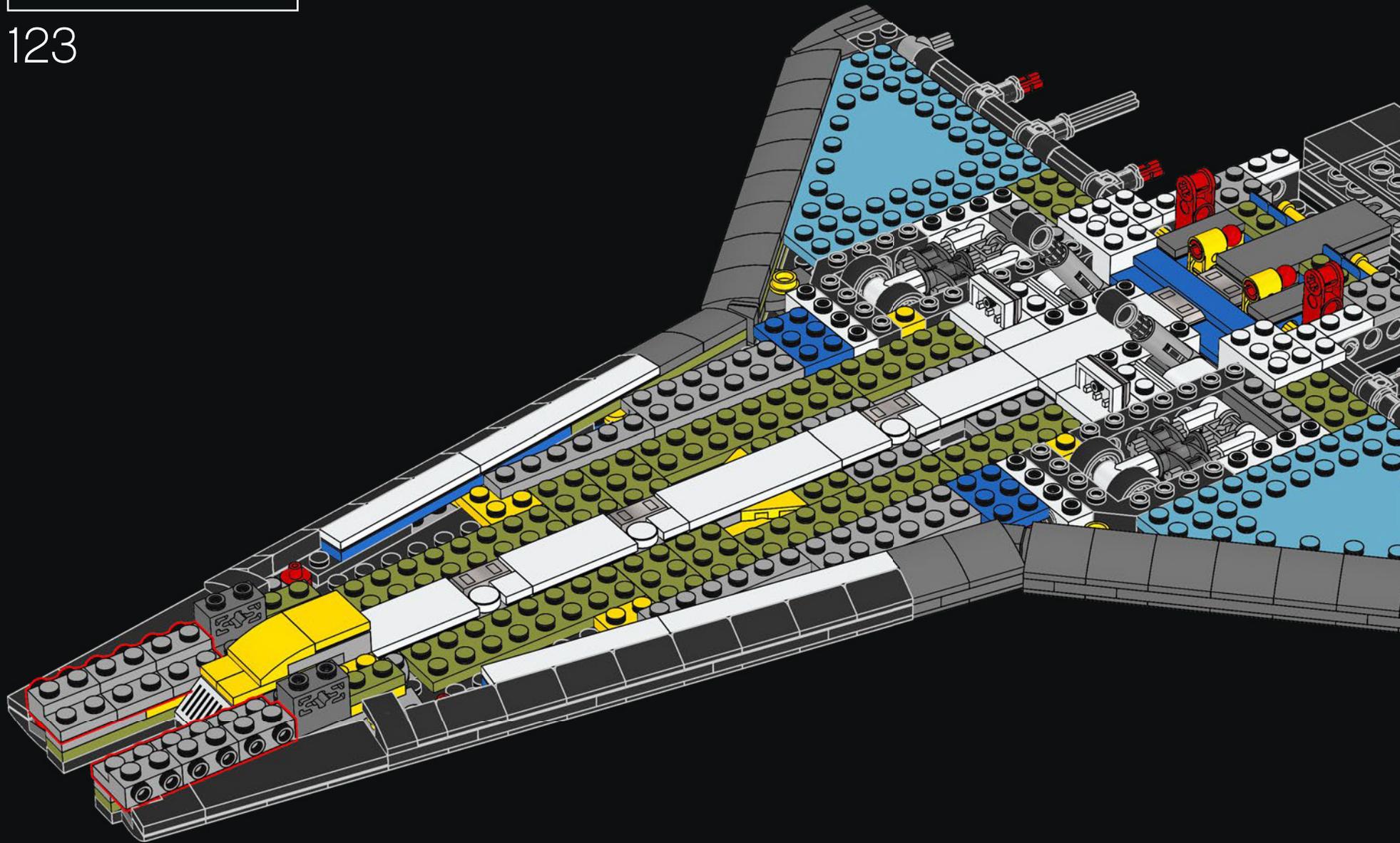


122





123





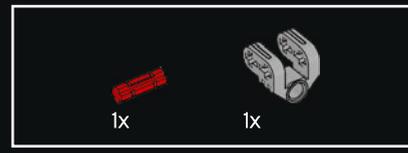
124



125



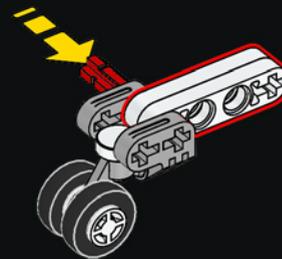
126

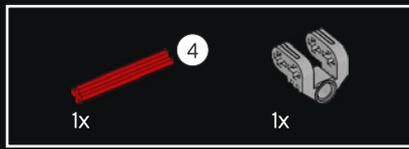


127

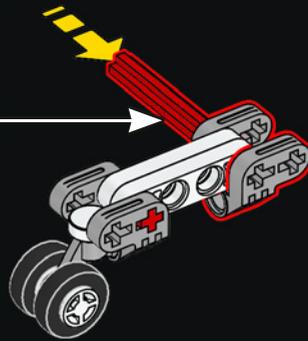
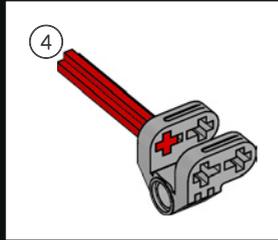


128

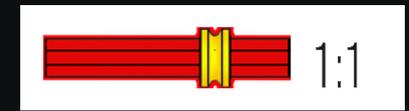
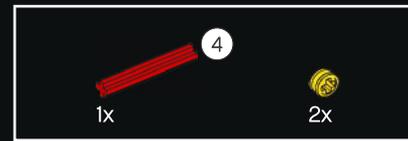
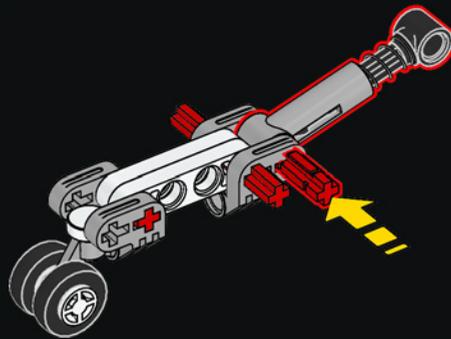




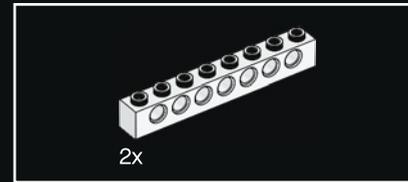
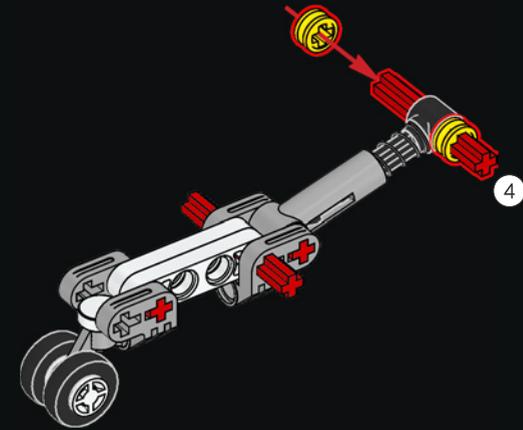
129



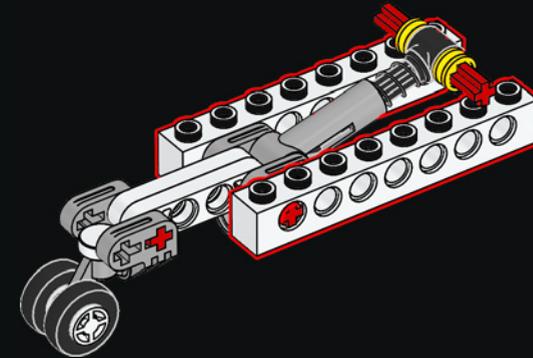
130



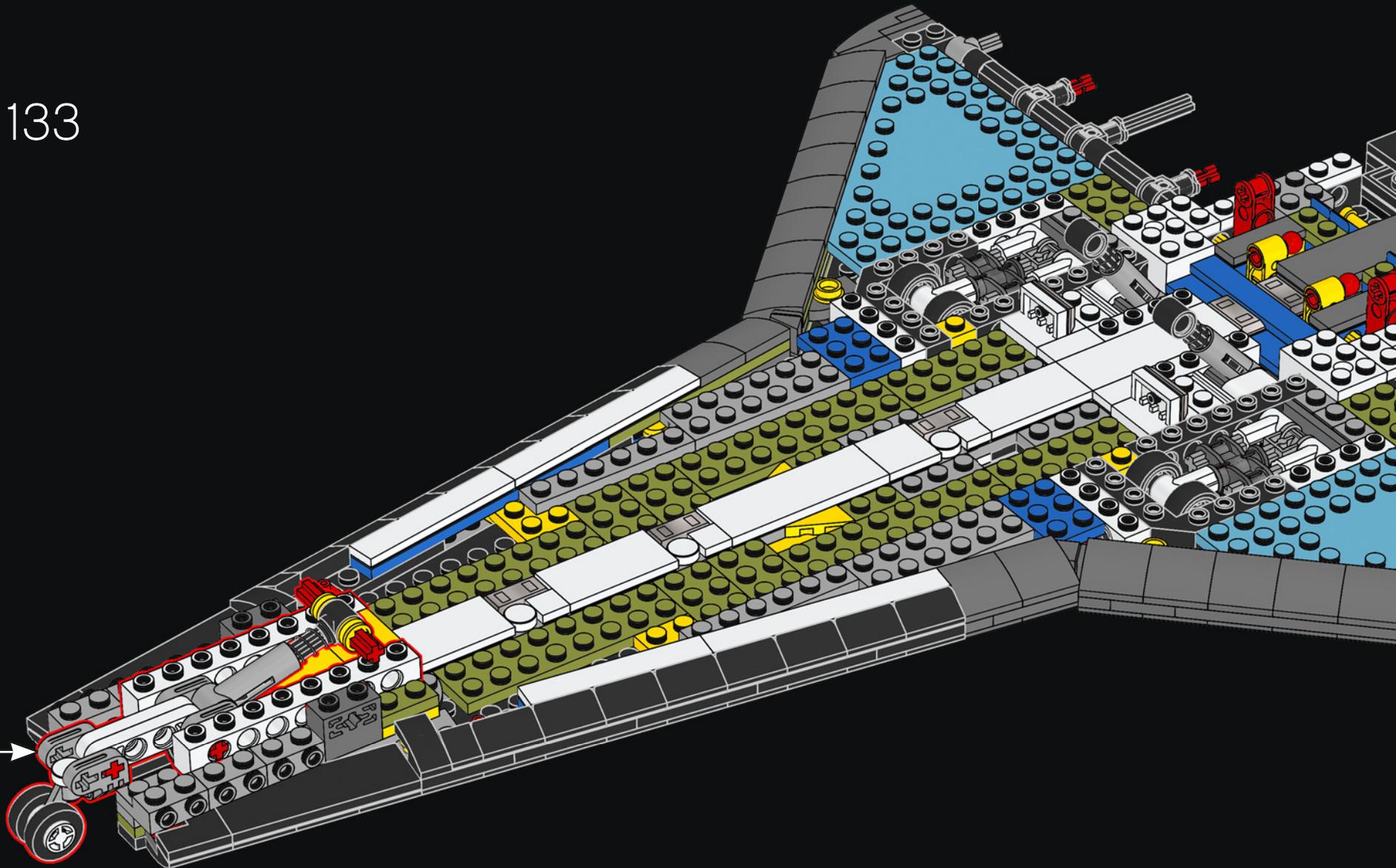
131



132

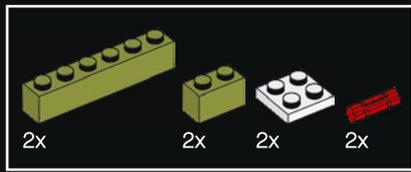


133

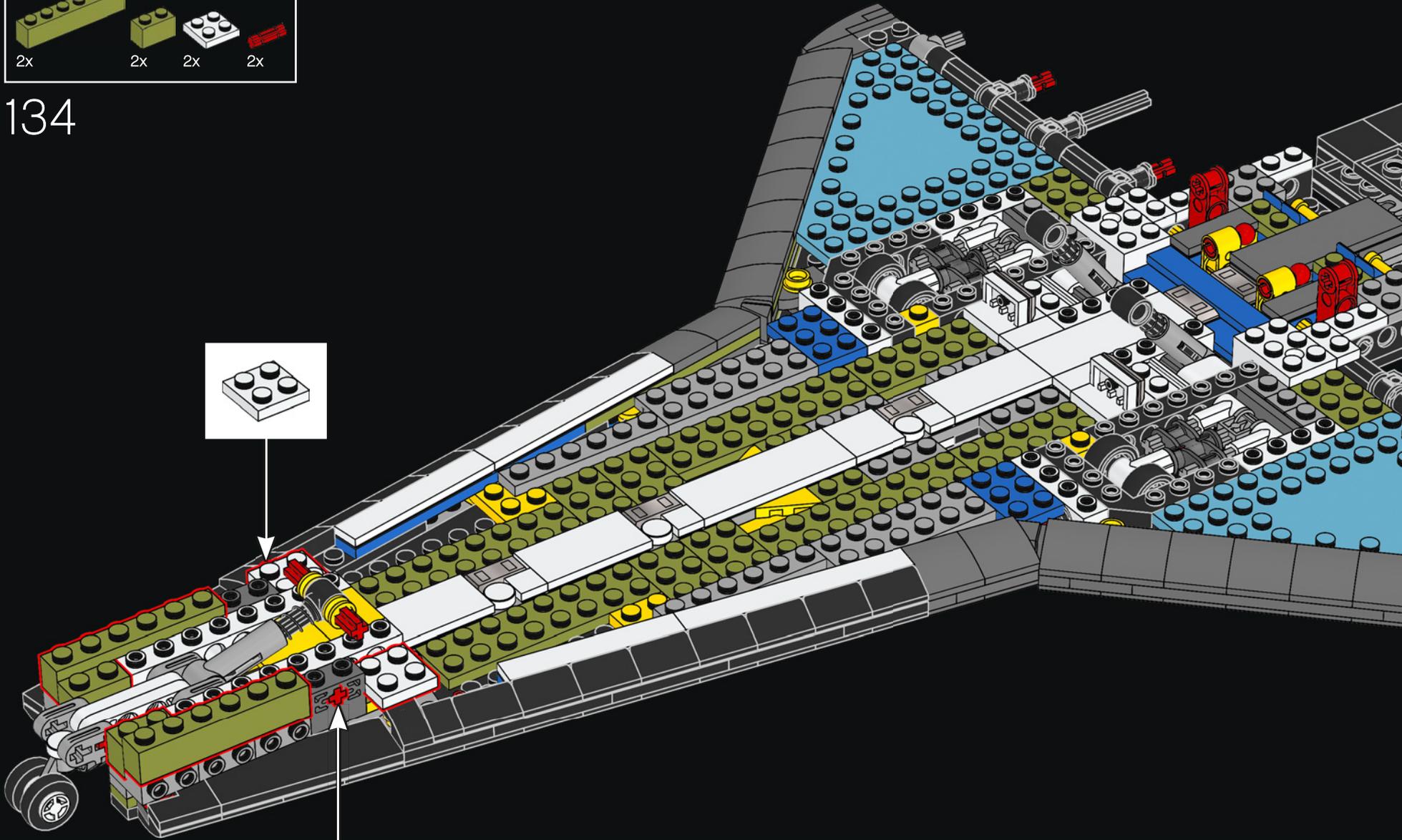


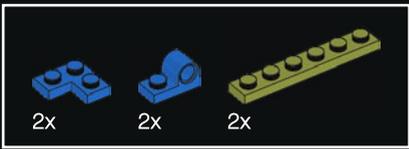
SCHON GEWUSST?

Als „Segelflugzeug“ hatte das Spaceshuttle nur einen einzigen Landeversuch. War das Fahrwerk ausgefahren, ließ es sich nicht mehr einziehen.

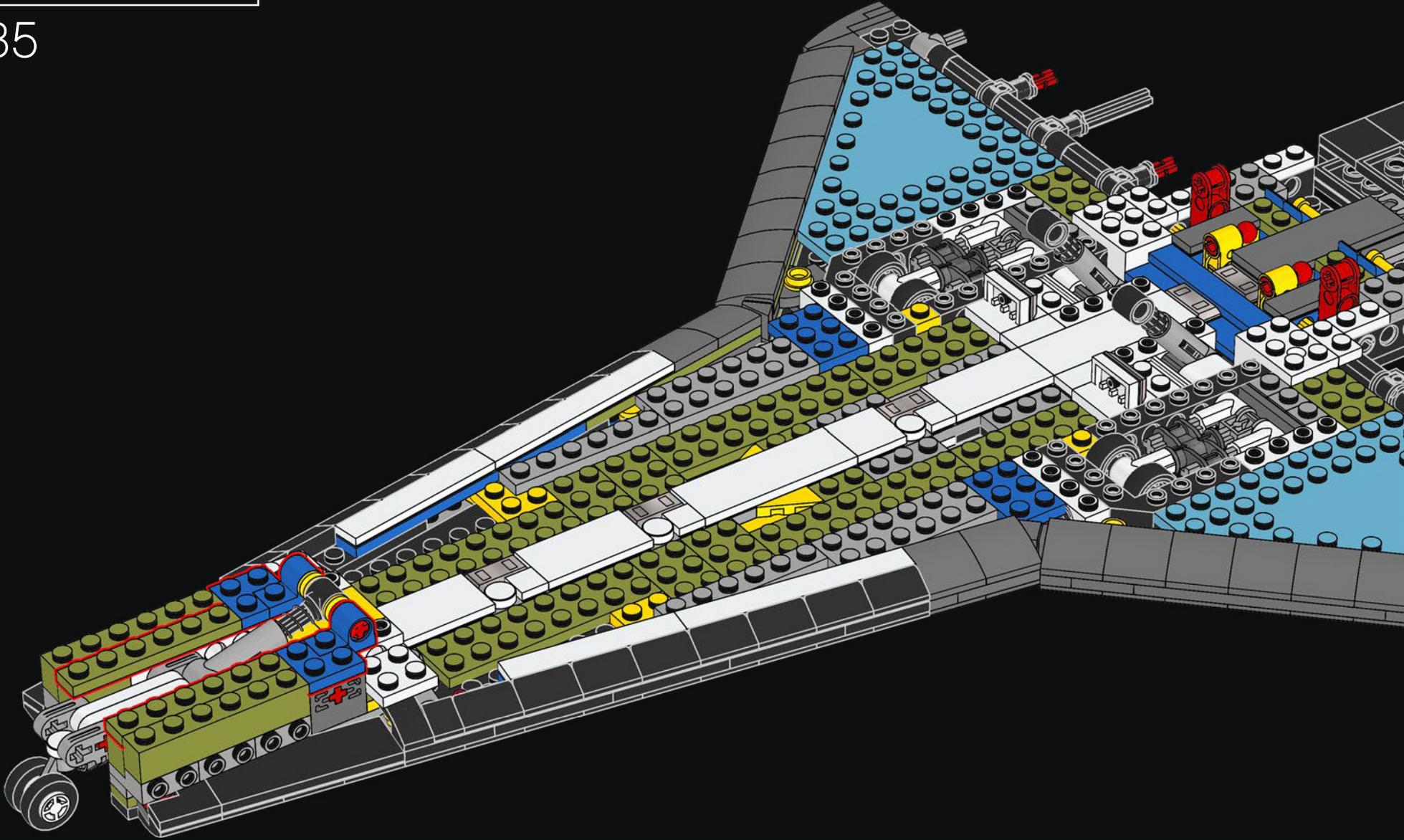


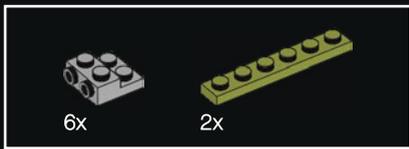
134



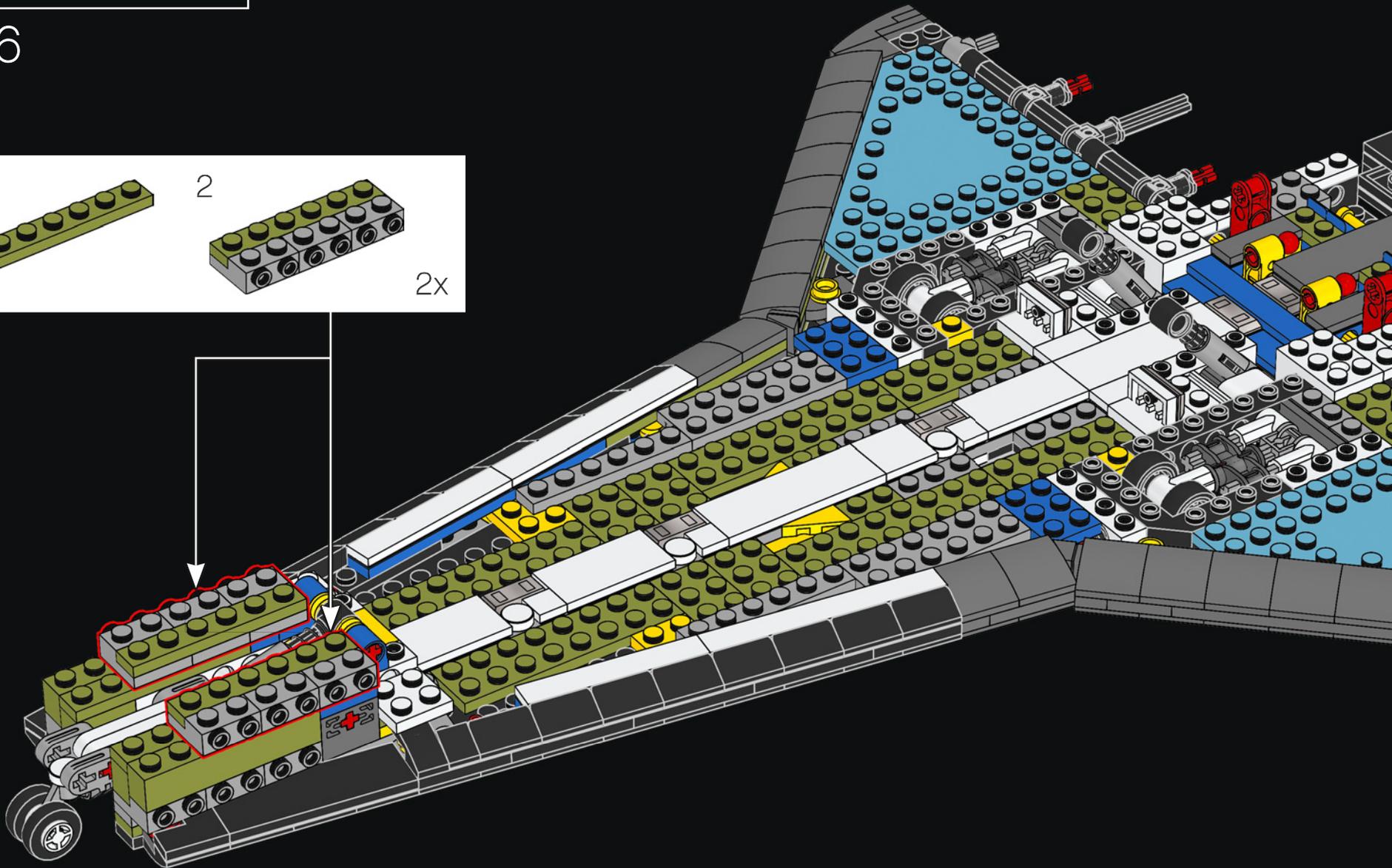
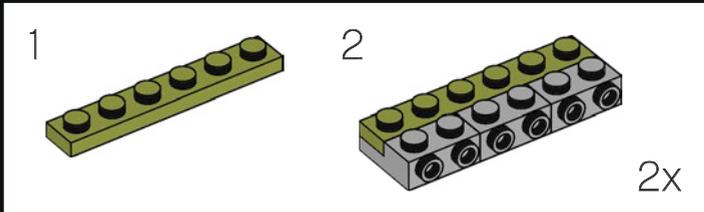


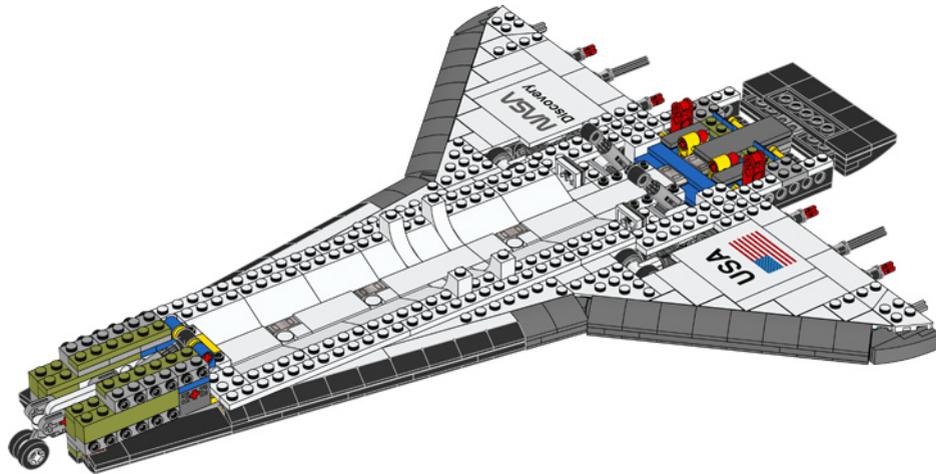
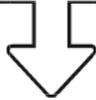
135

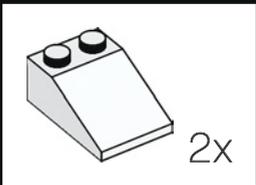
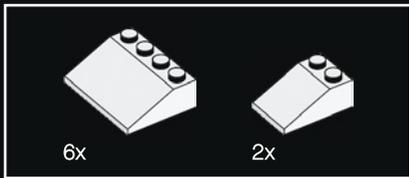




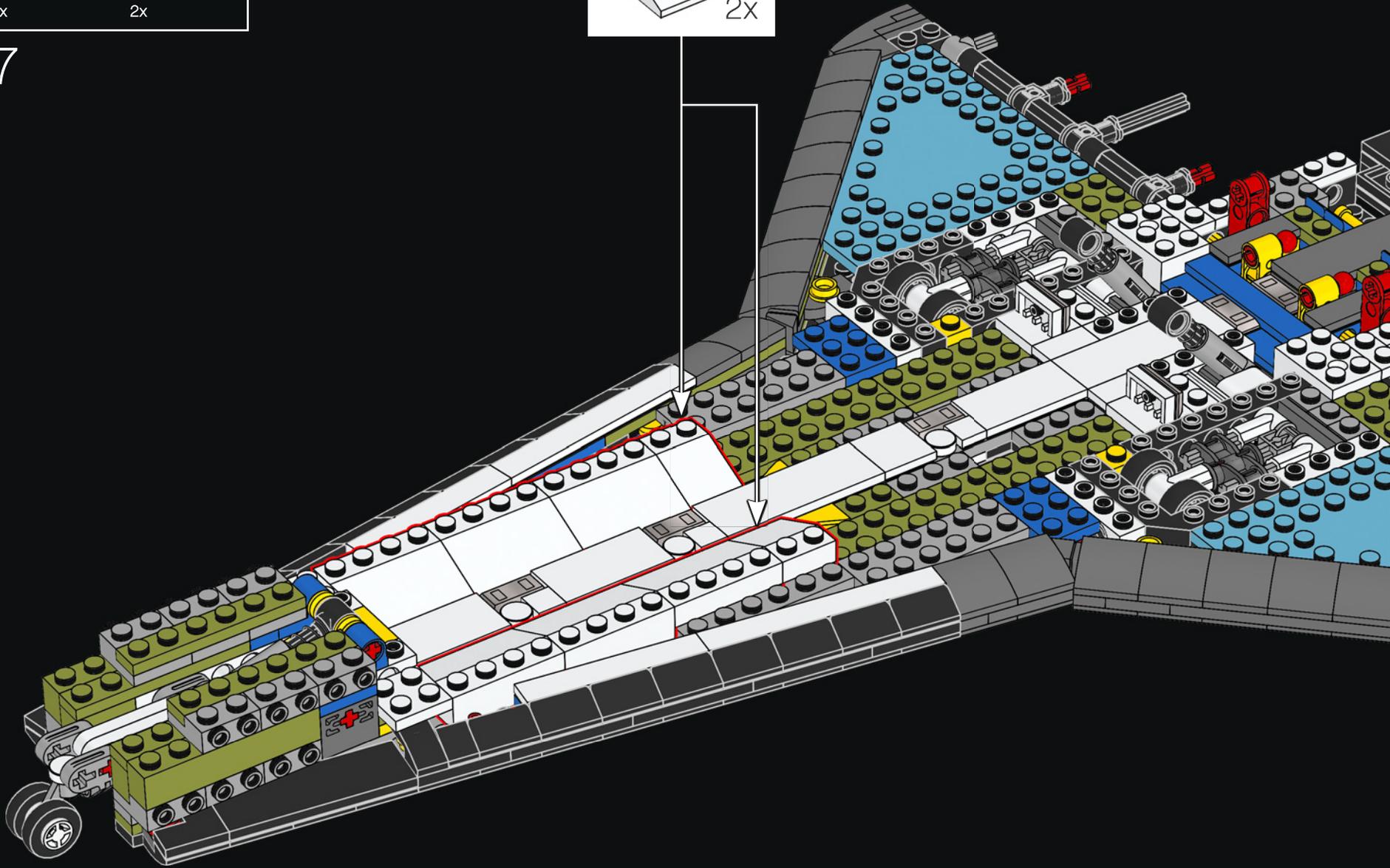
136

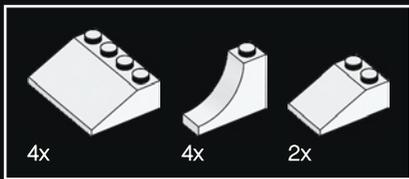




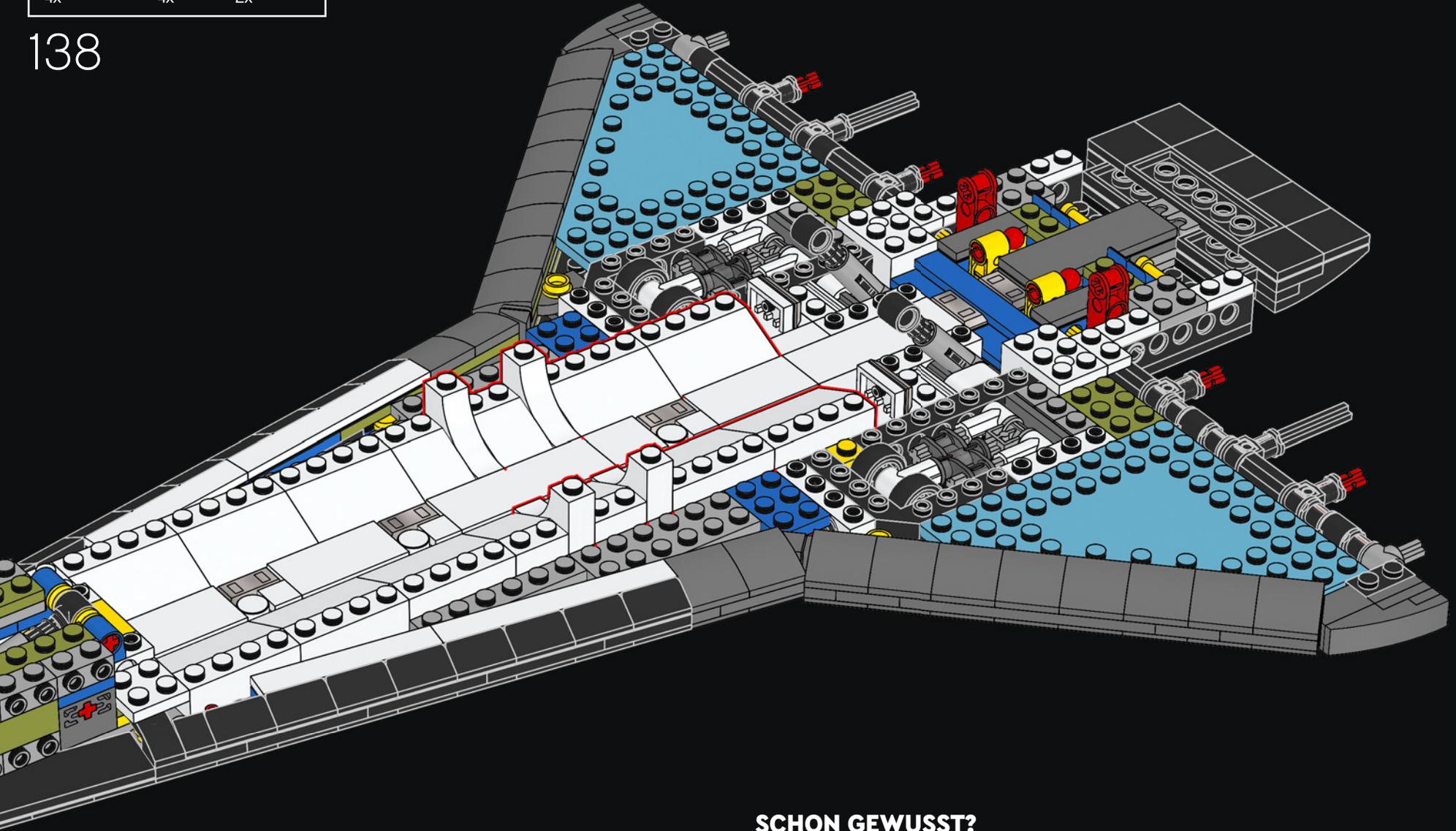


137



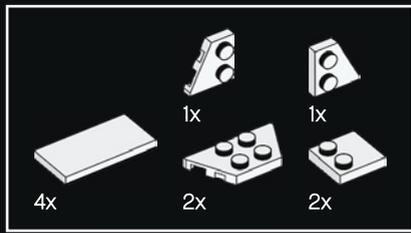


138

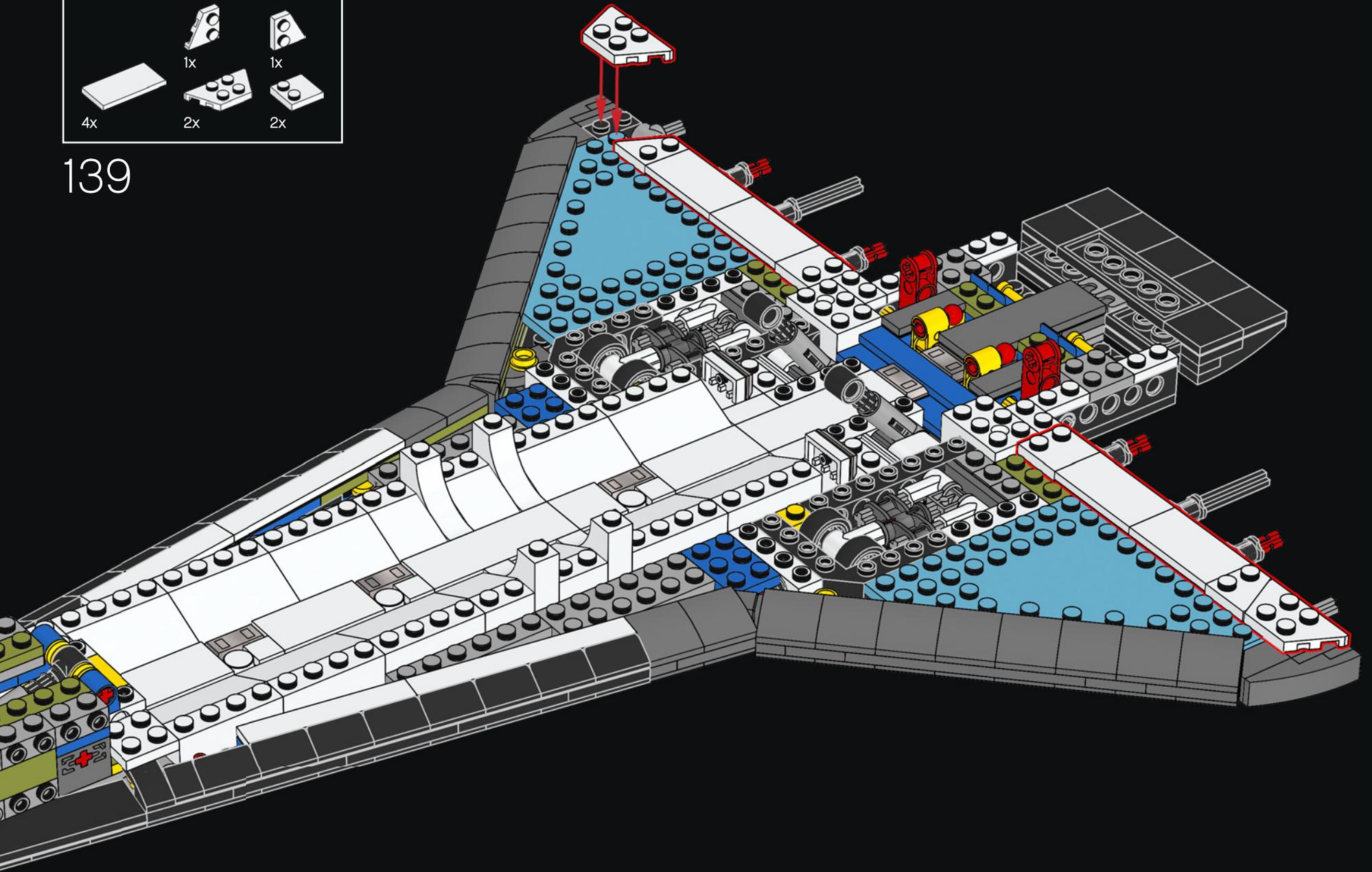


SCHON GEWUSST?

Wenn der Orbiter mit Mach 25 in die Atmosphäre eintritt, ist seine Geschwindigkeit so hoch, dass er die Umgebungsluft überhitzt und im Schein des glühenden Plasmas zur Erde zurückkehrt.

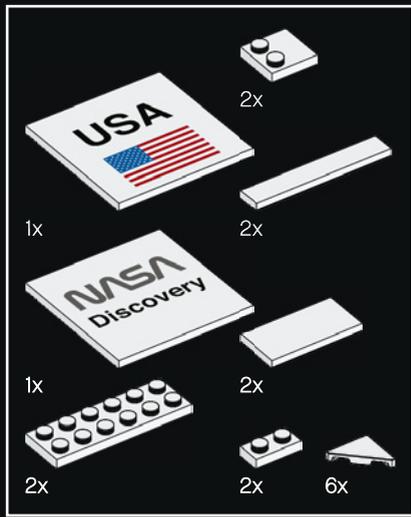


139

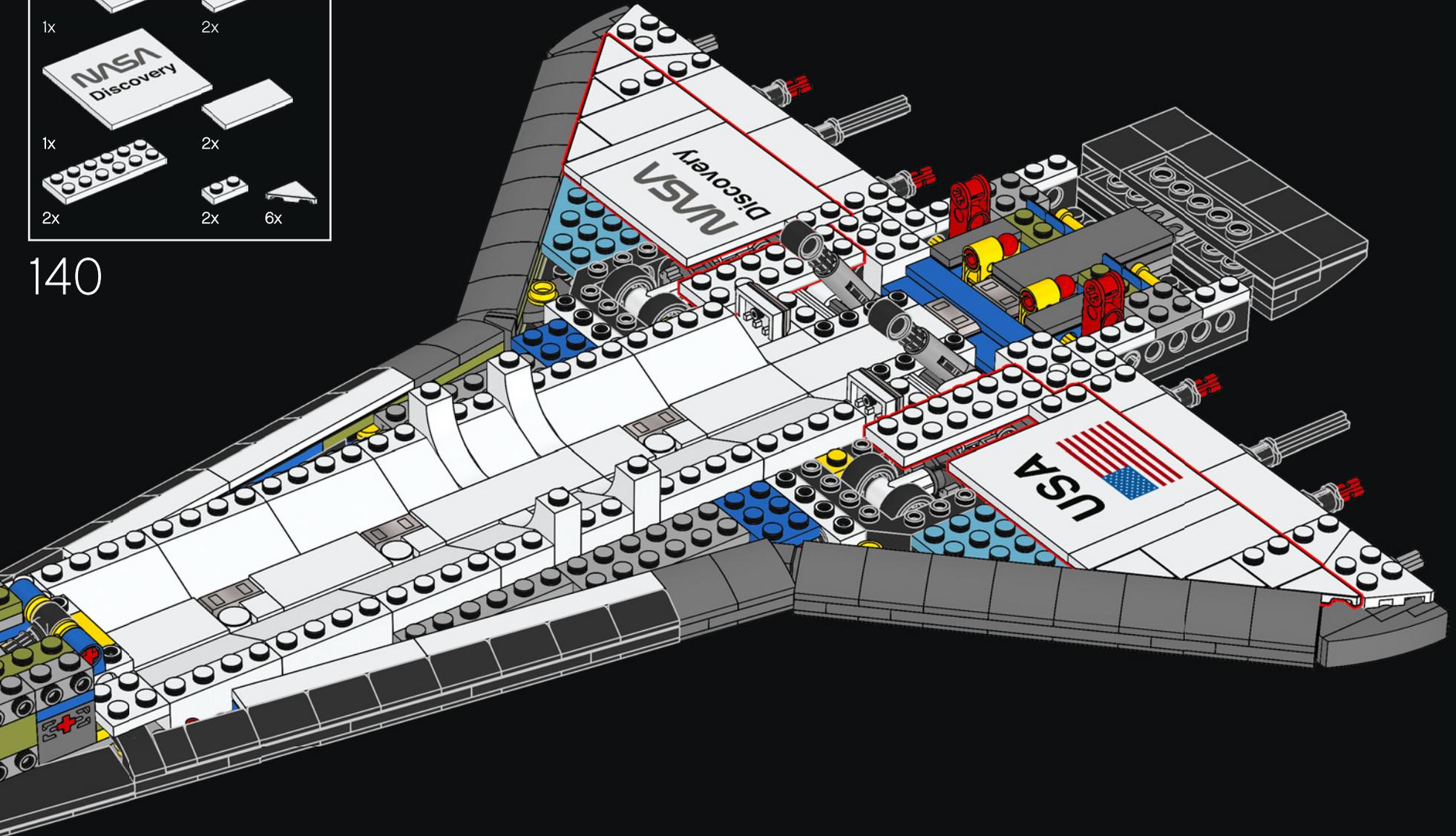


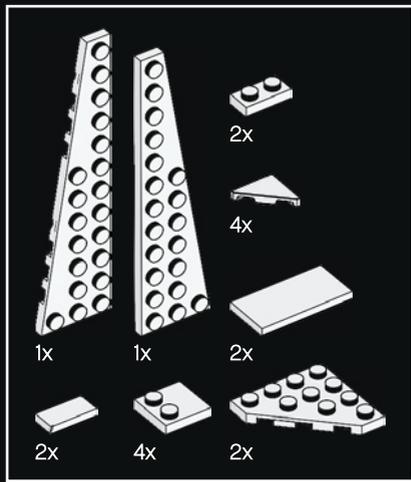
SCHON GEWUSST?

Das Spaceshuttle „Discovery“ ist mit ungefähr 23.000 Hitzeschutzkacheln aus Keramik verkleidet, die den Orbiter vor der gewaltigen Hitze beim Wiedereintritt in die Erdatmosphäre schützen sollen.

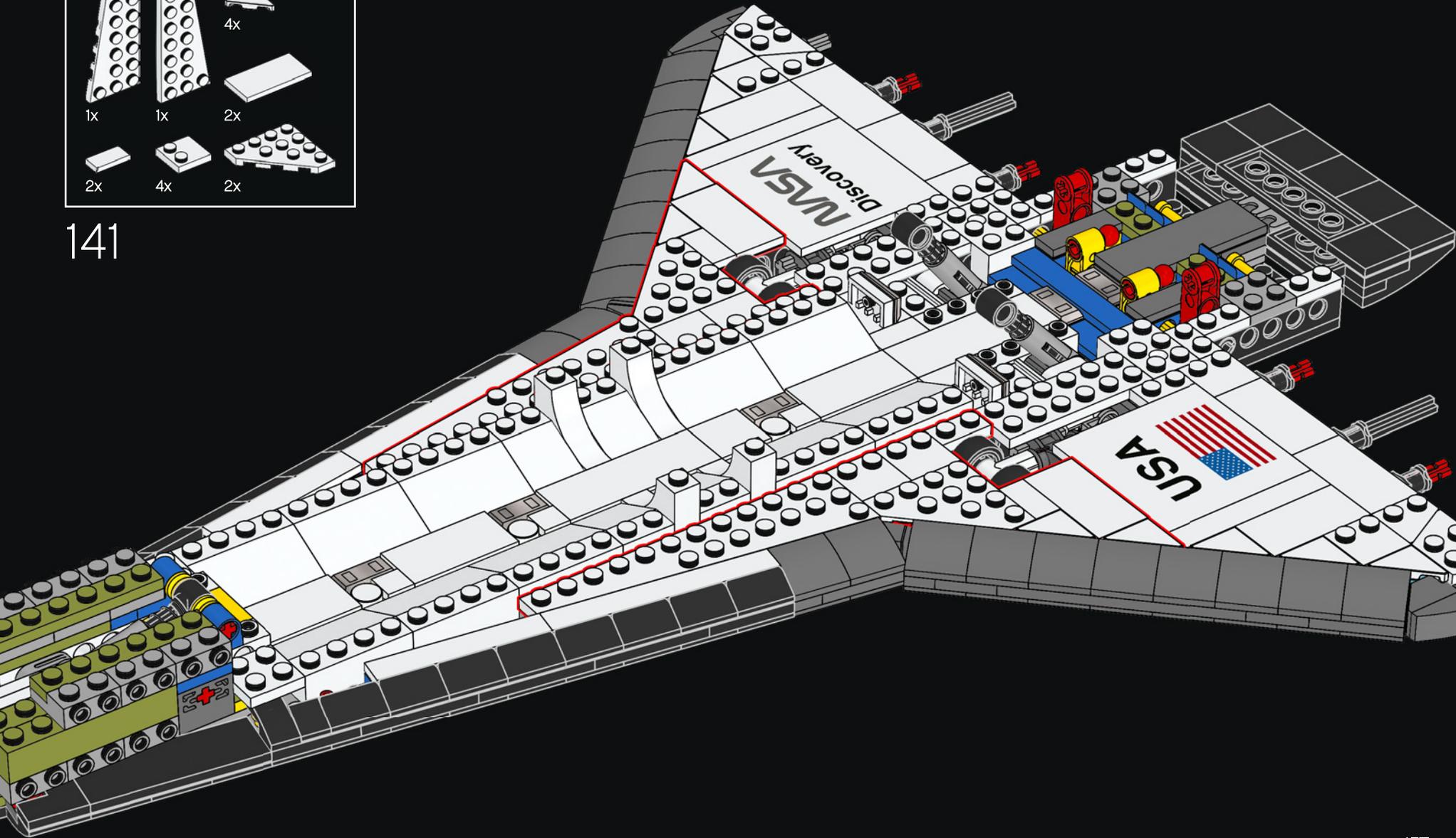


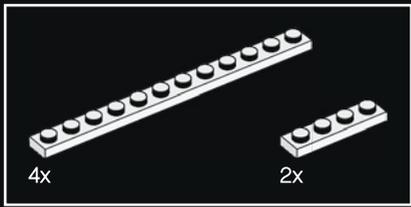
140



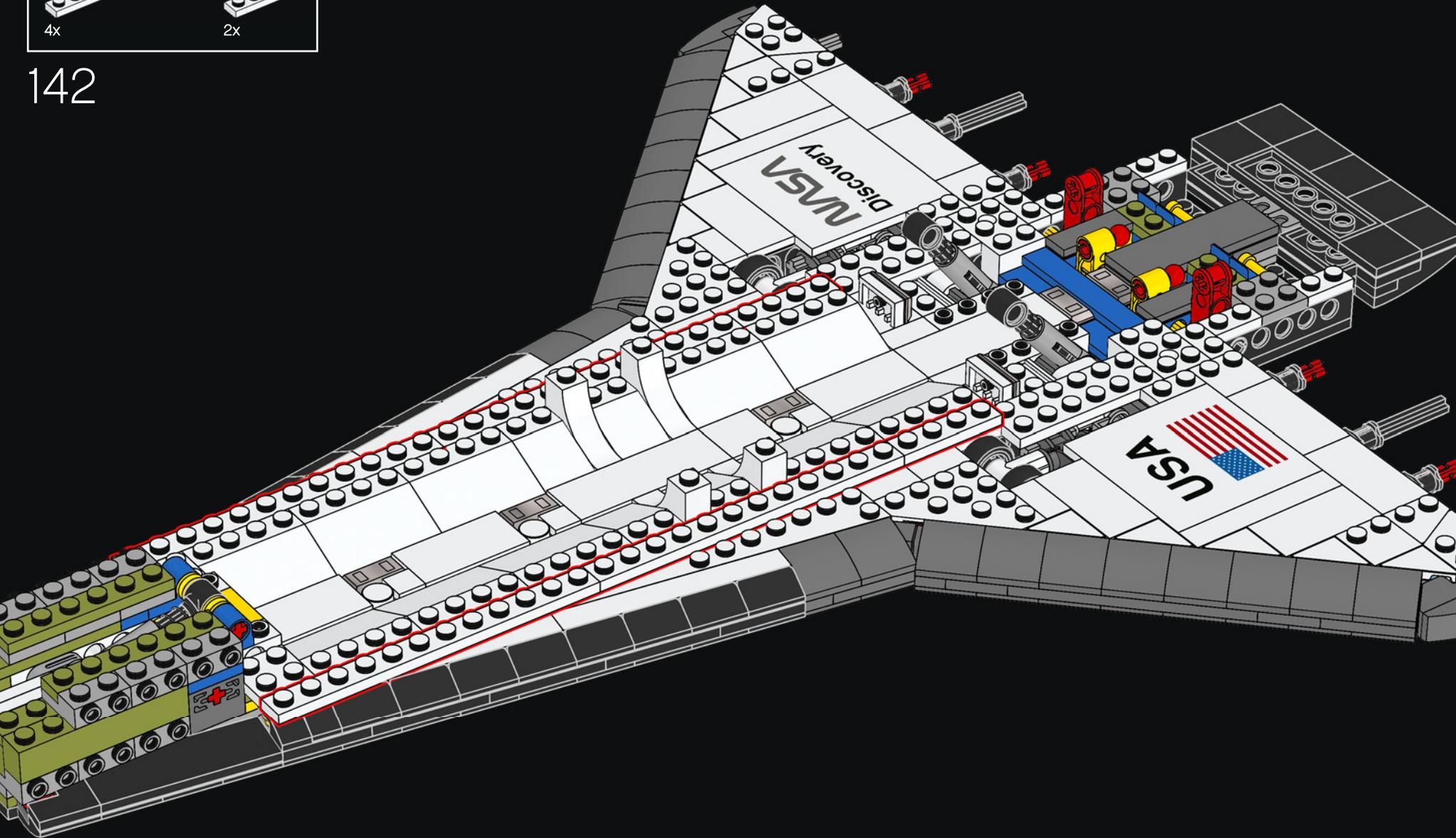


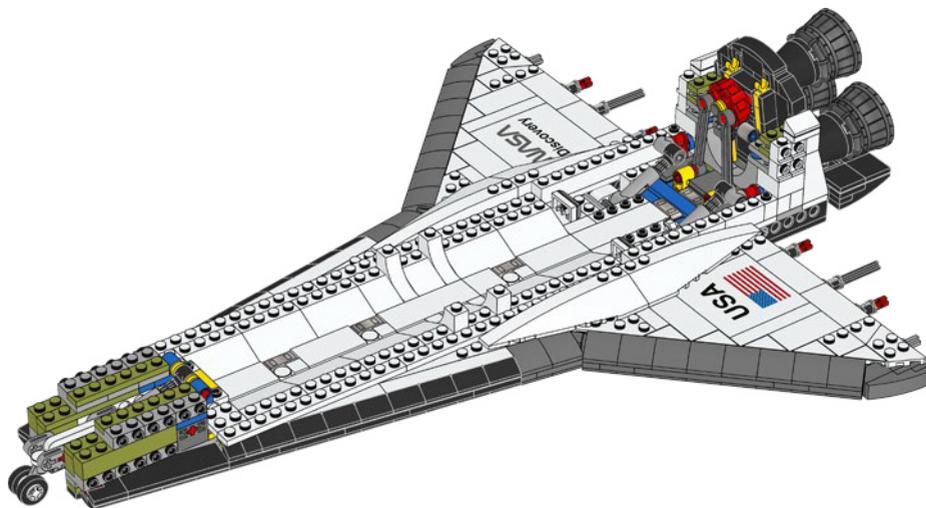
141





142

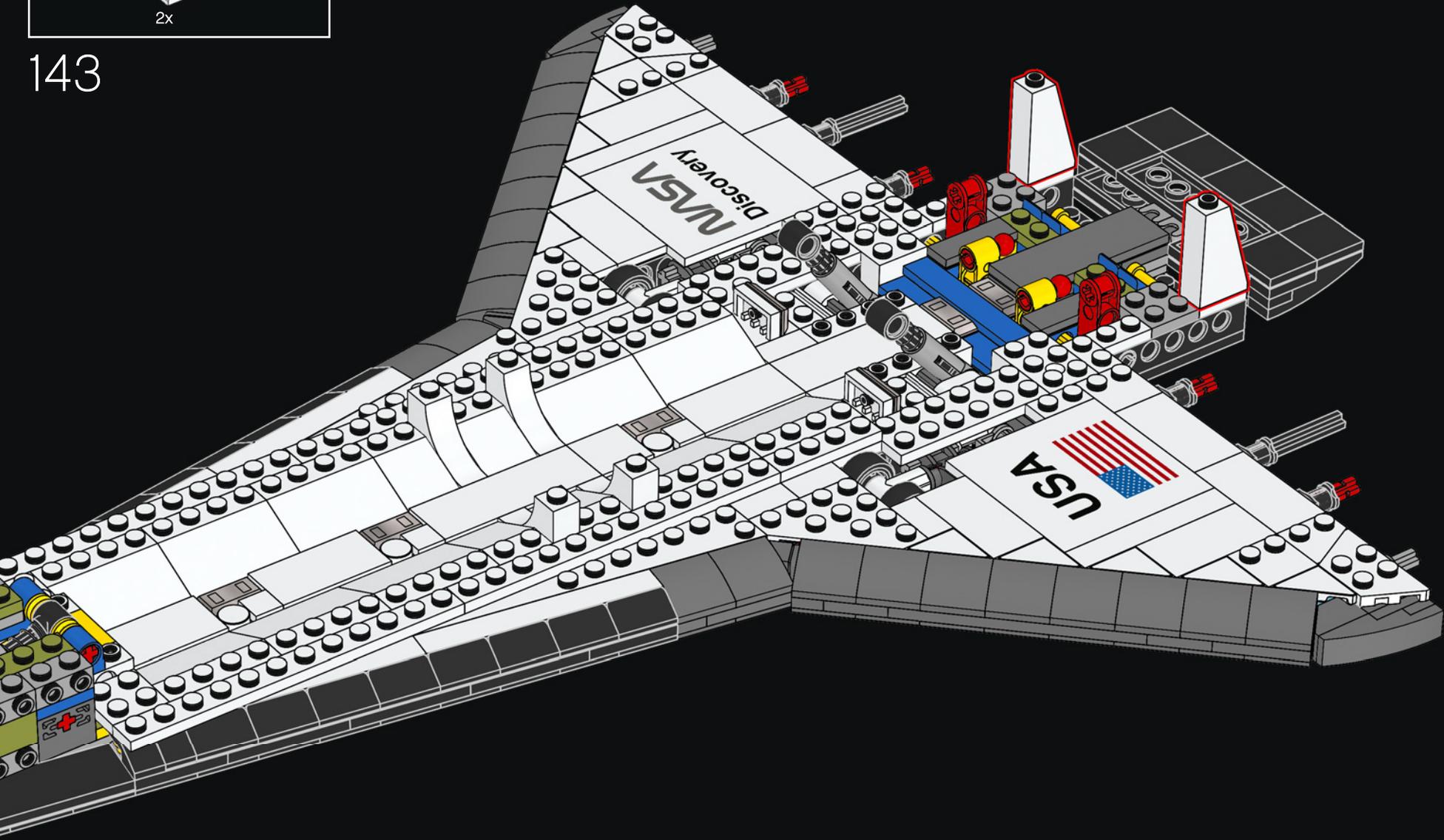






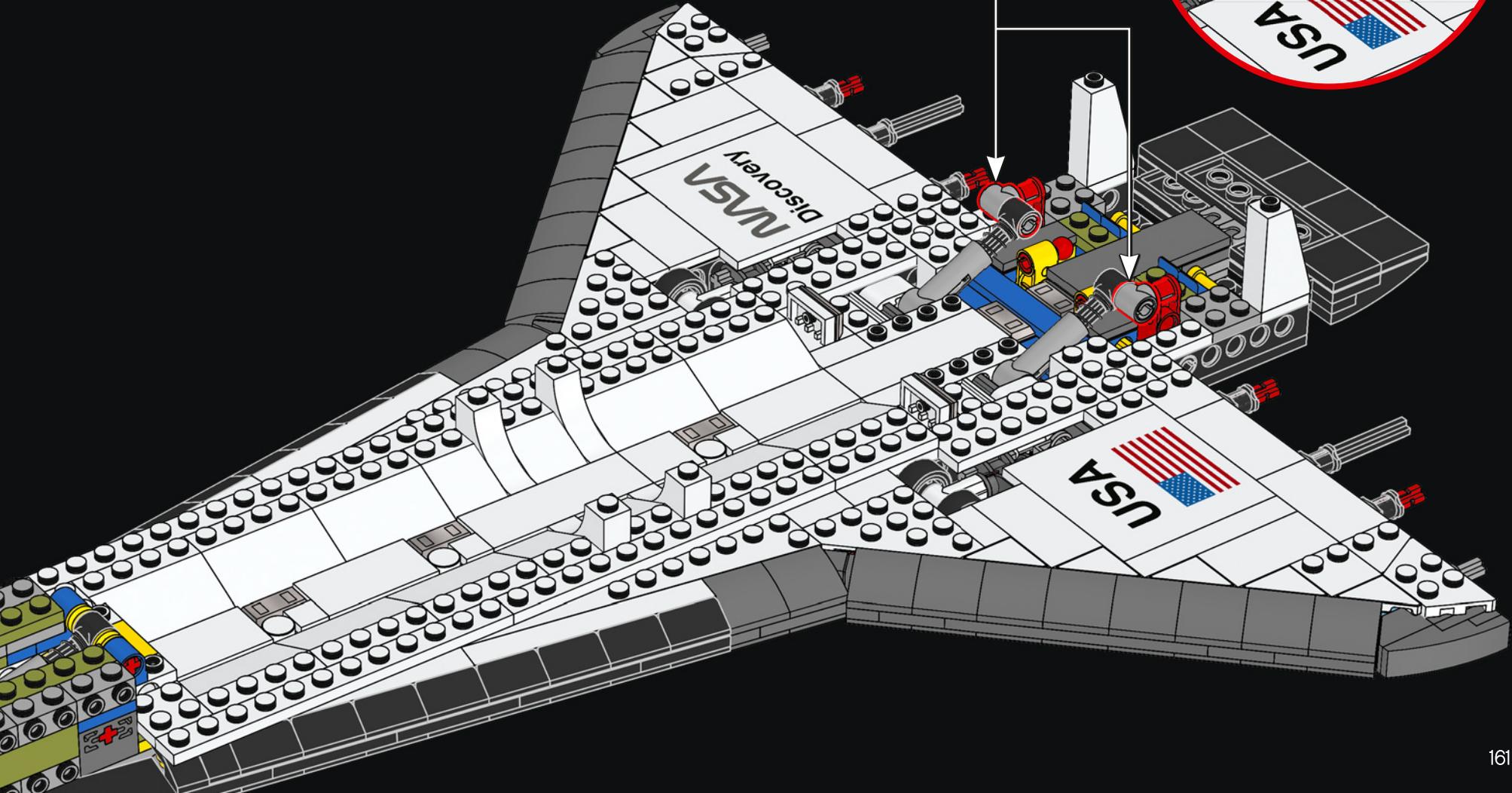
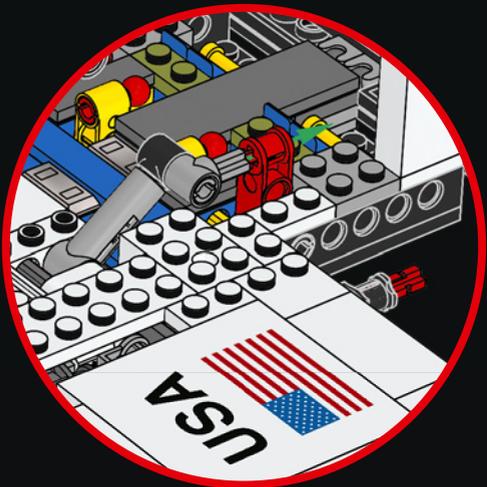
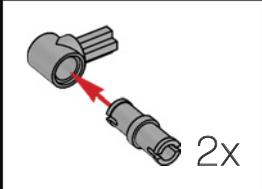
2x

143



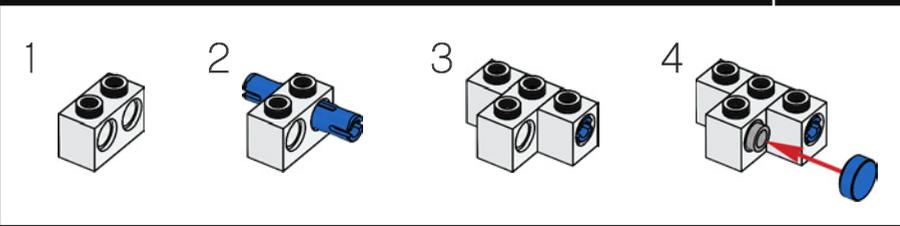
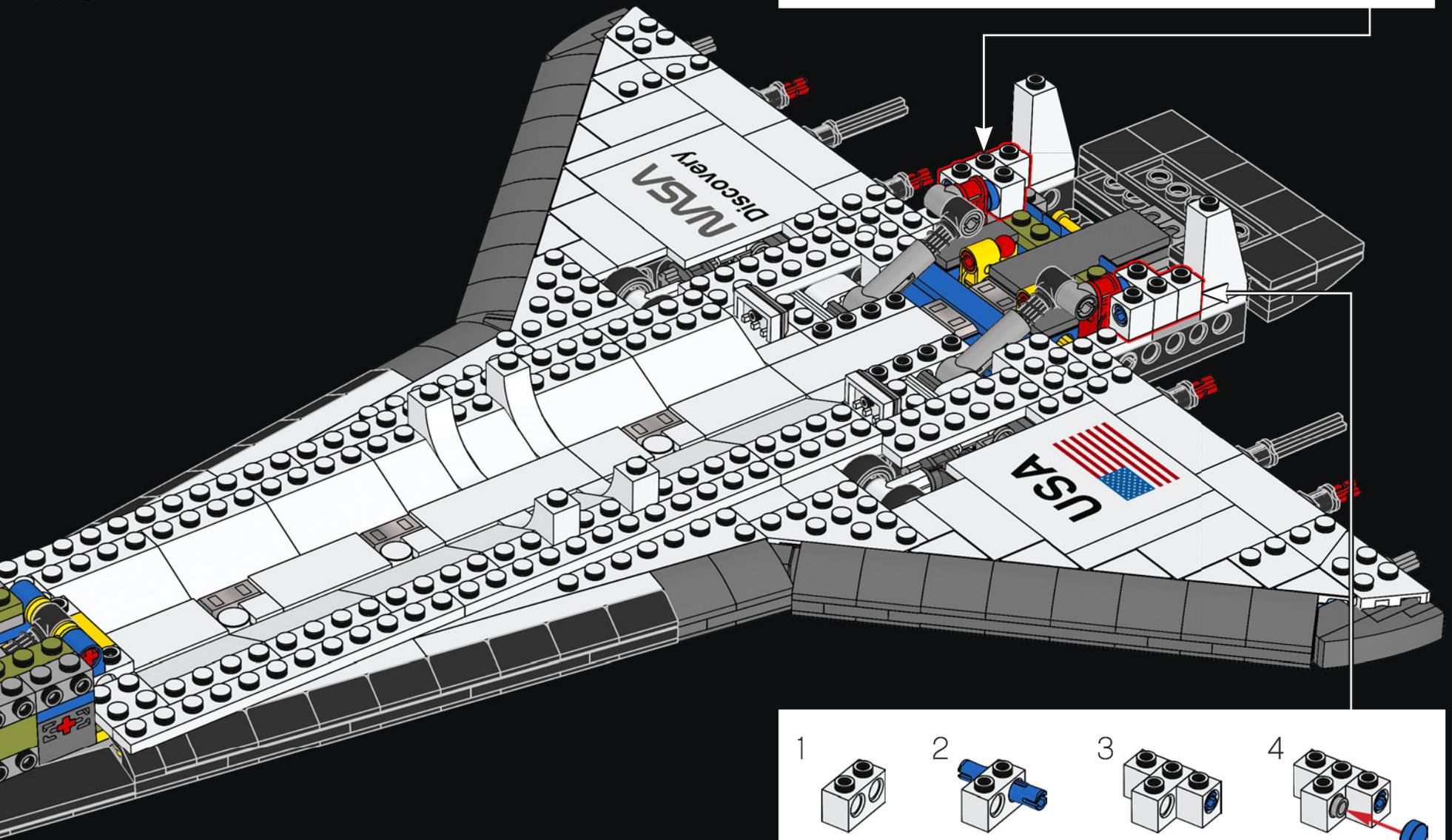
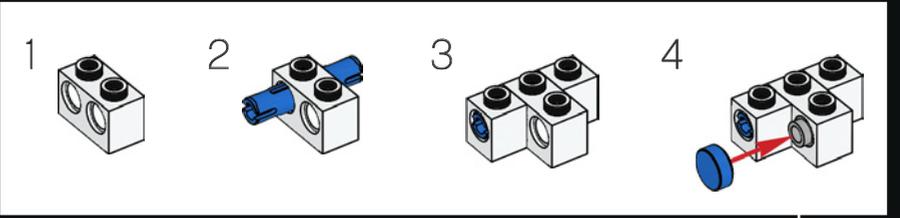


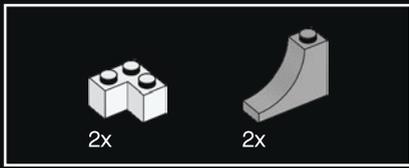
144



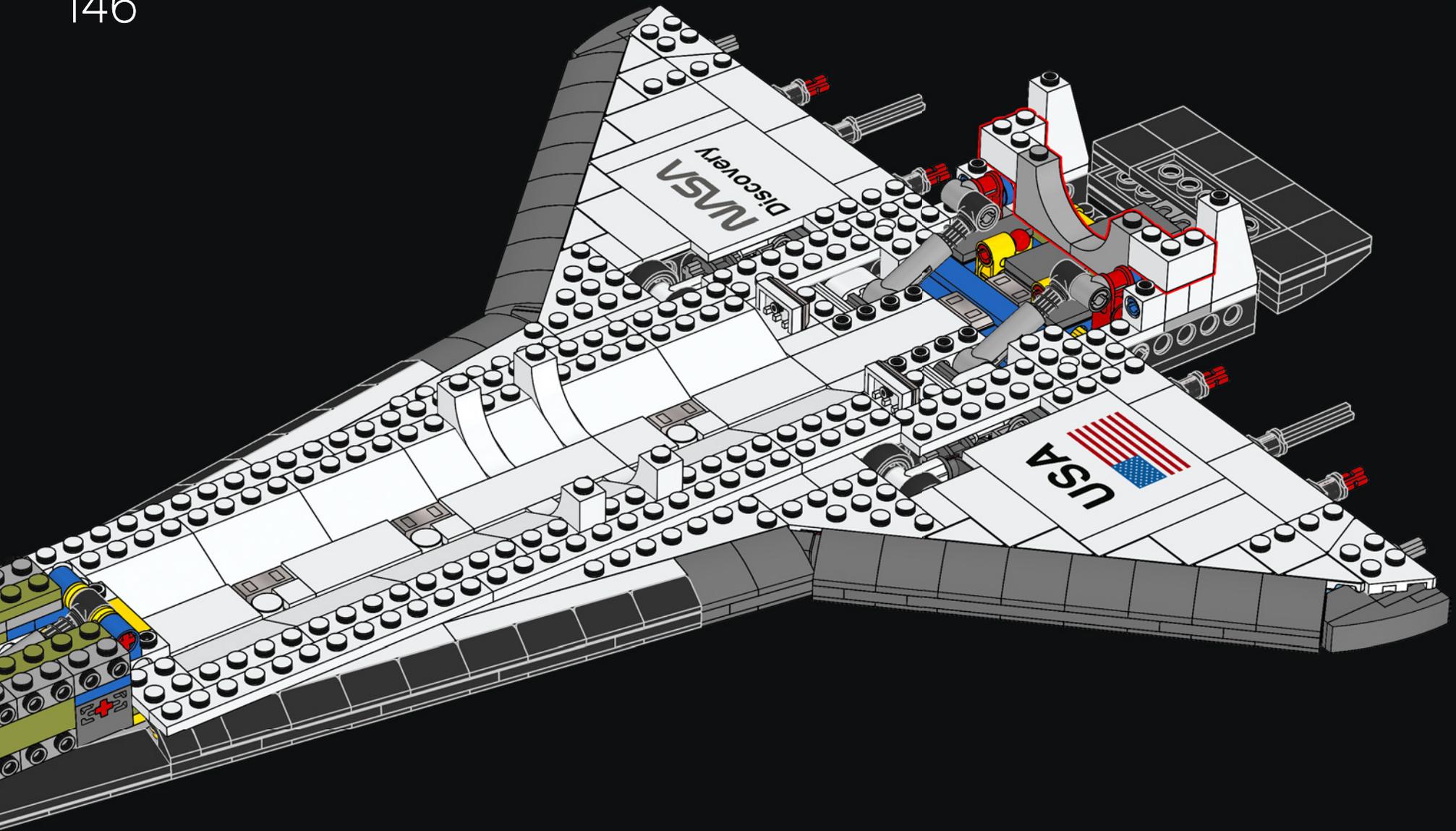


145



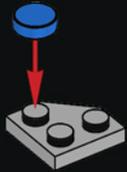


146





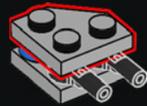
147



148



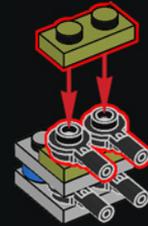
149



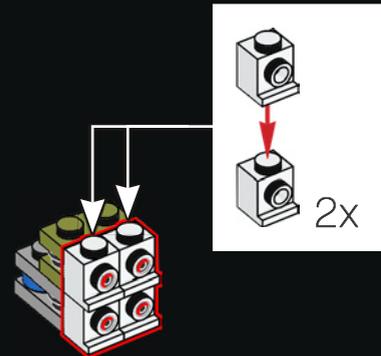
150

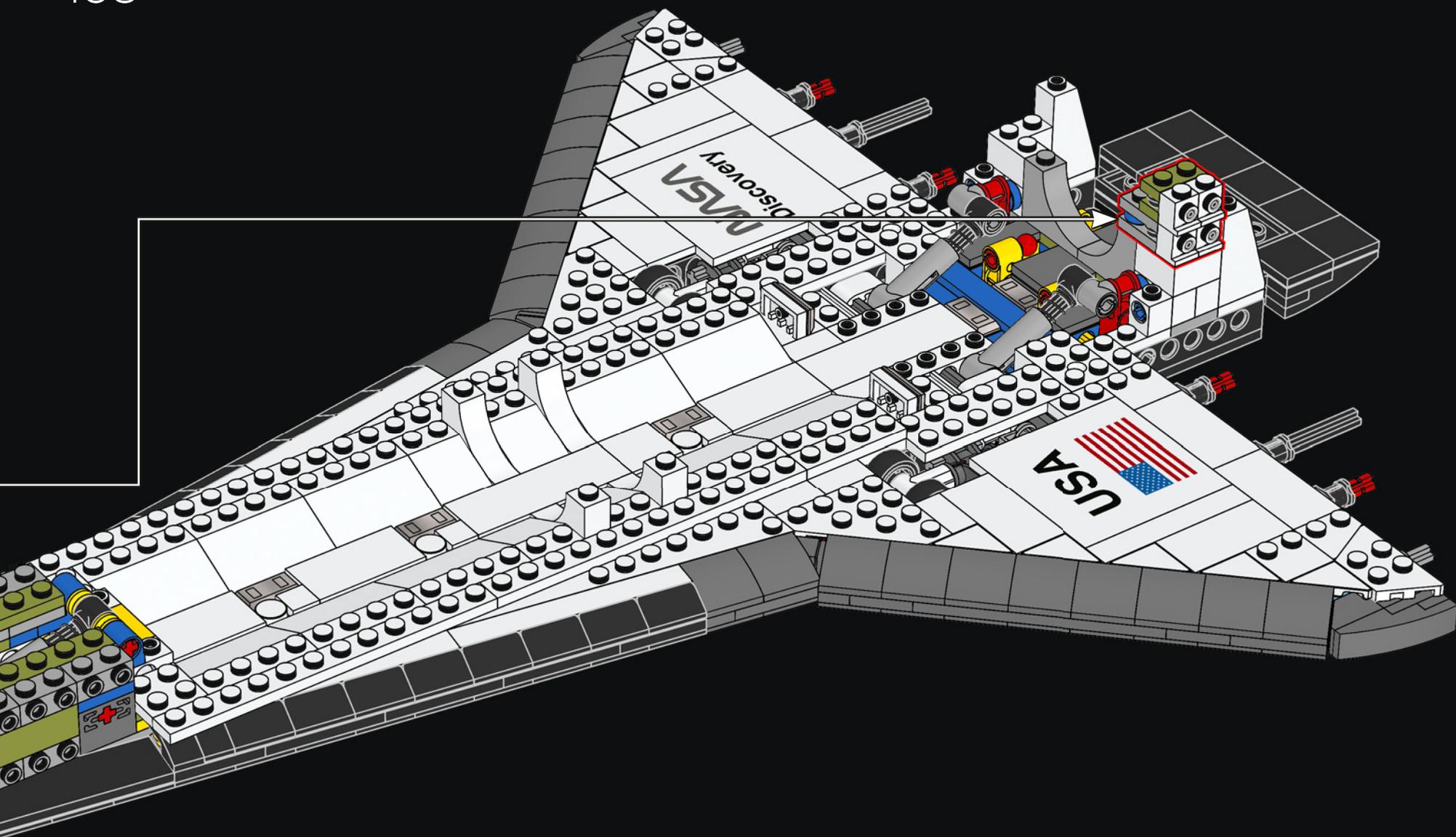


151



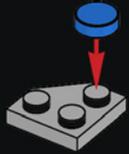
152







154



155



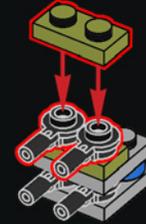
156



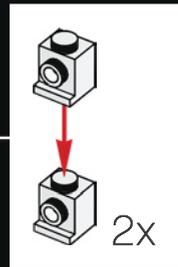
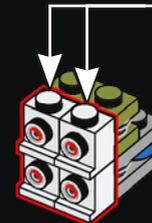
157

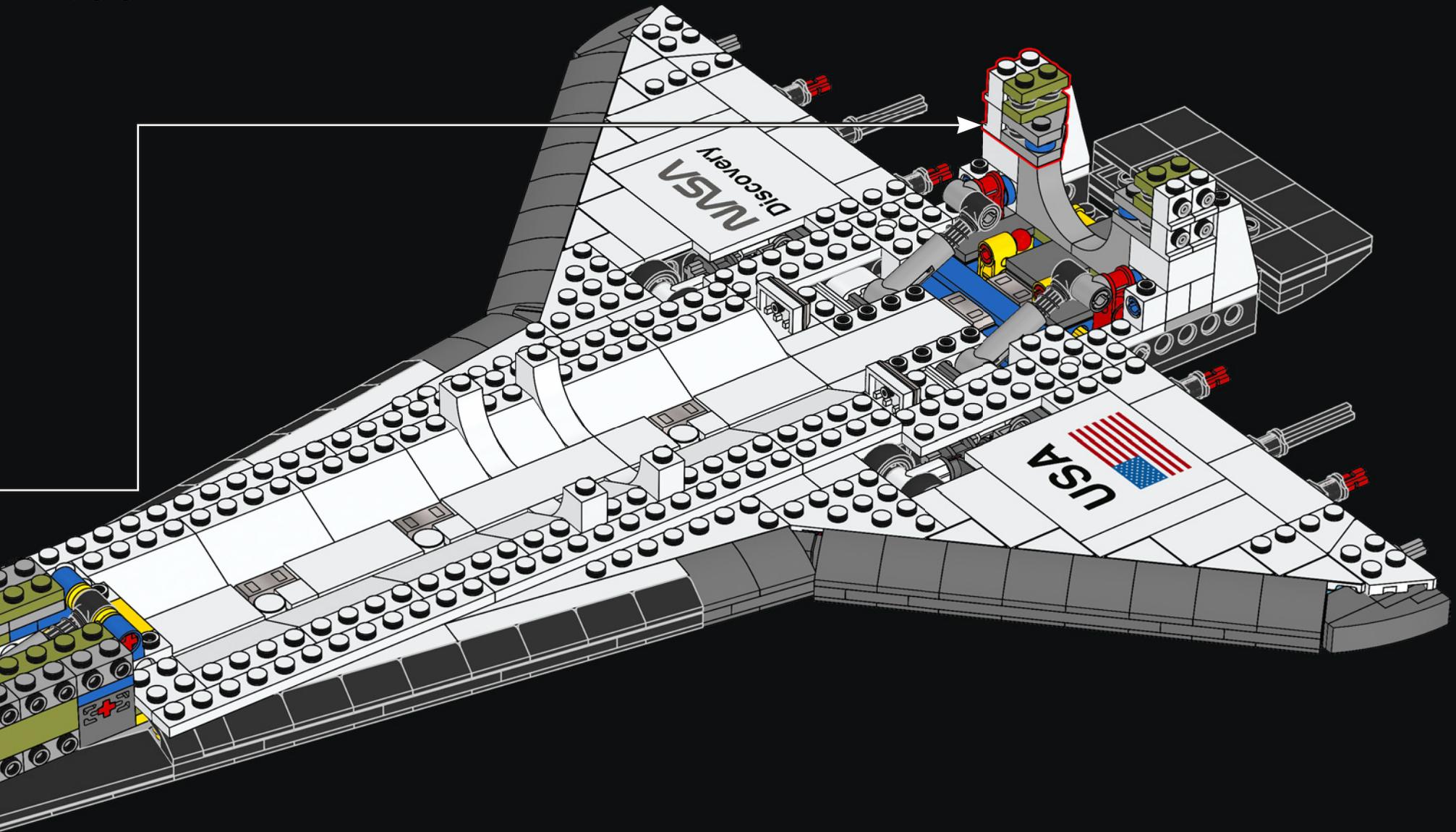


158



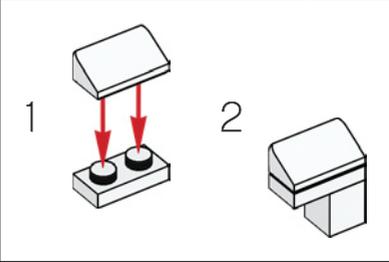
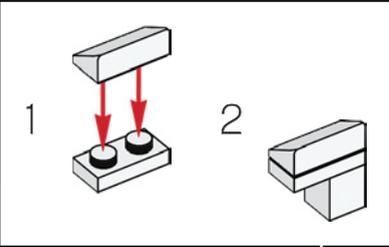
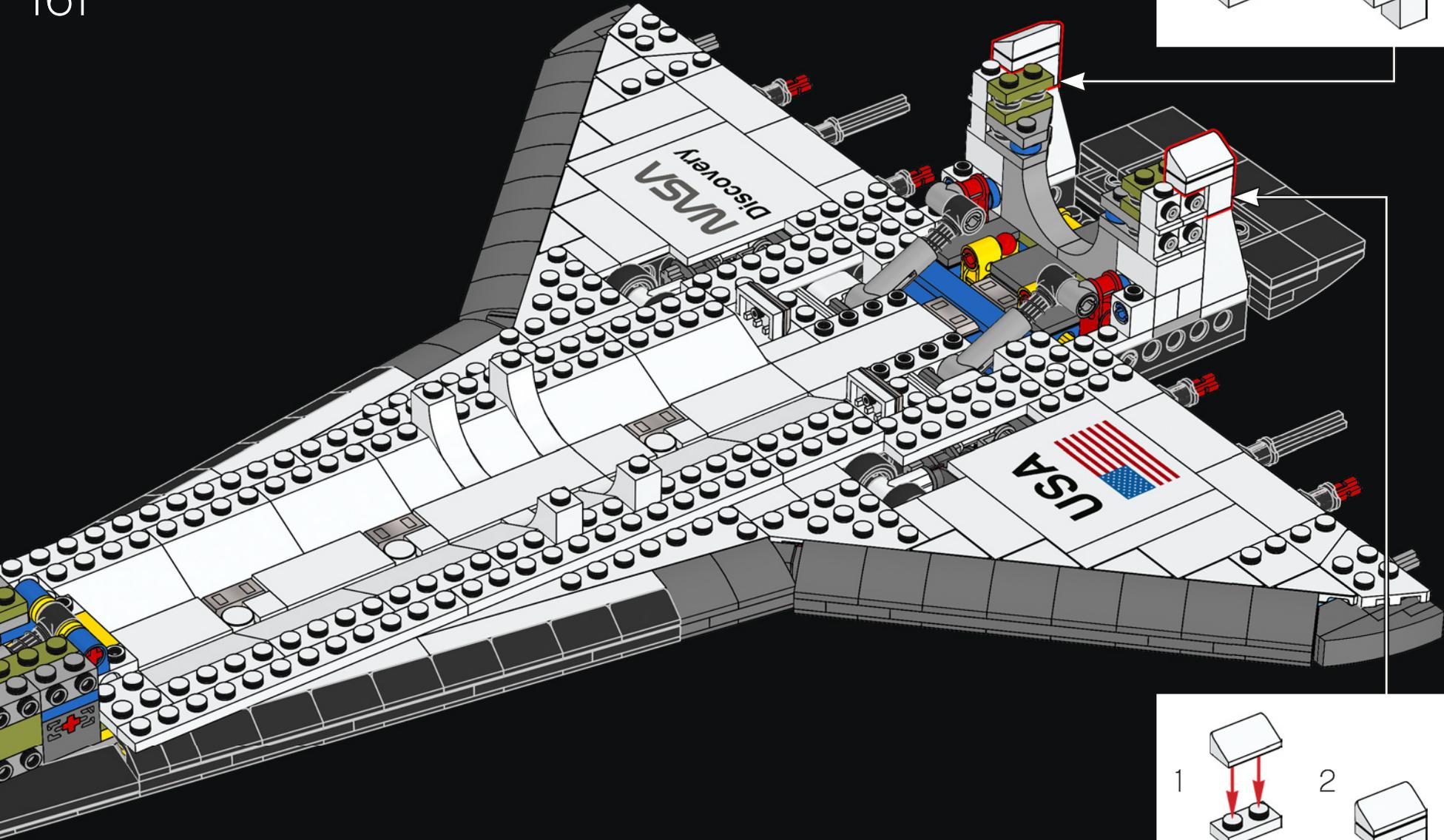
159

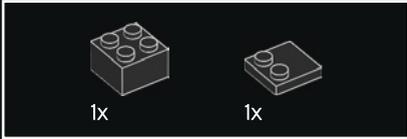
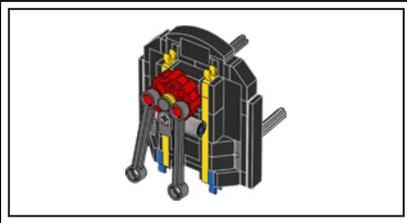




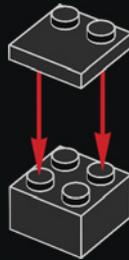


161





162



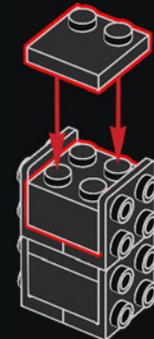
163



164



165





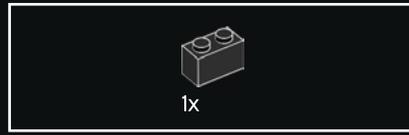
166



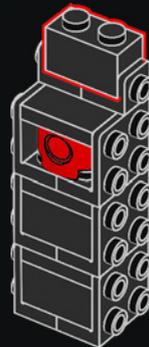
167



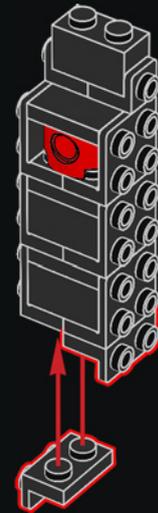
168

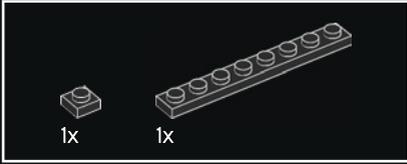
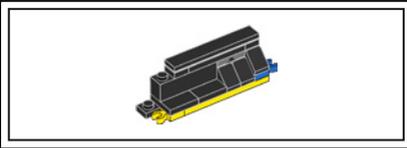


169

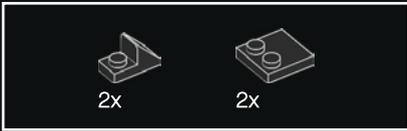
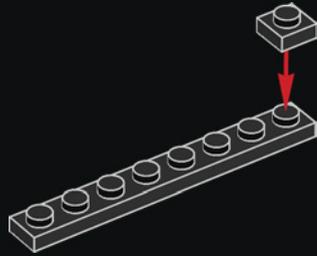


170

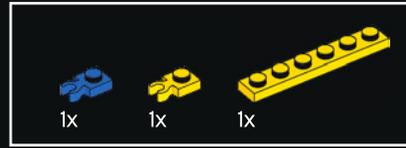
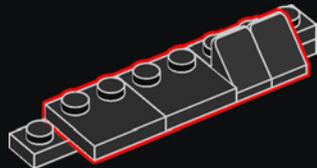




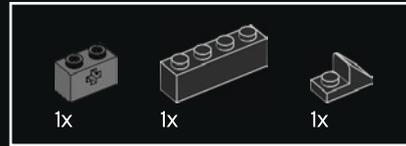
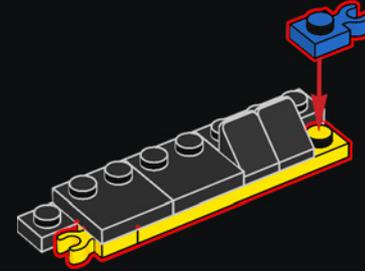
171



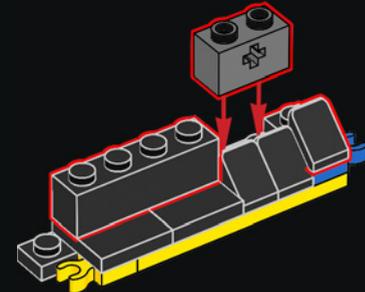
172



173

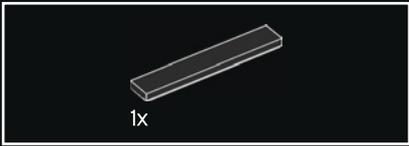
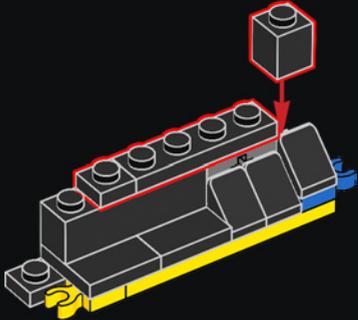


174

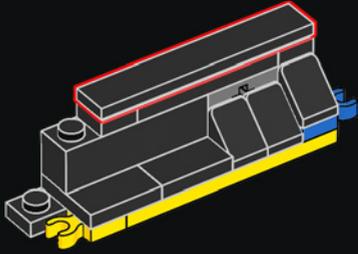




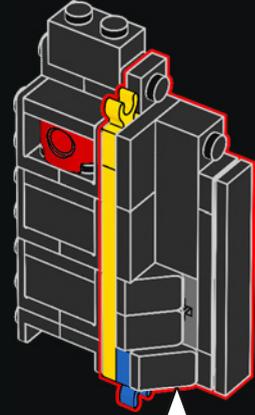
175

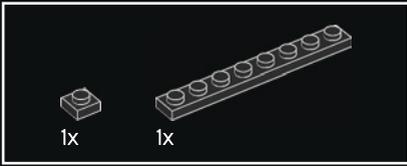
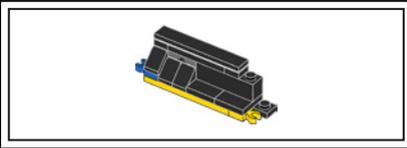


176

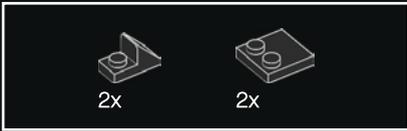
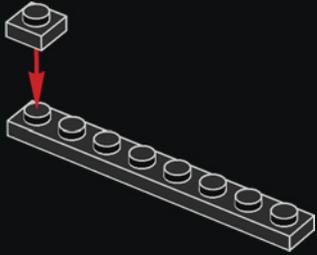


177

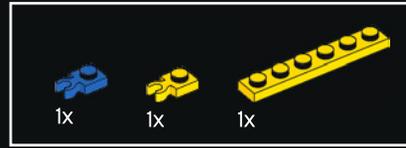
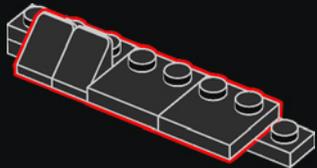




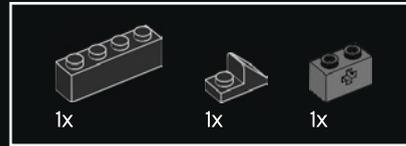
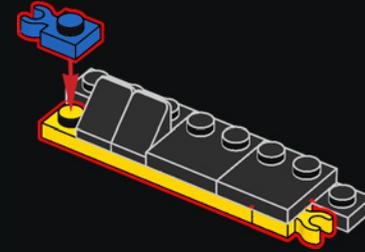
178



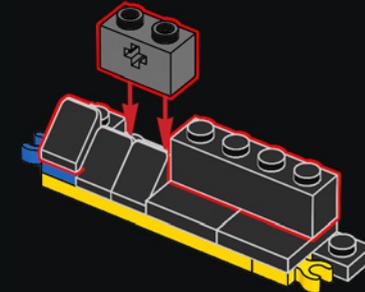
179



180

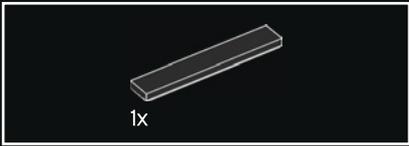
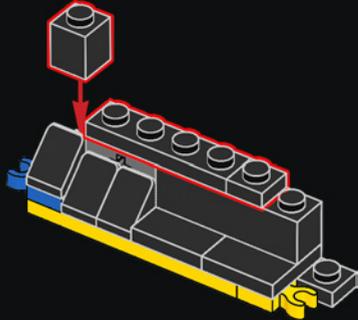


181

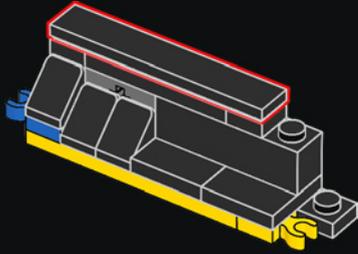




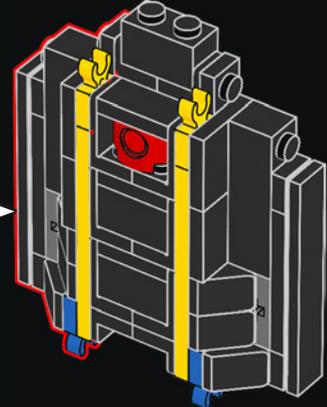
182



183

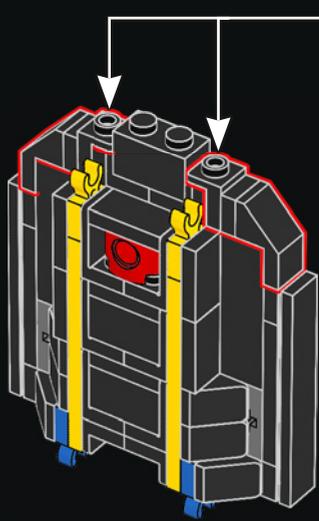
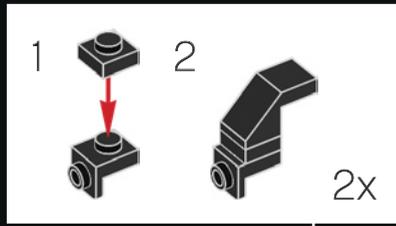


184

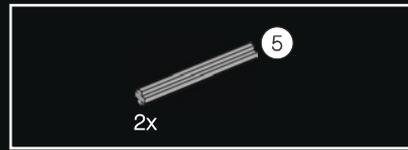
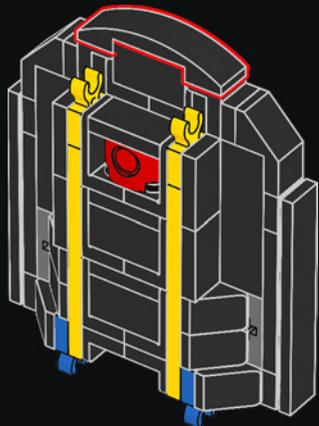




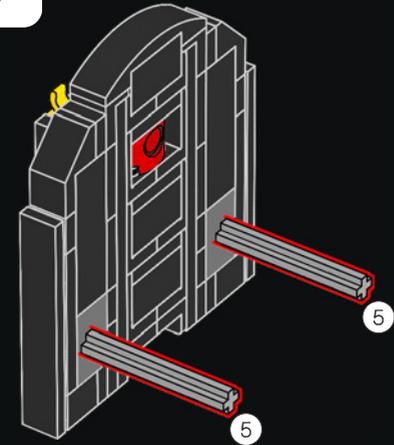
185

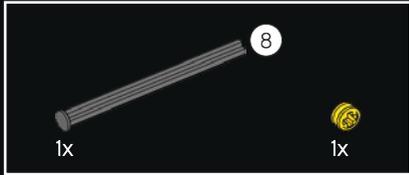
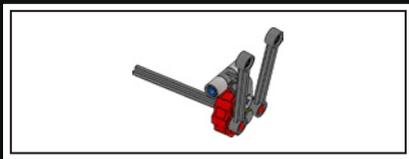


186

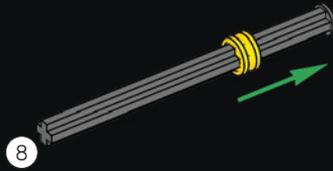


187

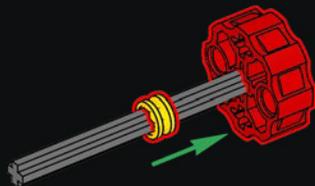




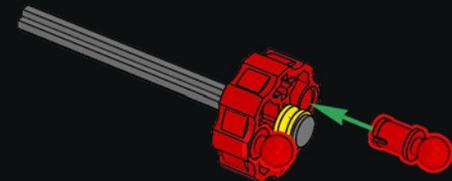
188



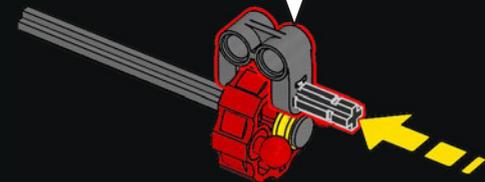
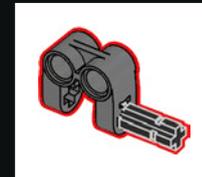
189



190

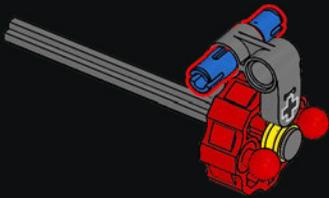


191

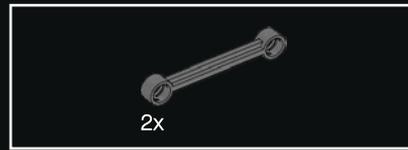
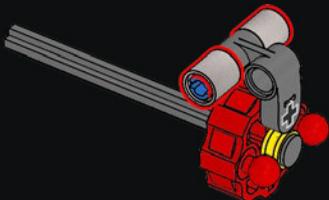




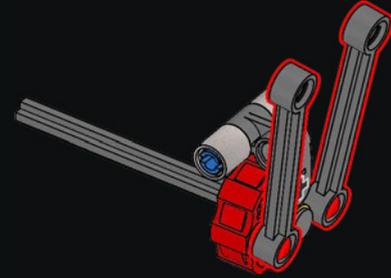
192



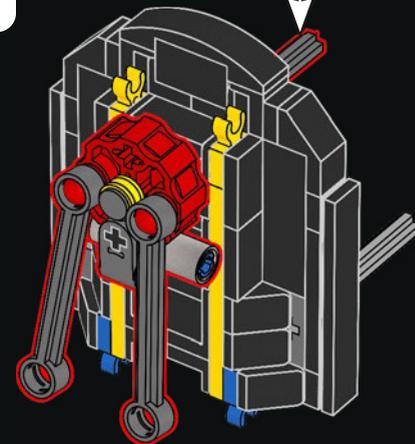
193

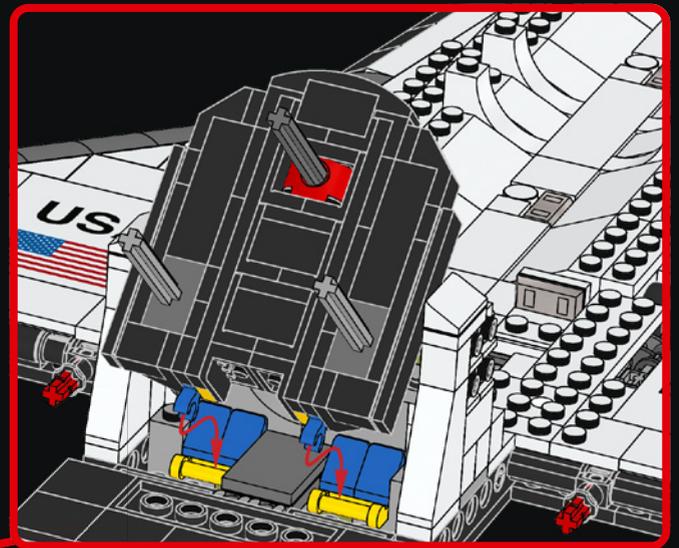
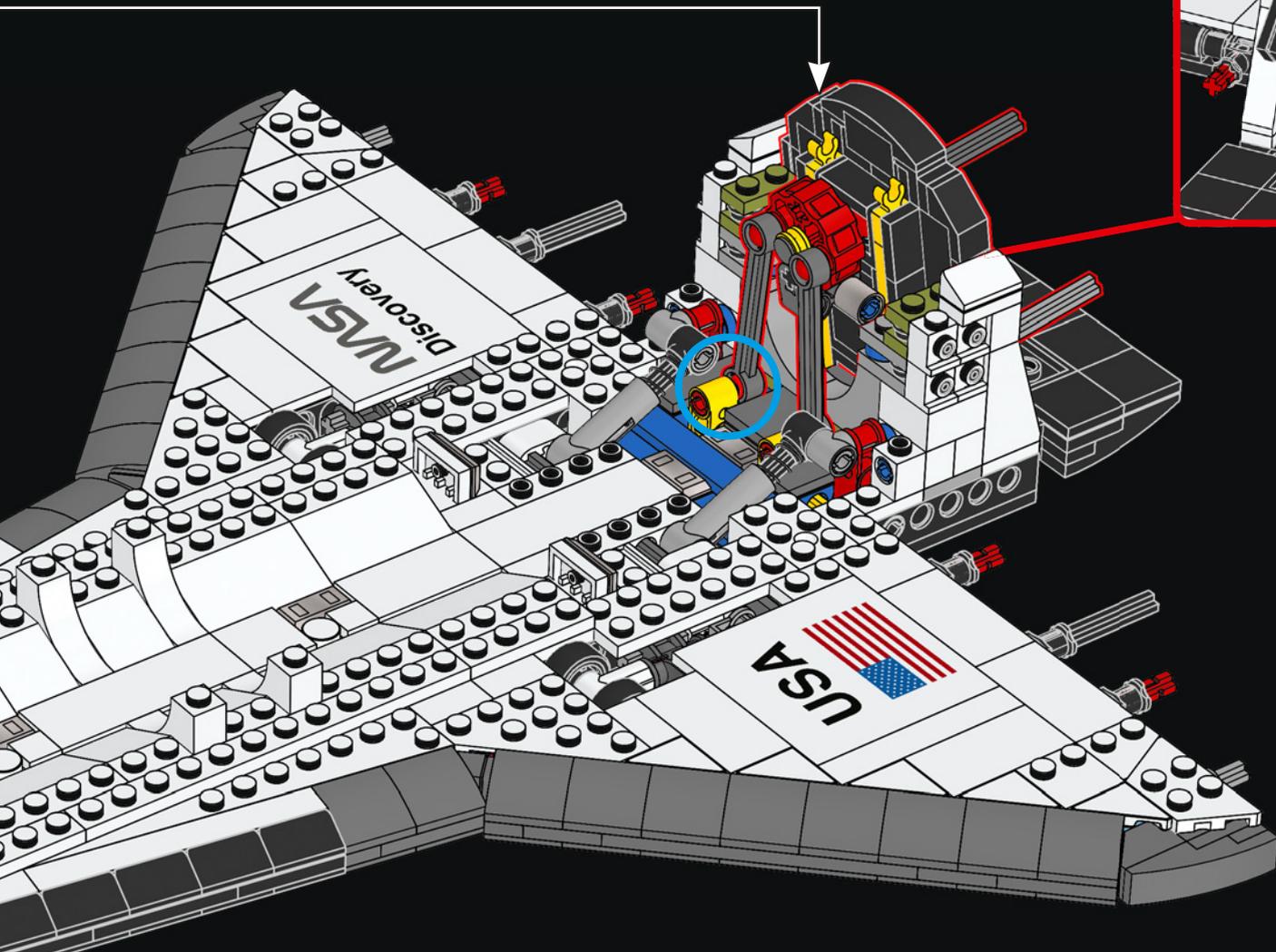


194



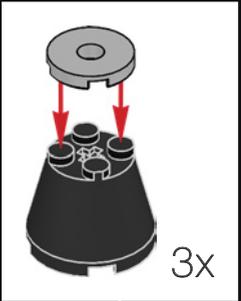
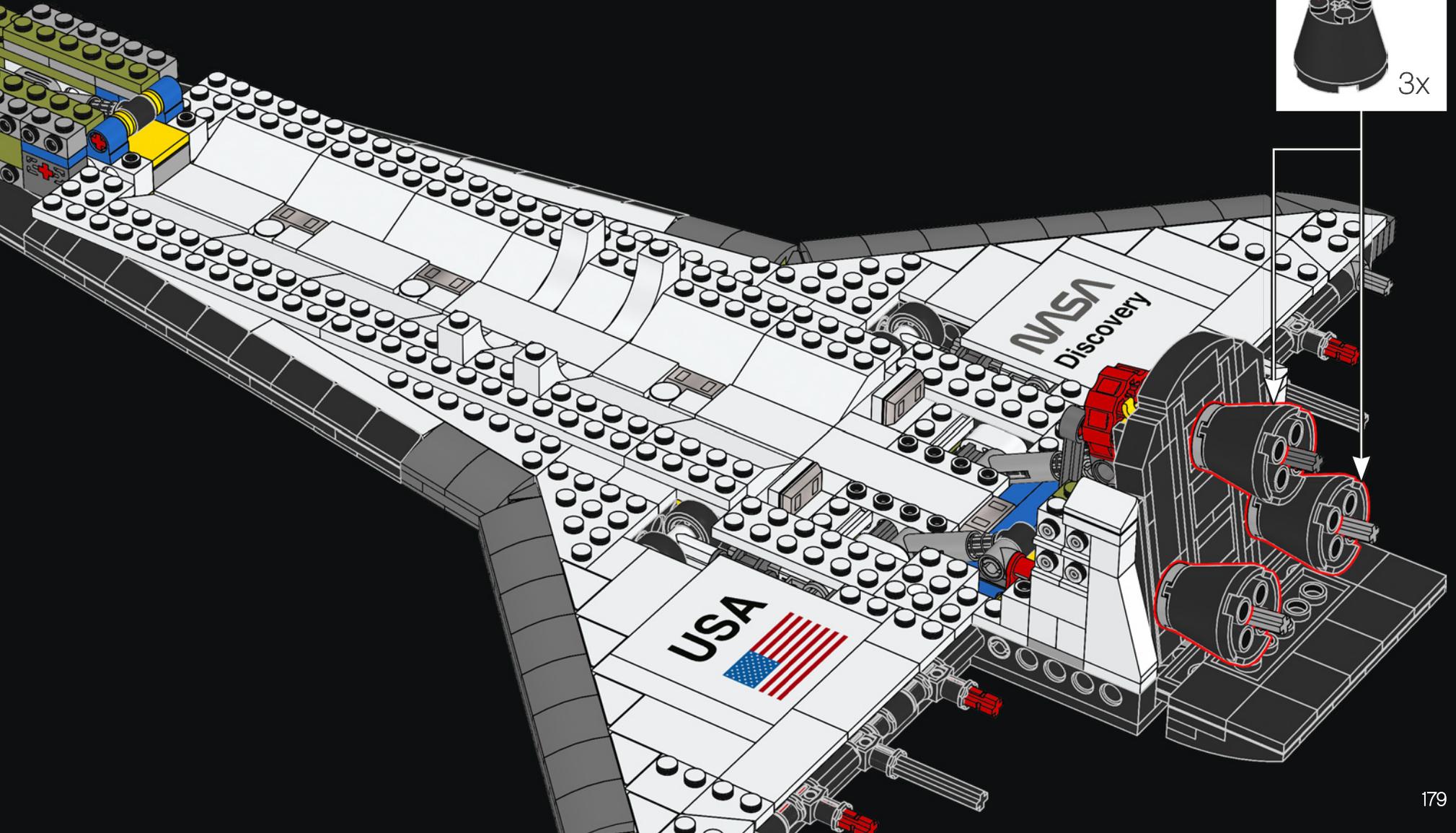
195





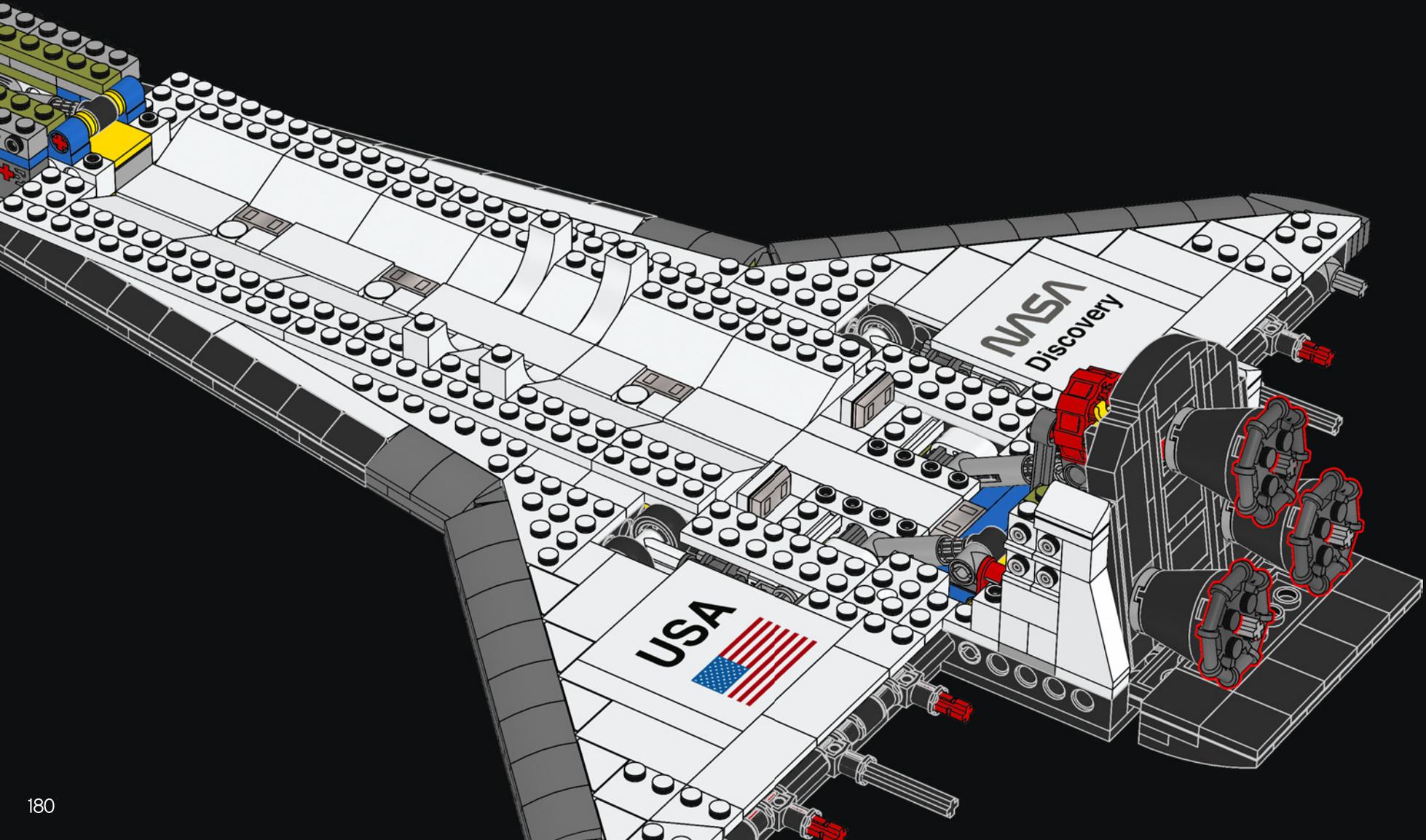


197





198



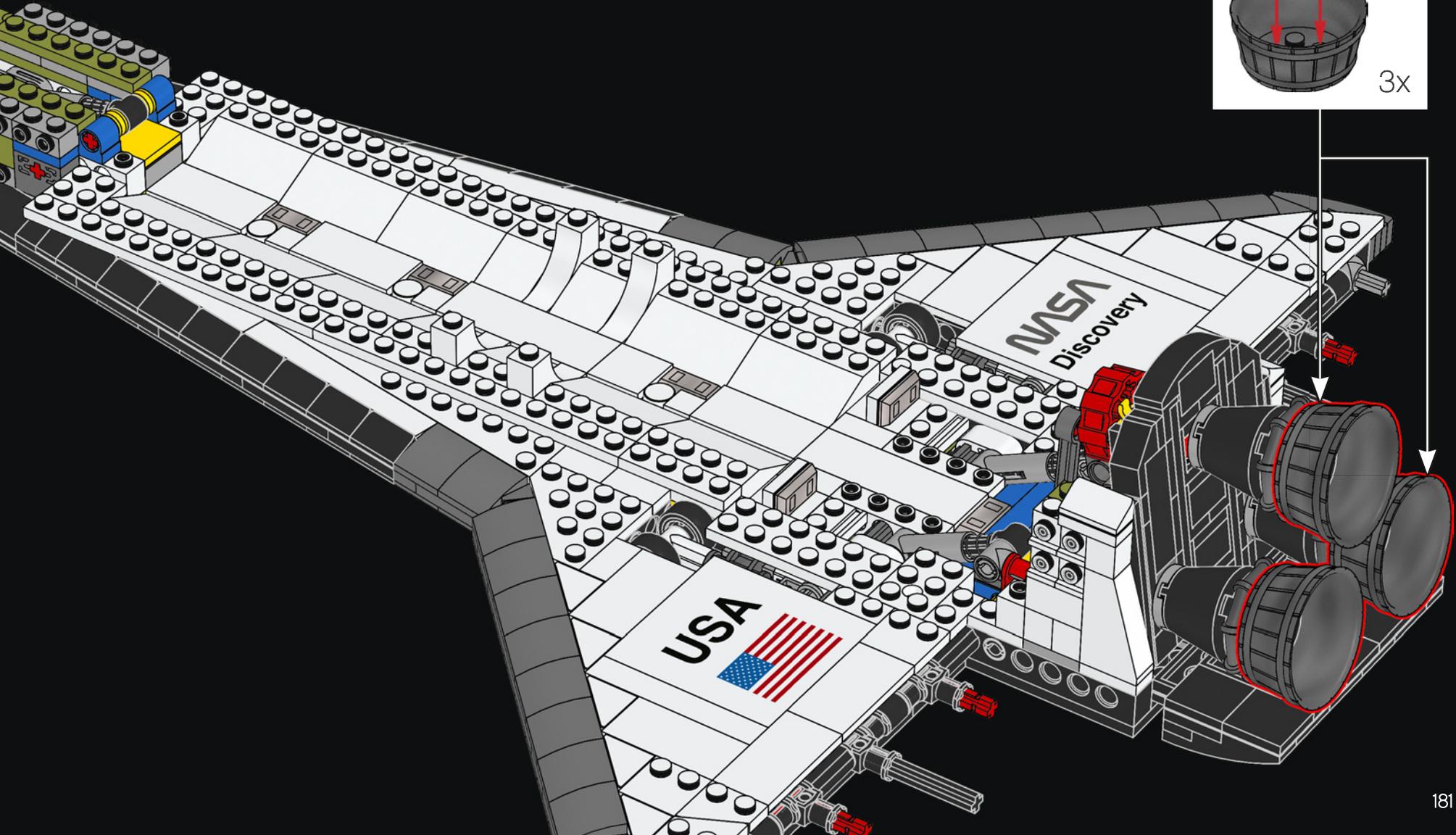
180

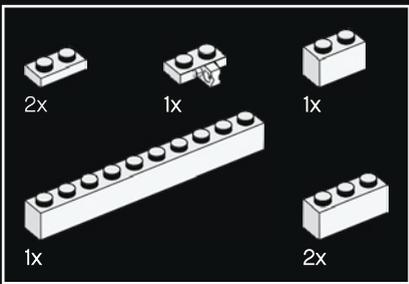


SCHON GEWUSST?

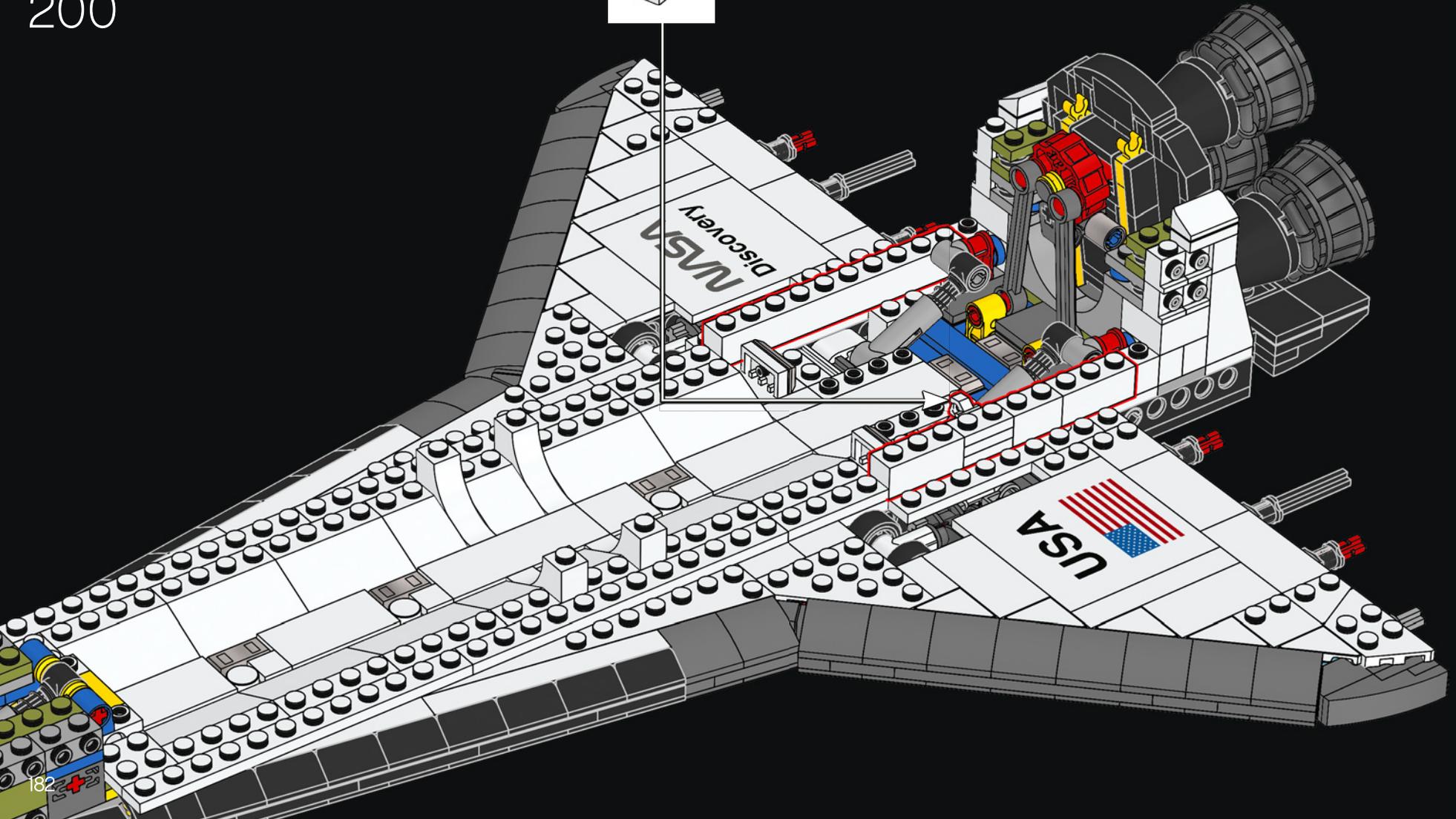
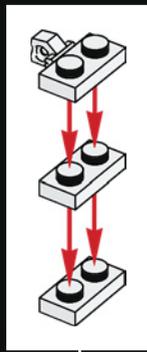
Tiefkalter Flüssigwasserstoff wird durch 1.080 Röhren in der Düsenwand gepumpt, bevor der Treibstoff in den Hauptbrennraum gelangt, um das Triebwerk auf kühlen 10 Grad Celsius zu halten.

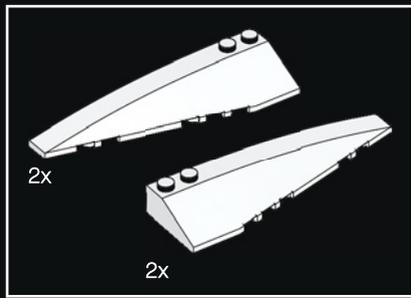
199



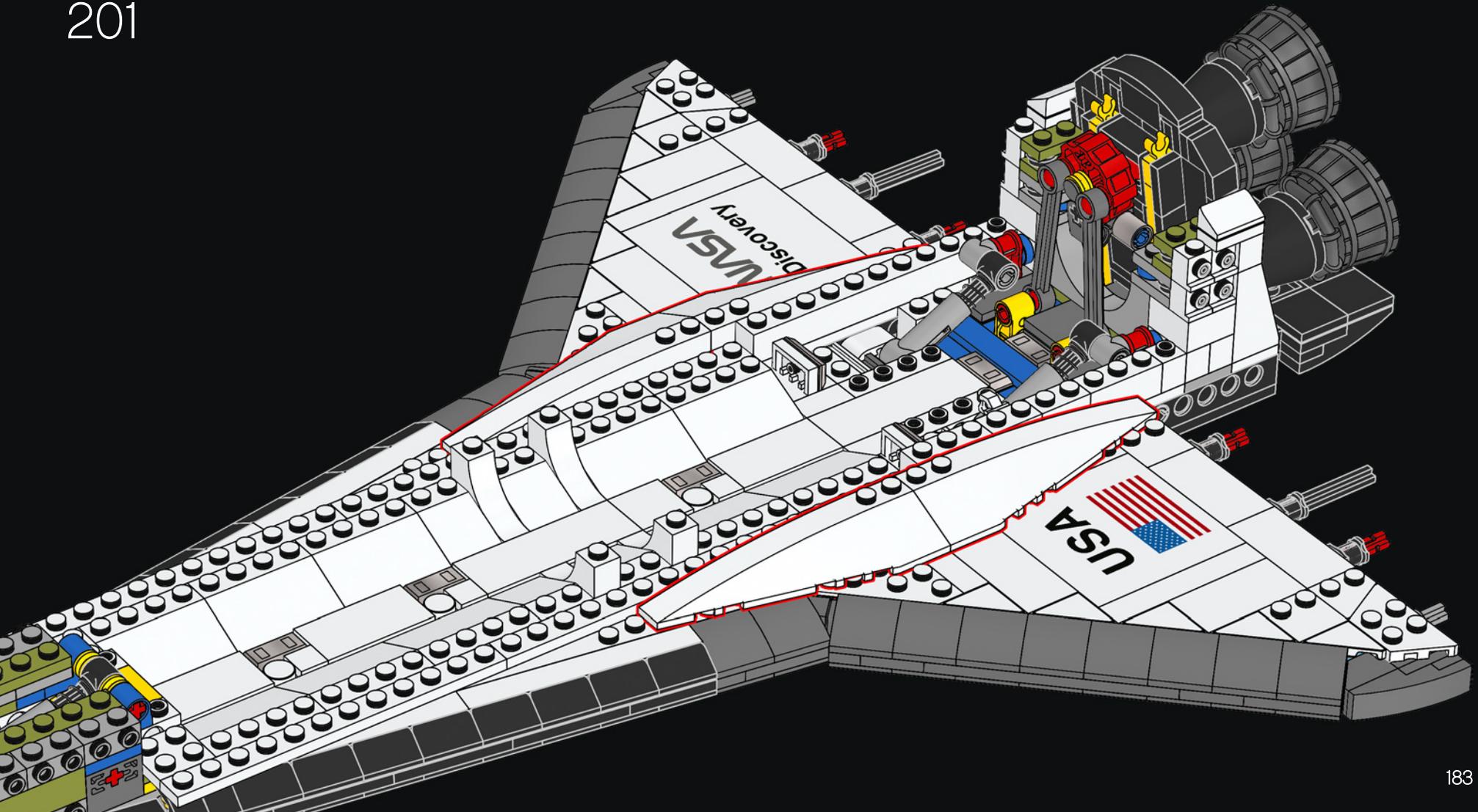


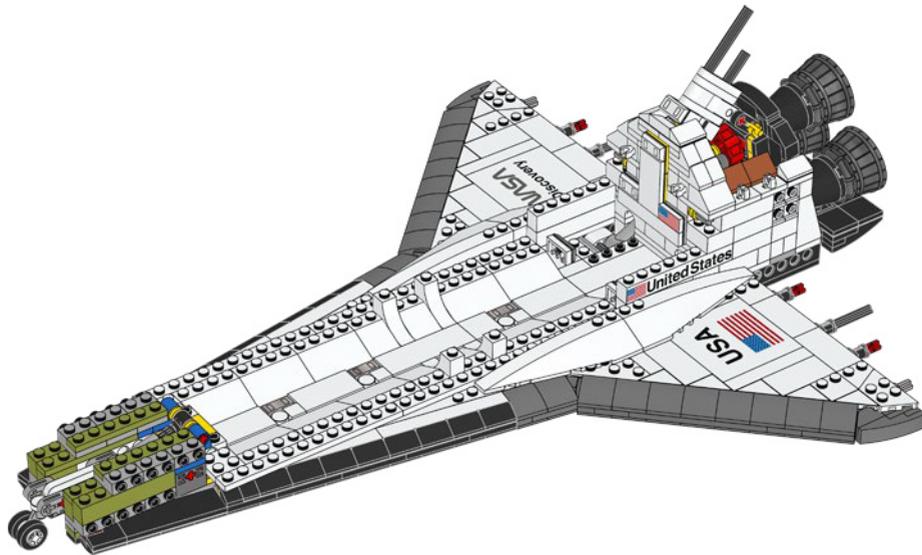
200

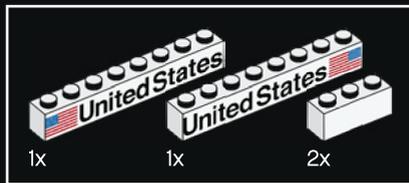




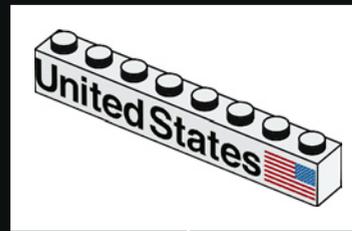
201





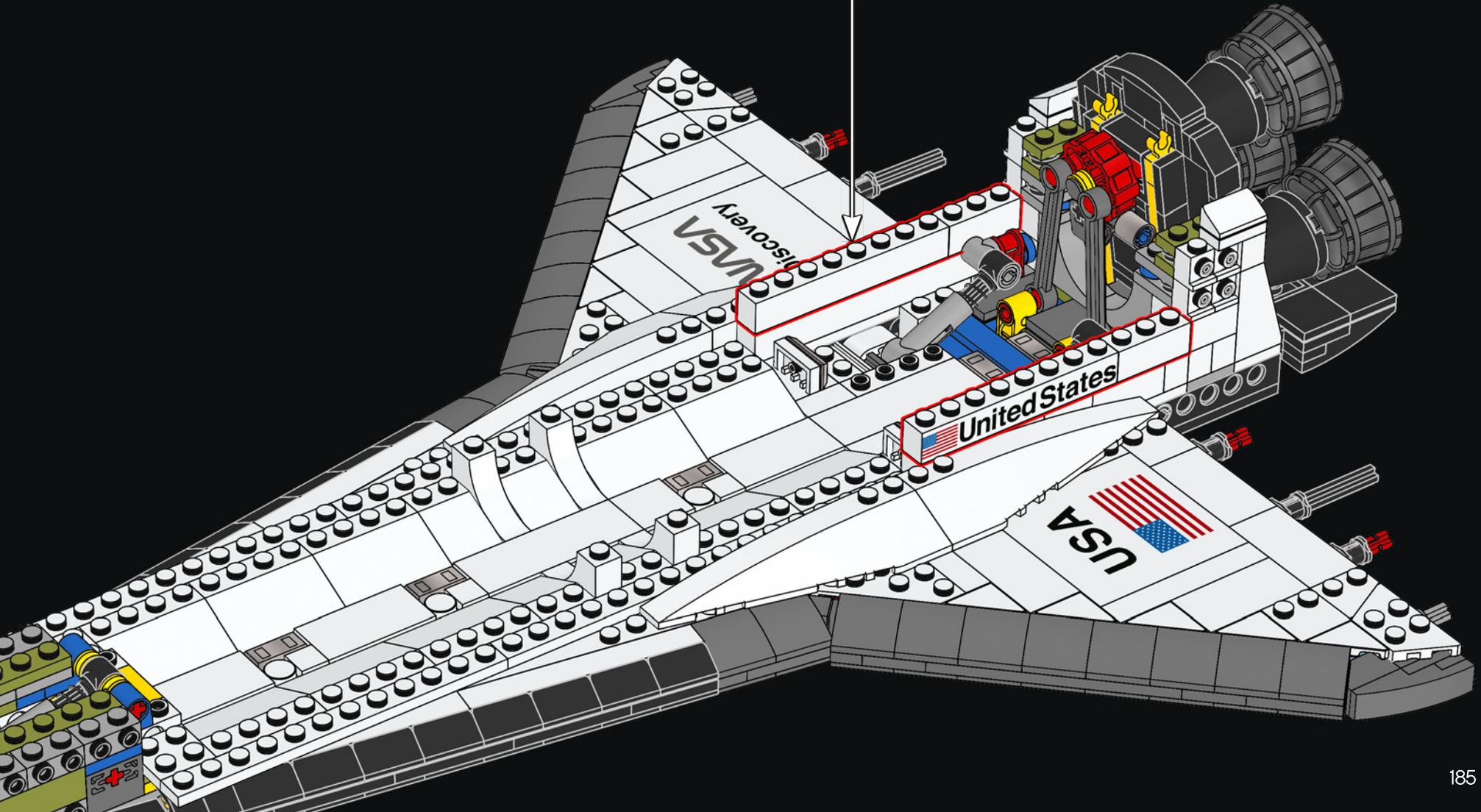


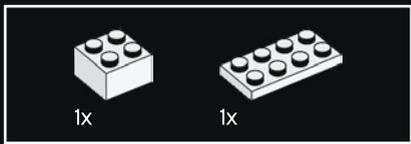
202



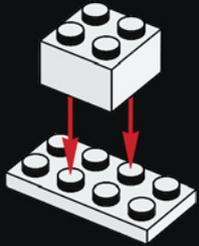
SCHON GEWUSST?

Eine Vorschrift besagt, dass die Sterne der amerikanischen Flagge immer nach vorne zeigen müssen, als würde die Fahne im Wind flattern. Deshalb befinden sich die Sterne an der Steuerbordseite des Rumpfes in der oberen rechten Ecke der Flagge, anstatt üblicherweise in der oberen linken Ecke.

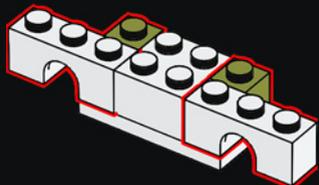




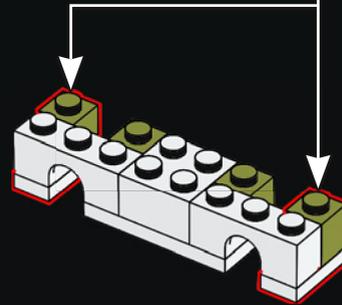
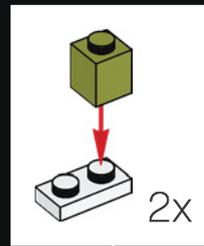
203



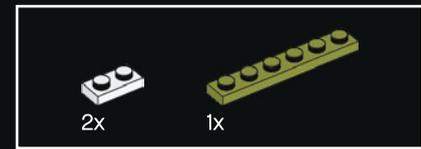
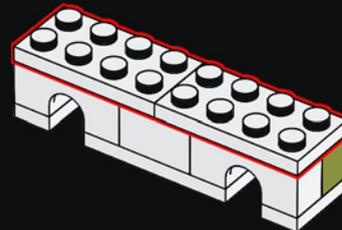
204



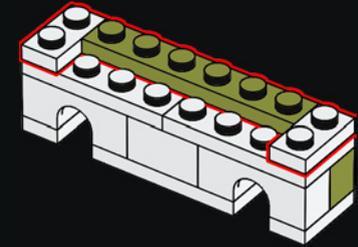
205



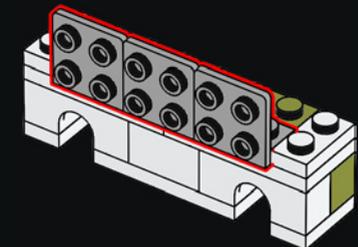
206



207

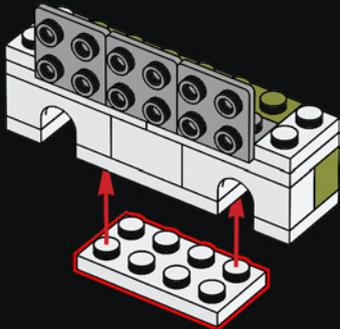


208

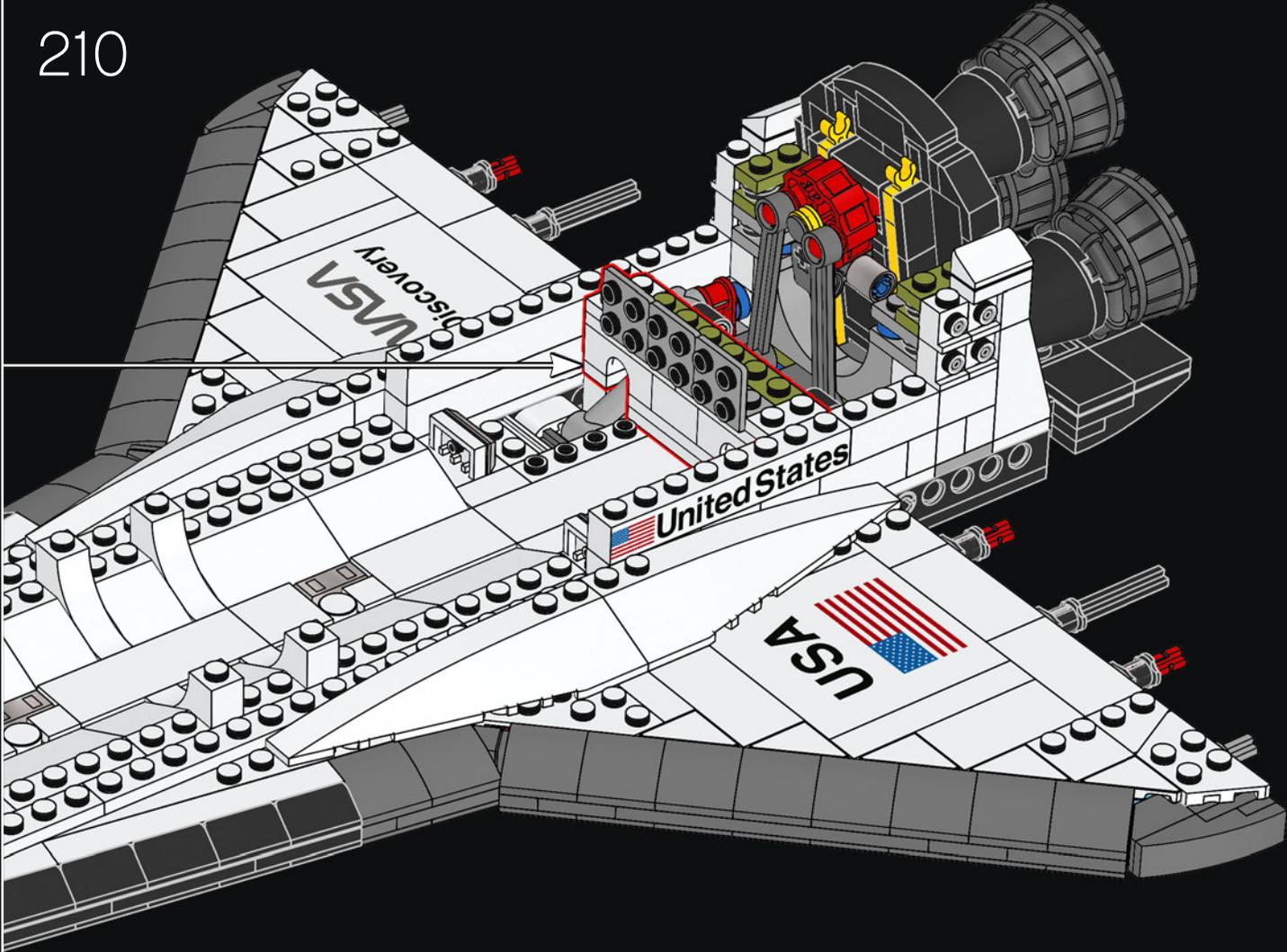


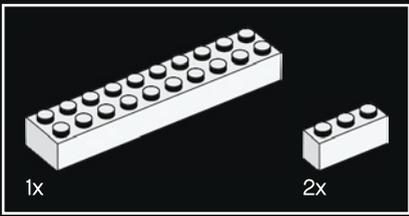


209

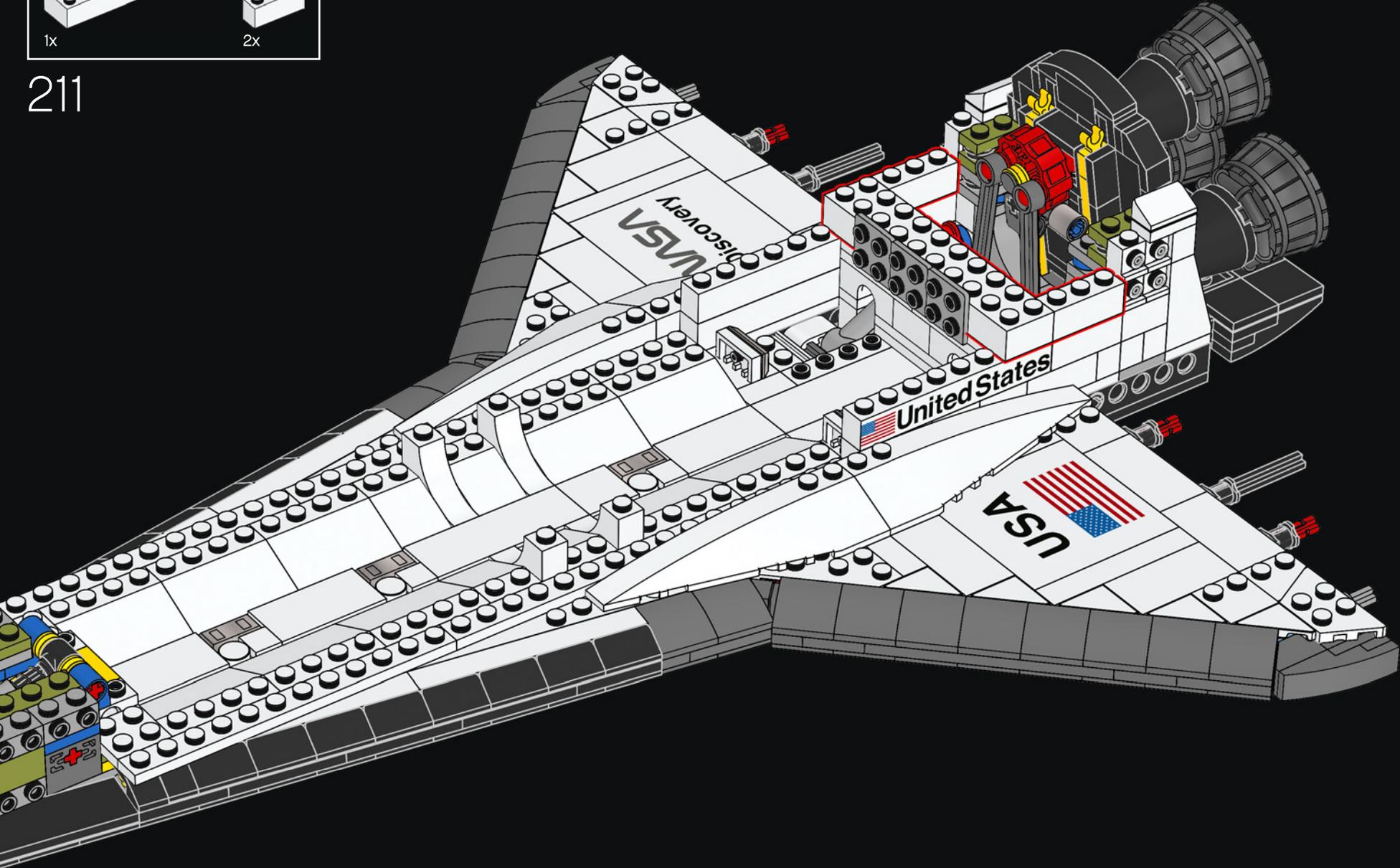


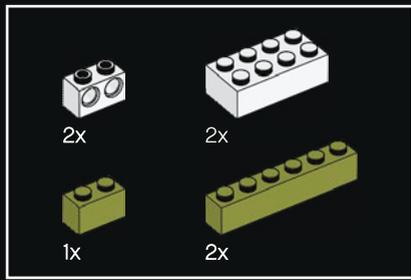
210



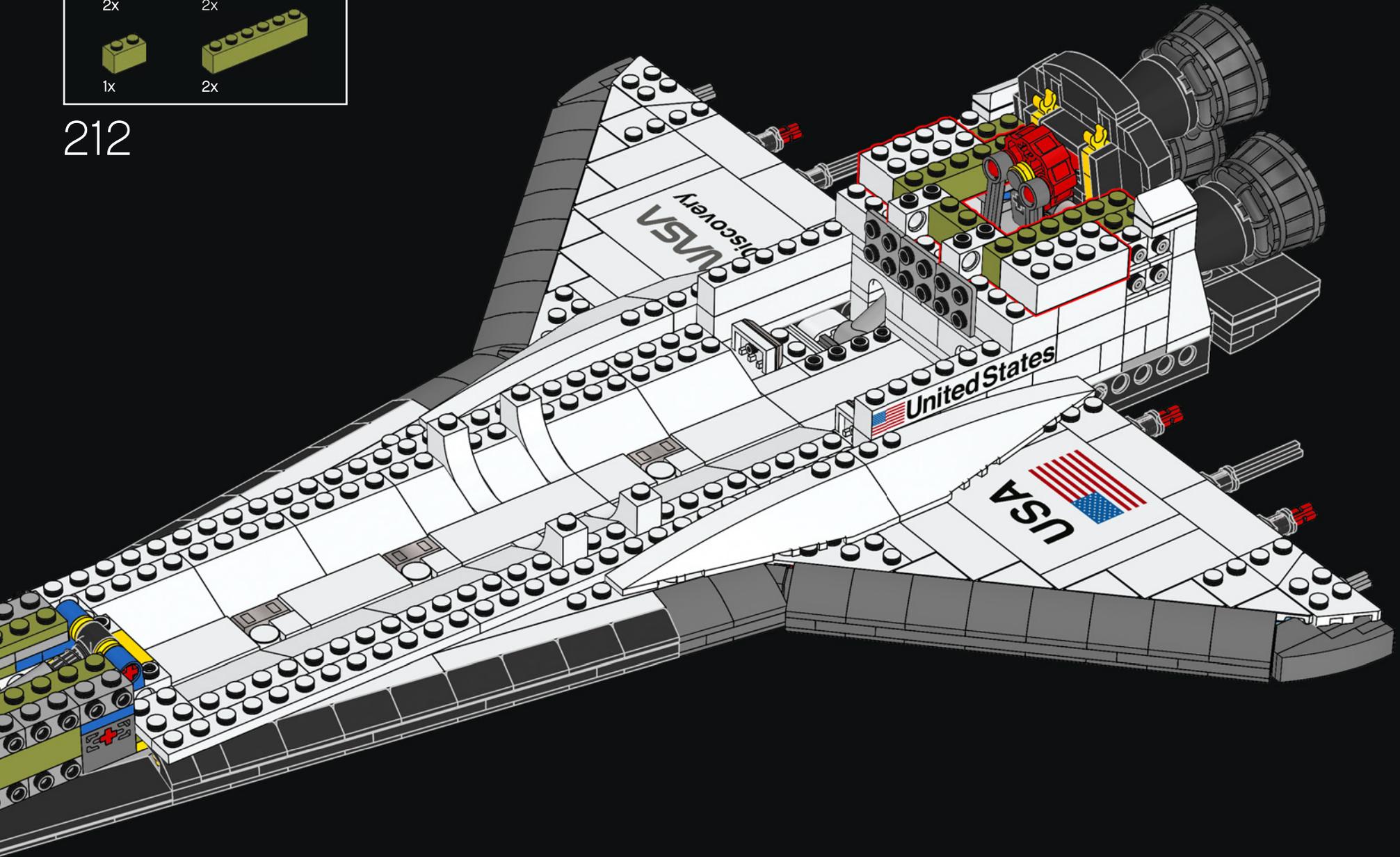


211





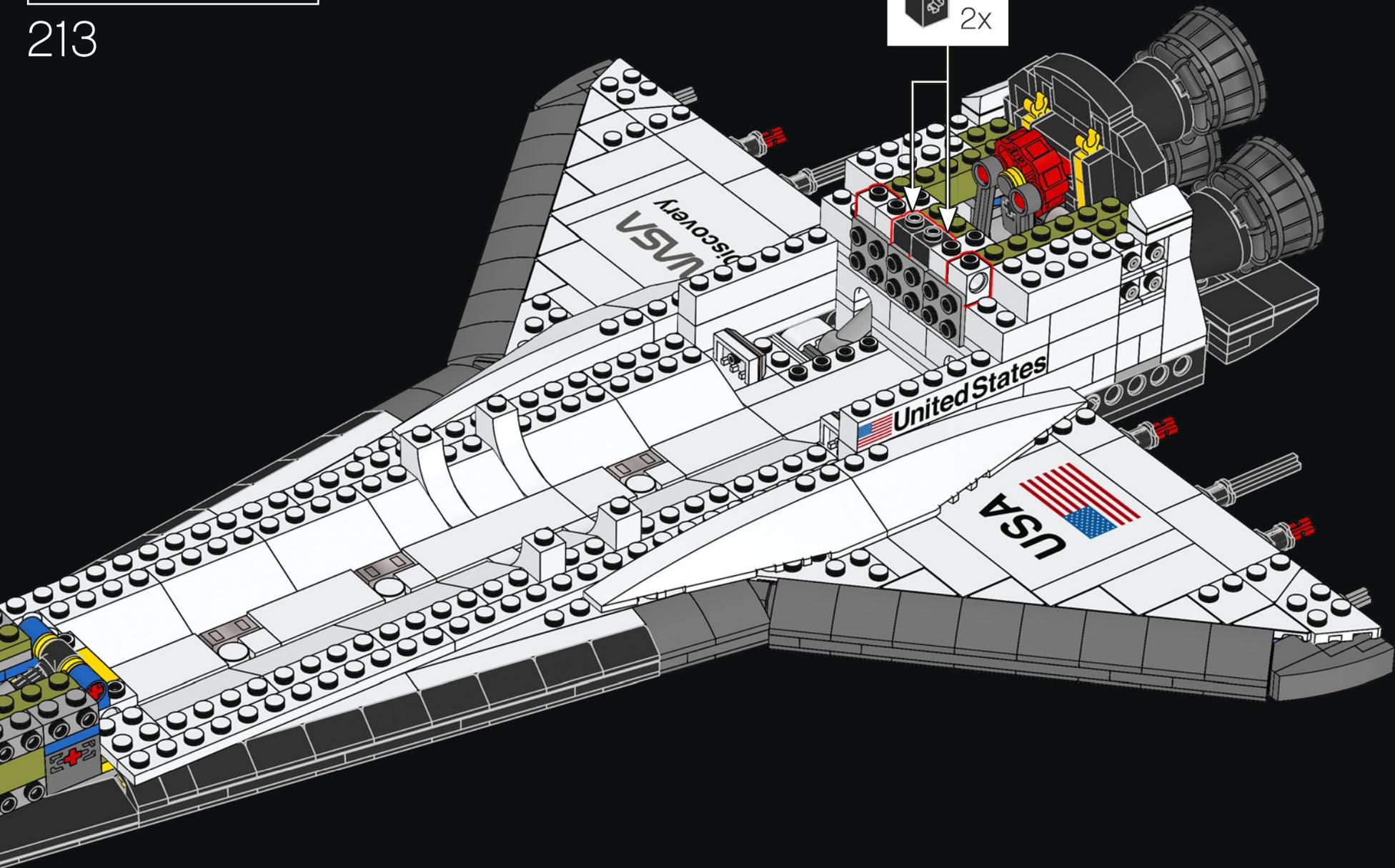
212

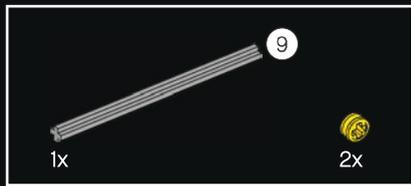


2x 2x

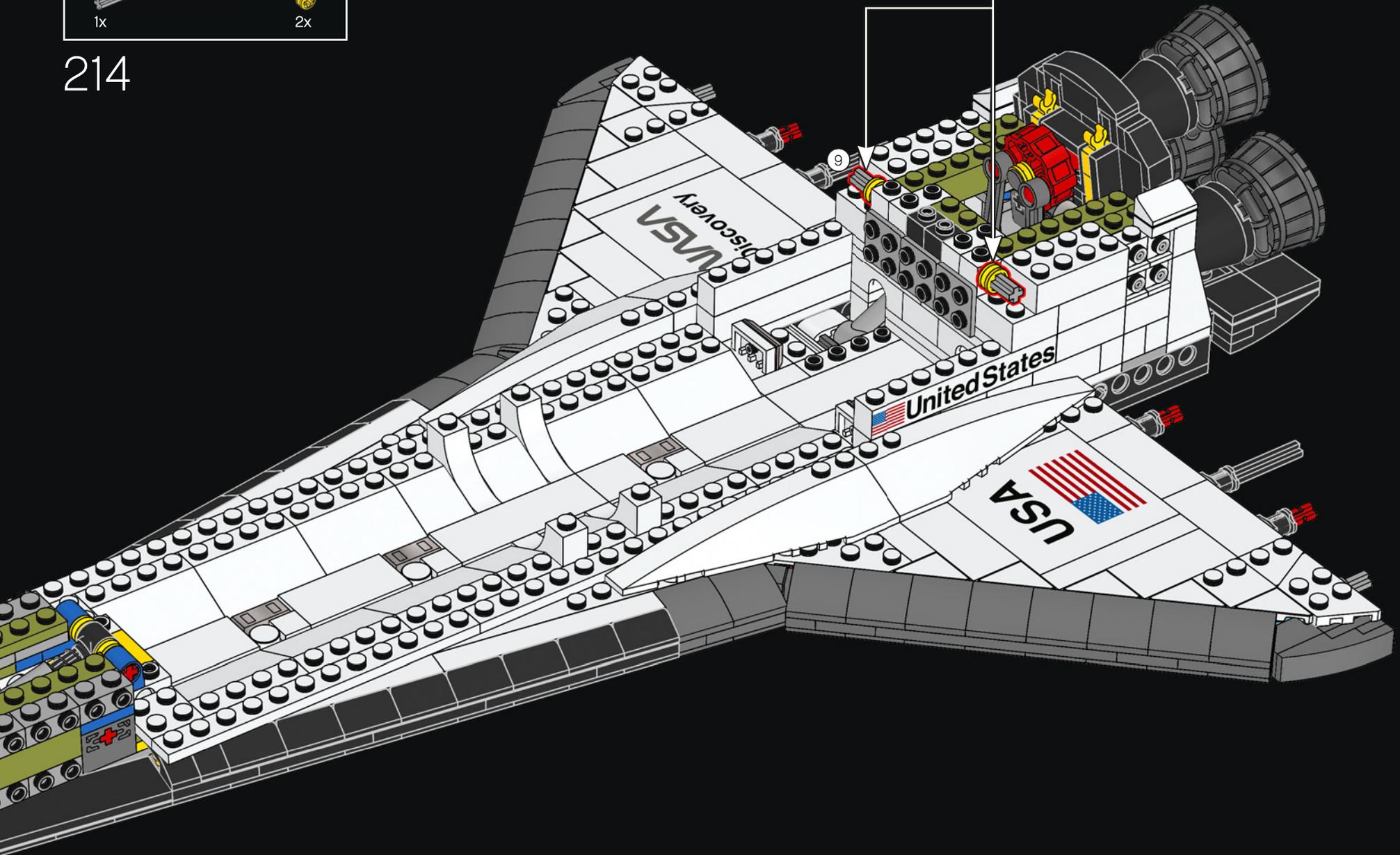
213

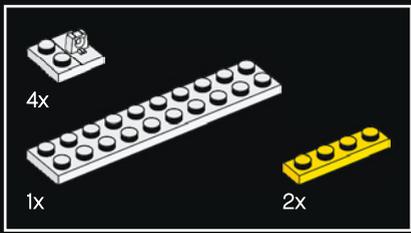
2x



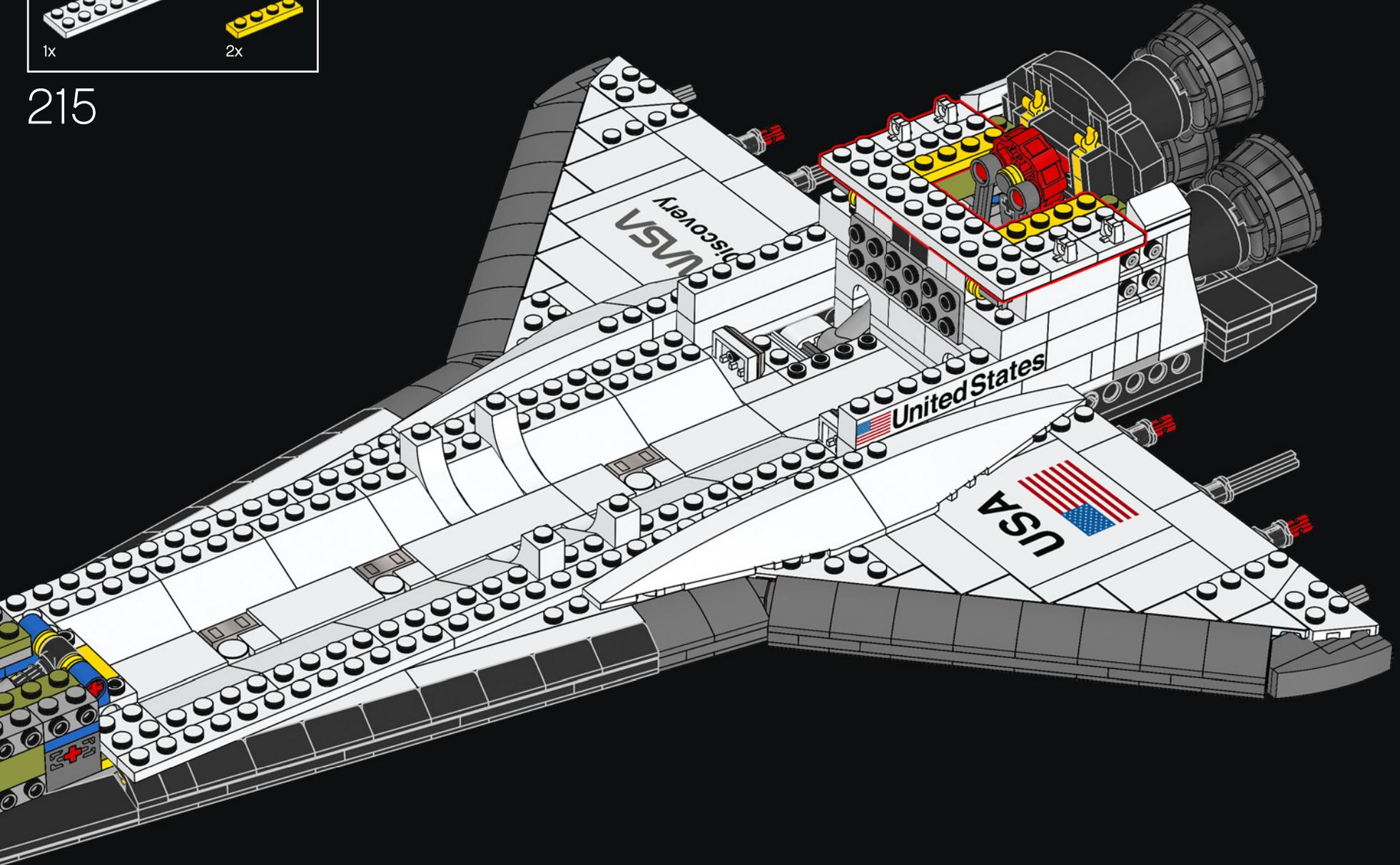


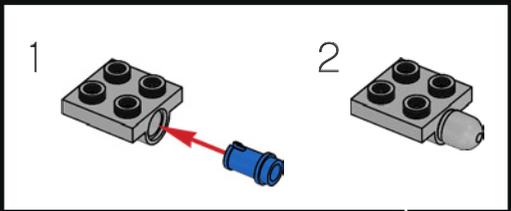
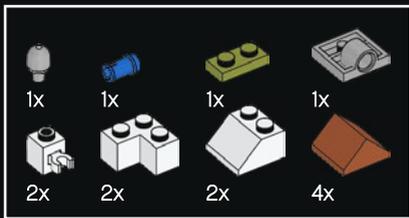
214



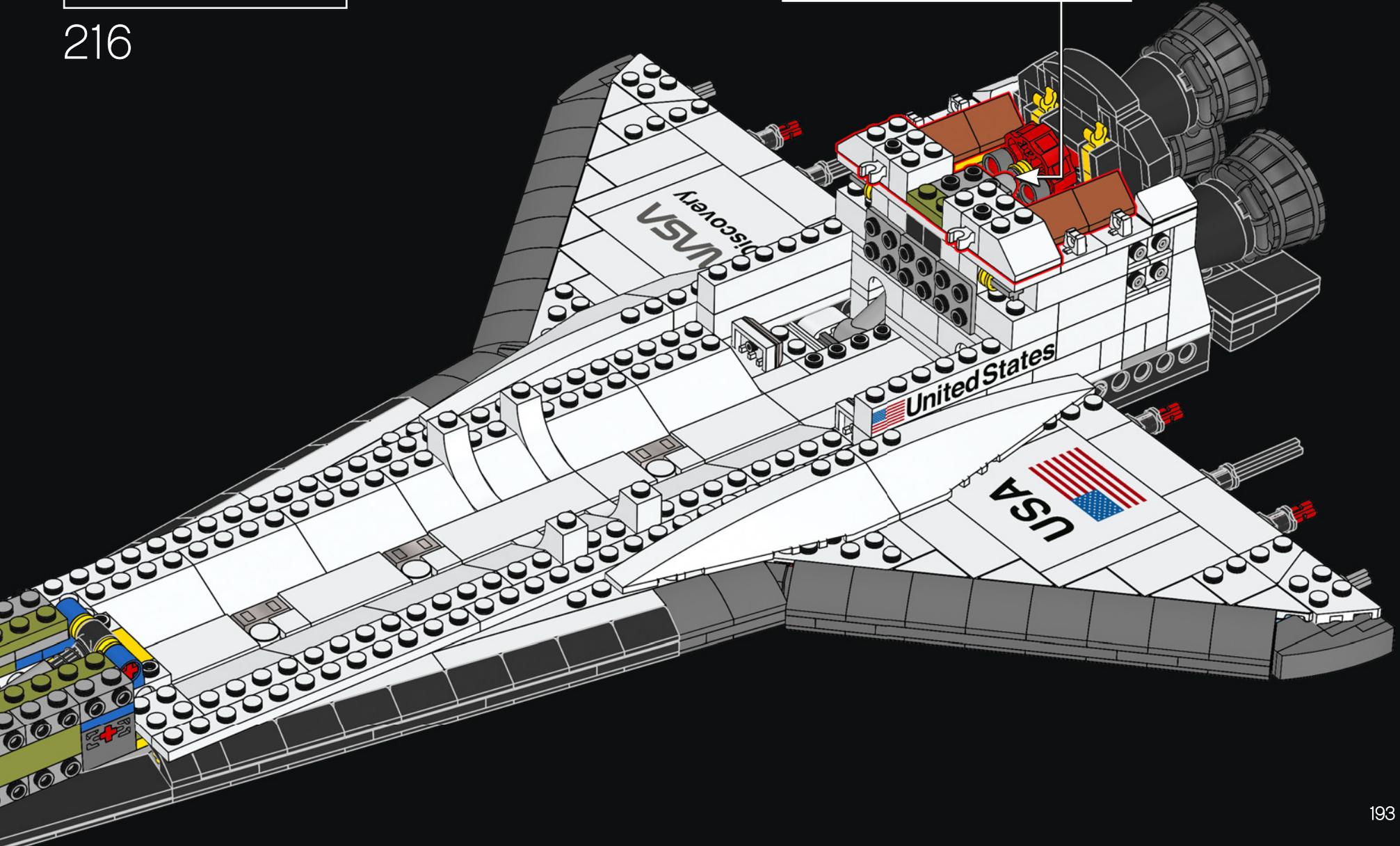


215



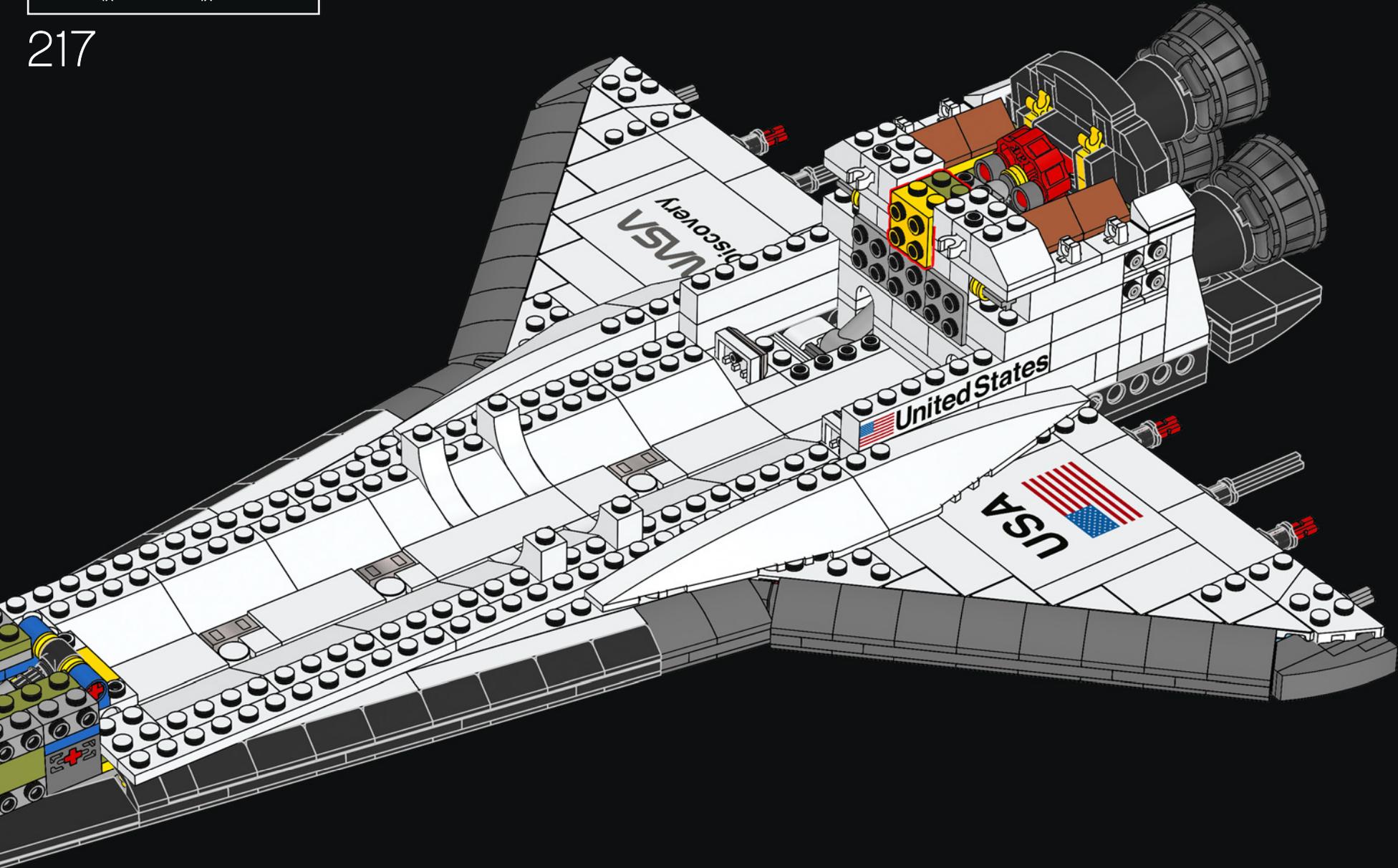


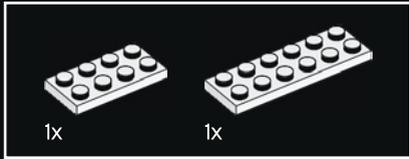
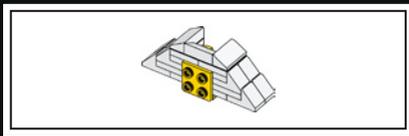
216



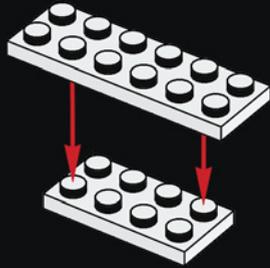


217

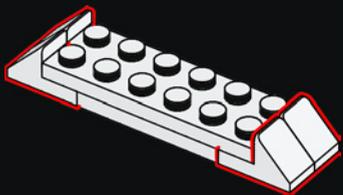




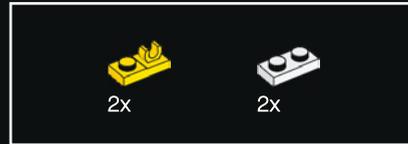
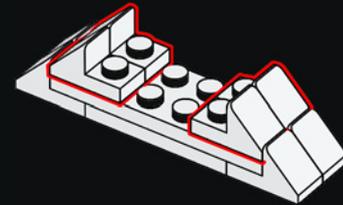
218



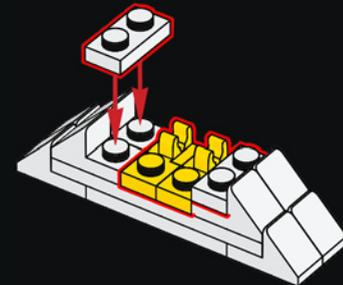
219

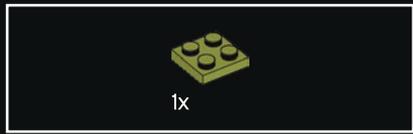


220

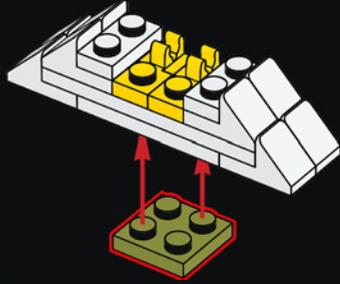


221

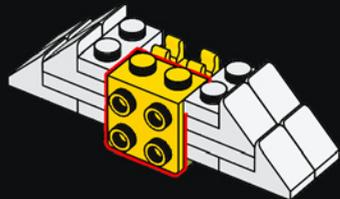




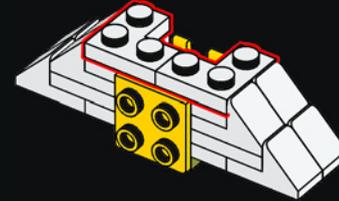
222



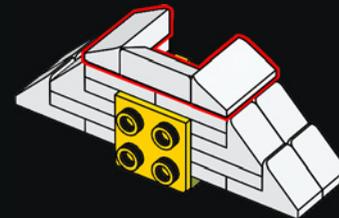
223



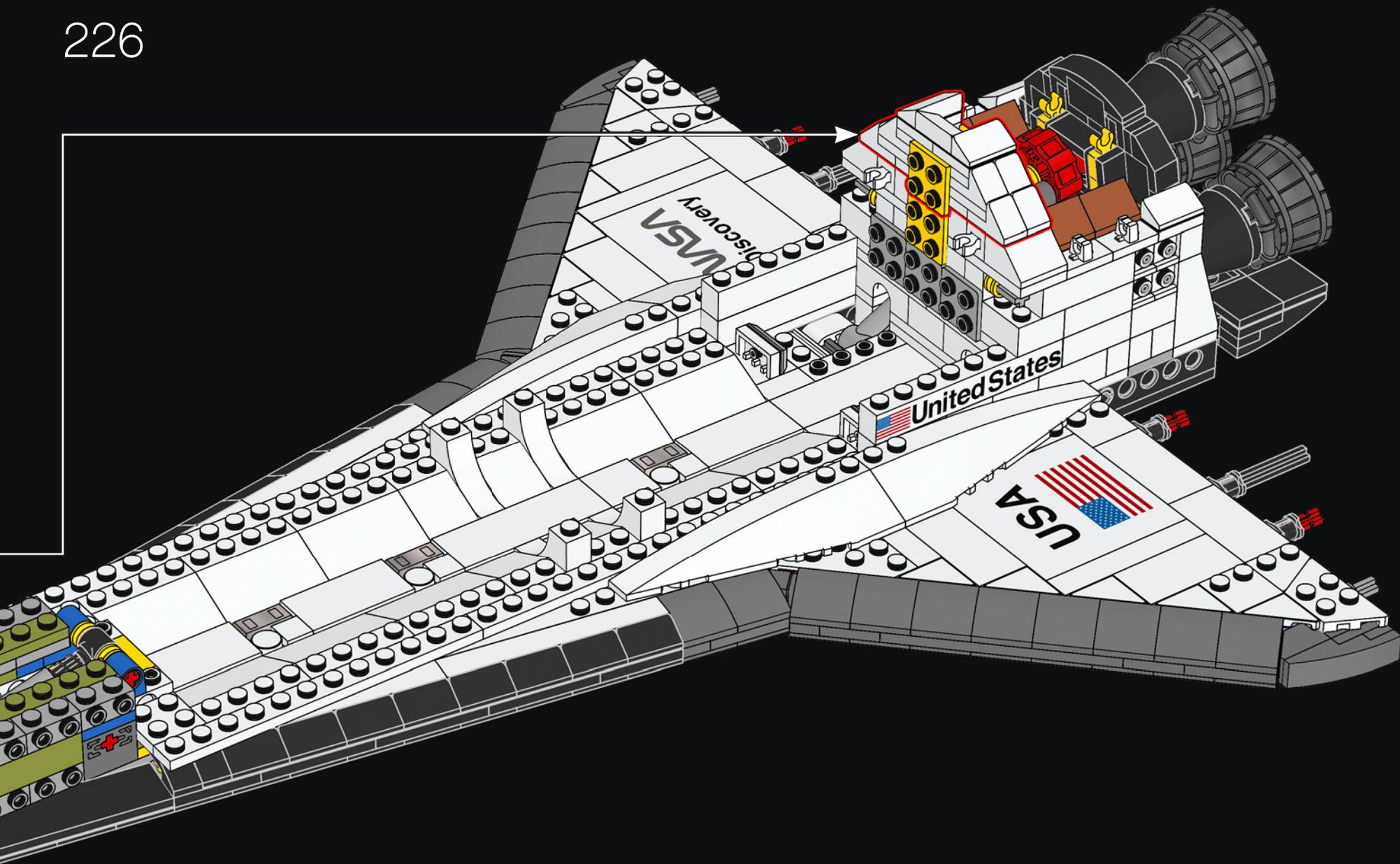
224

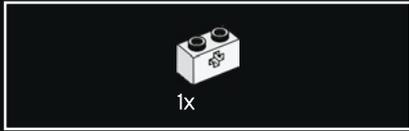
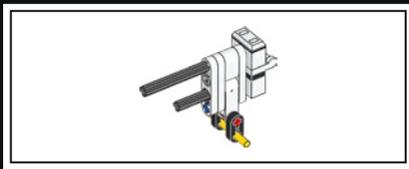


225



226





1x

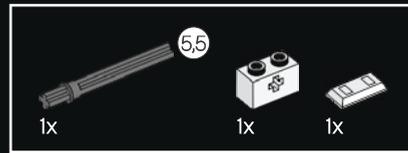
228



1x

1x

229

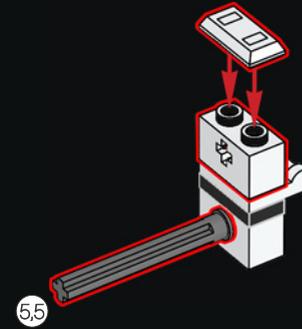


1x

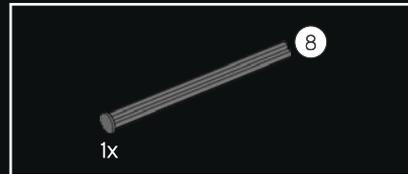
1x

1x

230



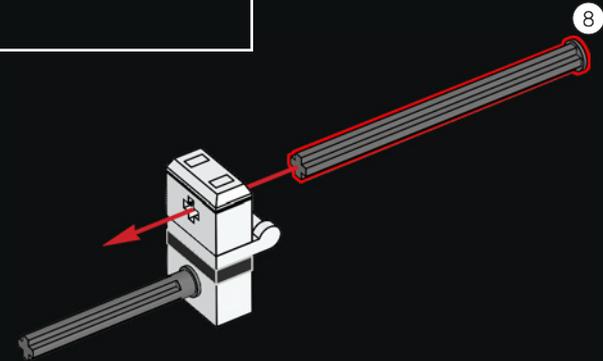
5.5



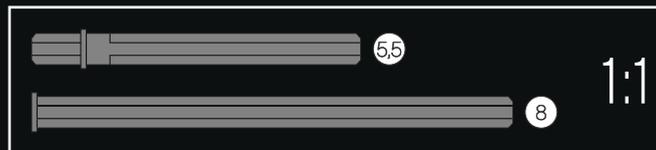
1x

8

231



8



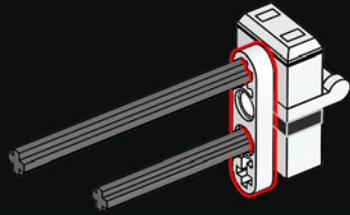
5.5

8

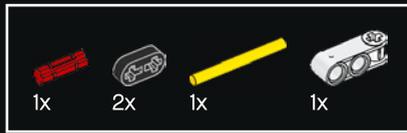
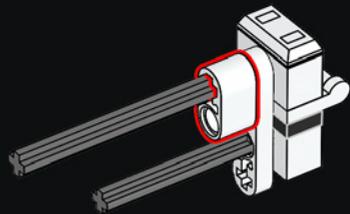
1:1



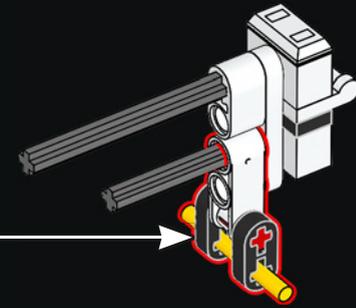
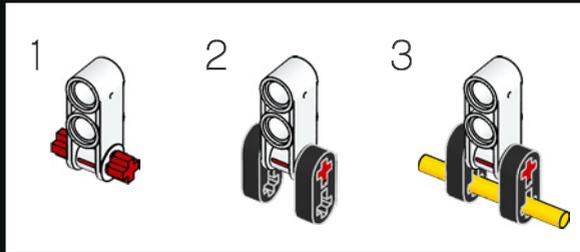
232



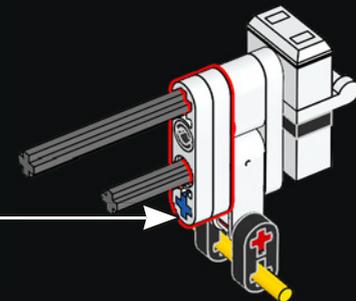
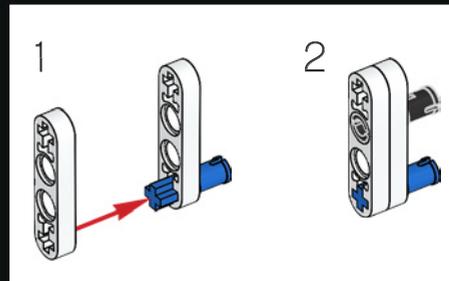
233



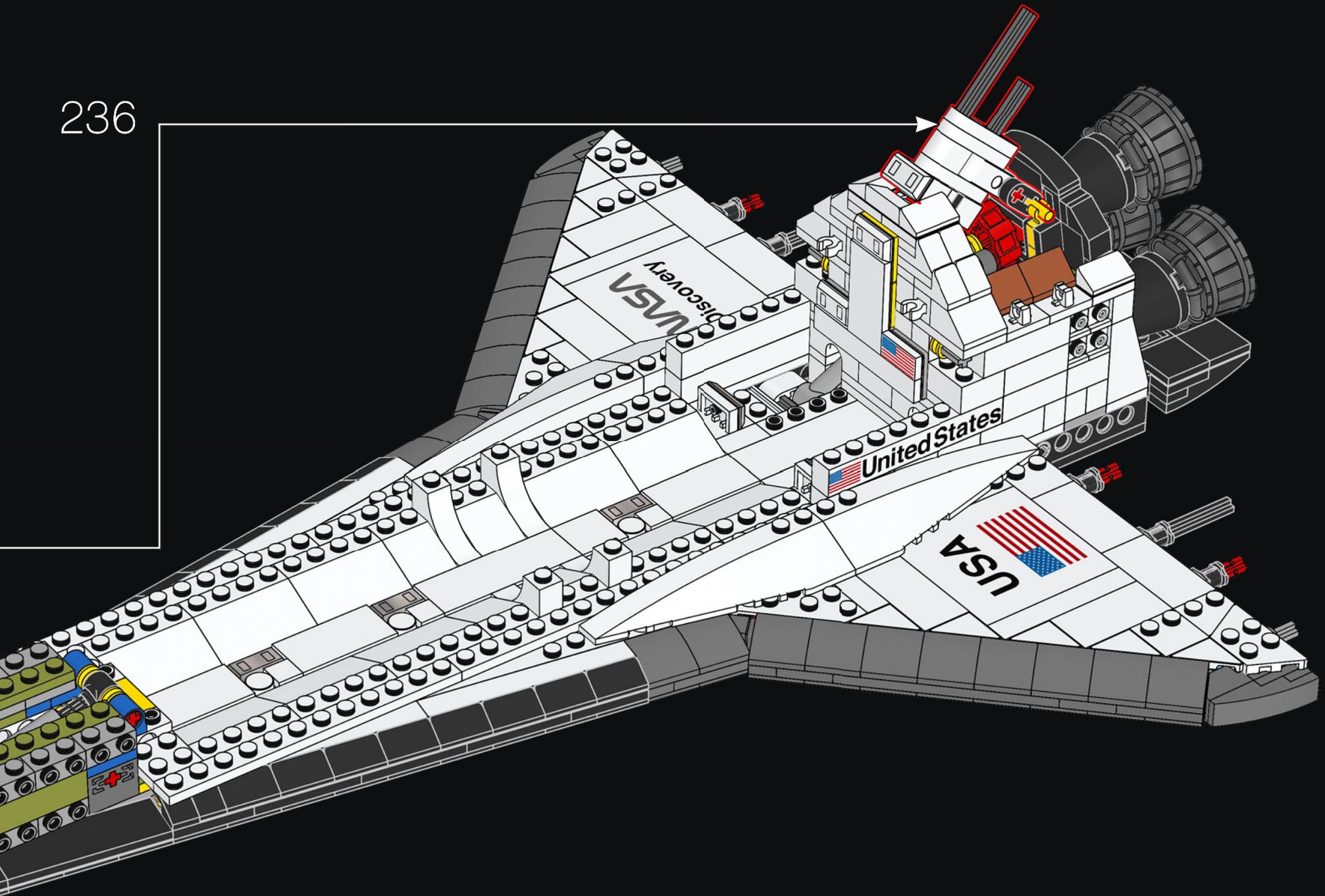
234



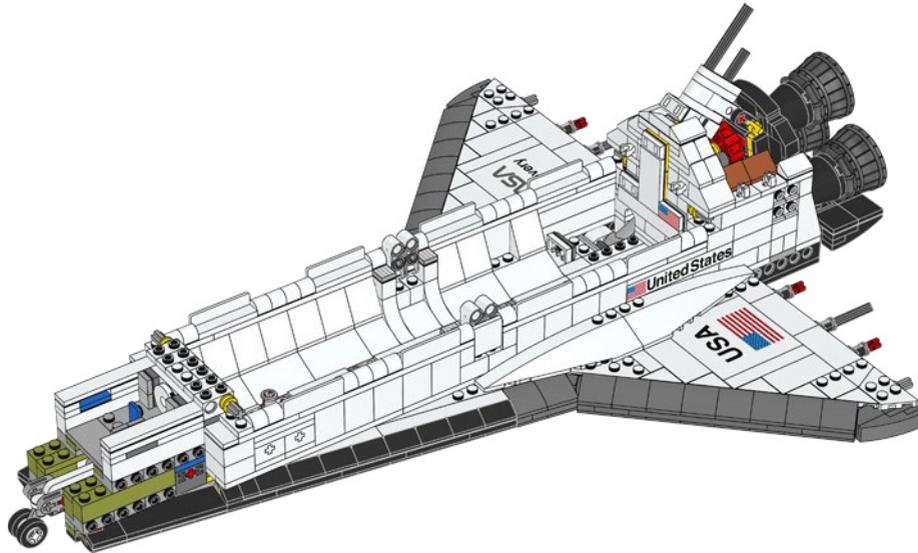
235

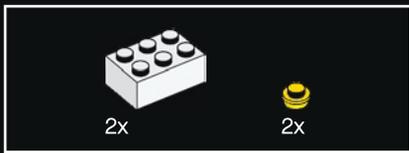


236

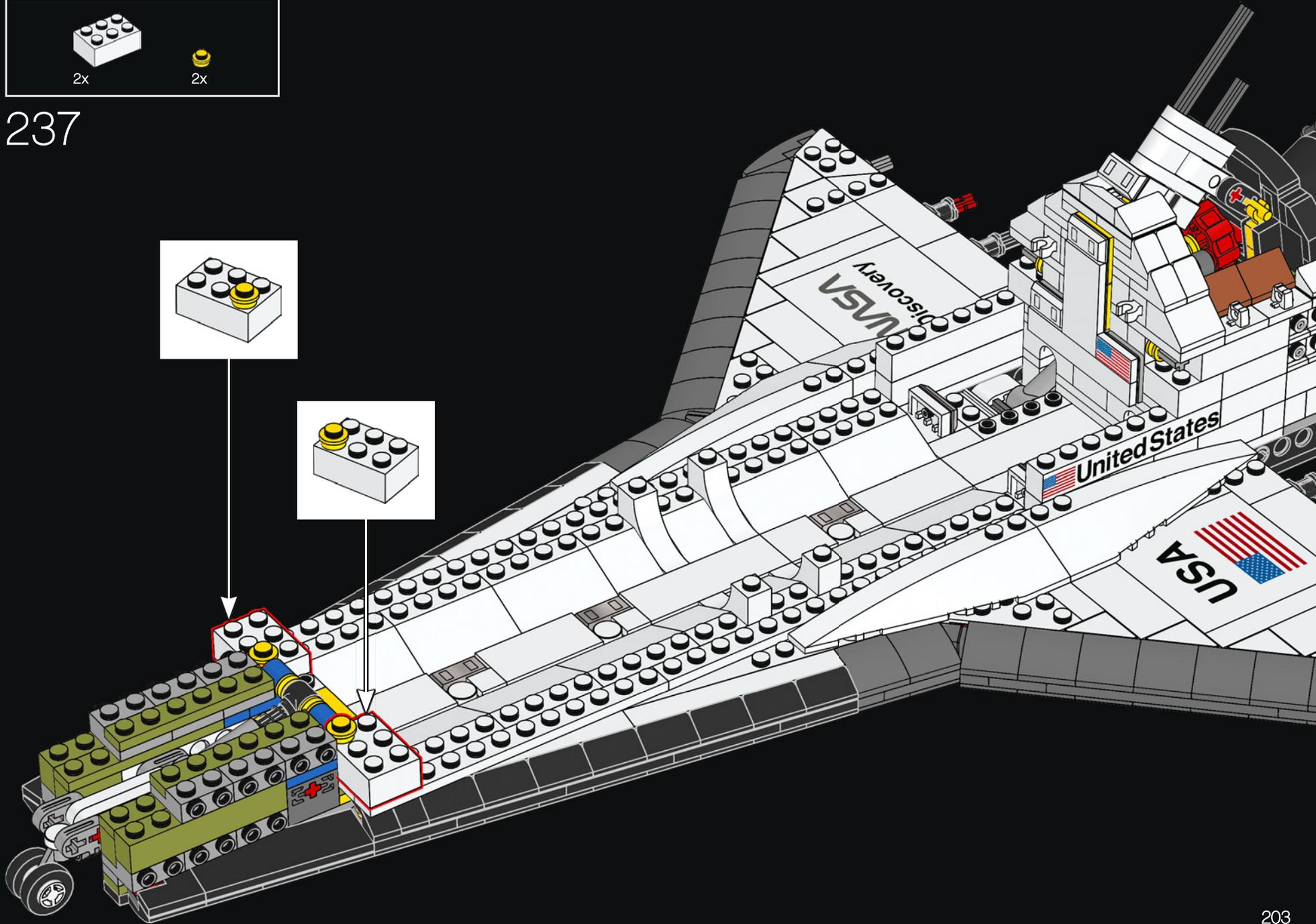
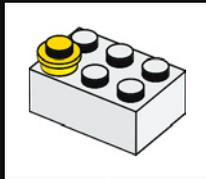
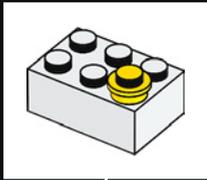


12



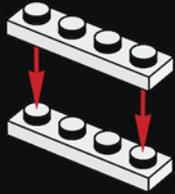


237

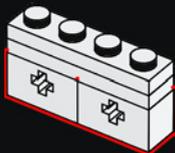




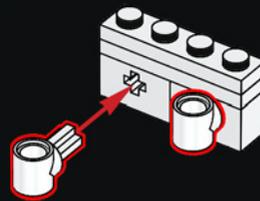
238



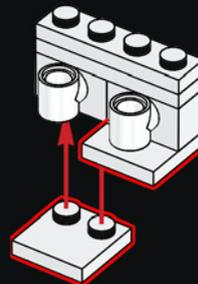
239



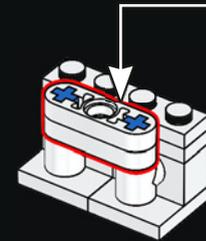
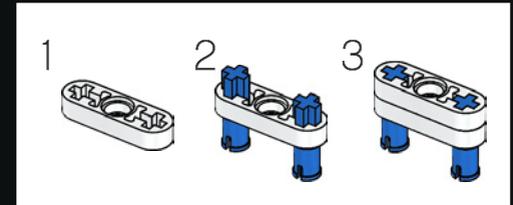
240



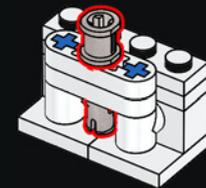
241

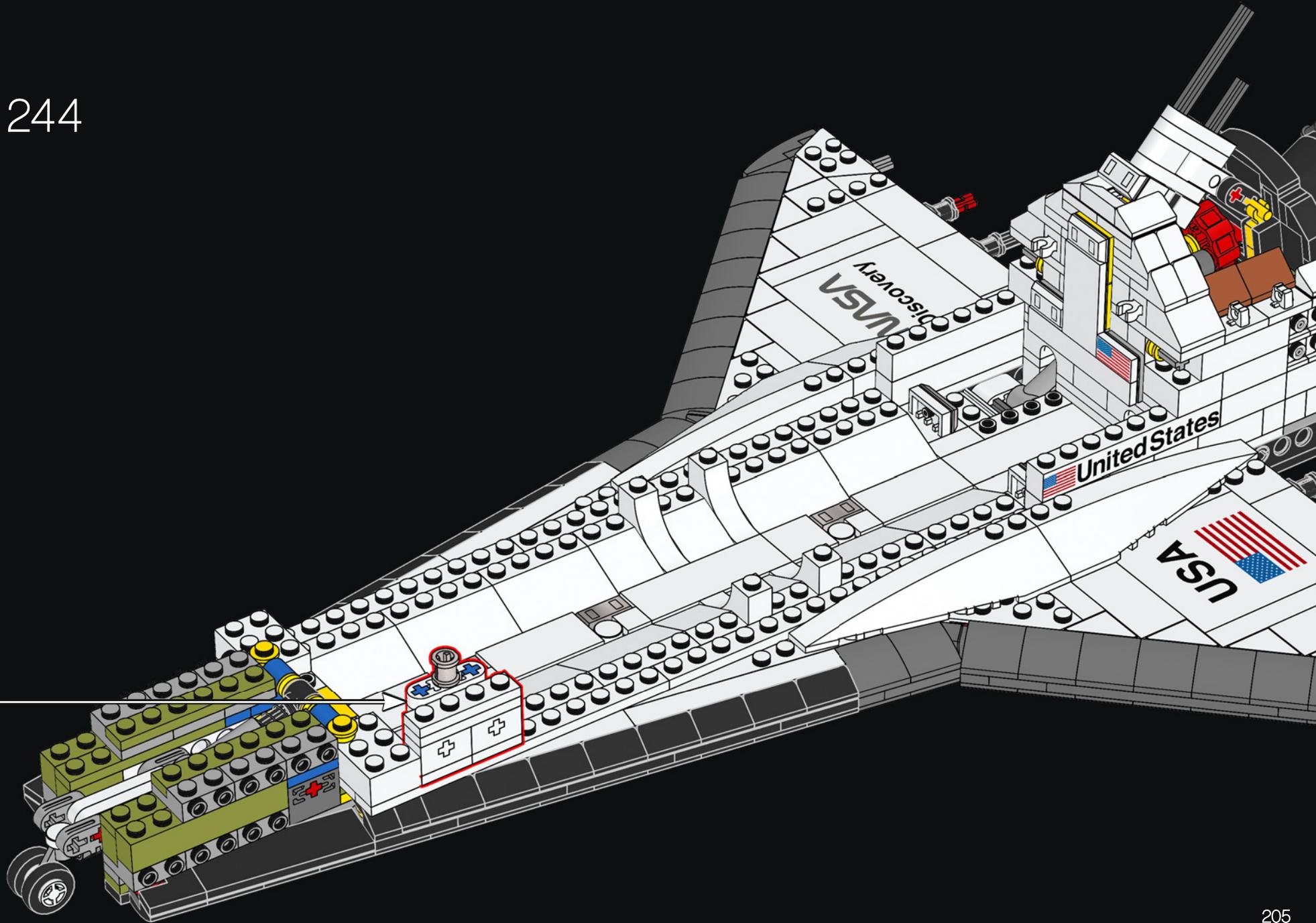


242



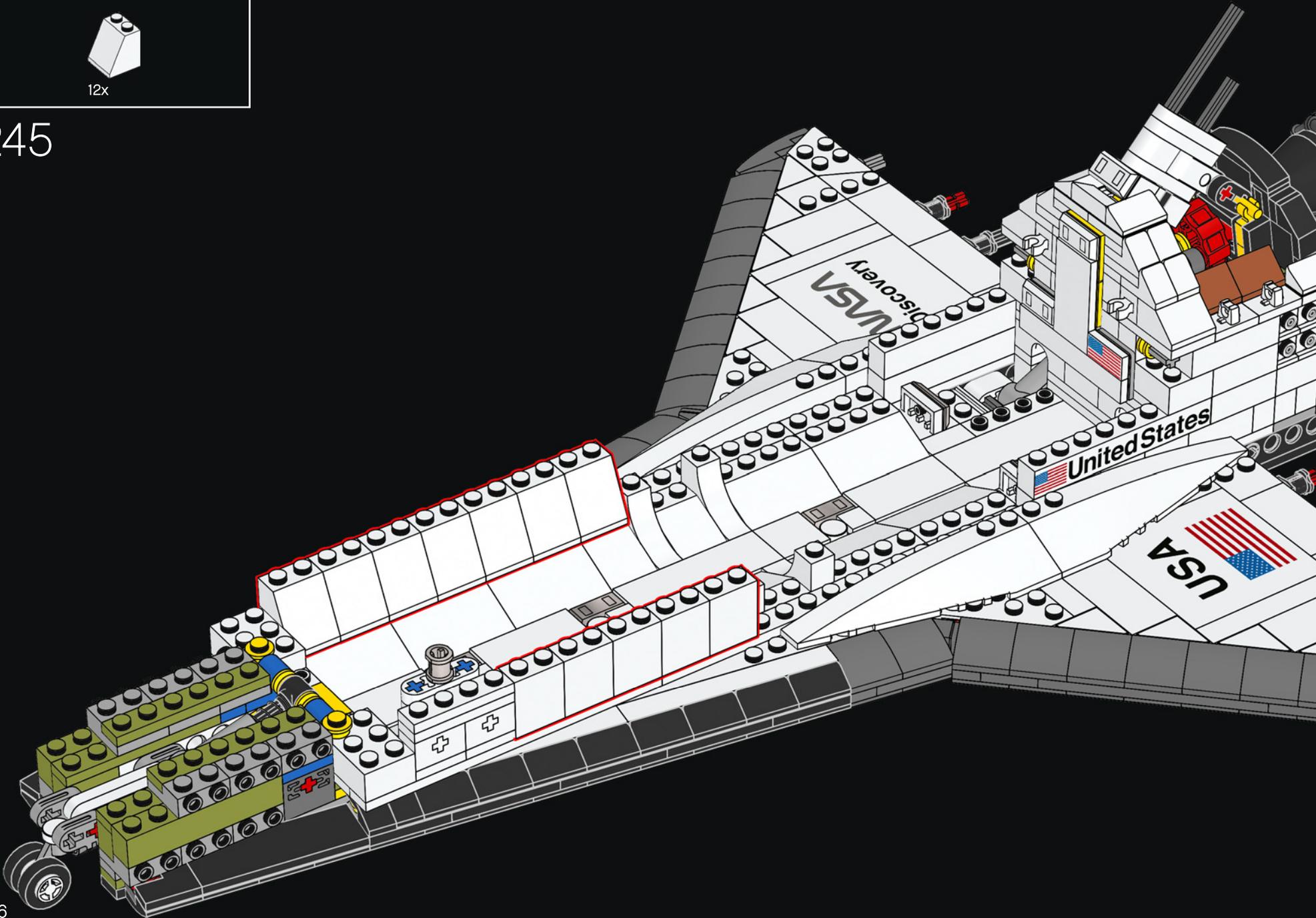
243

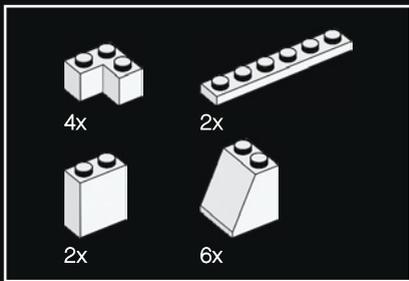




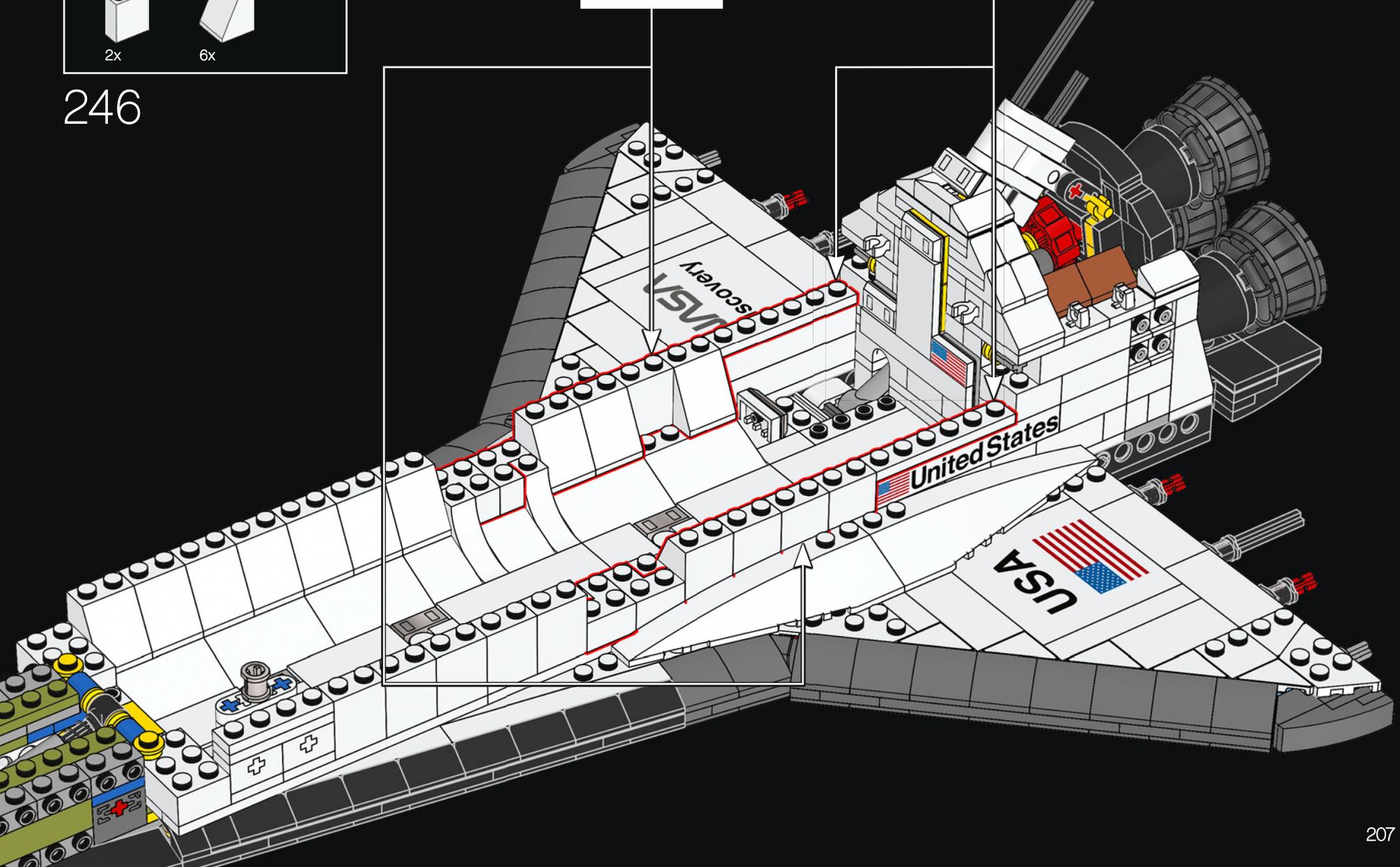
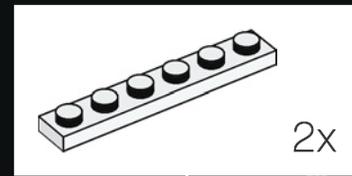
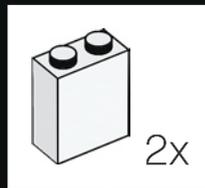


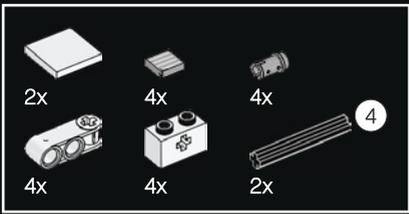
245



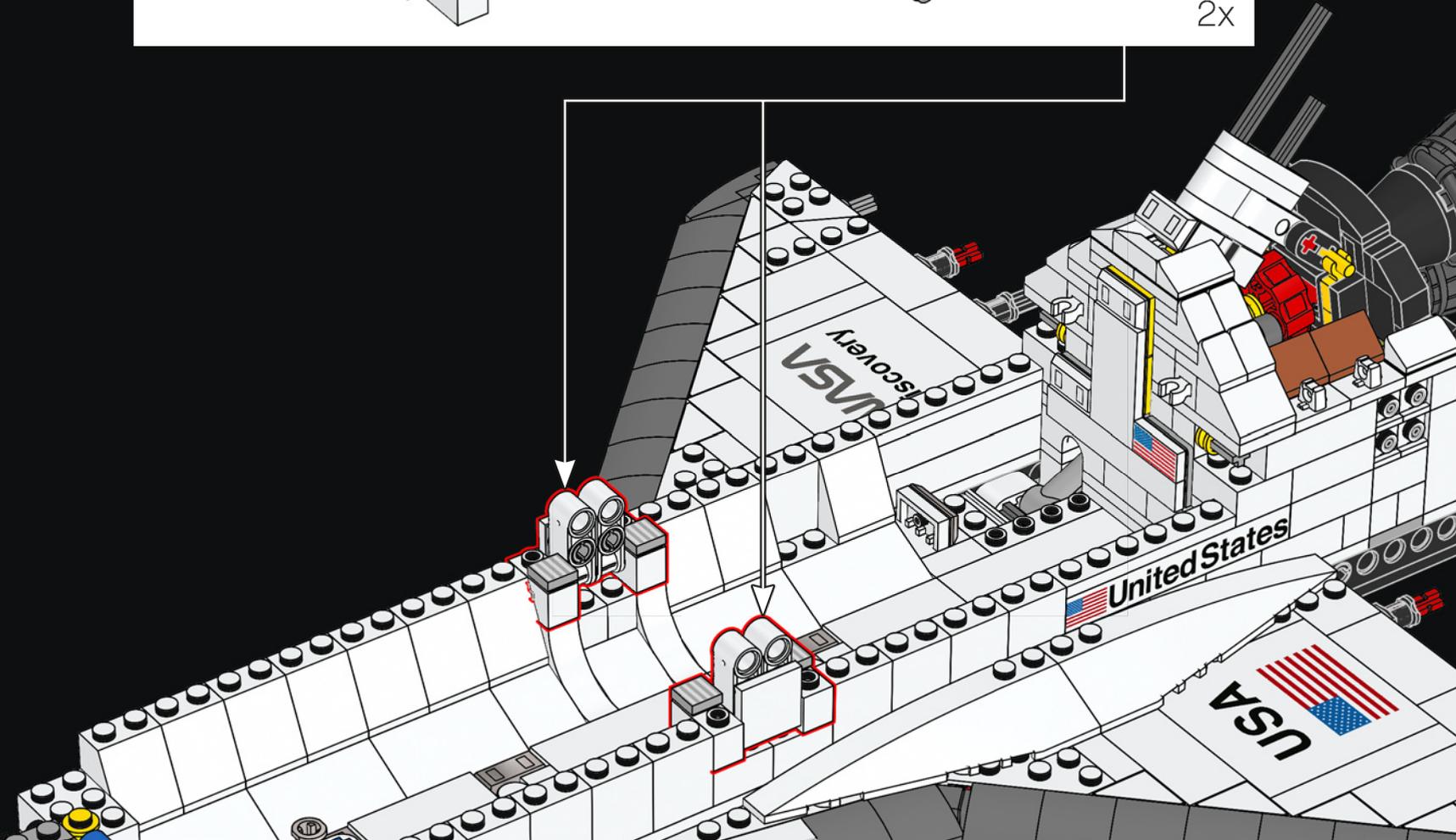
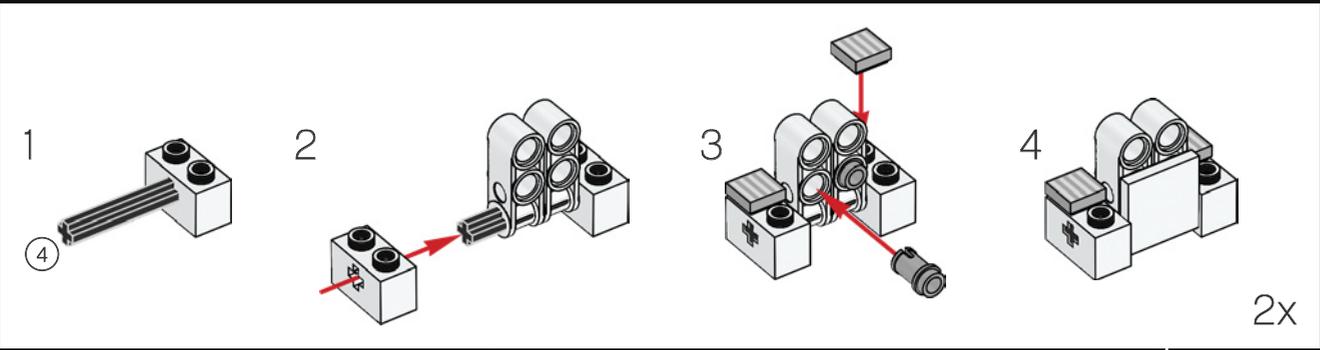


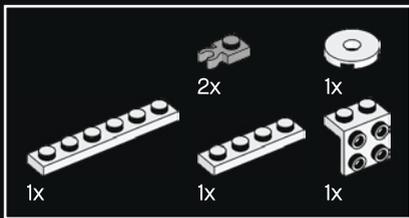
246



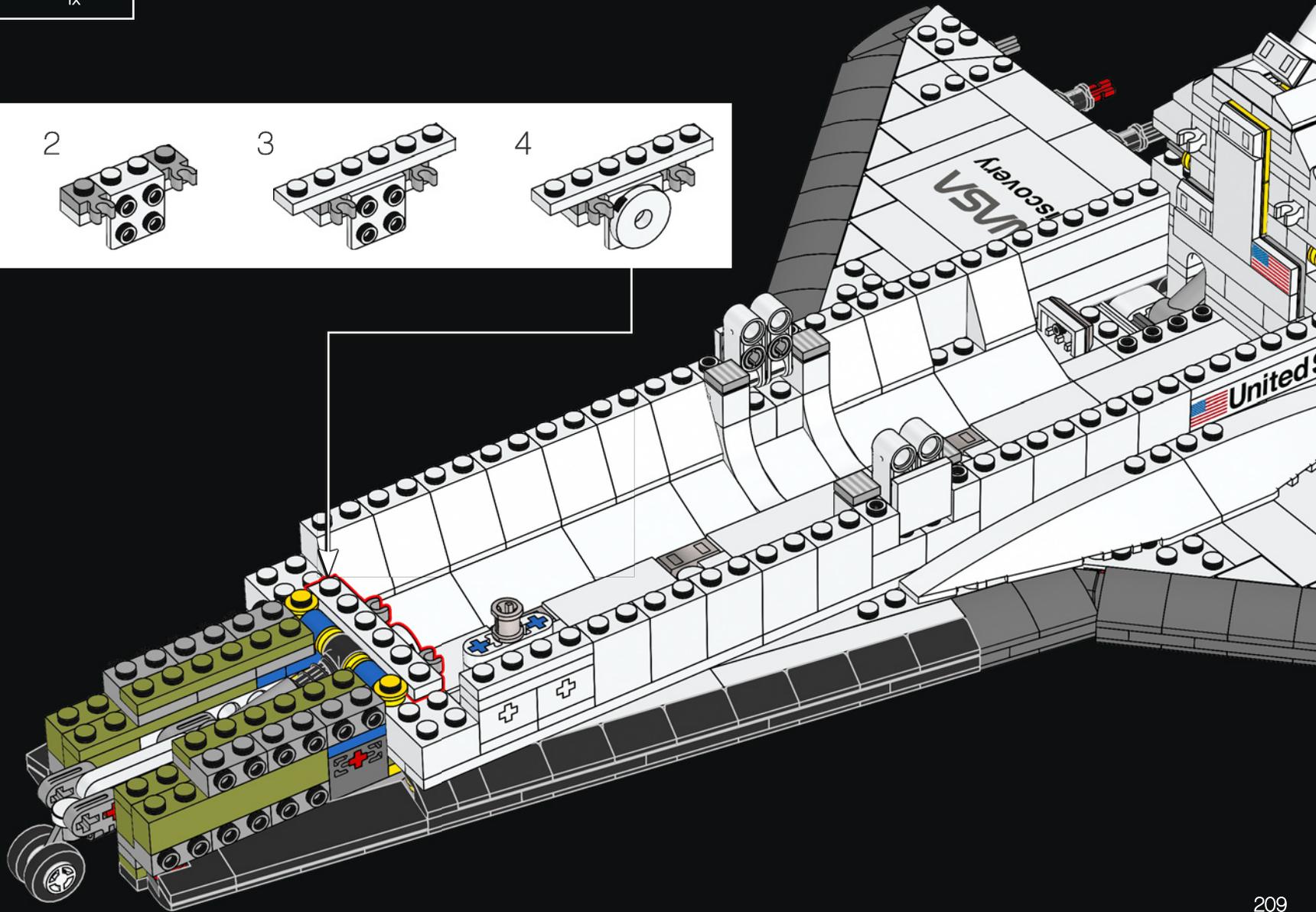
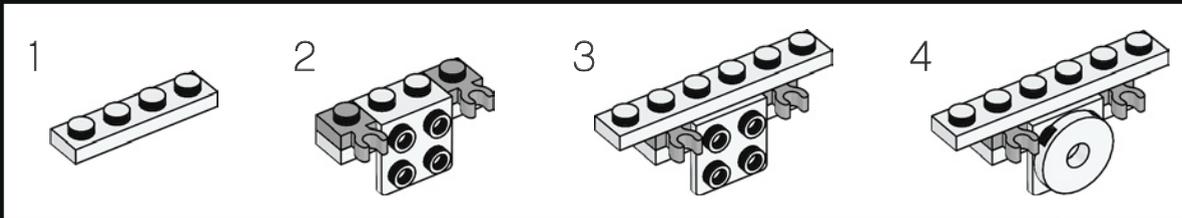


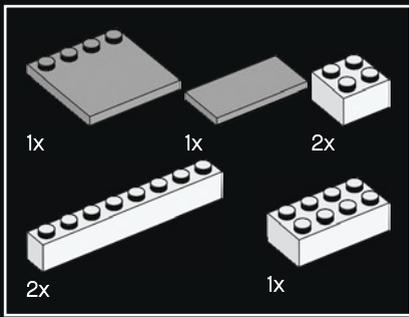
247





248

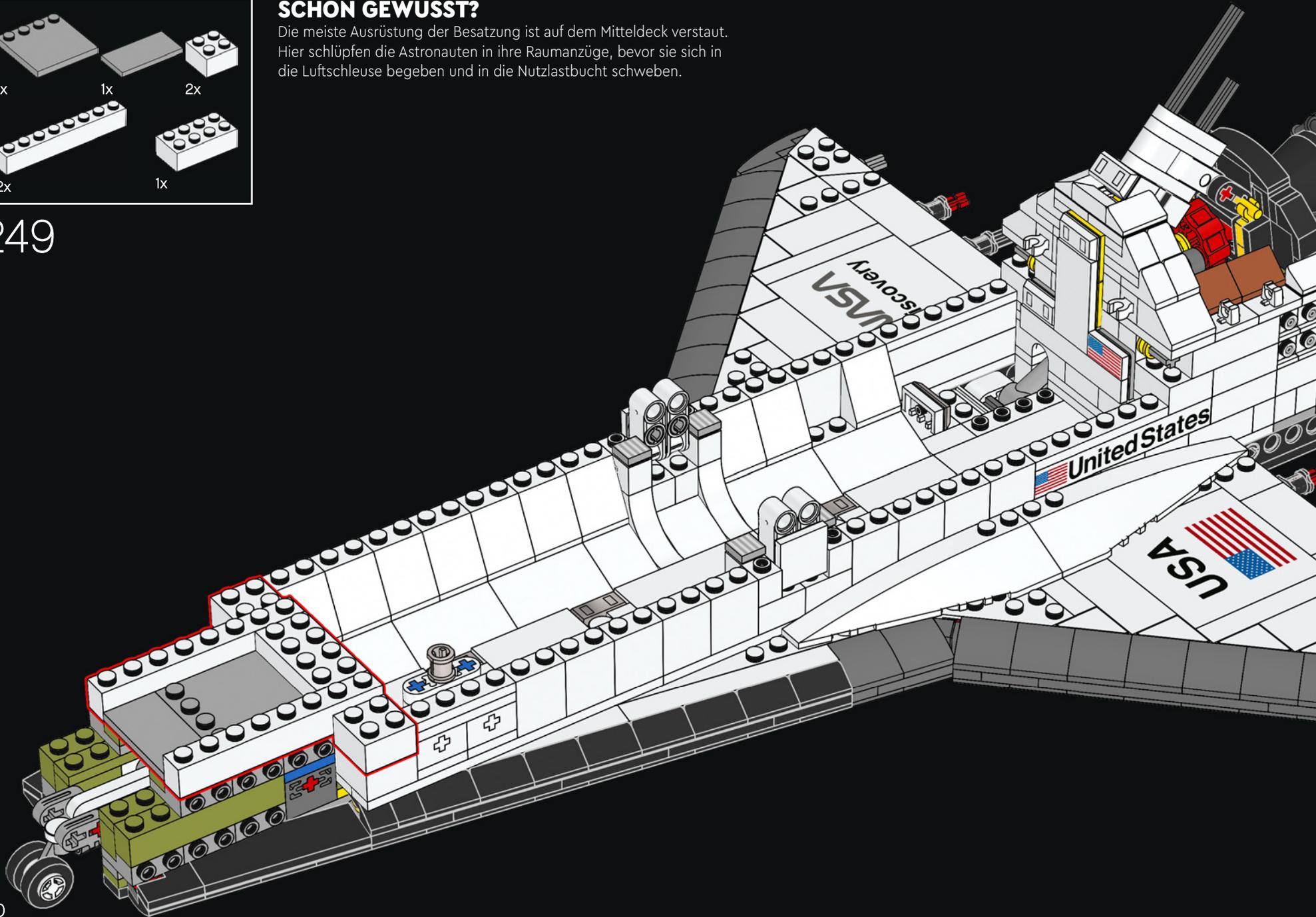


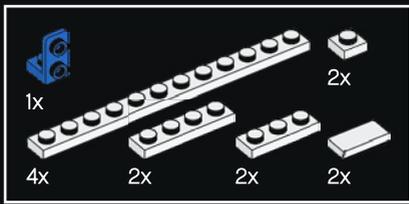


SCHON GEWUSST?

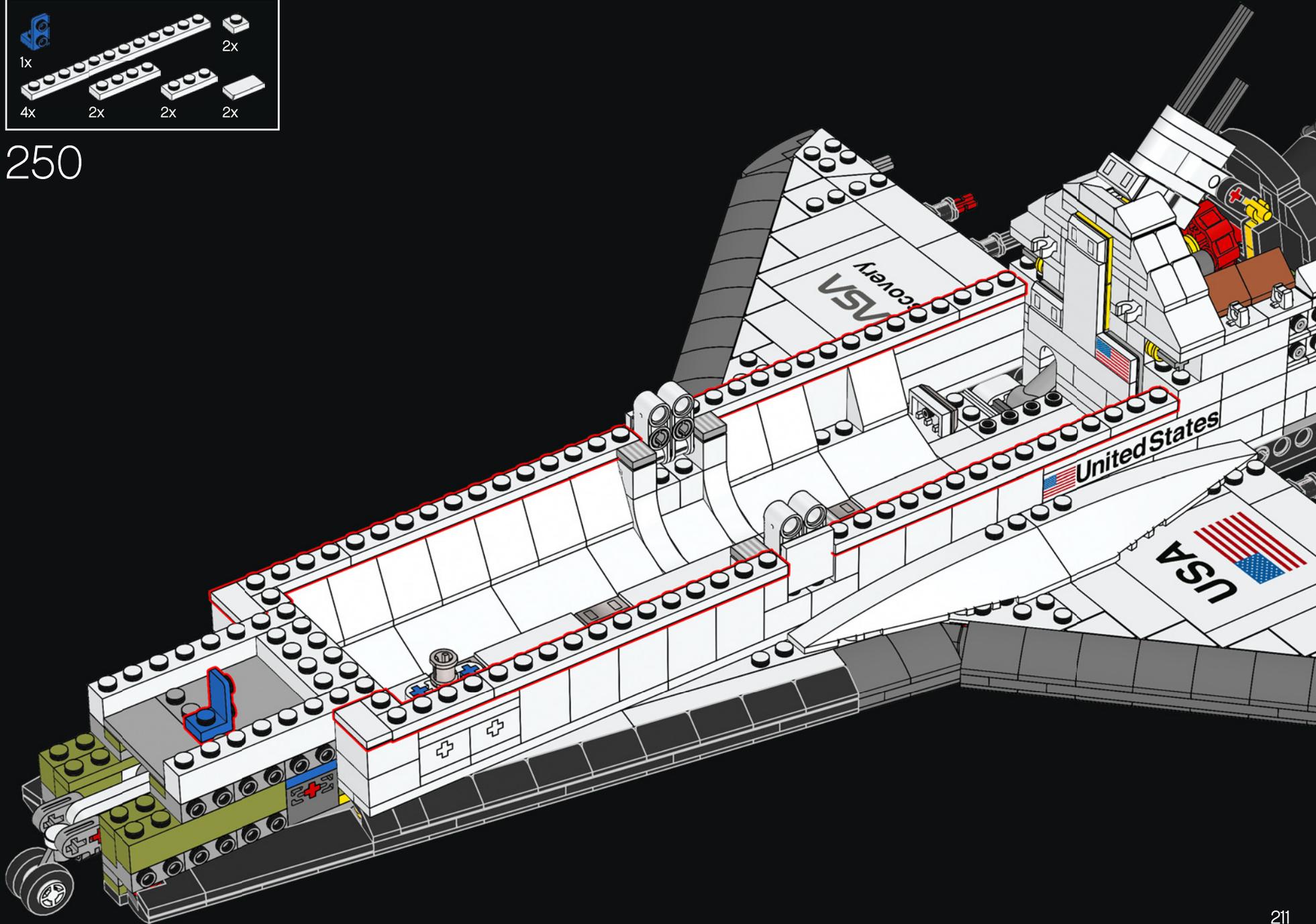
Die meiste Ausrüstung der Besatzung ist auf dem Mitteldeck verstaут. Hier schlüpfen die Astronauten in ihre Raumanzüge, bevor sie sich in die Luftschleuse begeben und in die Nutzlastbucht schweben.

249



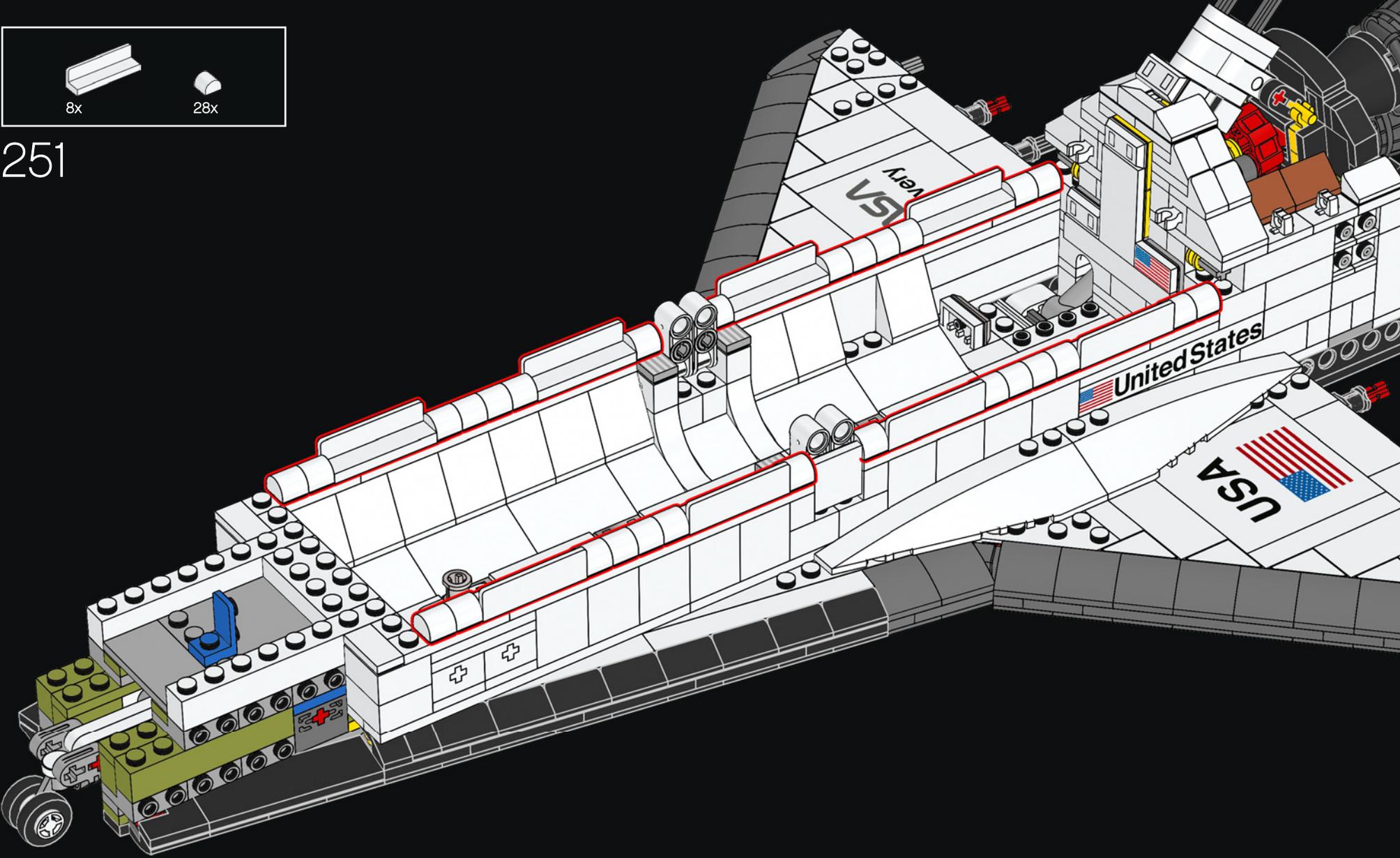


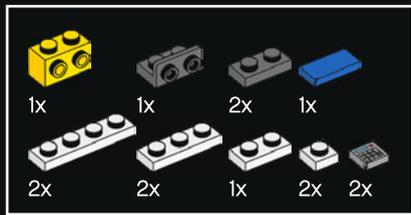
250



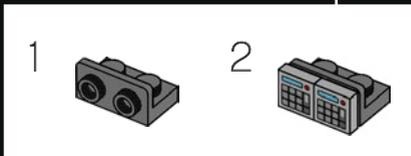
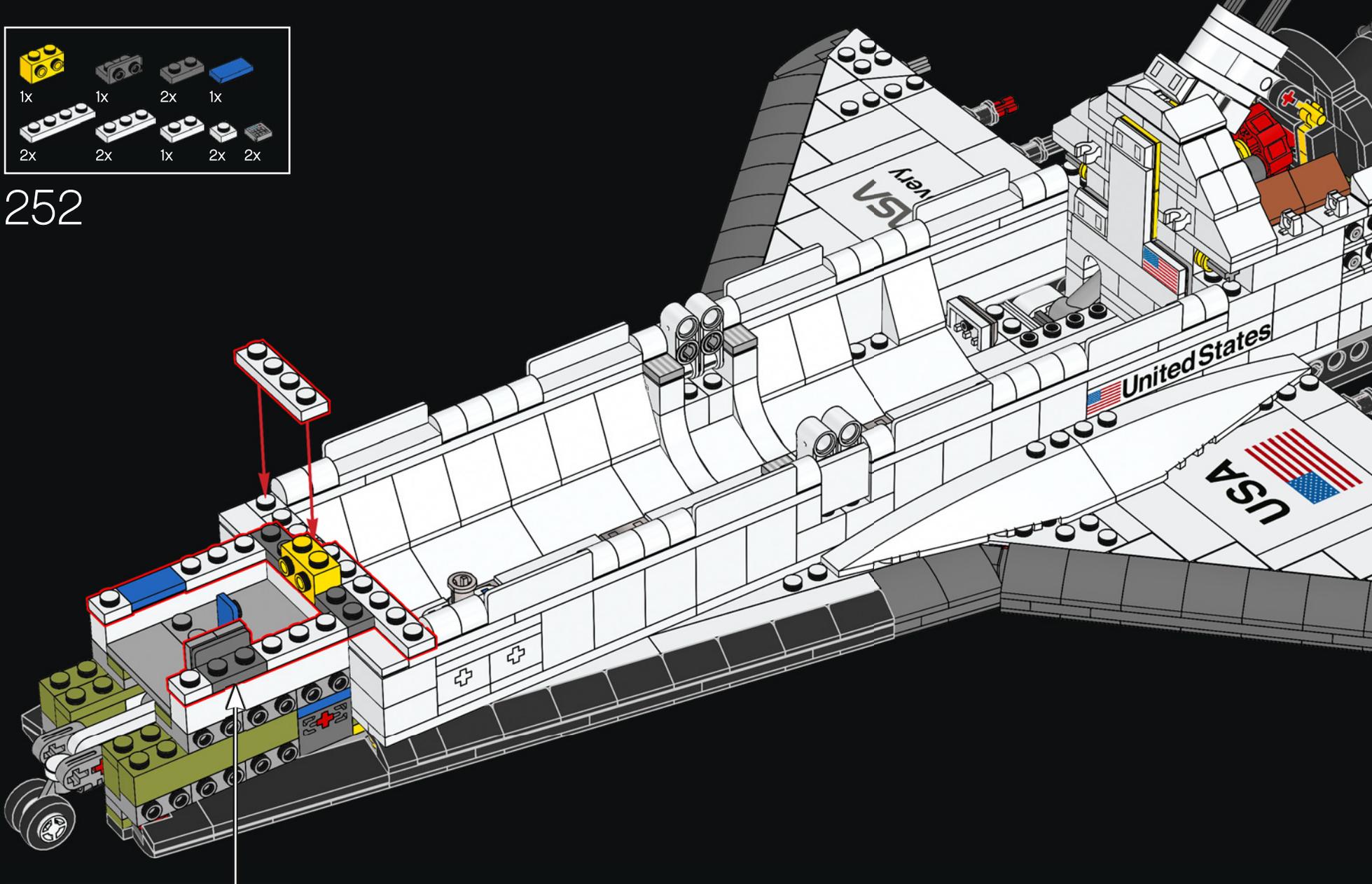


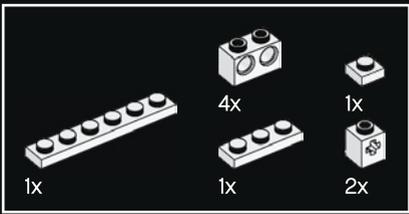
251



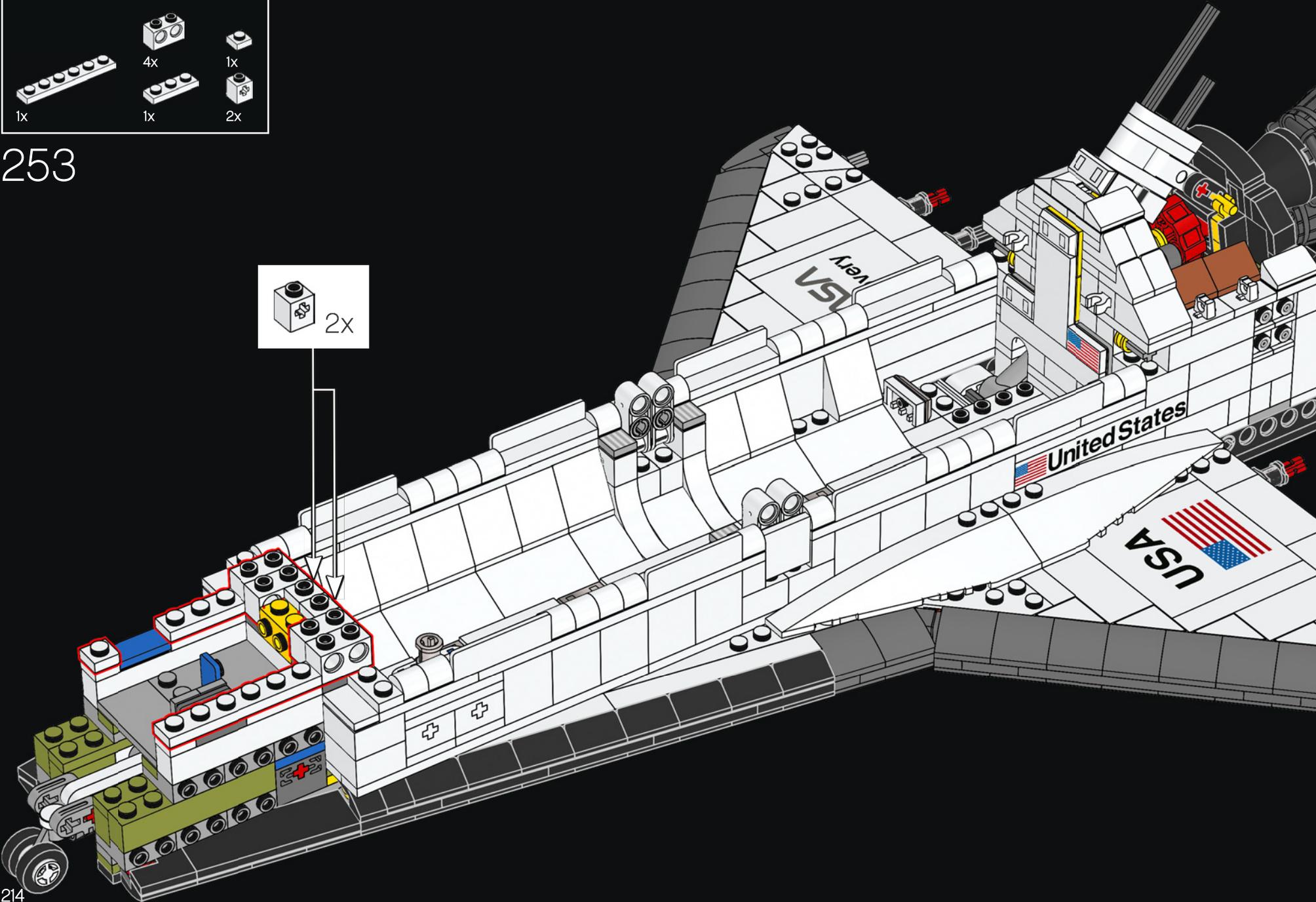
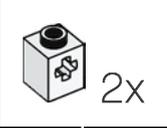


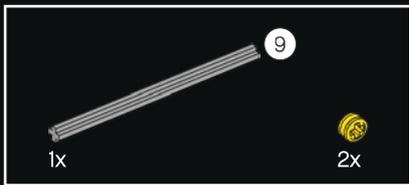
252



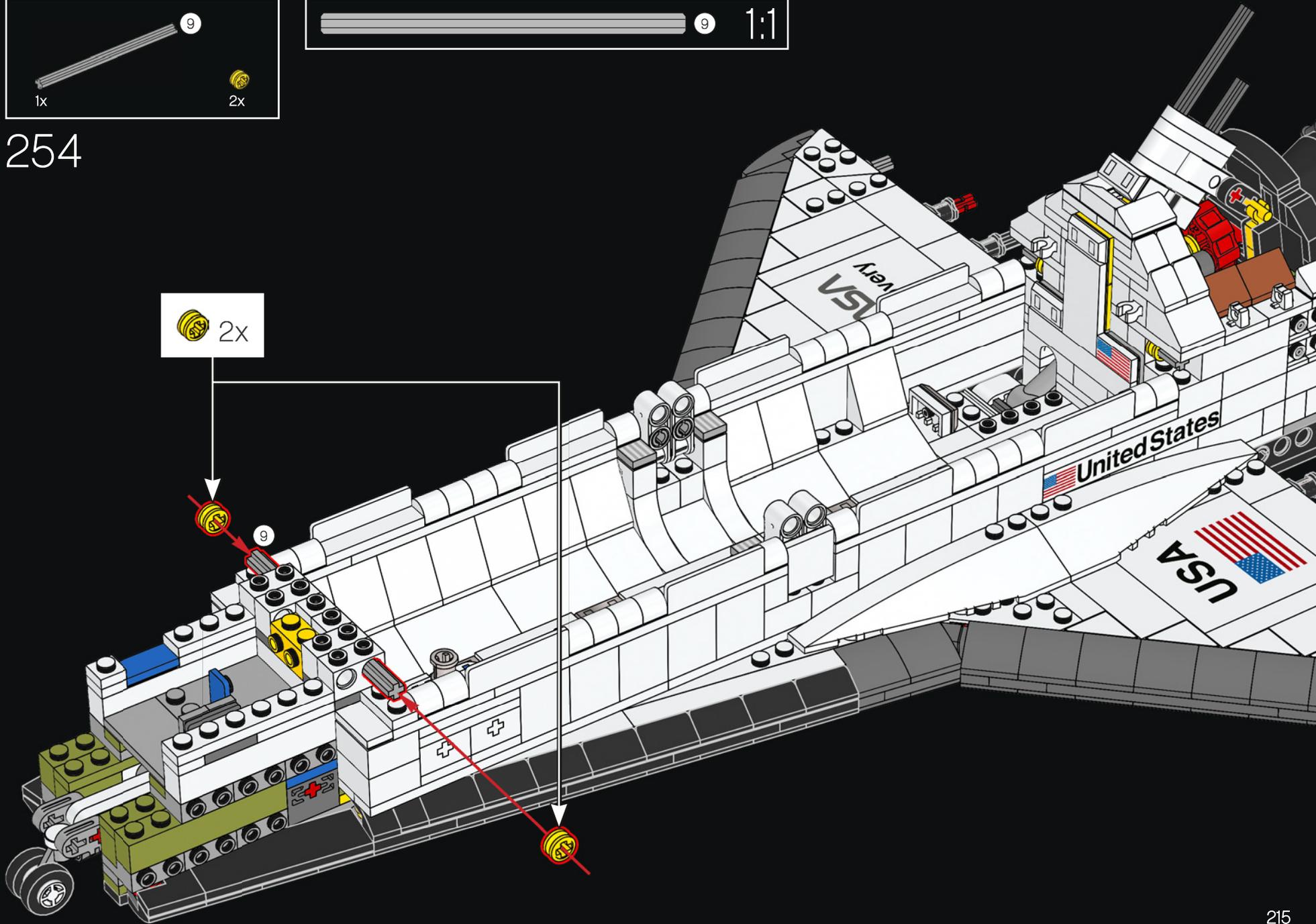


253



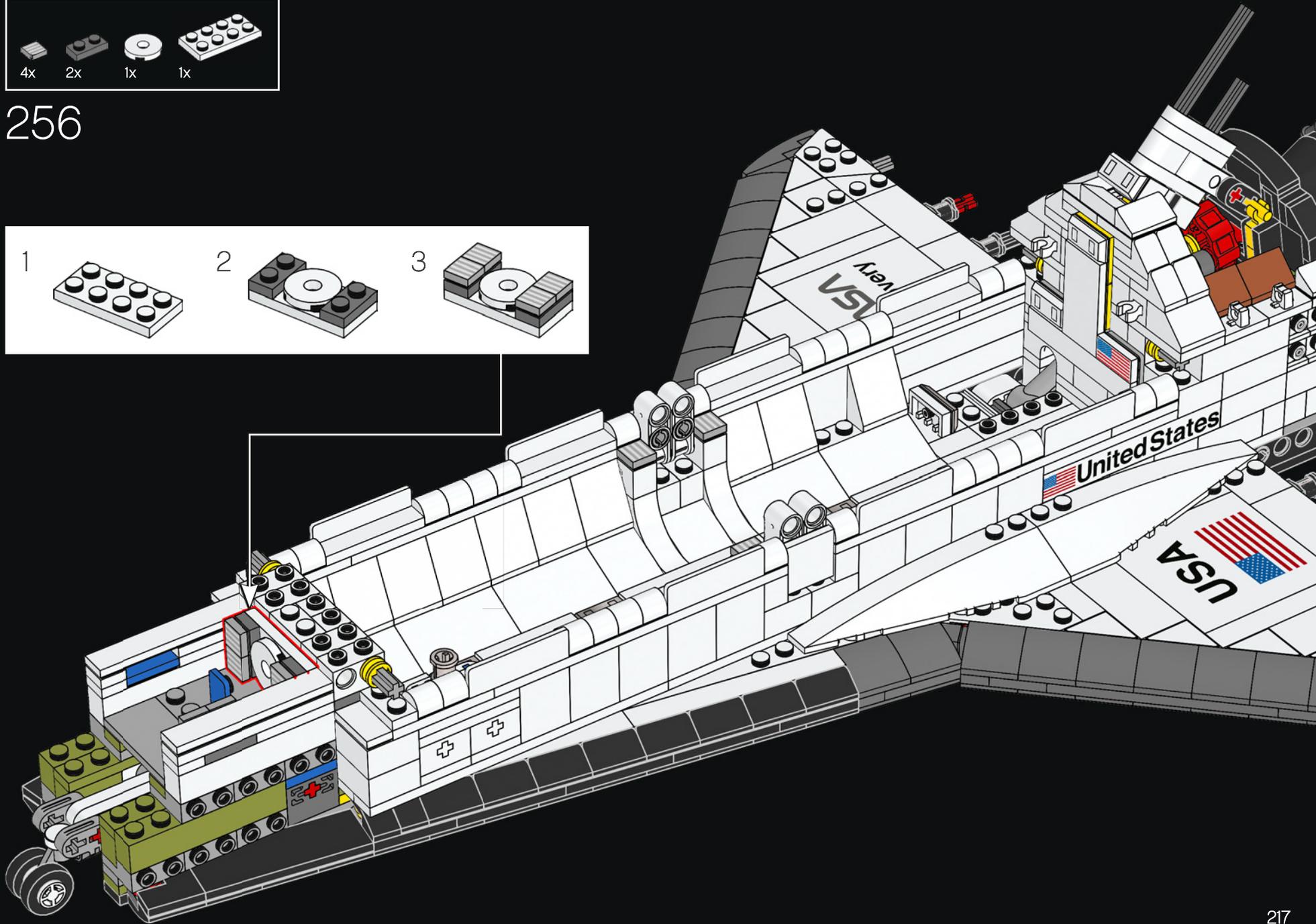
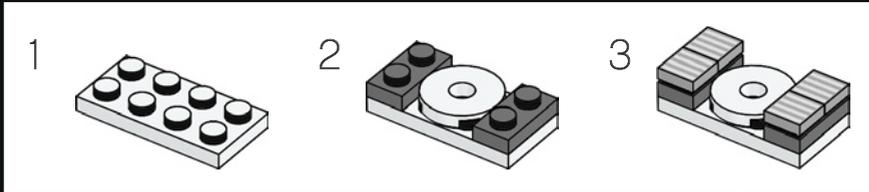


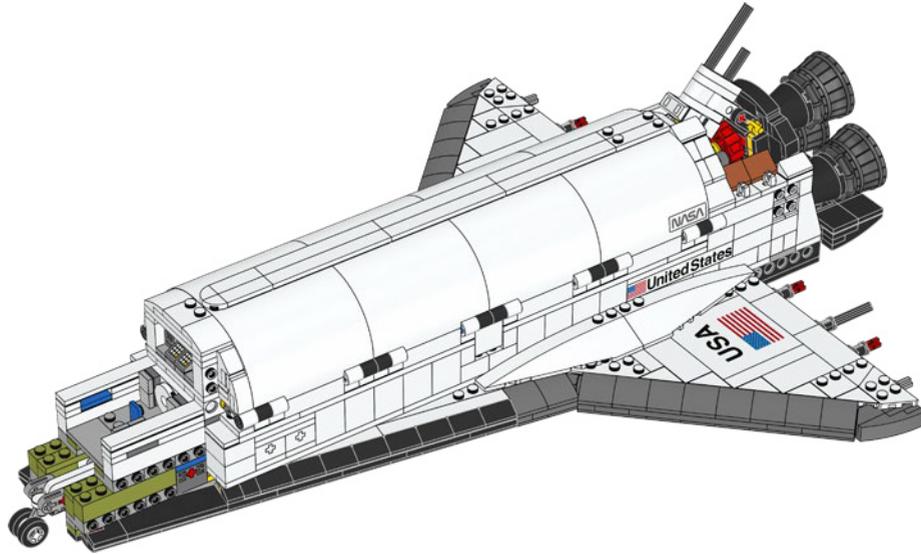
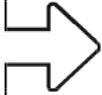
254



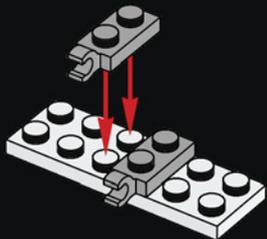


256

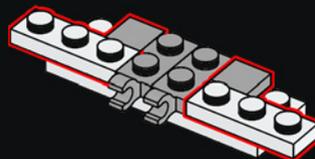




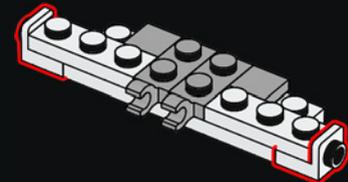
257



258

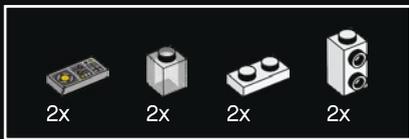
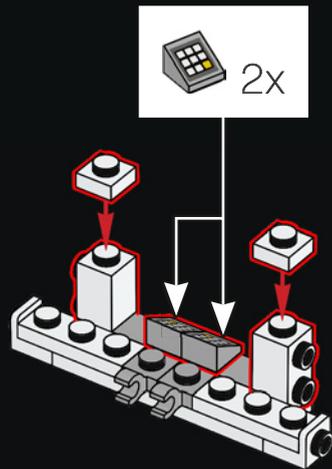


259

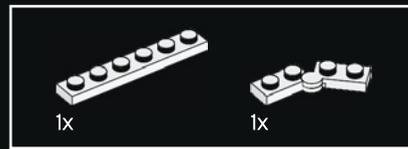
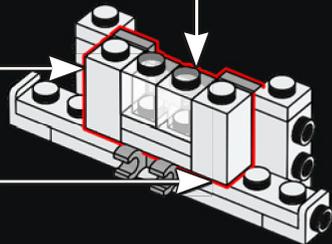
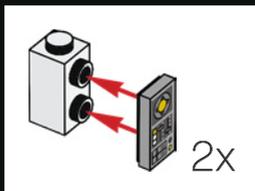
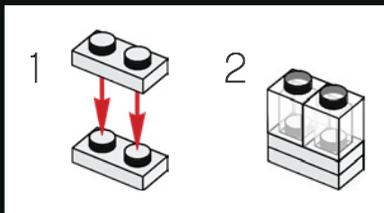




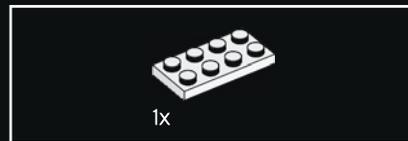
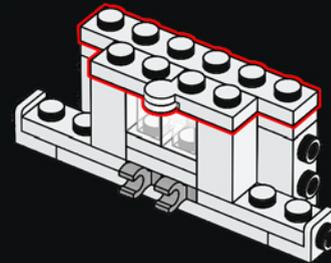
260



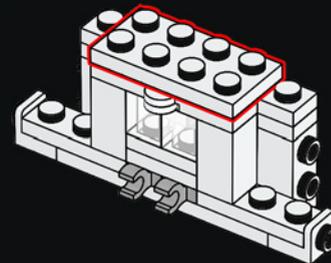
261



262

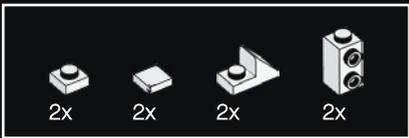
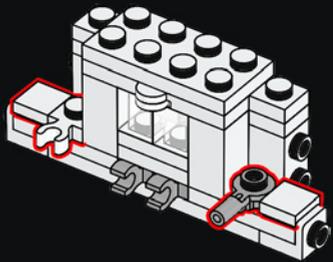


263

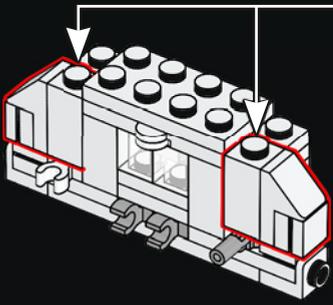
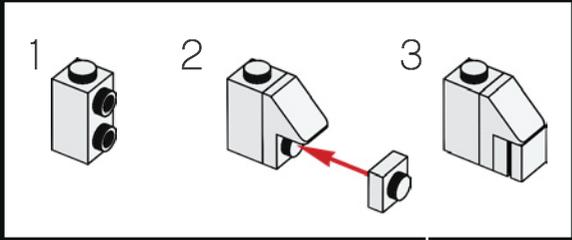




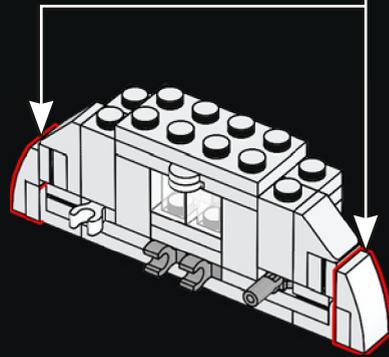
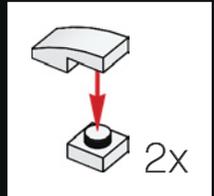
264



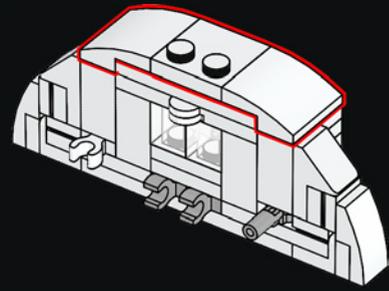
265

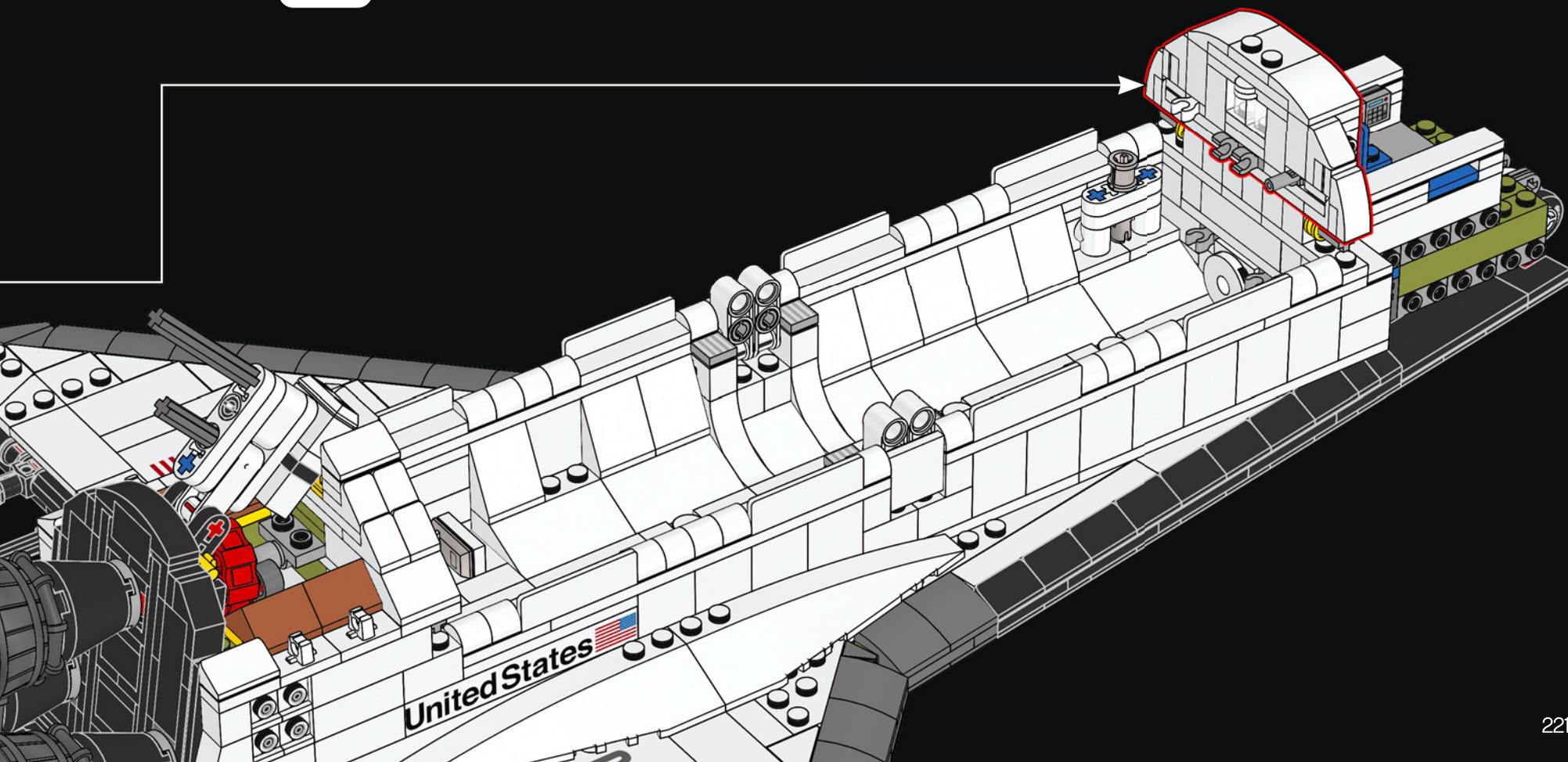


266



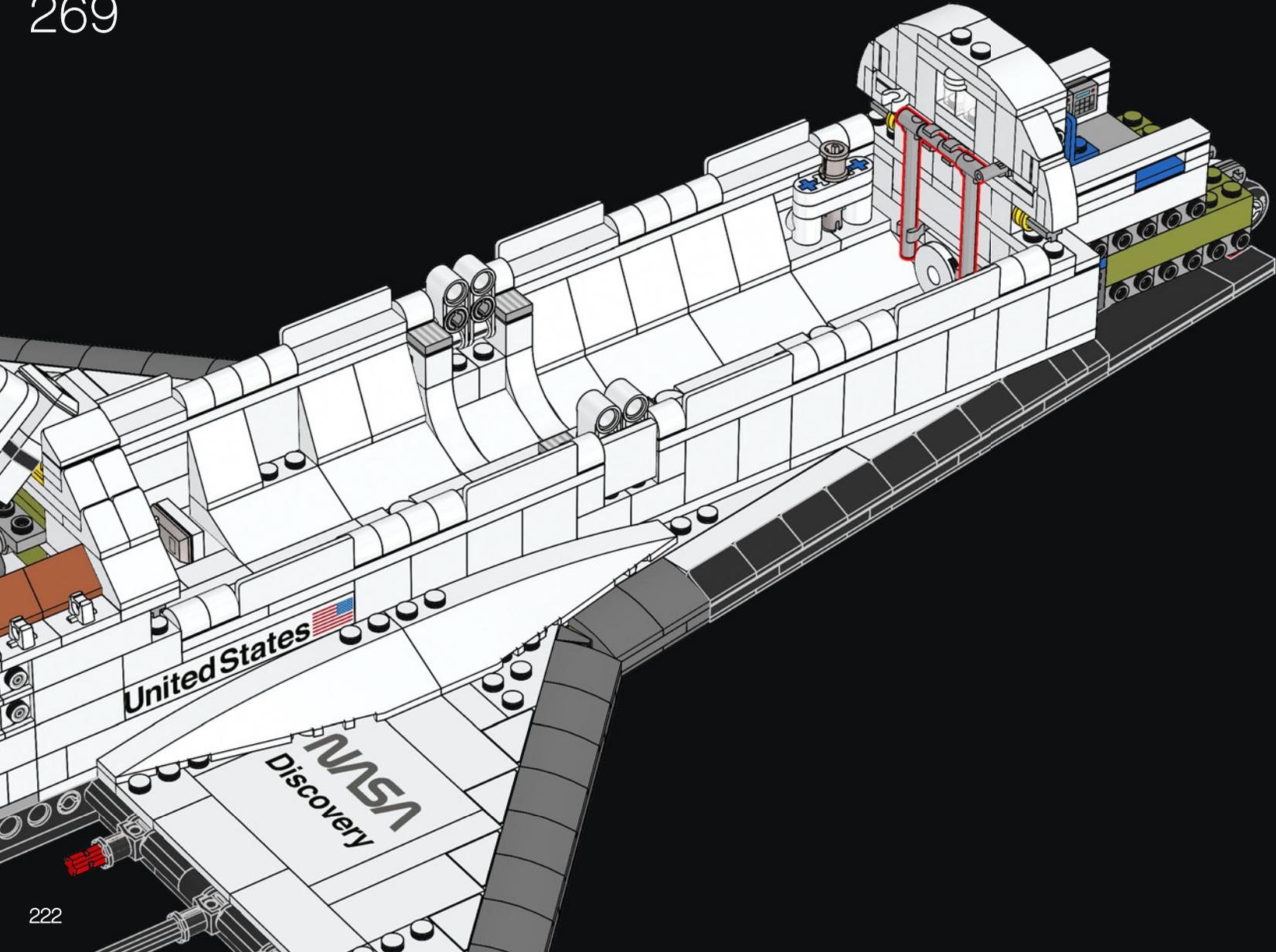
267



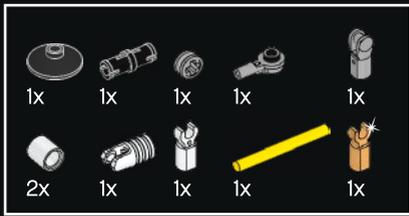




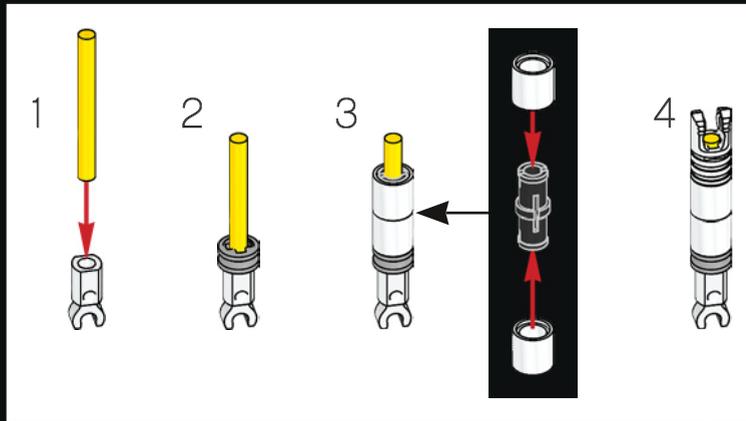
269



222

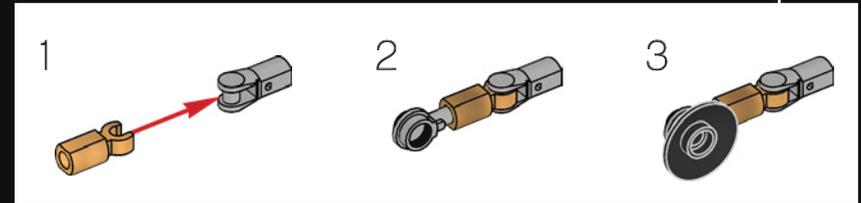
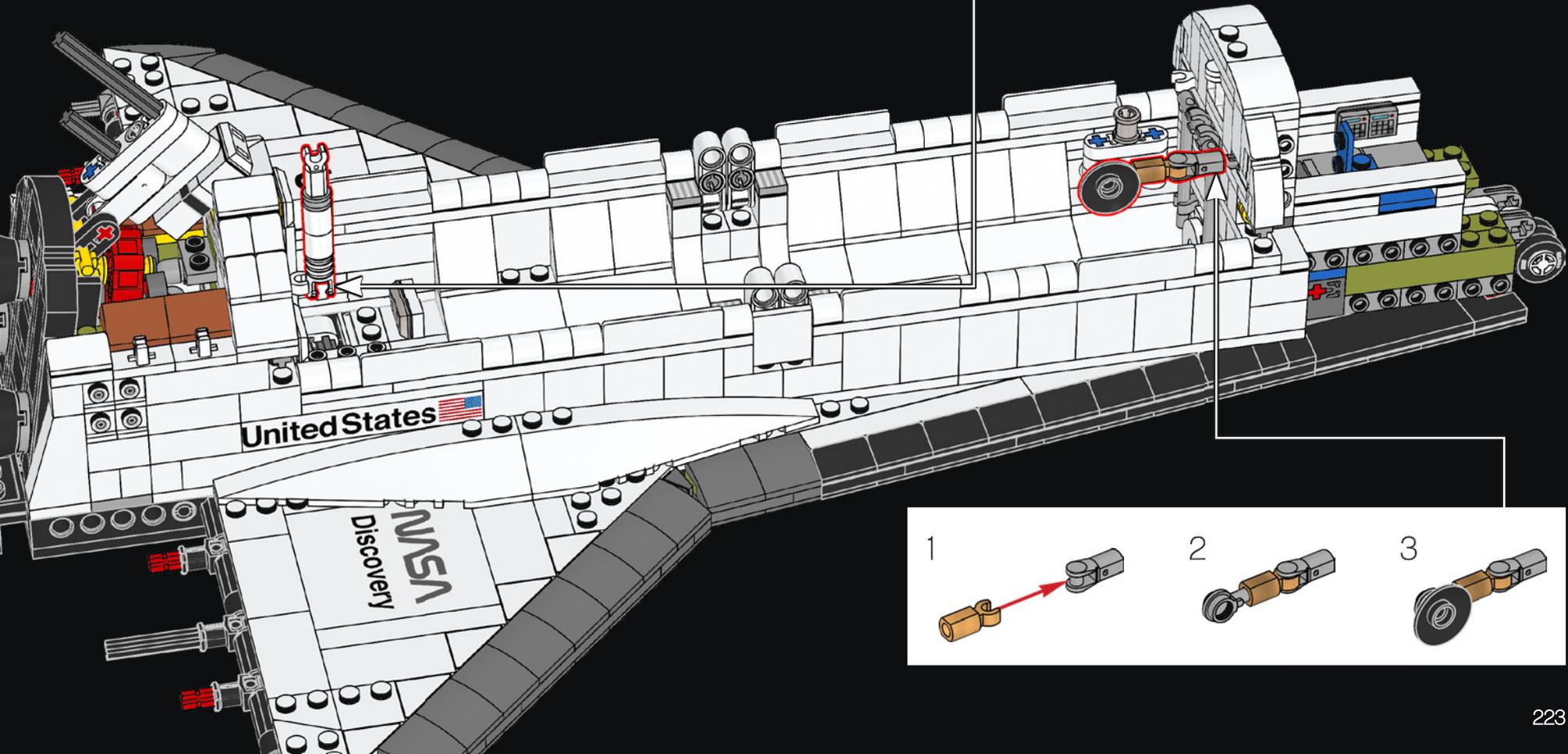


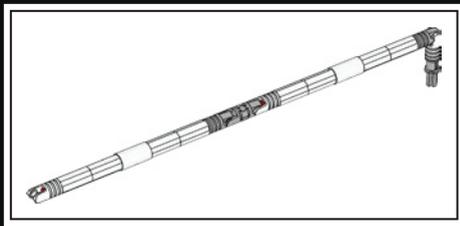
270



SCHON GEWUSST?

Die Ku-Band-Antenne wird im Orbit benutzt und ermöglicht der Besatzung die Kommunikation mit dem Bodenkontrollzentrum.

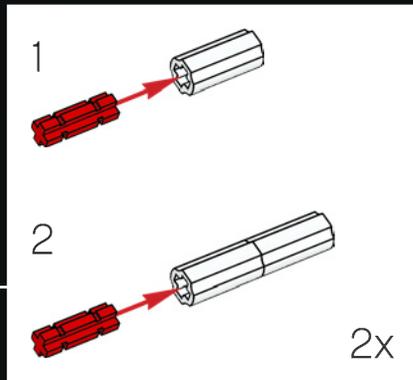
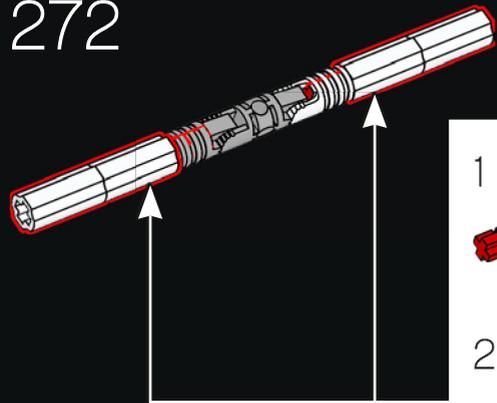




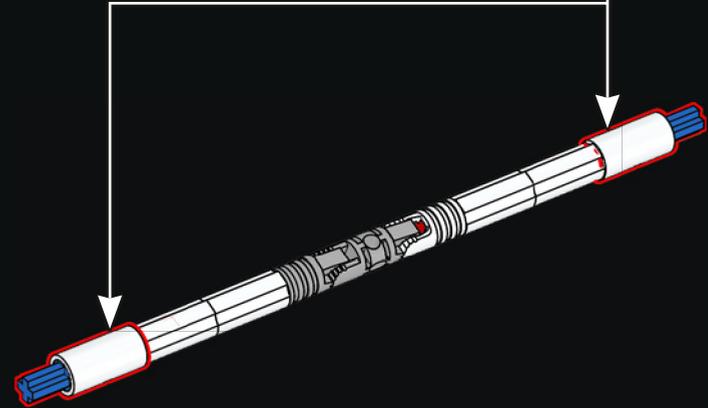
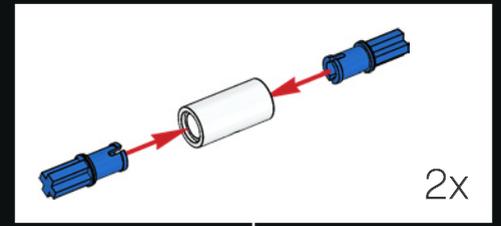
271



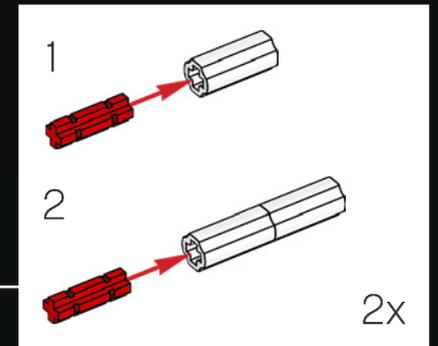
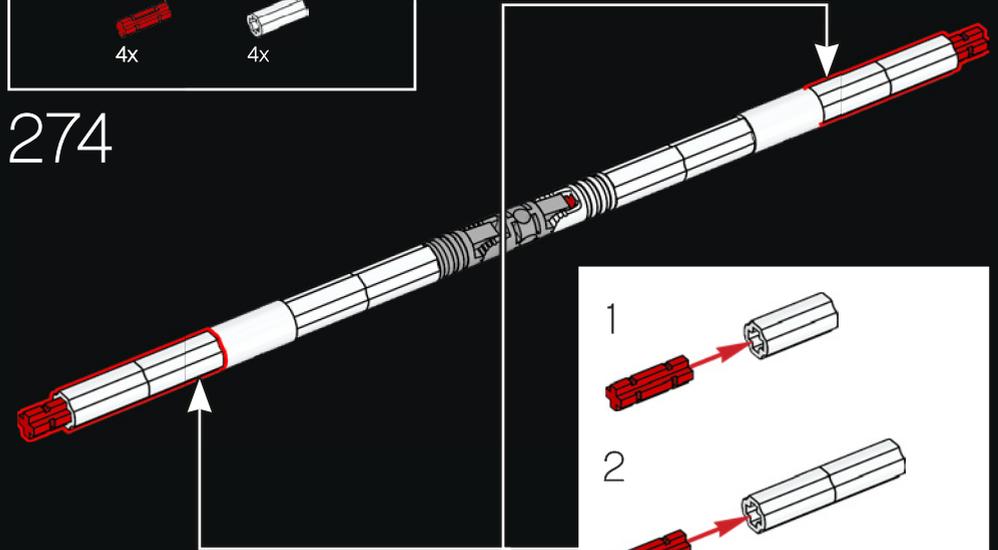
272



273

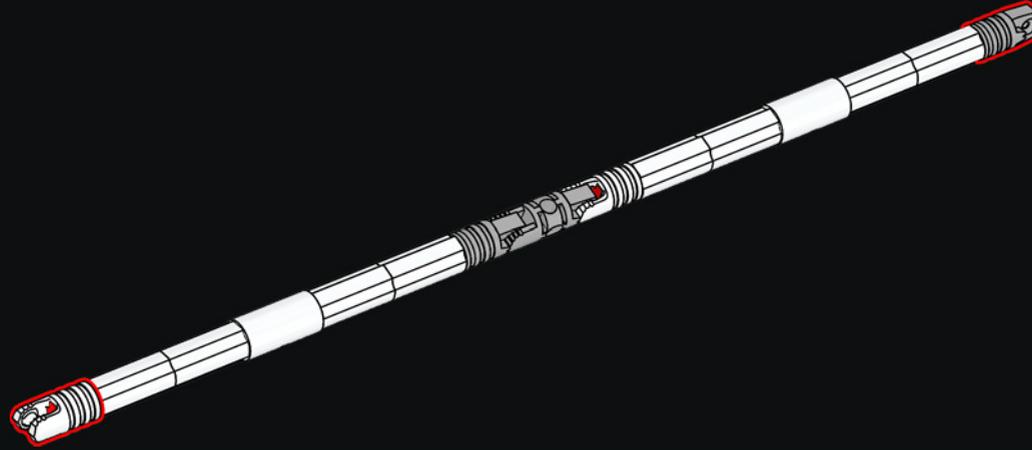


274

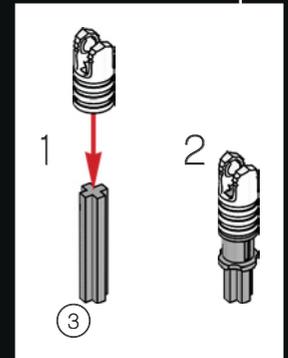
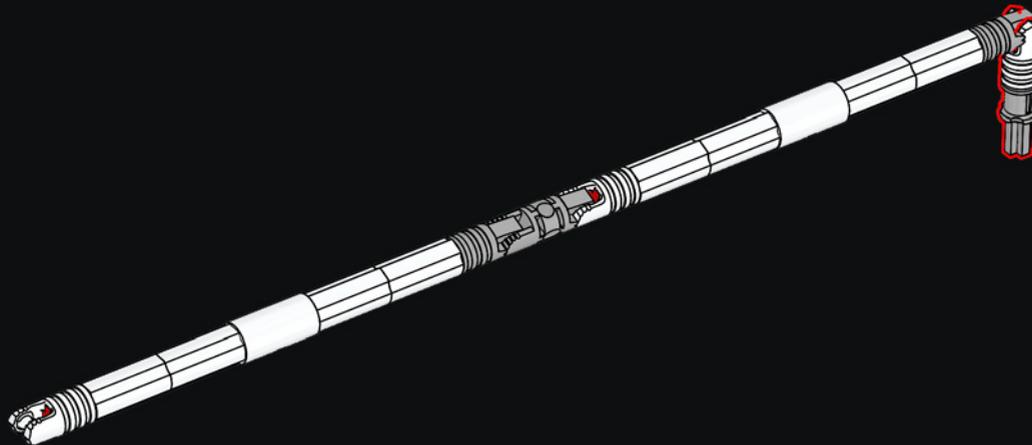




275



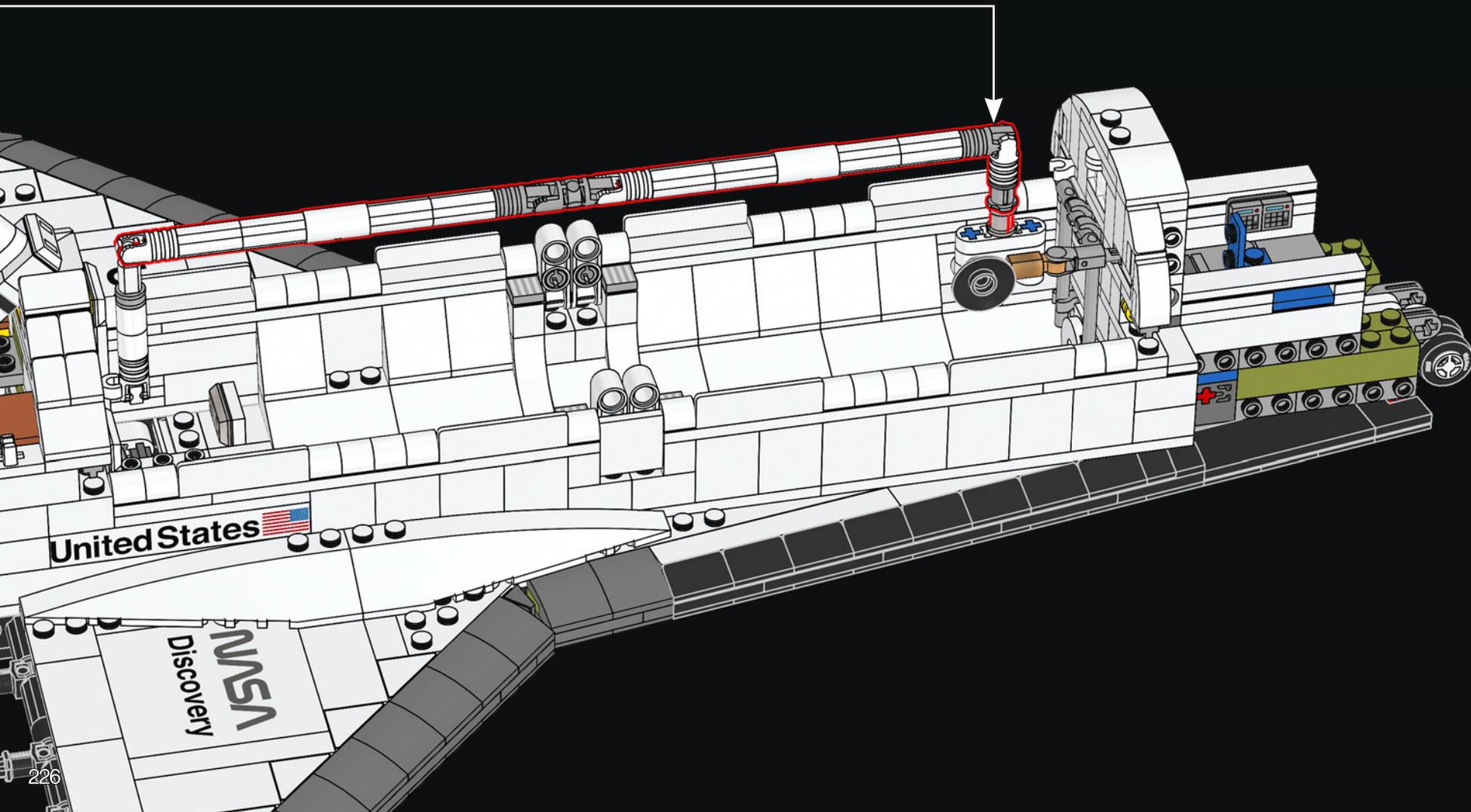
276



SCHON GEWUSST?

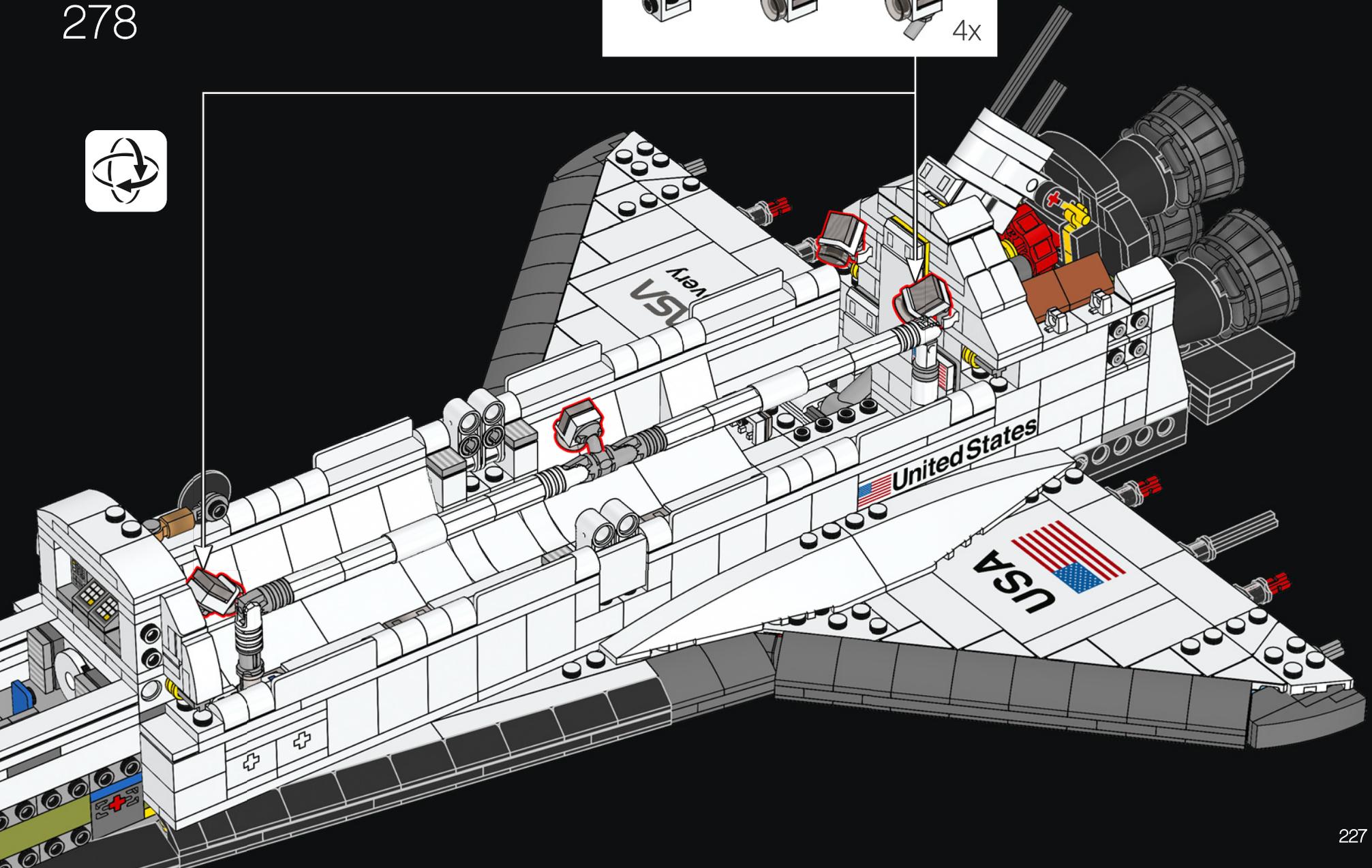
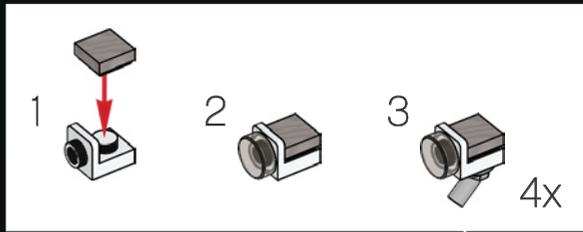
Das Remote Manipulator System (RMS) des Spaceshuttles wurde von den Astronauten an Bord verwendet, um die Fracht aus der Nutzlastbuchse ins Weltall zu bringen und die Astronauten bei ihren Weltraumspaziergängen zu manövrieren.

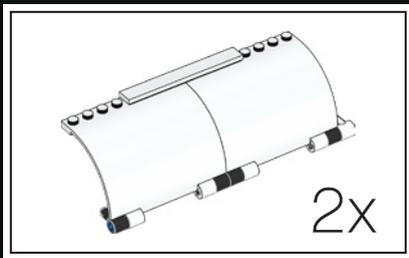
277



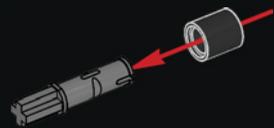


278

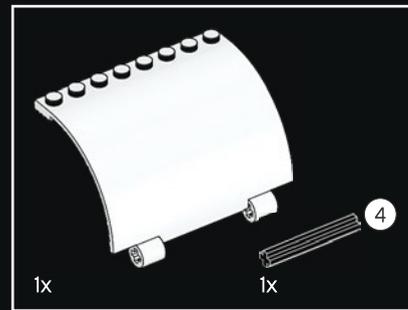




279



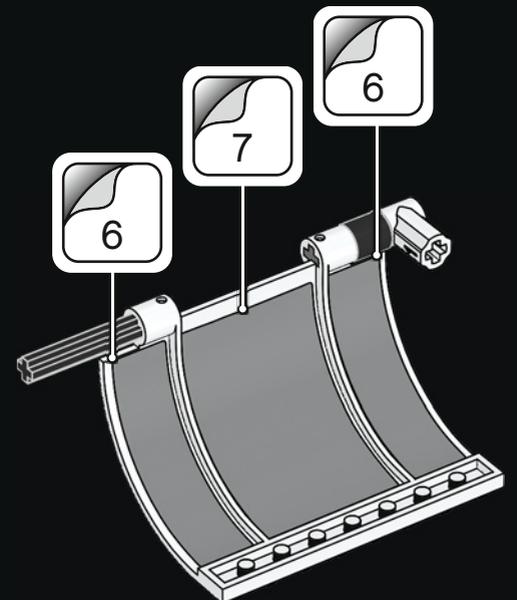
280



281

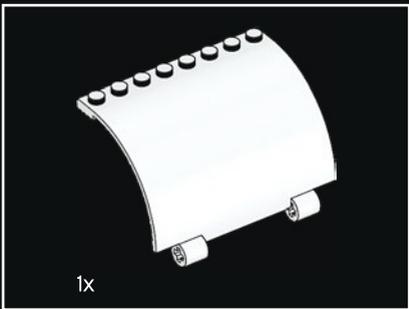
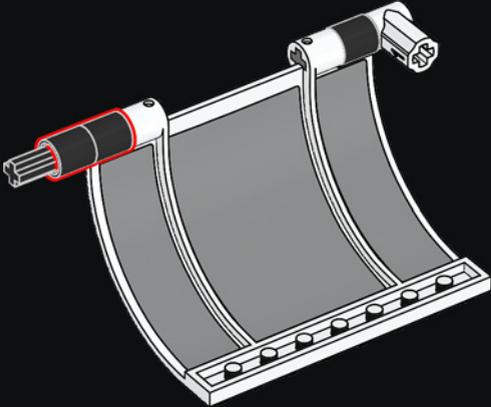


282

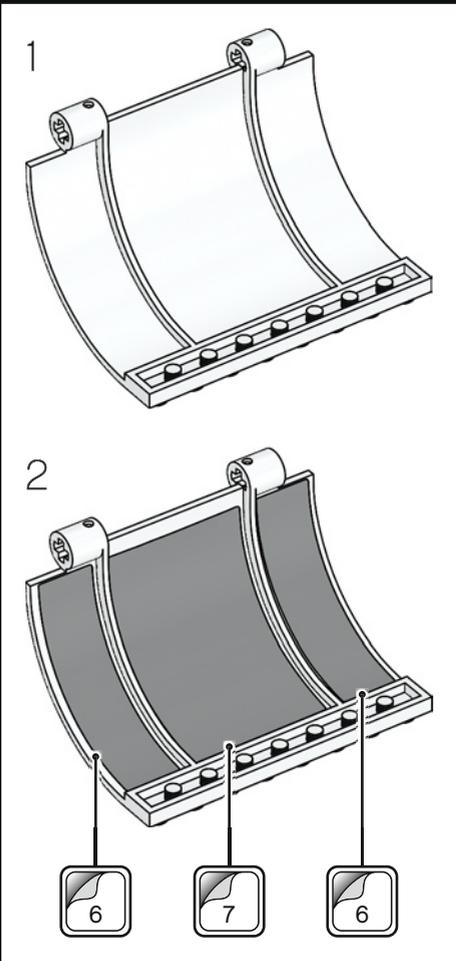
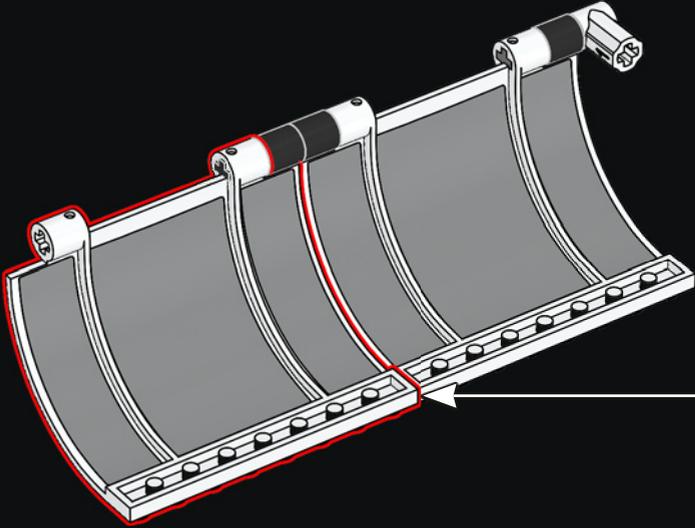




283

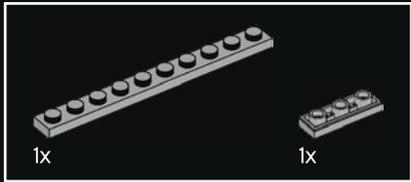
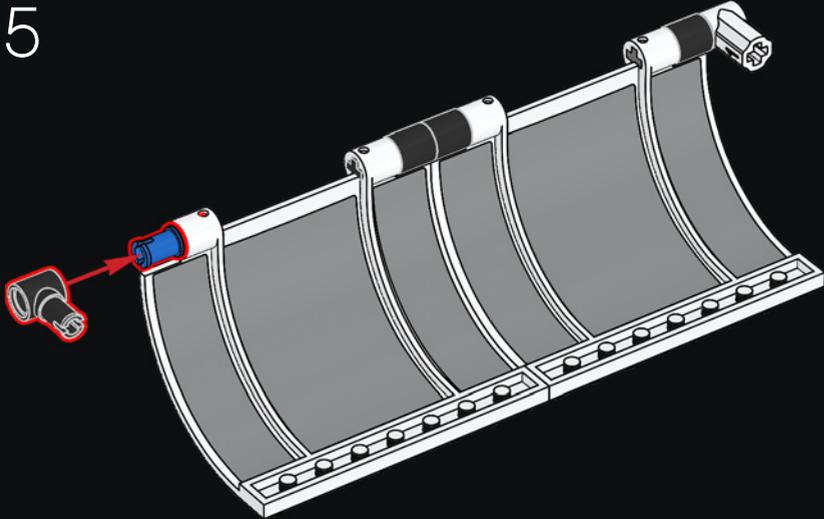


284

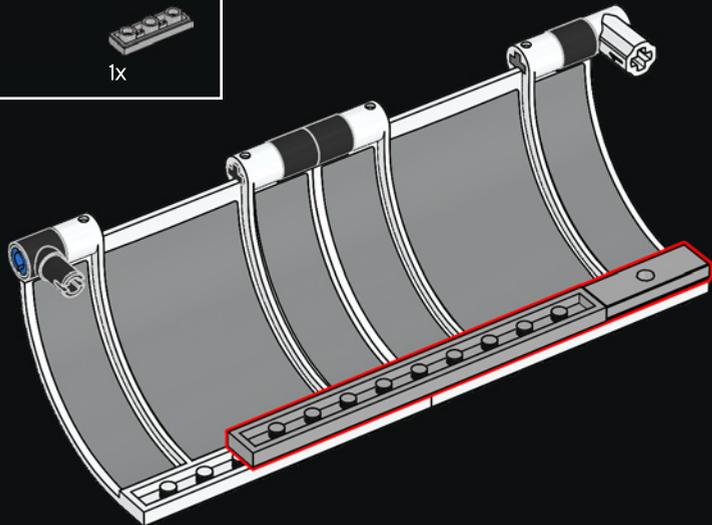




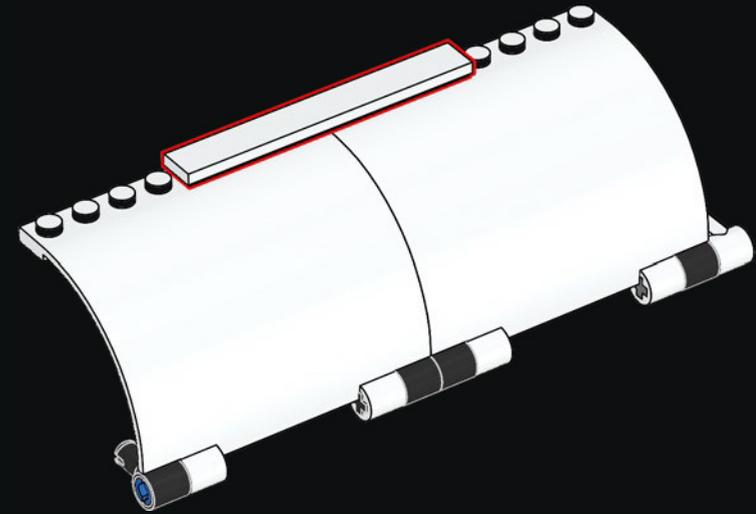
285



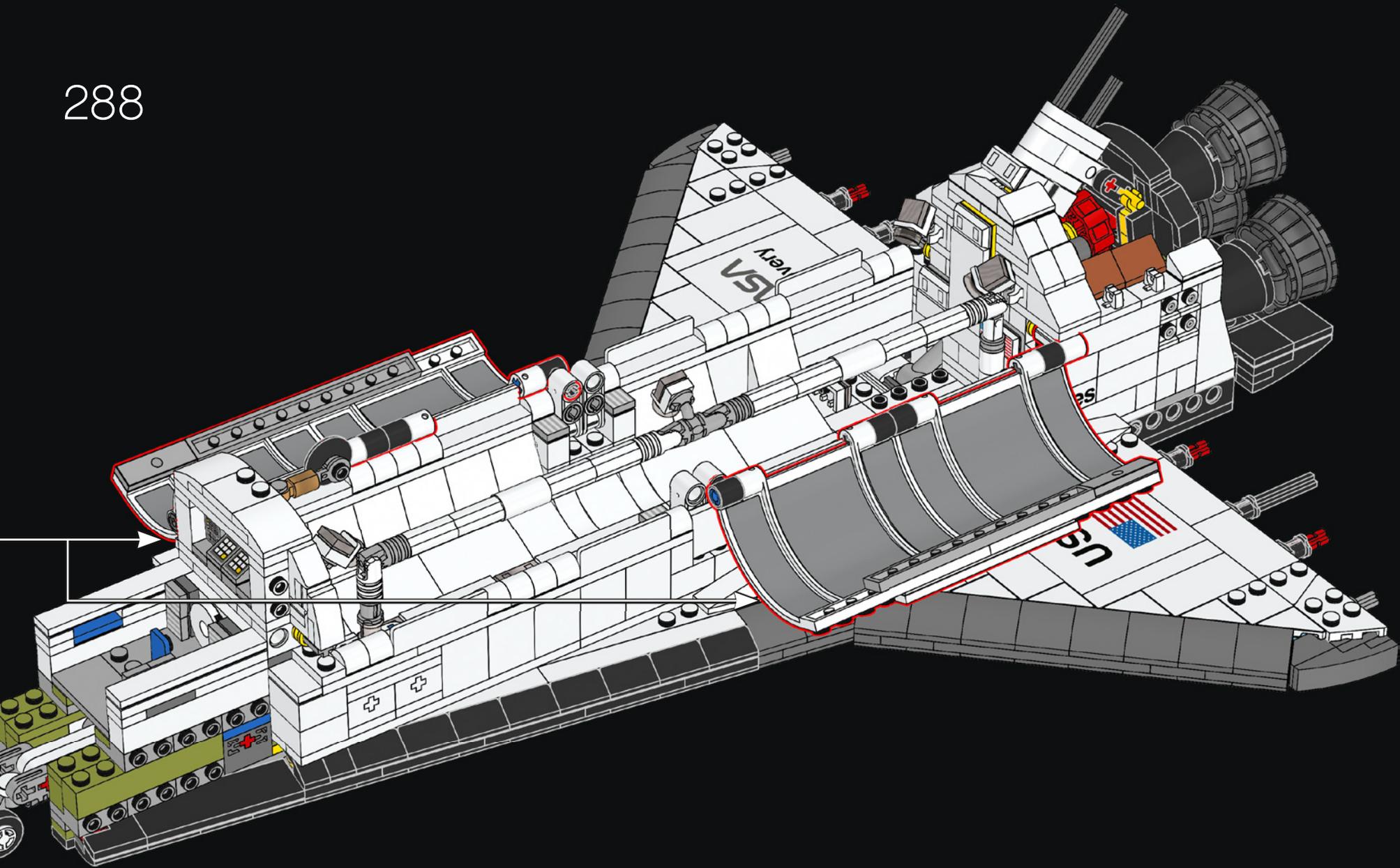
286

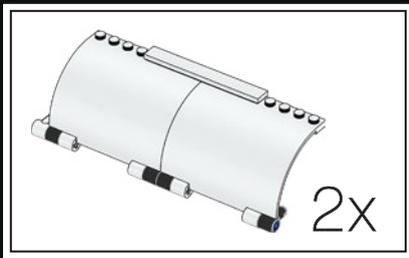


287



2x





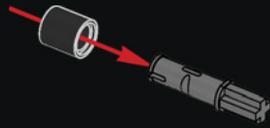
2x



1x

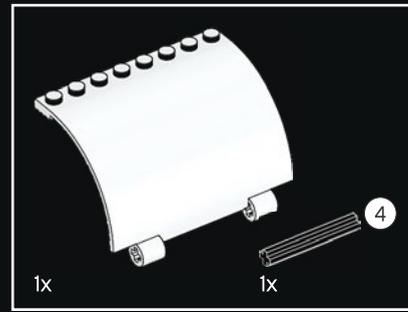
1x

289



1x

290



1x

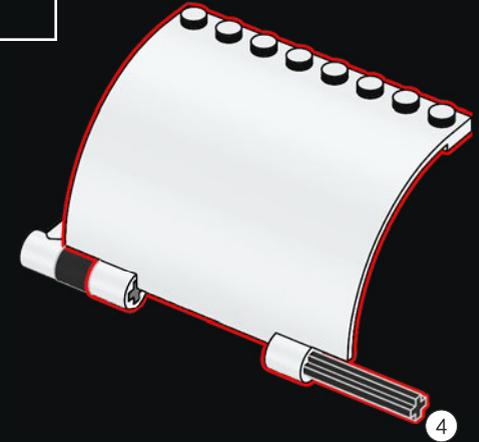
1x

291



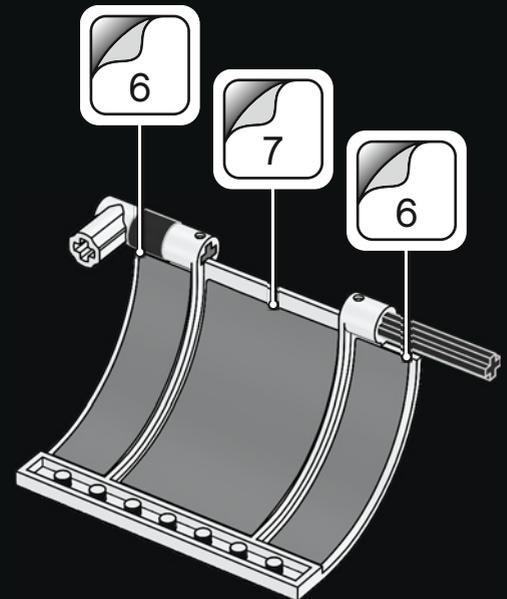
4

1:1



4

292



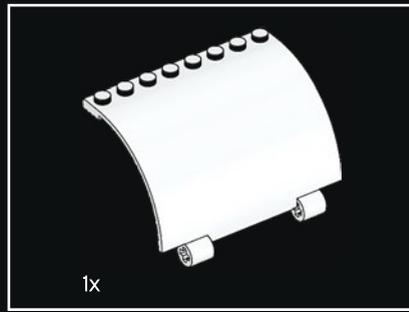
6

7

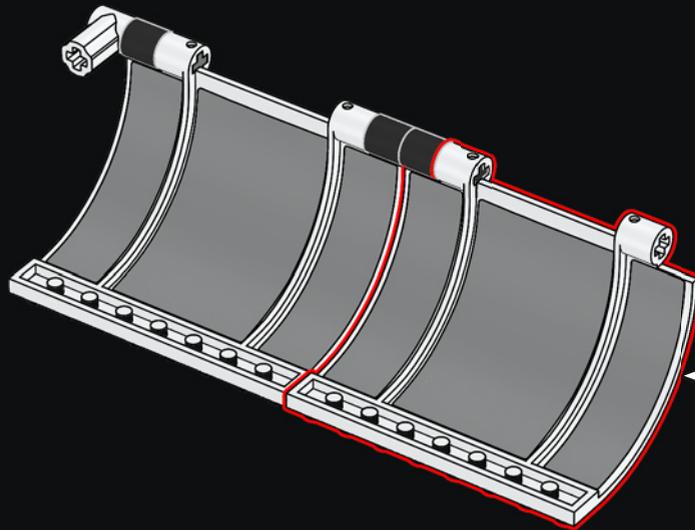
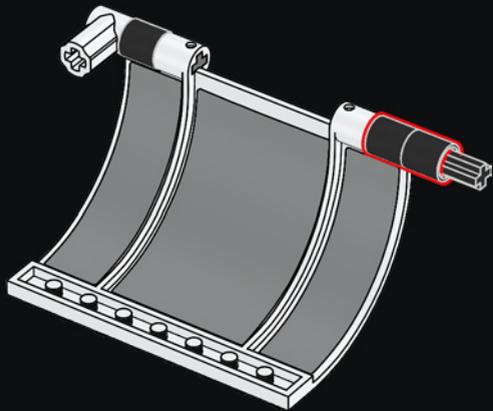
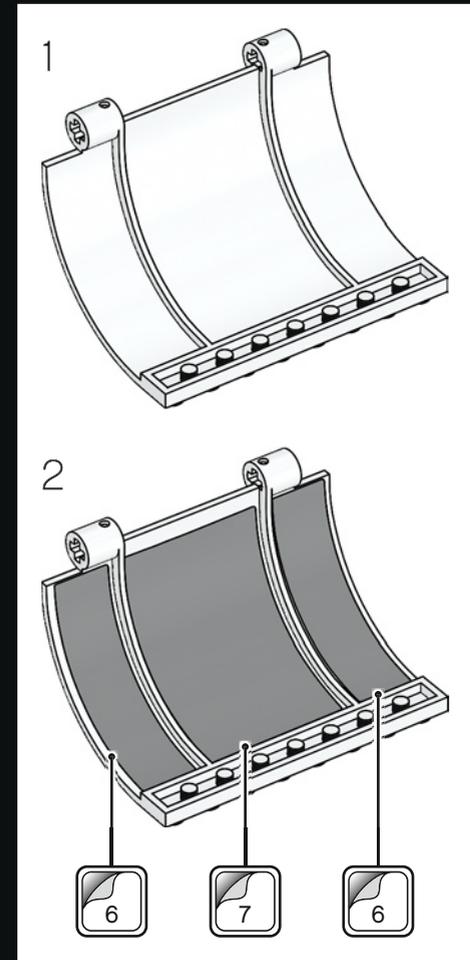
6



293

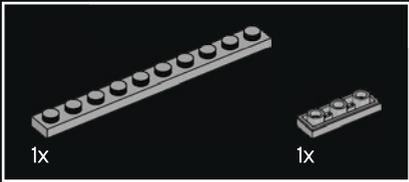
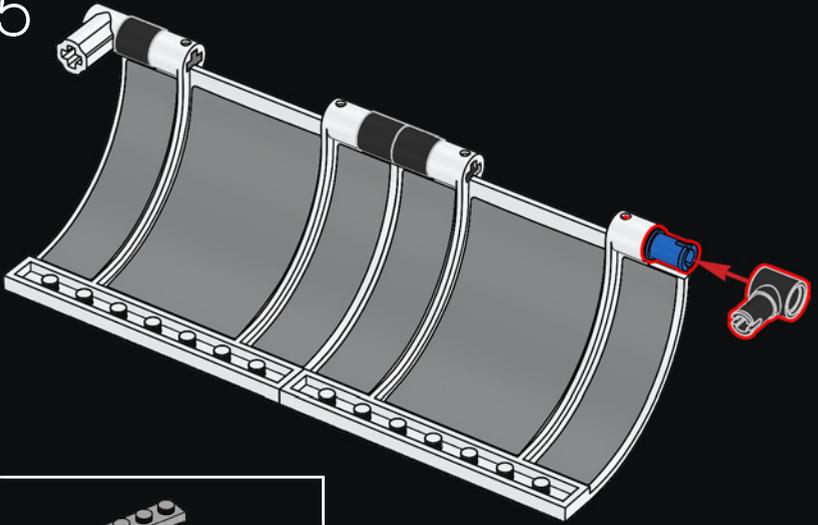


294

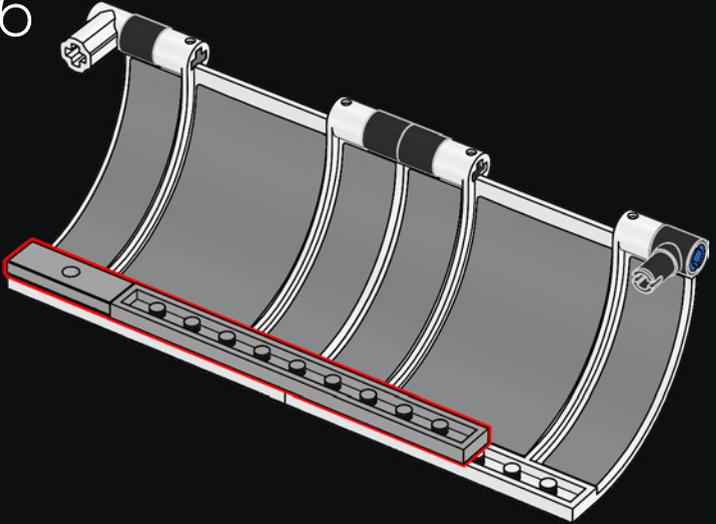




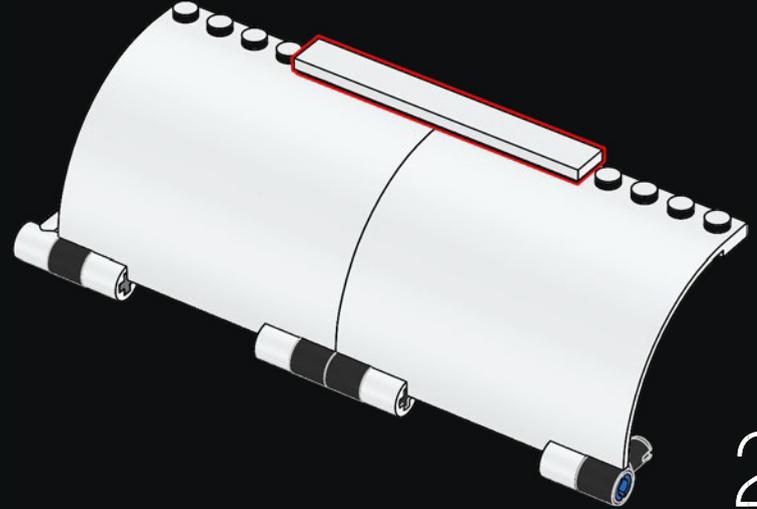
295



296



297

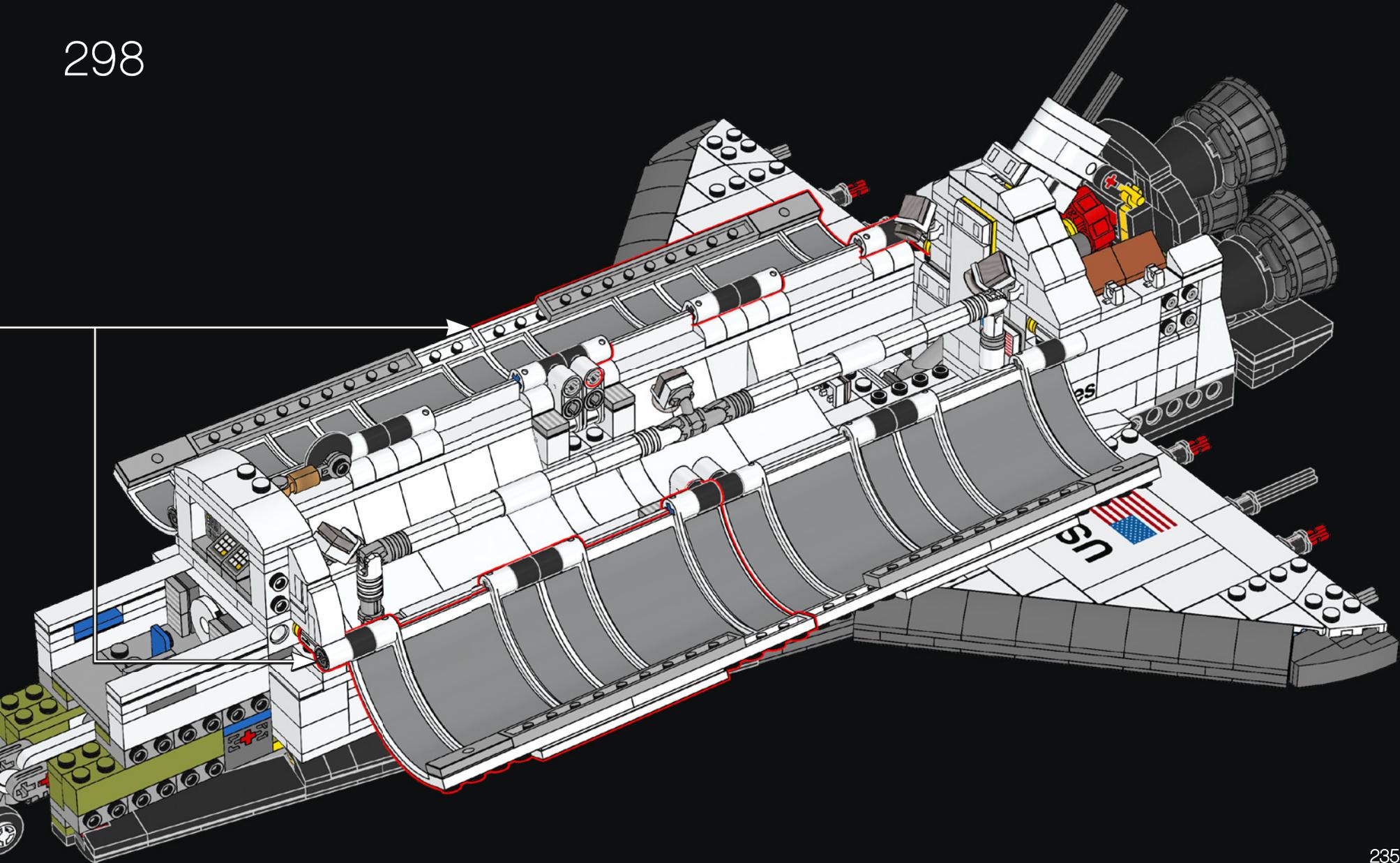


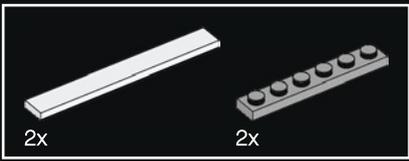
2x

SCHON GEWUSST?

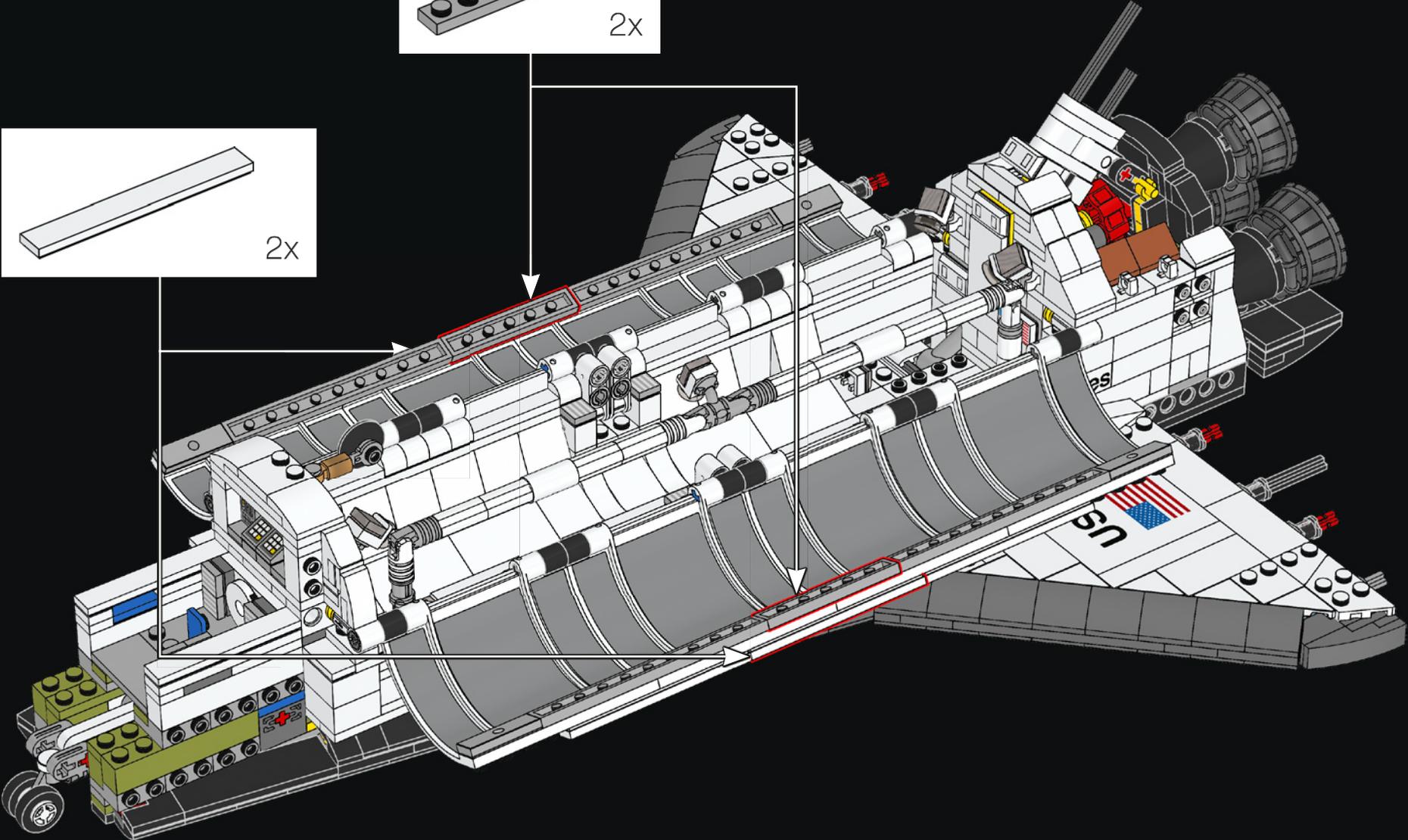
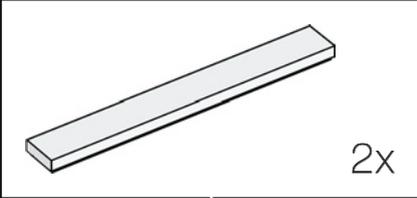
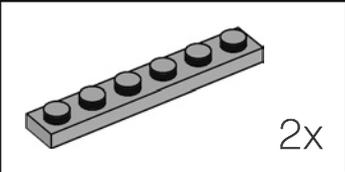
Wenn das Spaceshuttle seine Umlaufbahn erreicht hat, bleiben die 18,2 Meter langen Türen der Nutzlastbuchse immer geöffnet, damit die Radiatoren die Raumfähre kühlen können.

298



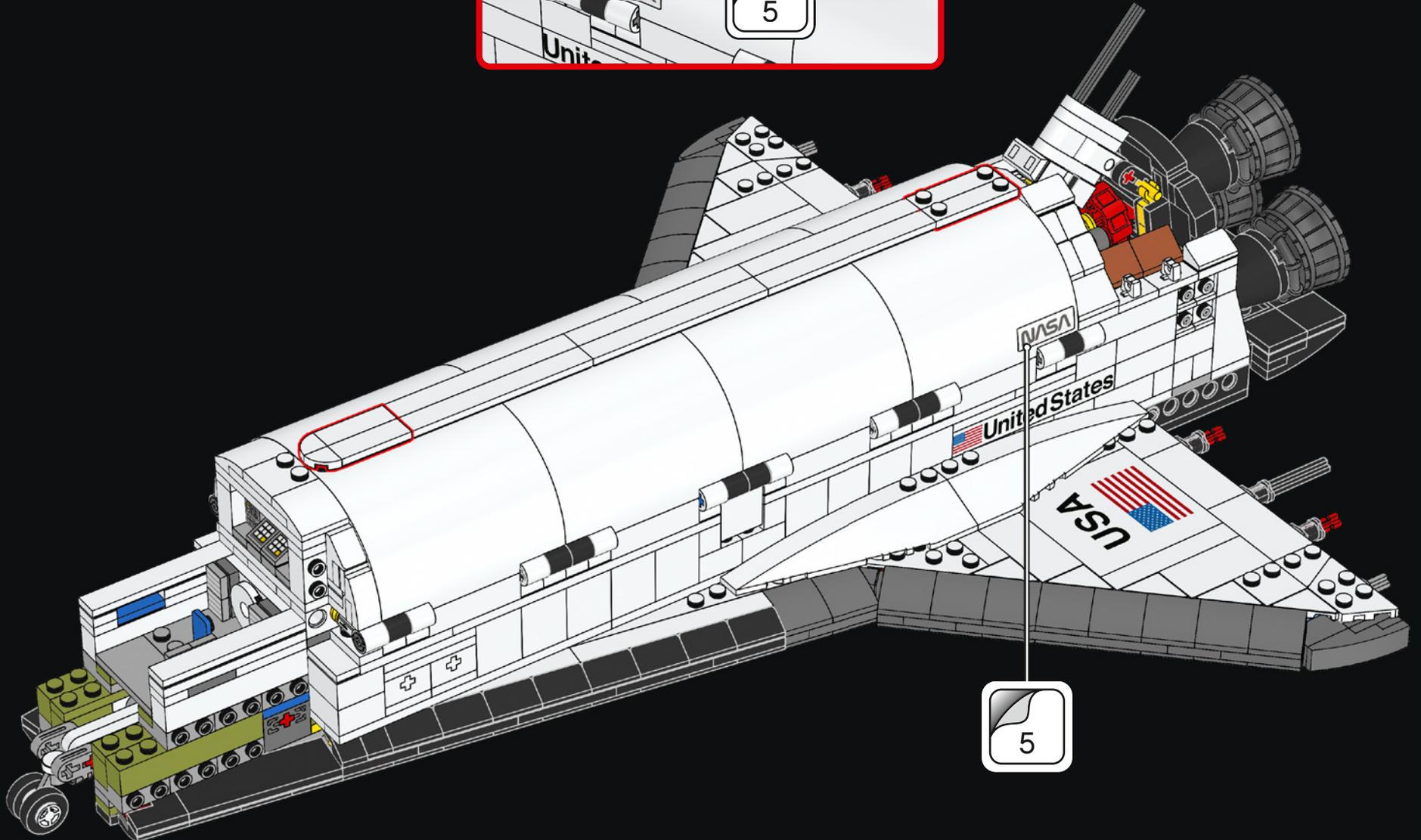
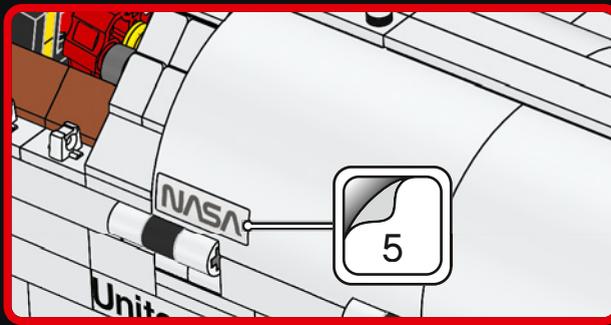


299

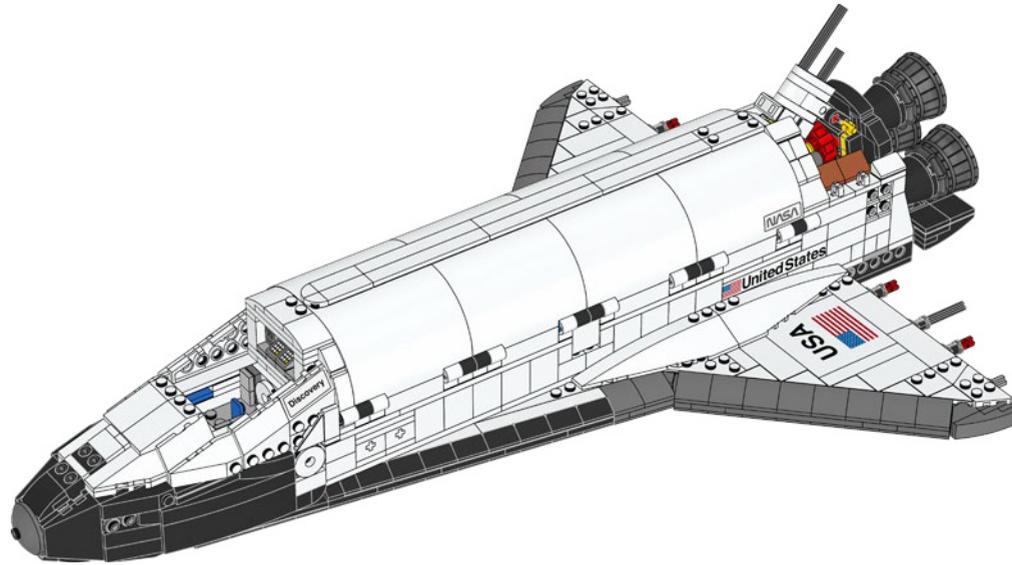


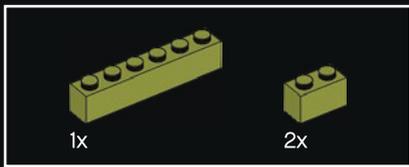


300

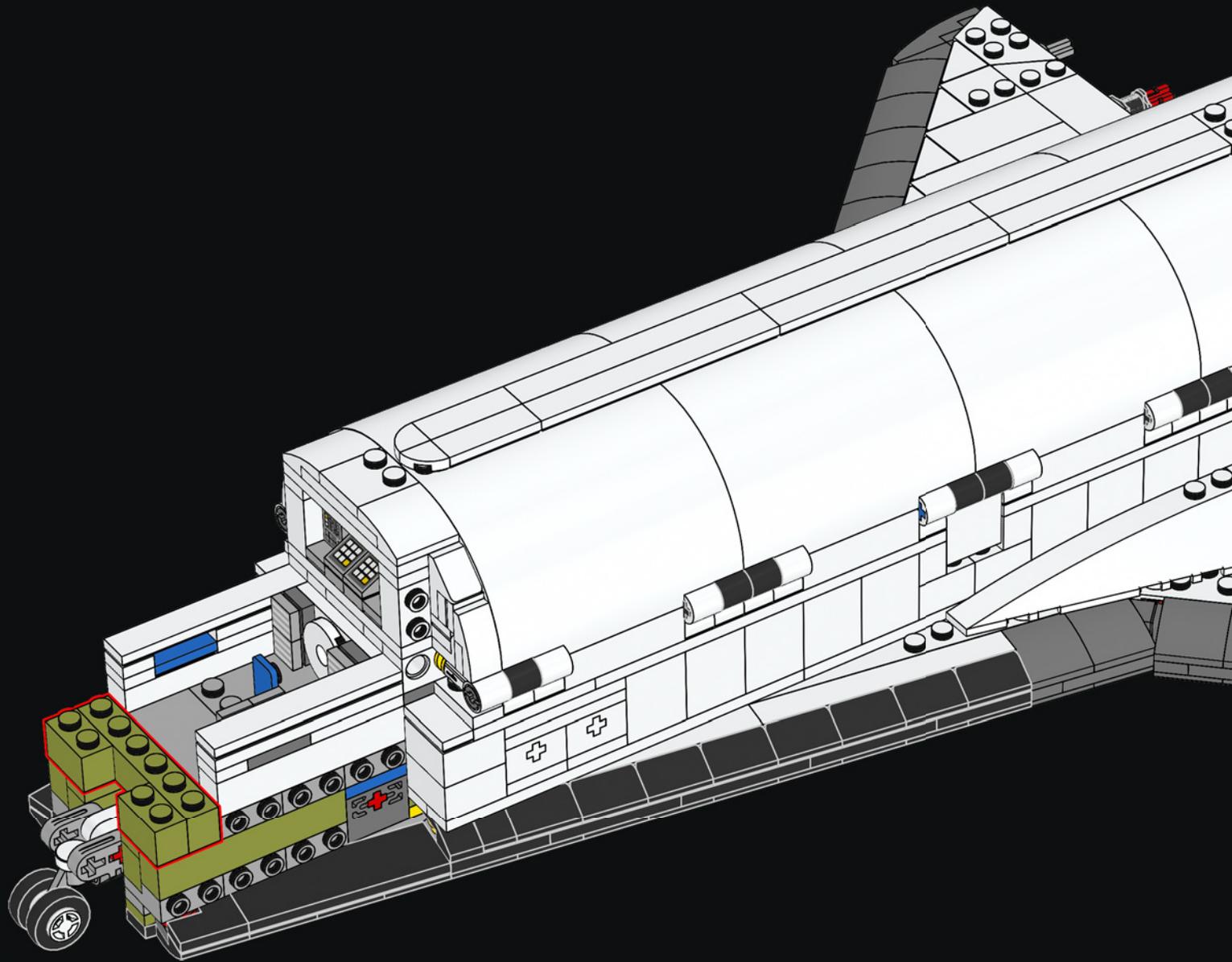


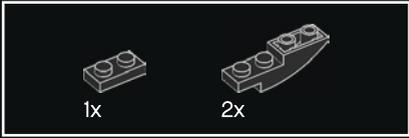
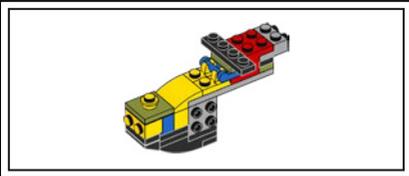
14



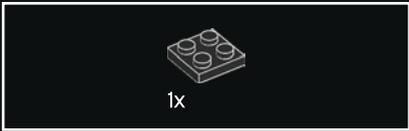
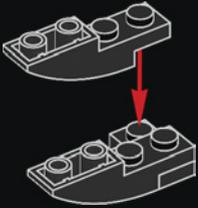


301

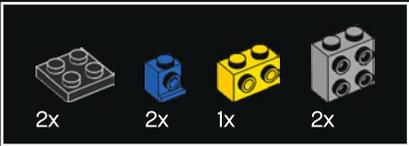
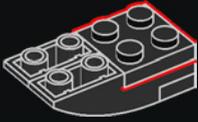




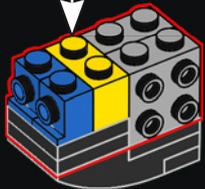
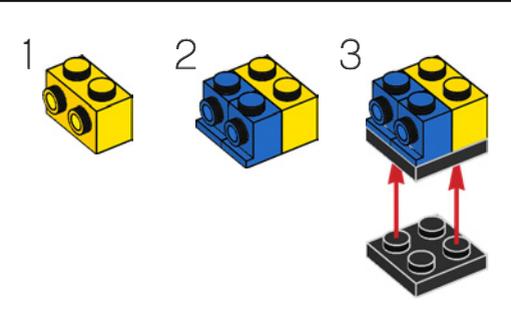
302



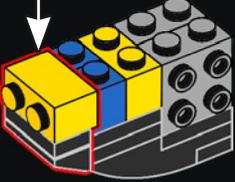
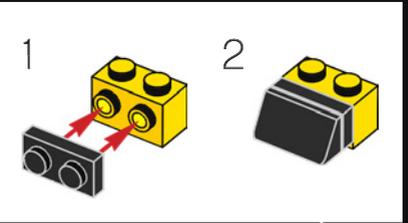
303

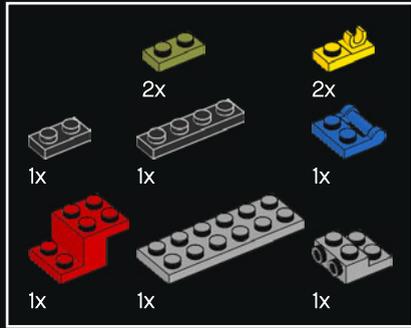


304

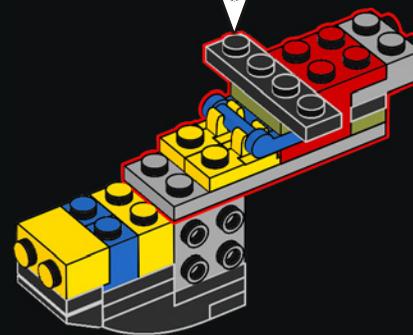
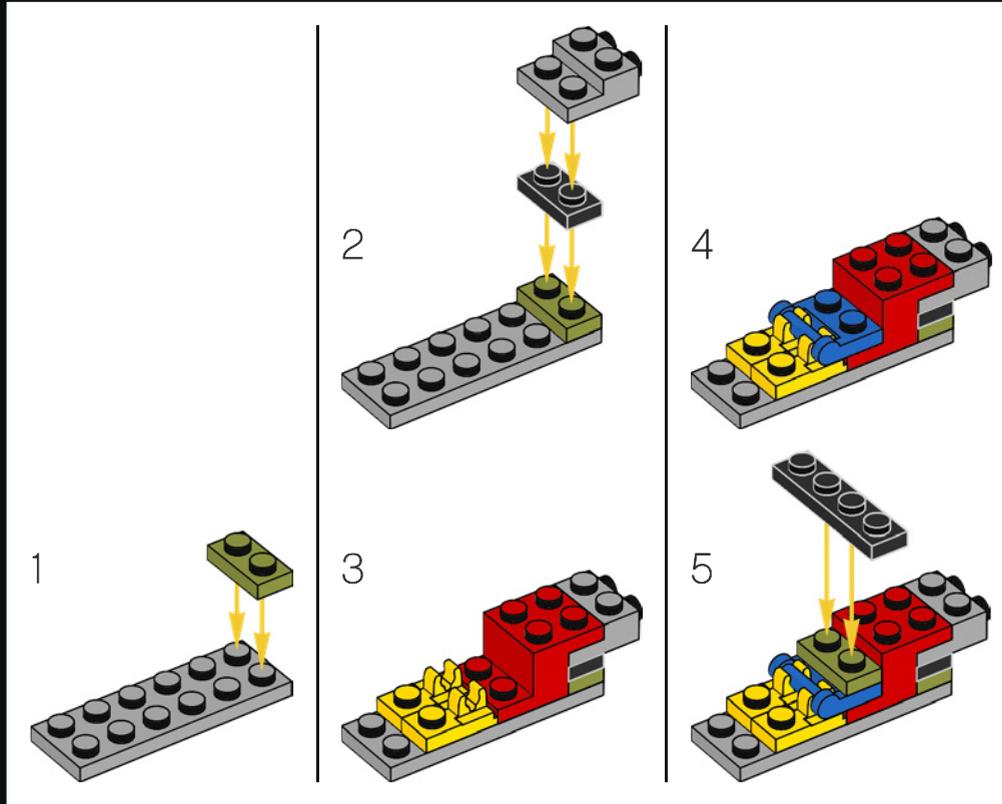


305



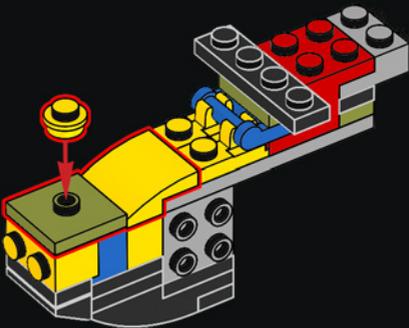


306

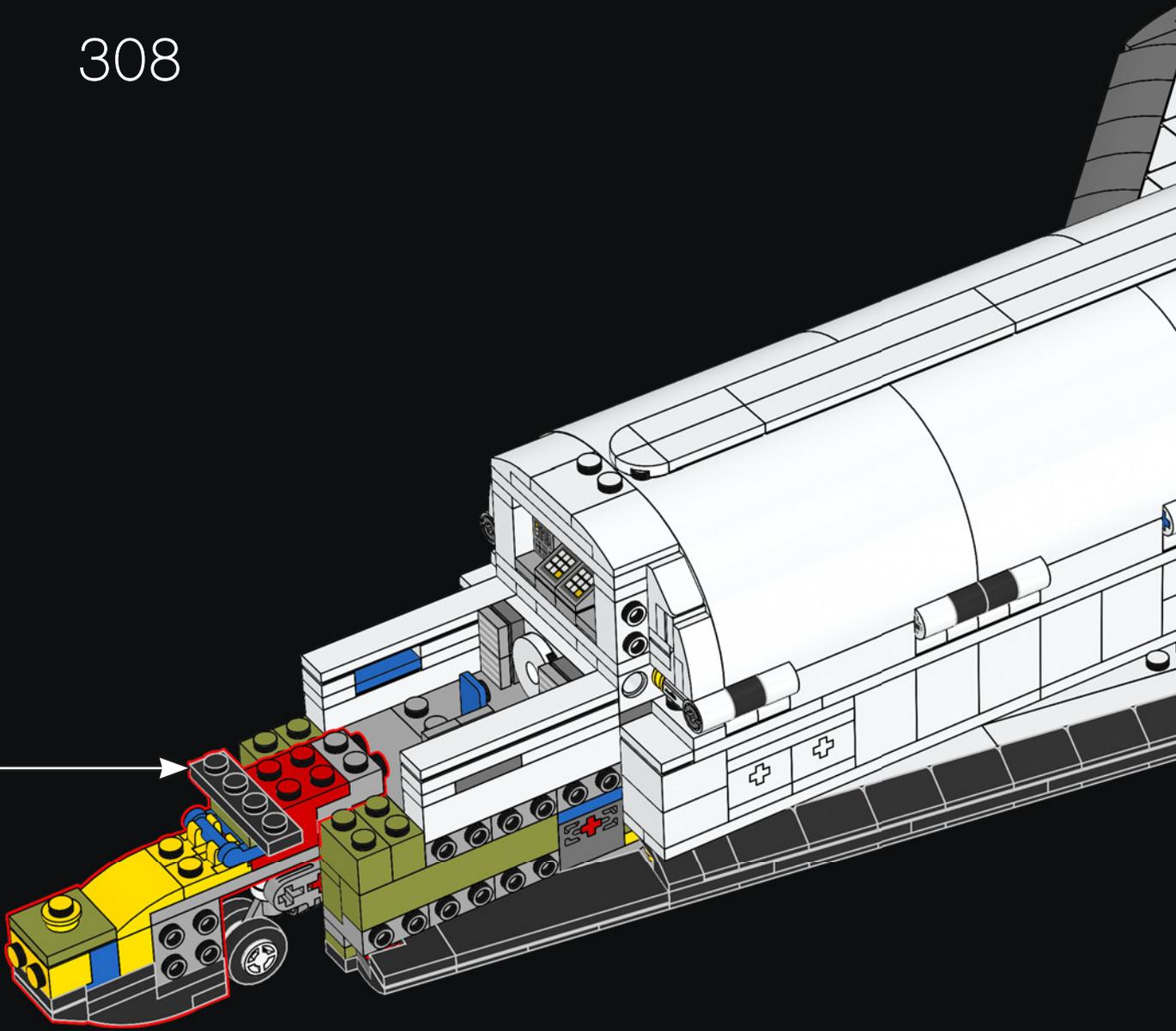




307

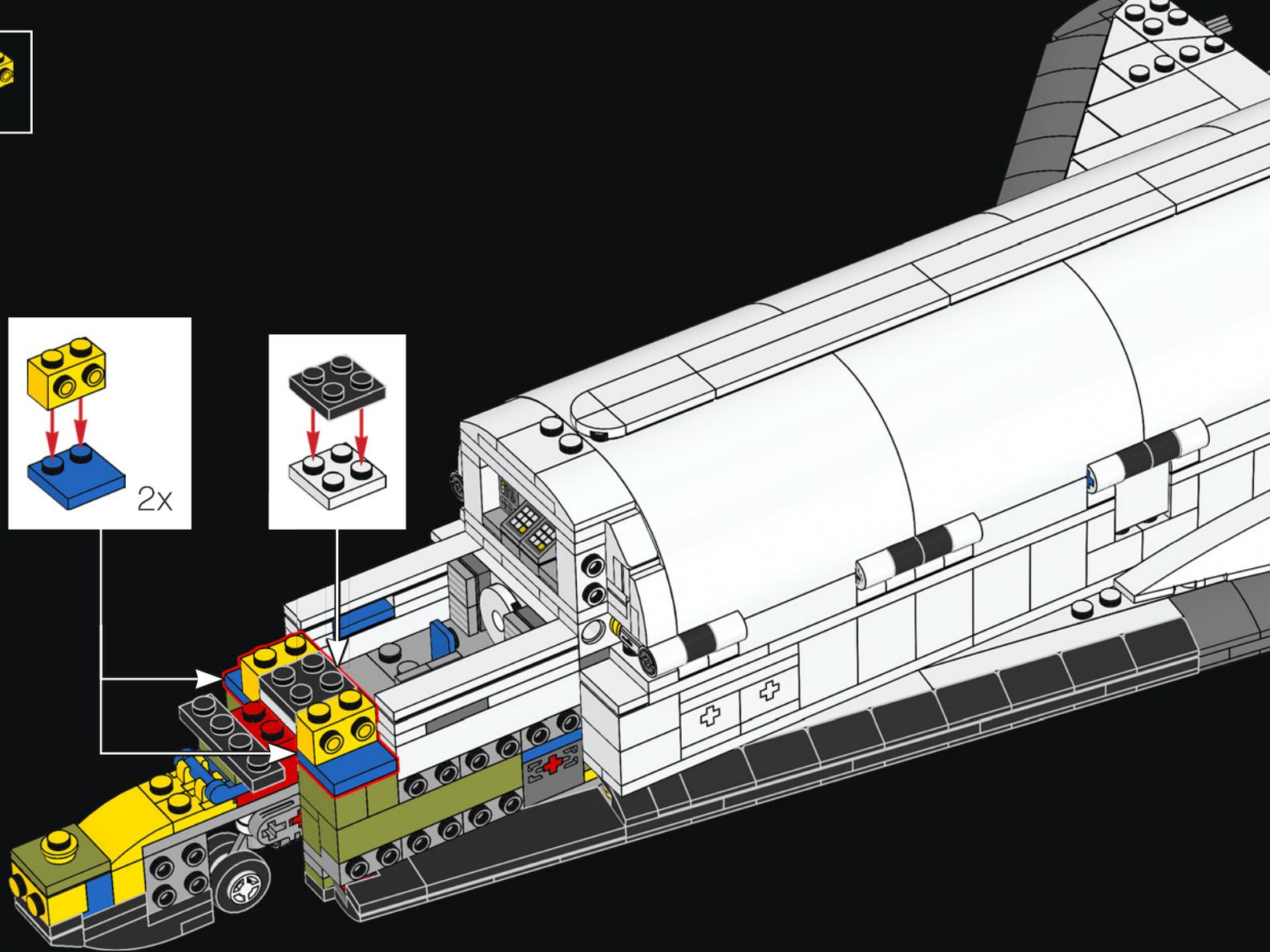
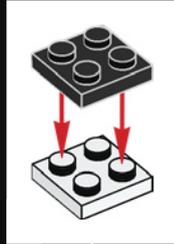
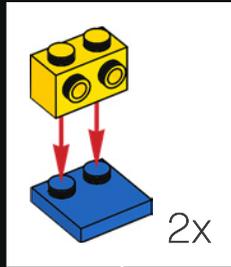


308



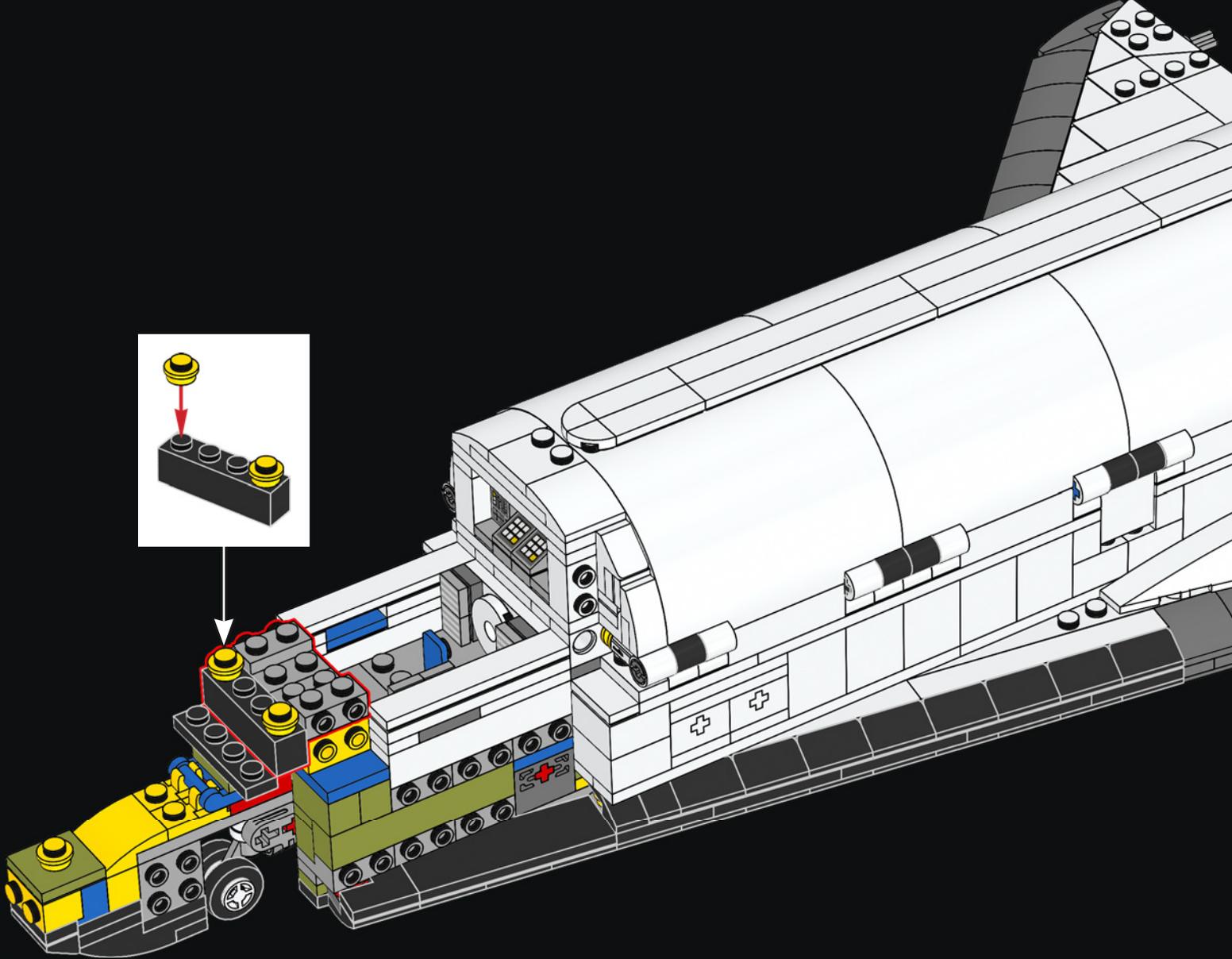
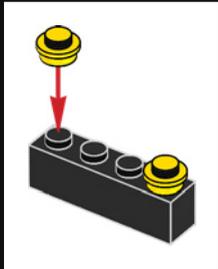


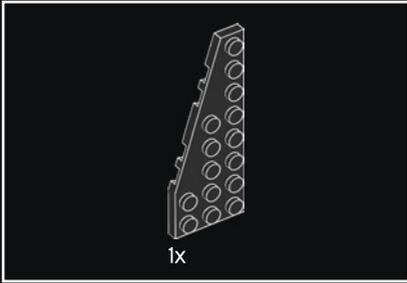
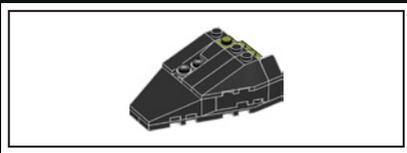
309



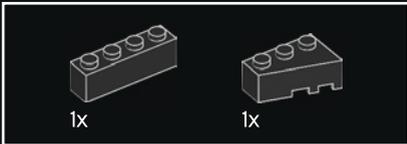
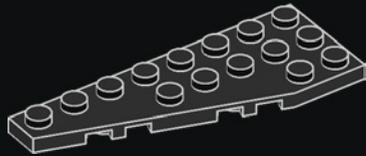


310

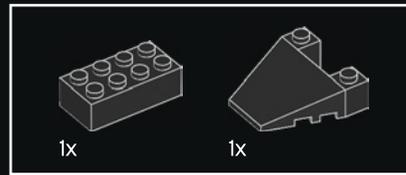
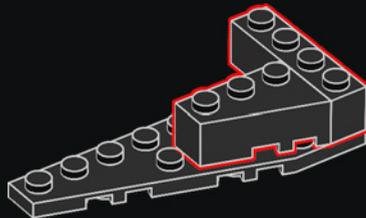




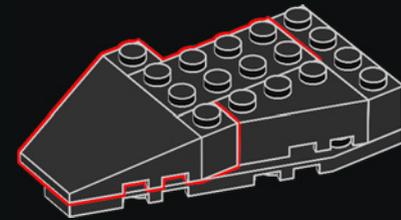
311



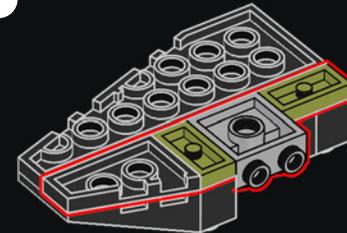
312



313

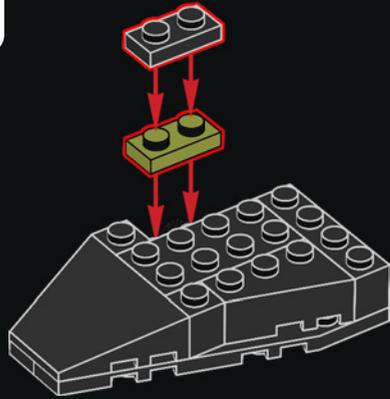


314

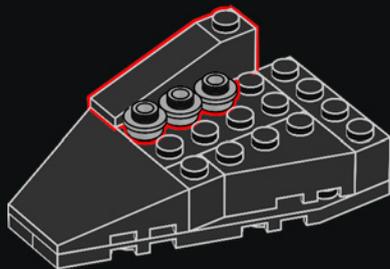




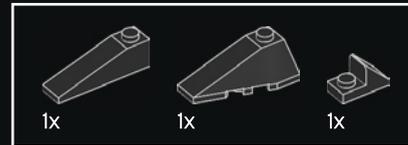
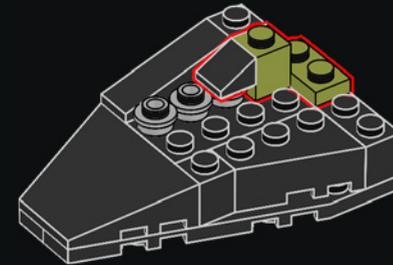
315



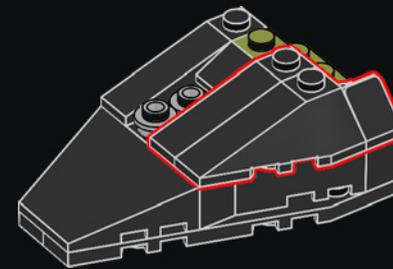
316



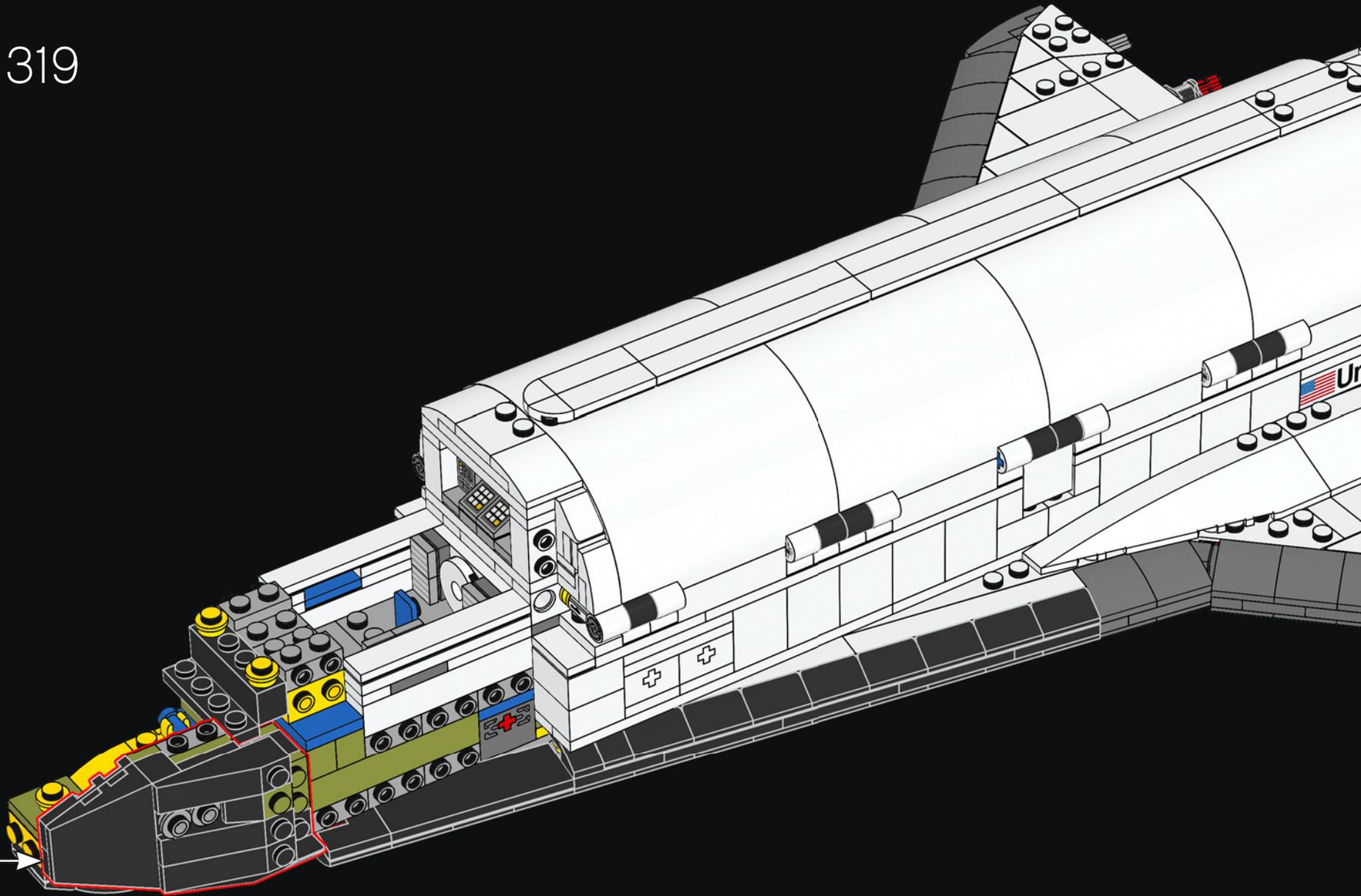
317

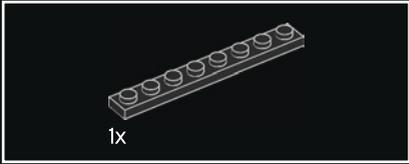
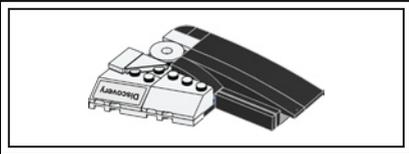


318

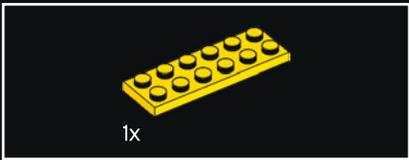
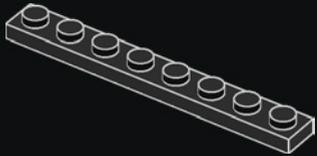


319





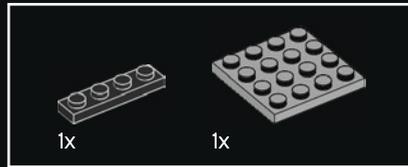
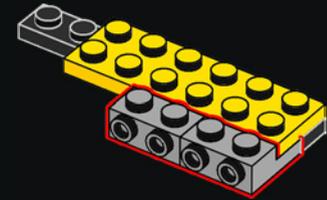
320



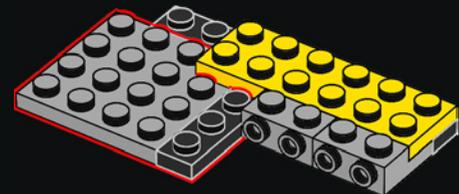
321

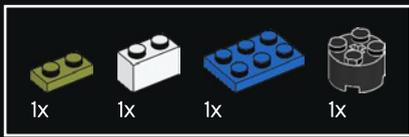


322

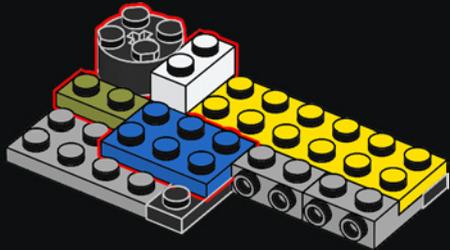


323

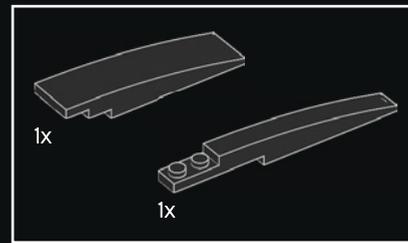
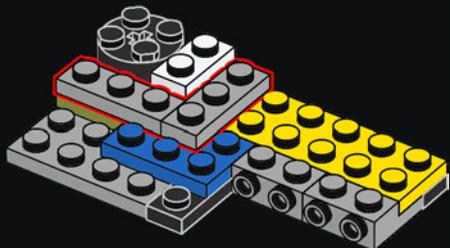




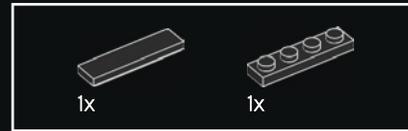
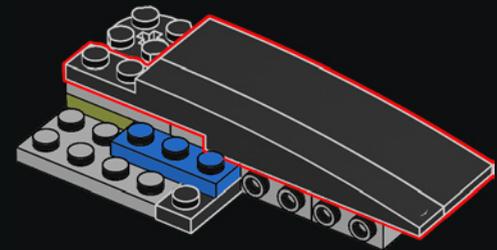
324



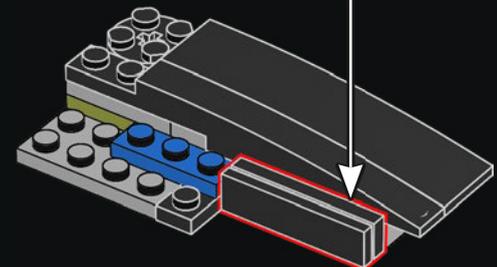
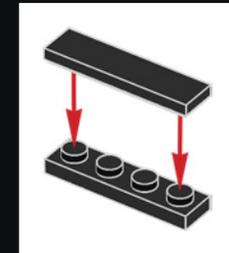
325



326

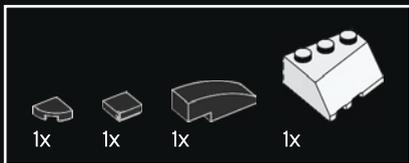
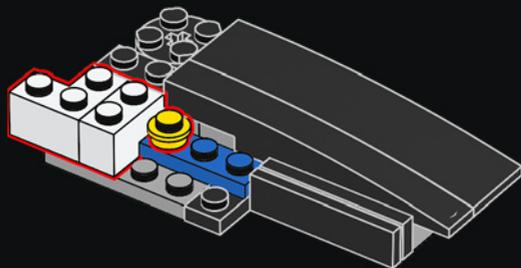


327

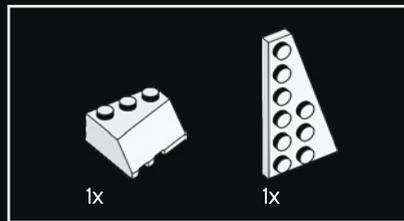
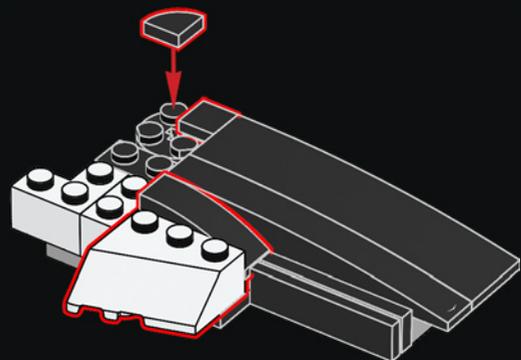




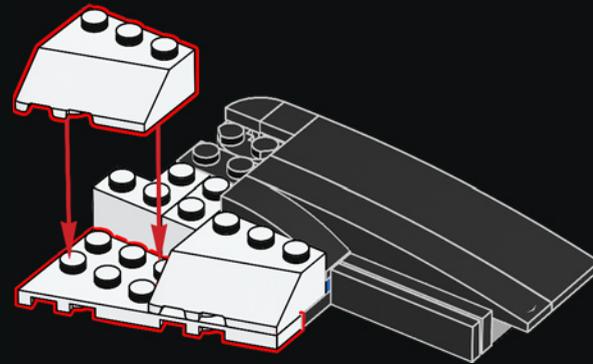
328



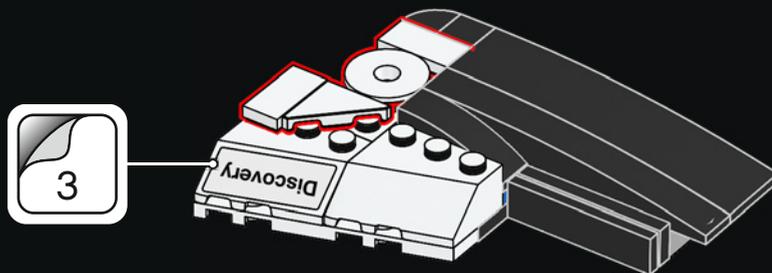
329



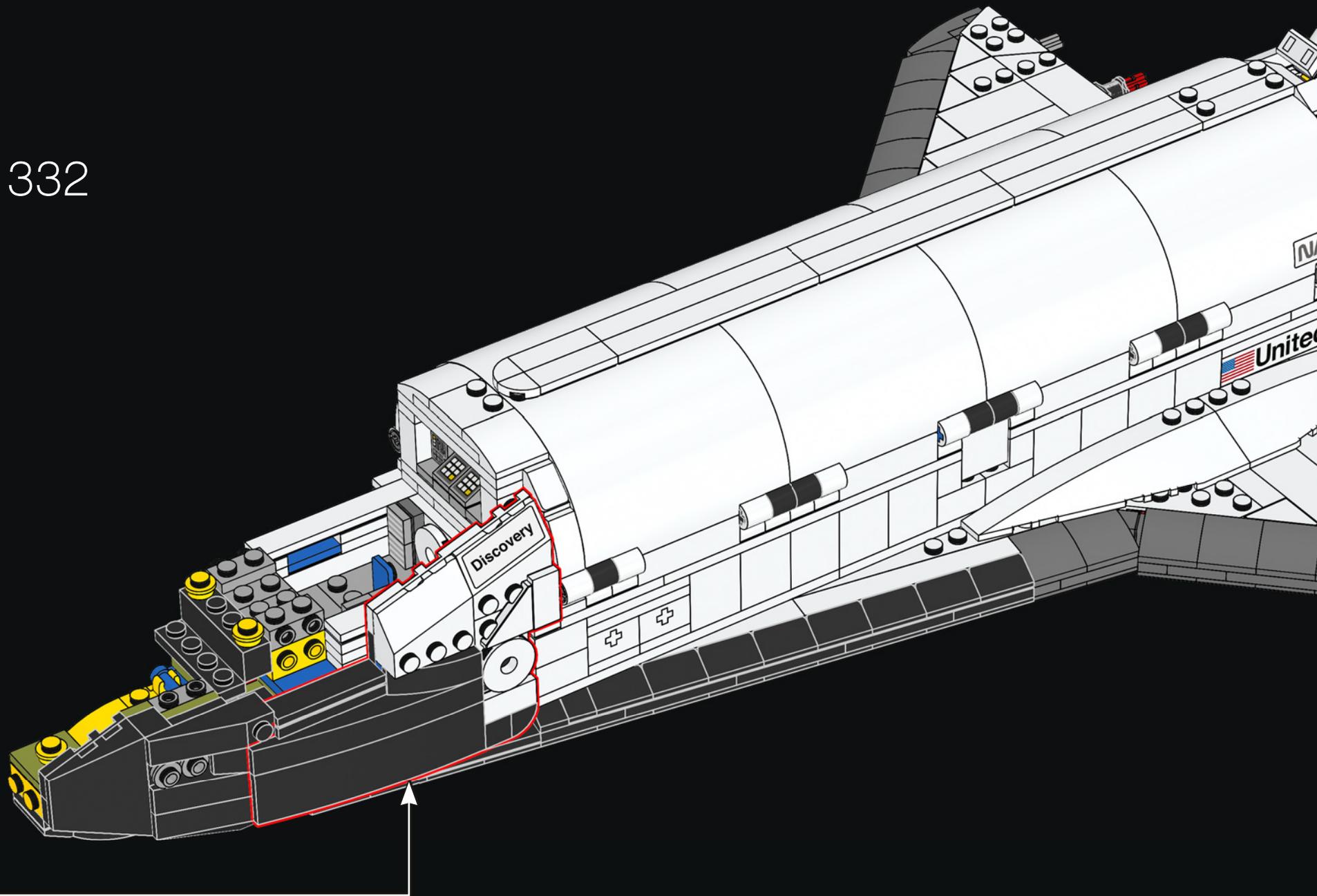
330

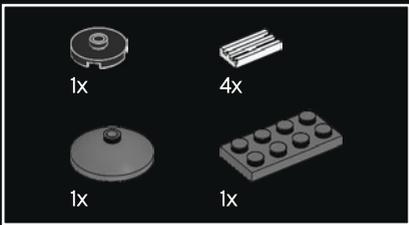


331

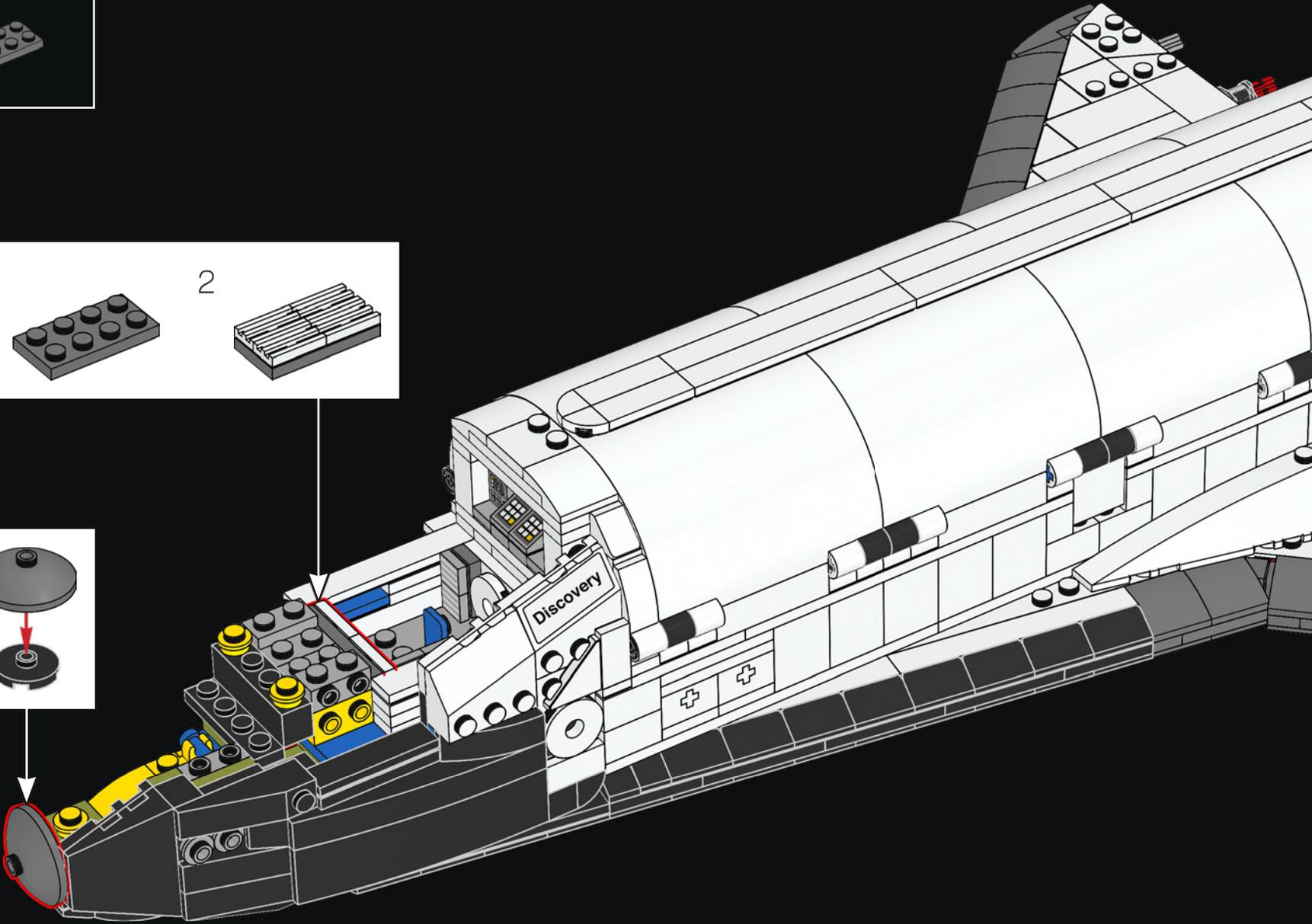
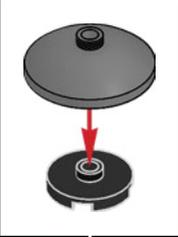
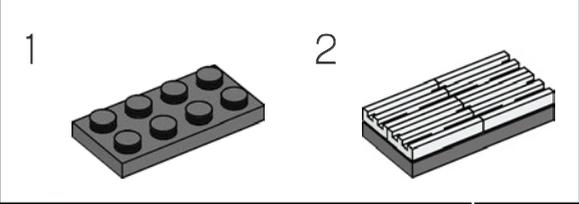


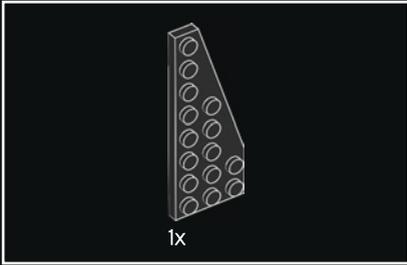
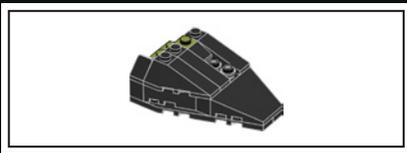
332





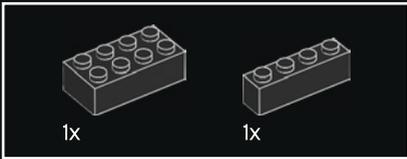
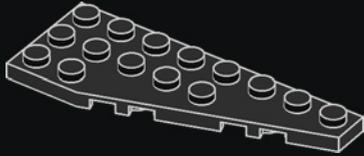
333





1x

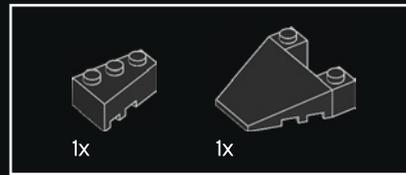
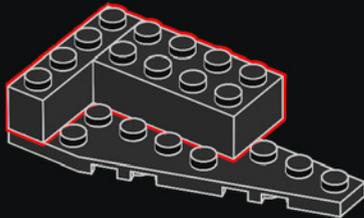
334



1x

1x

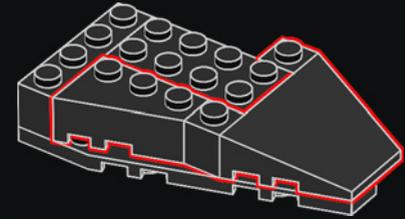
335



1x

1x

336

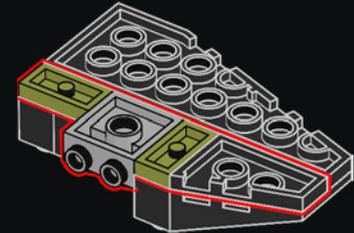


2x

1x

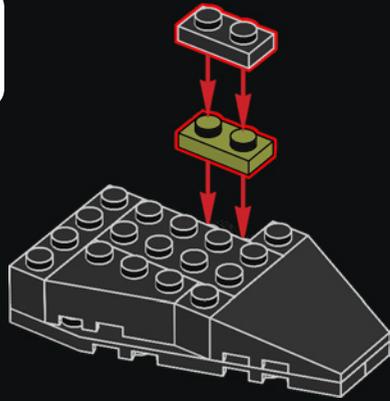
1x

337

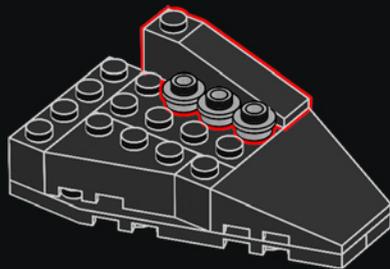




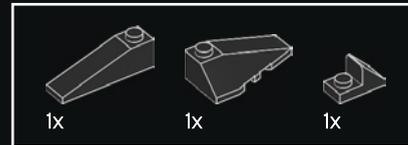
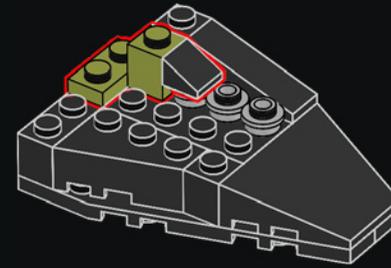
338



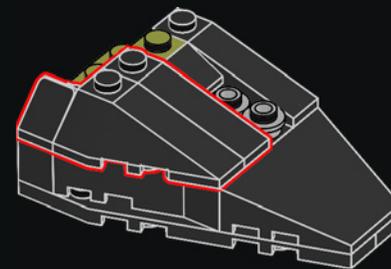
339



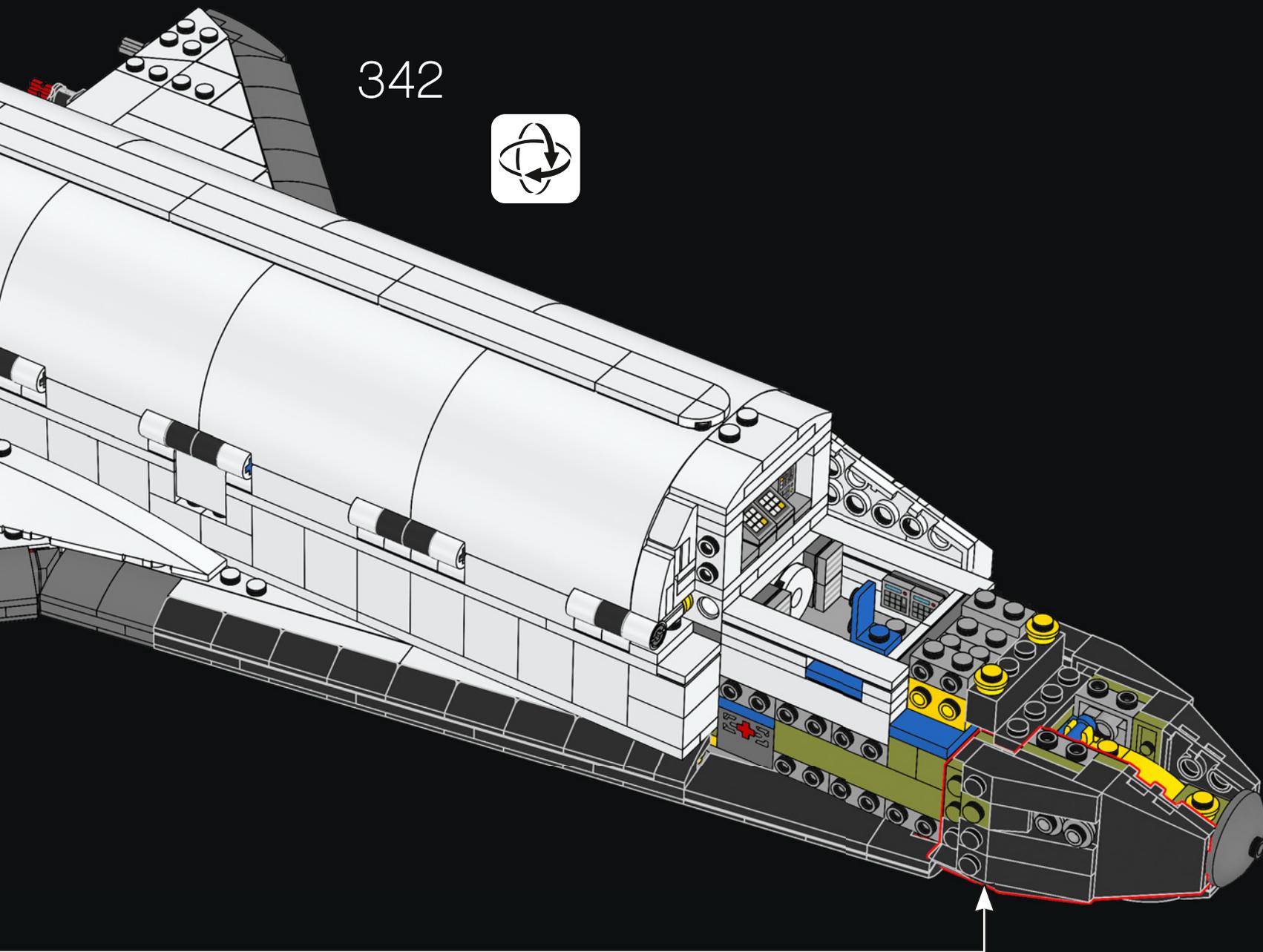
340

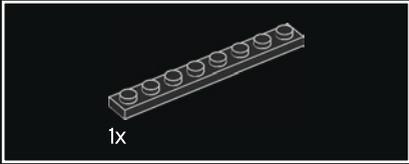
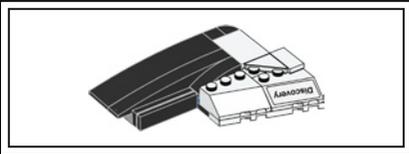


341

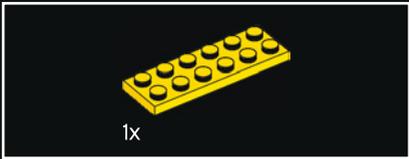
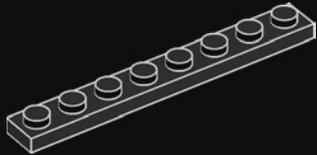


342





343

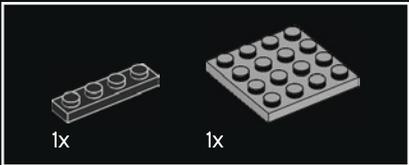
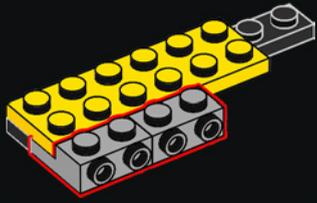


344



2x

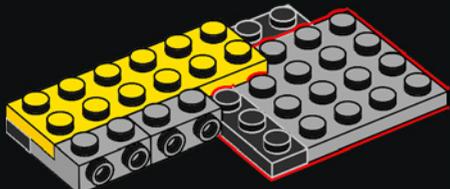
345

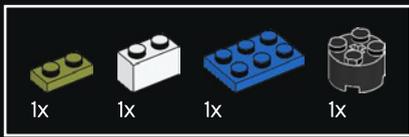


1x

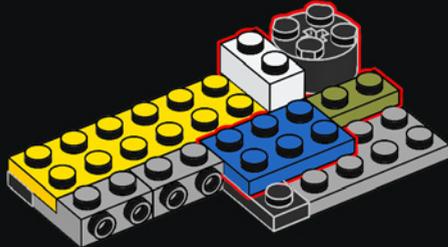
1x

346

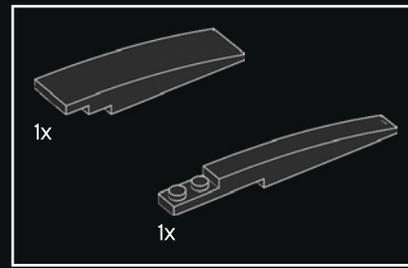
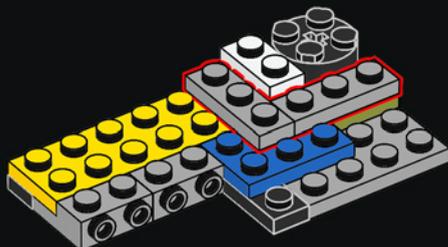




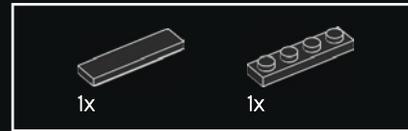
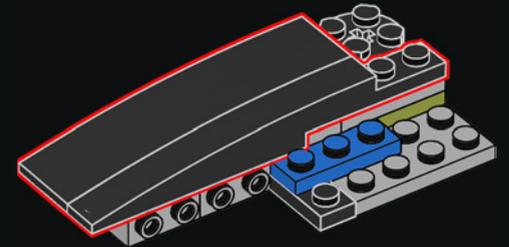
347



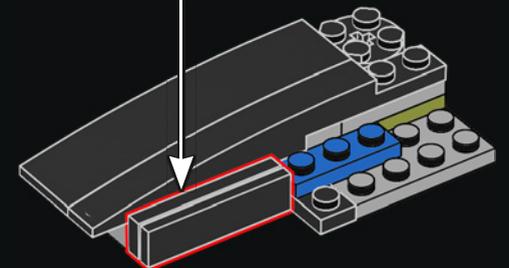
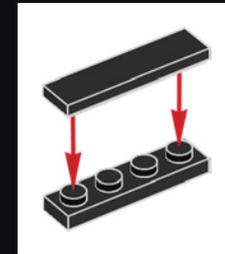
348

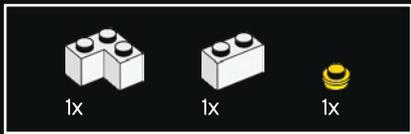


349

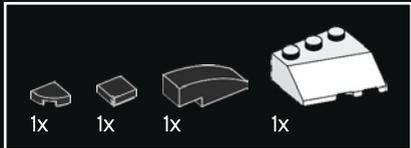
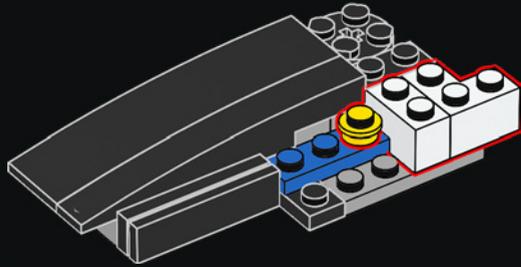


350

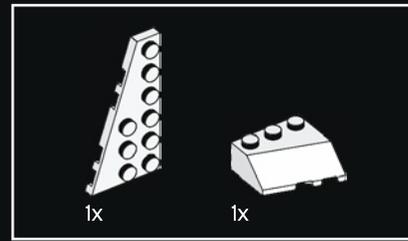
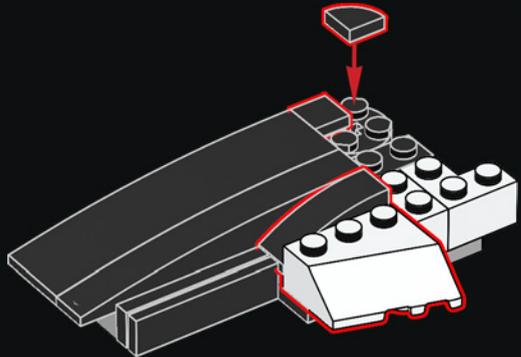




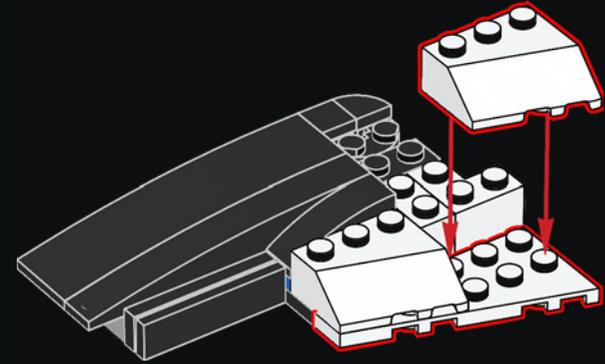
351



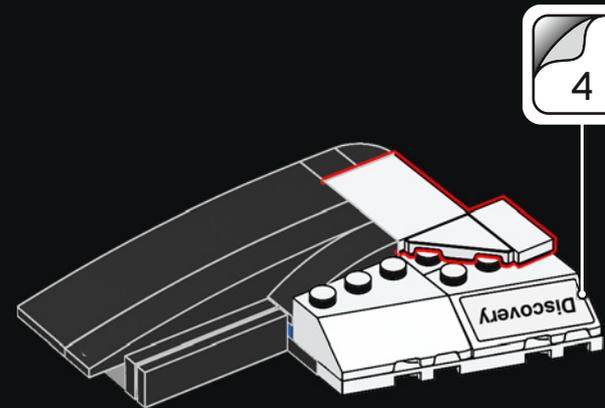
352



353

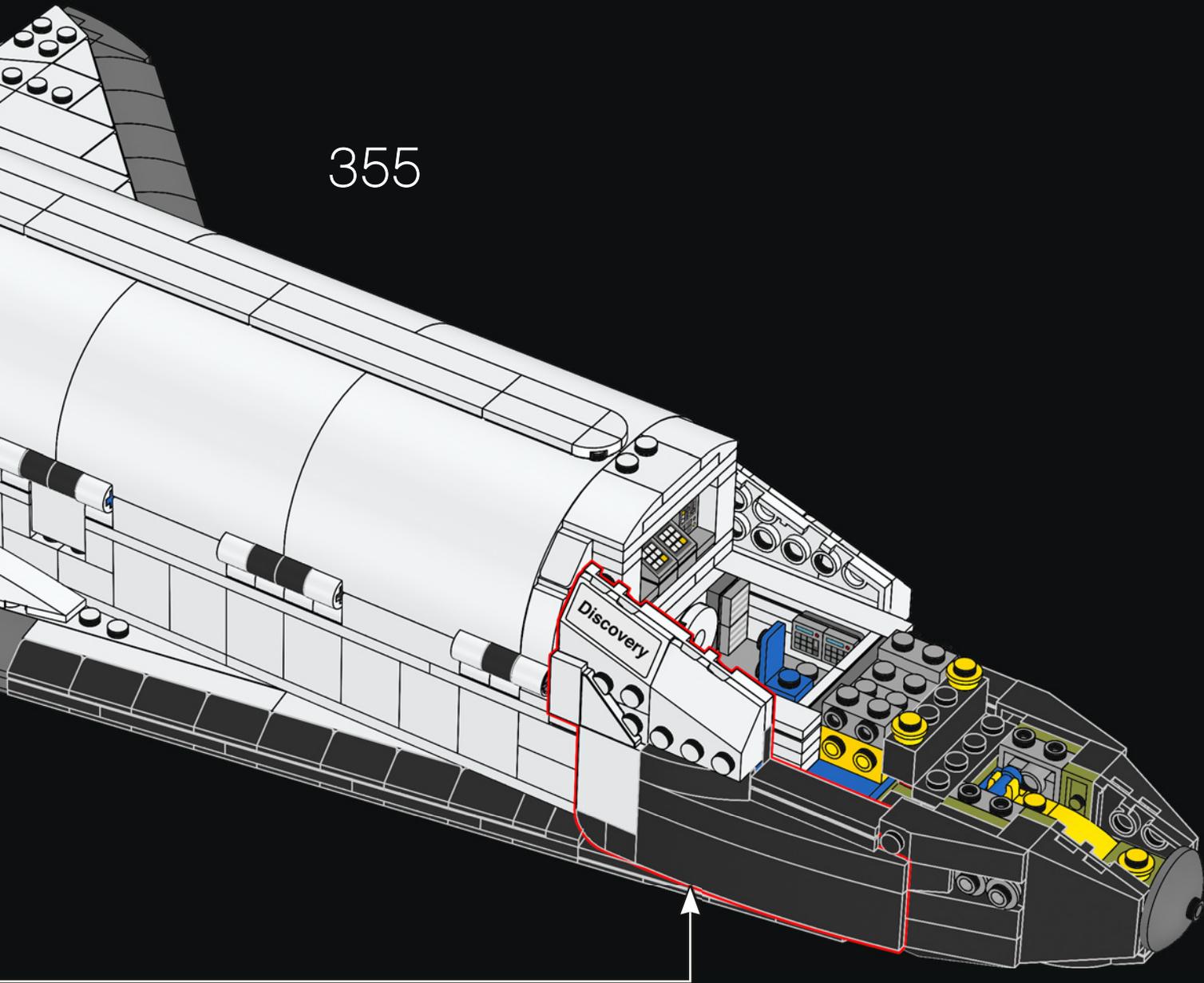


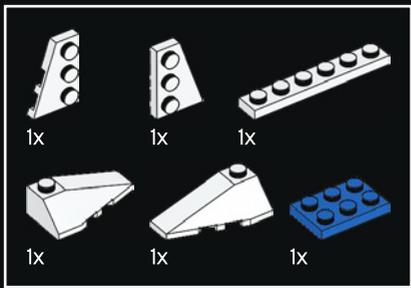
354



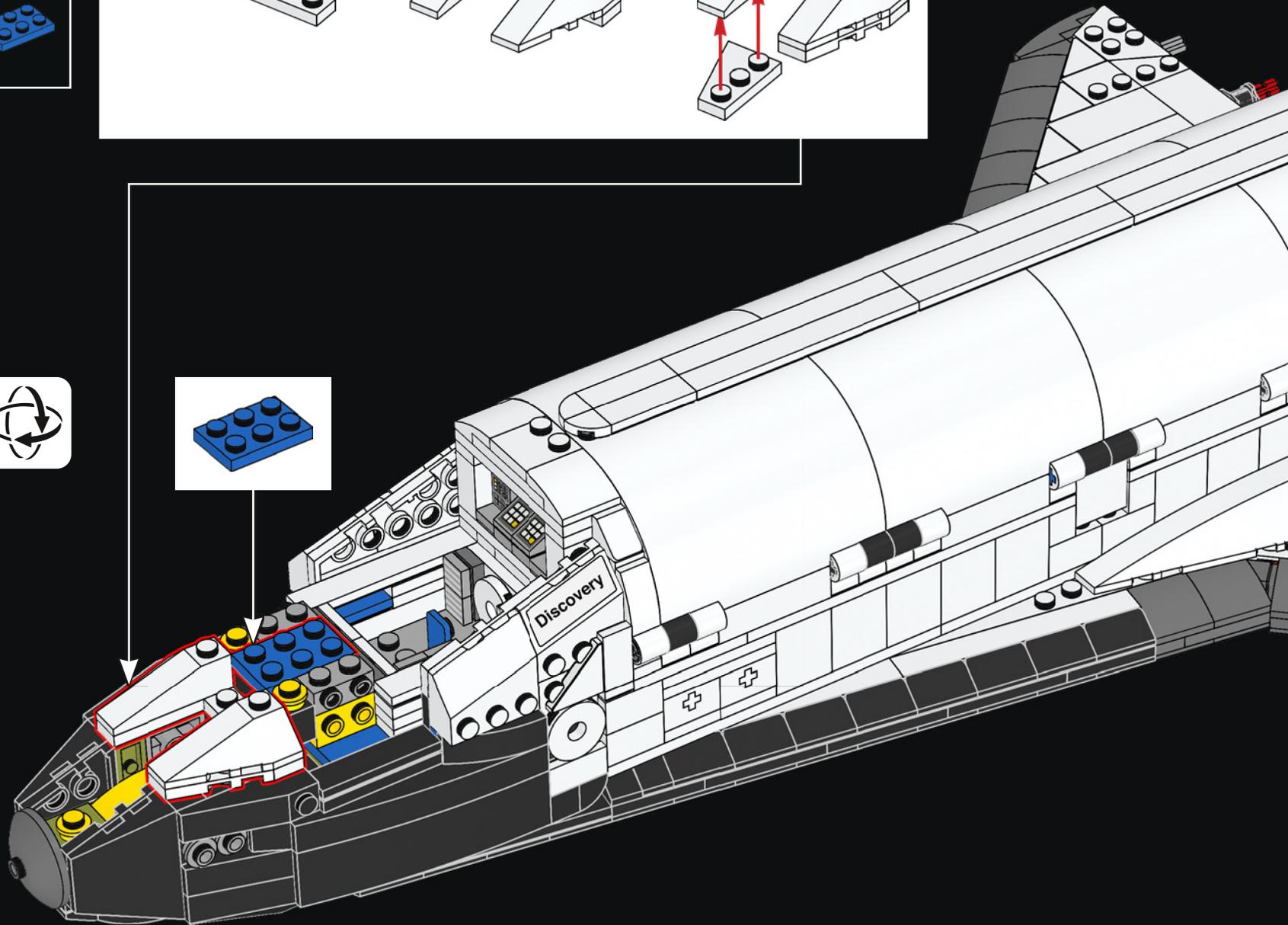
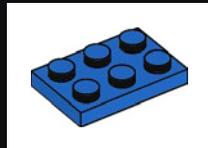
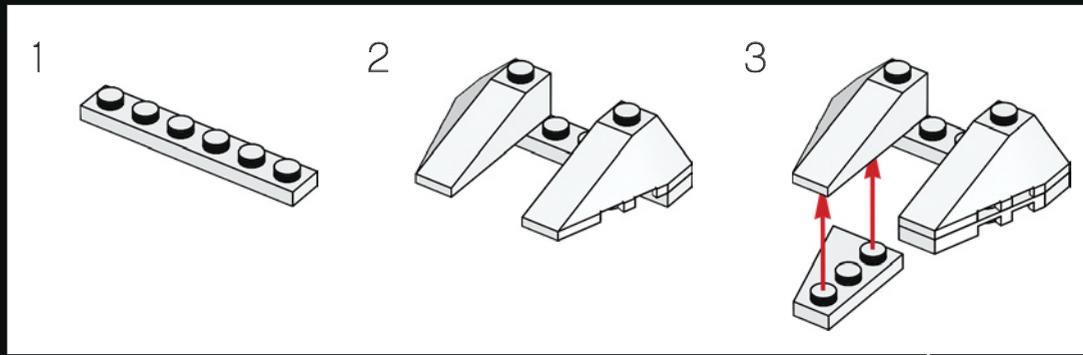
4

355



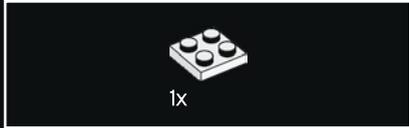
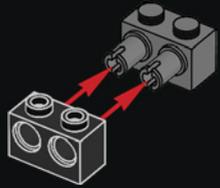


356





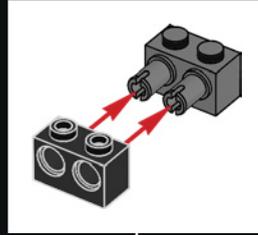
357



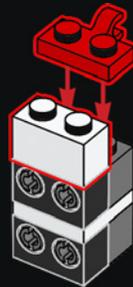
358



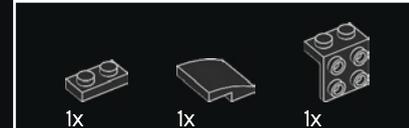
359



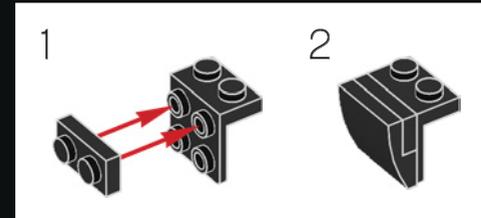
360



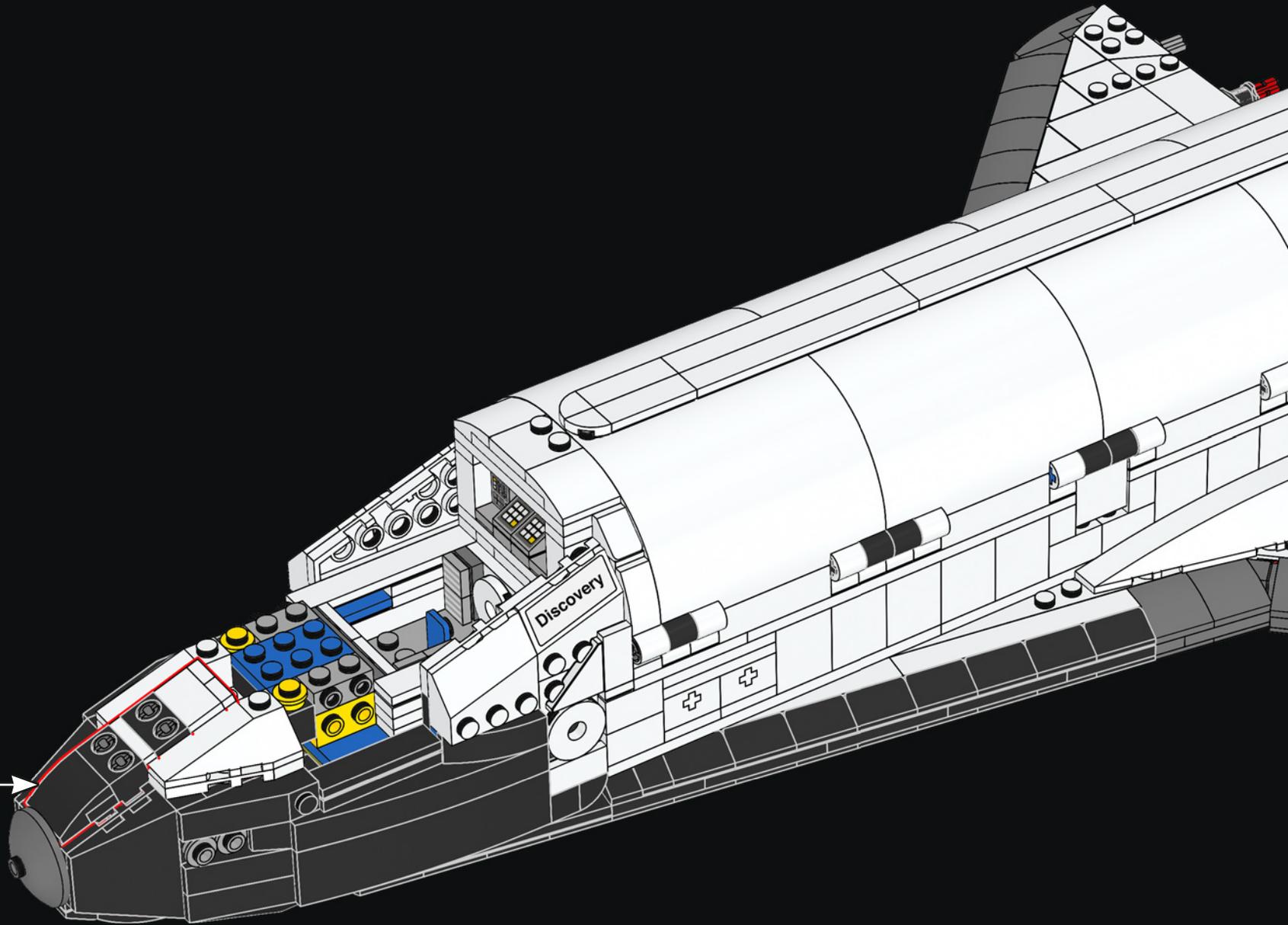
361

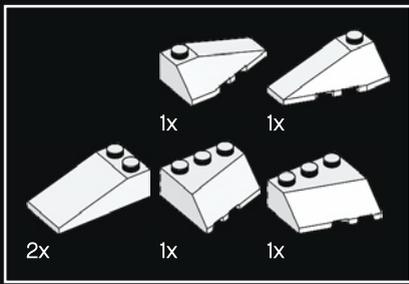


362

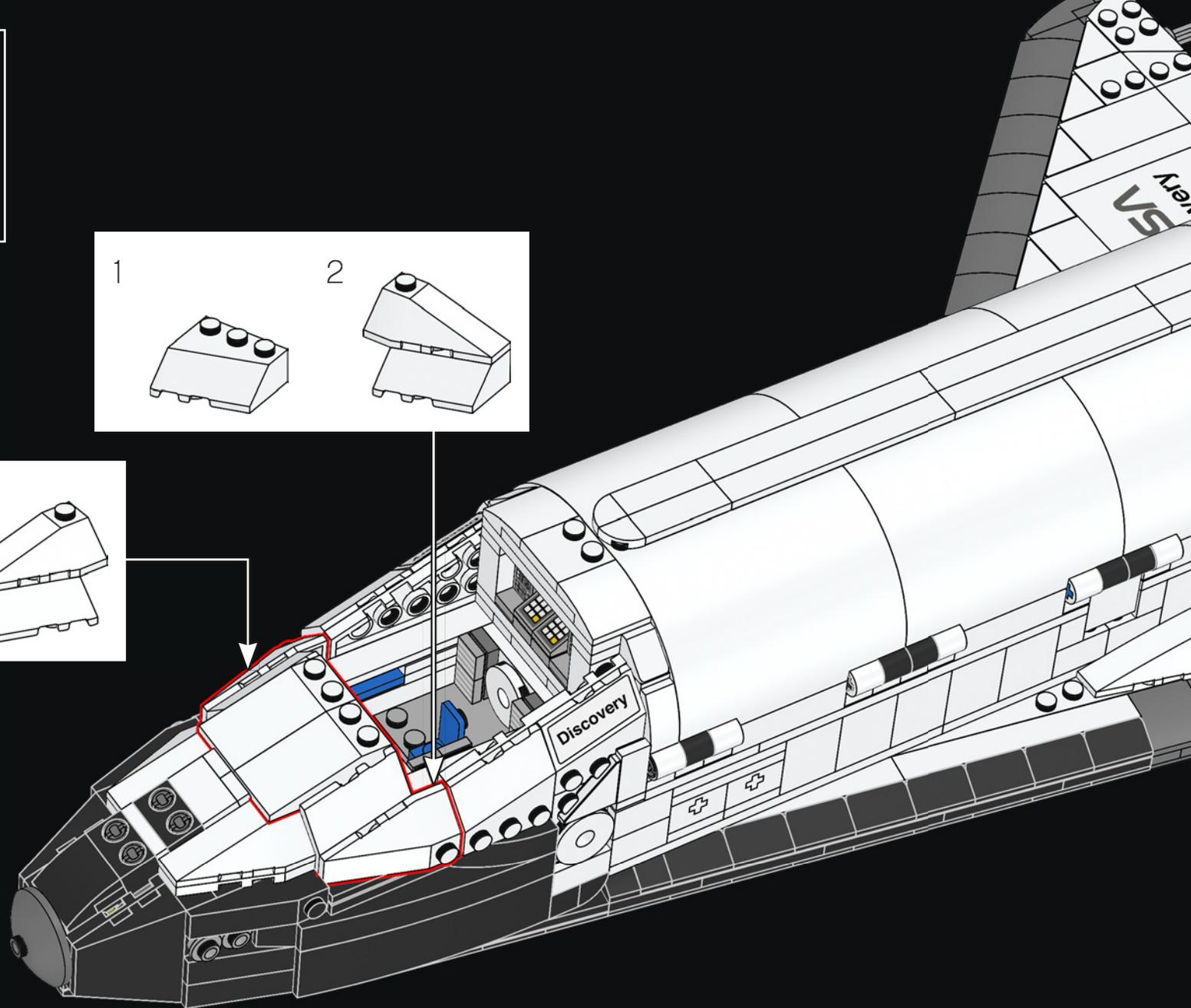
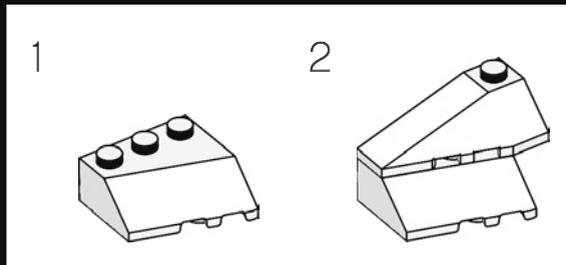
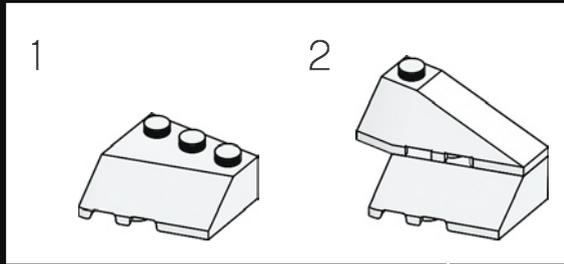


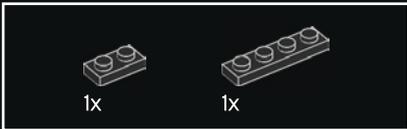
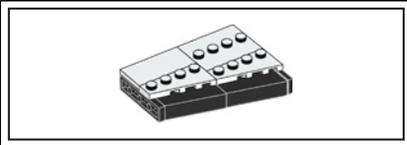
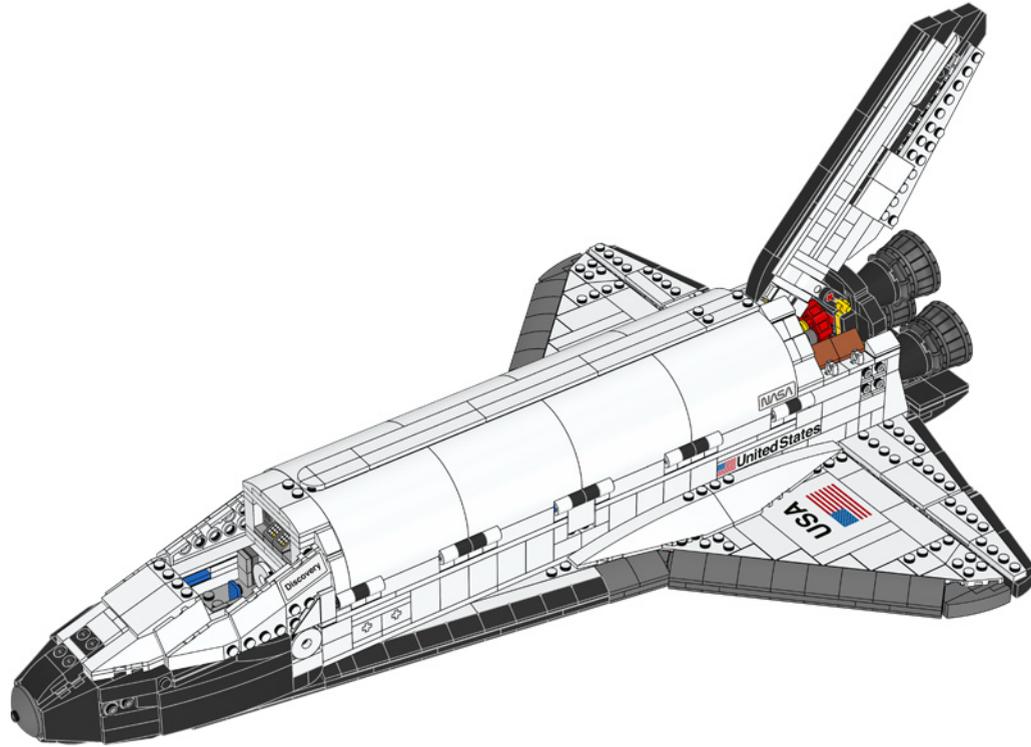
363



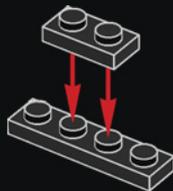


364

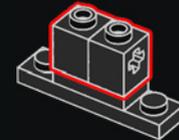




365

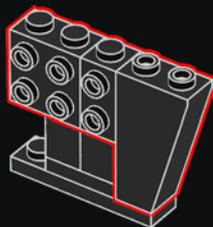


366

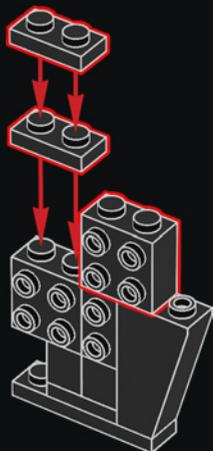




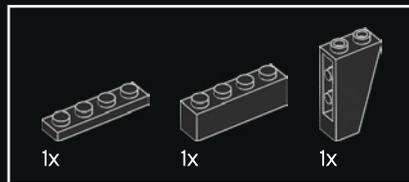
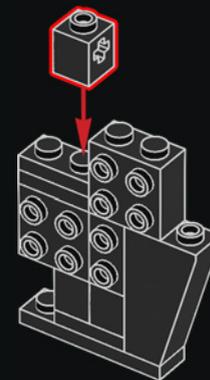
367



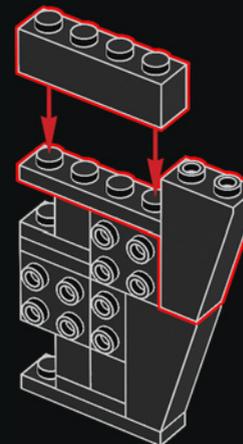
368

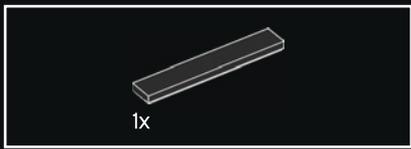


369

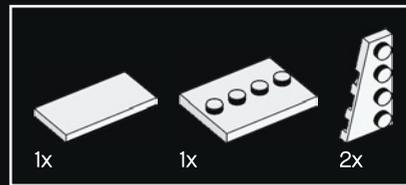
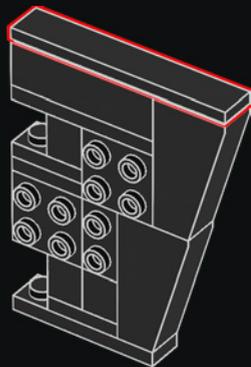


370

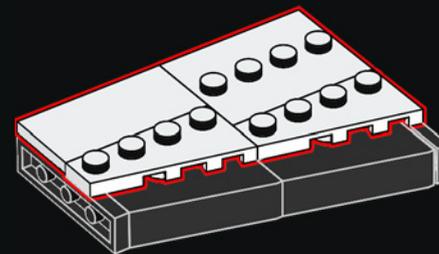




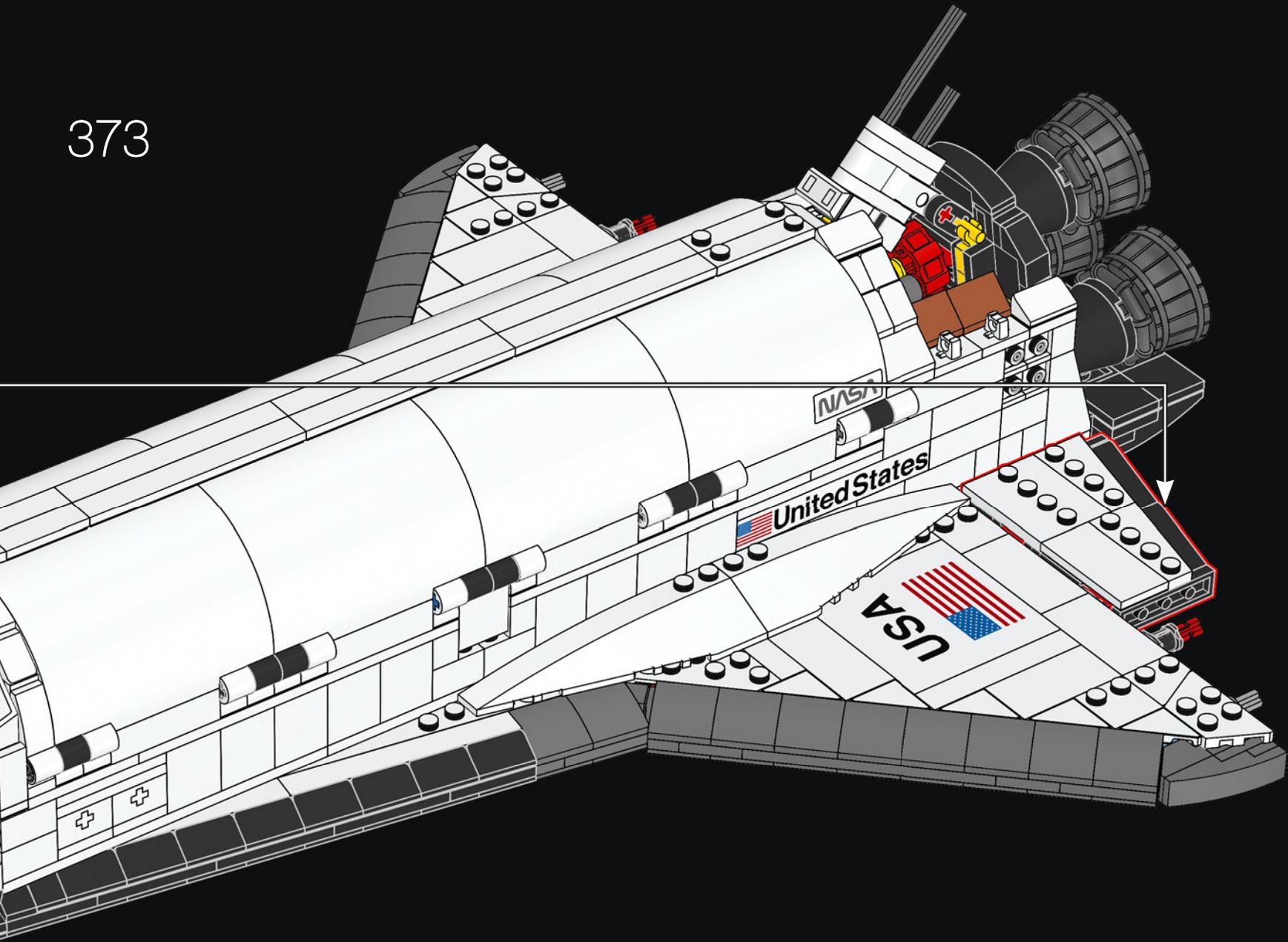
371

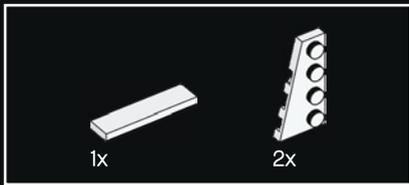


372

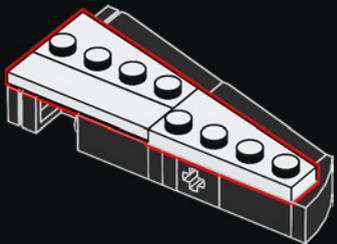


373

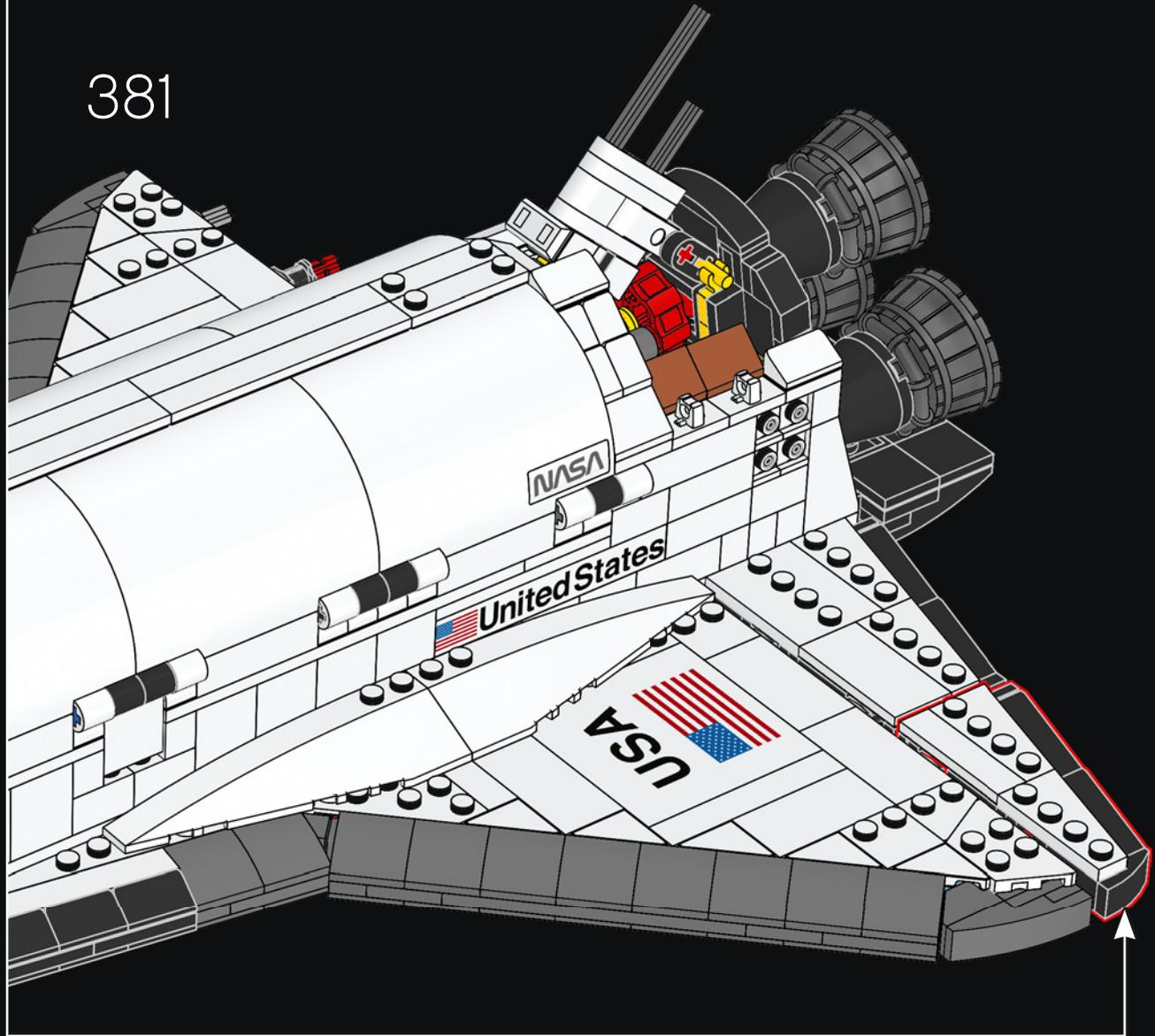


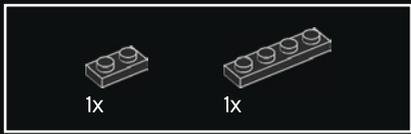


380

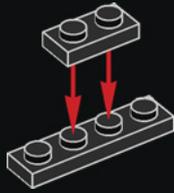


381

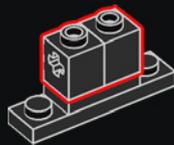




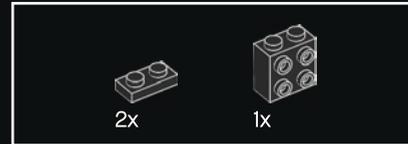
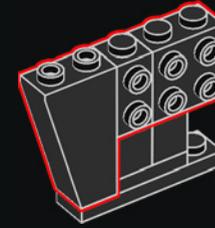
382



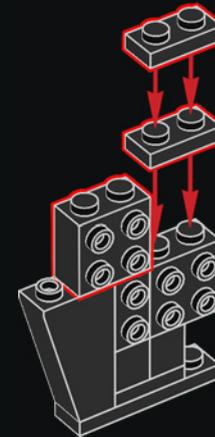
383



384

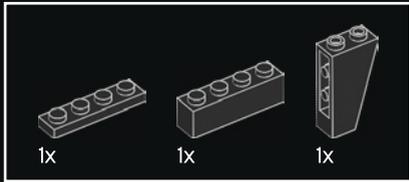
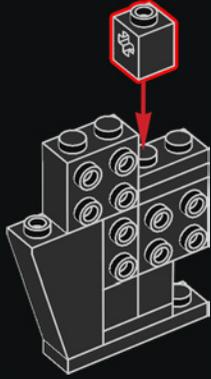


385

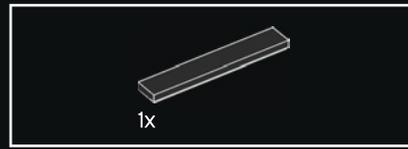
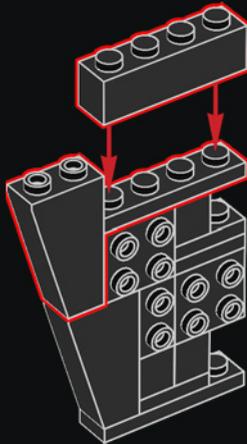




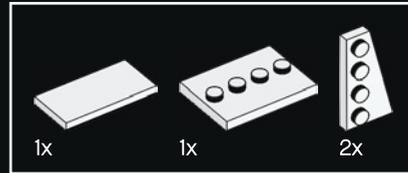
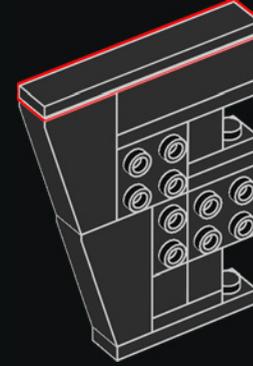
386



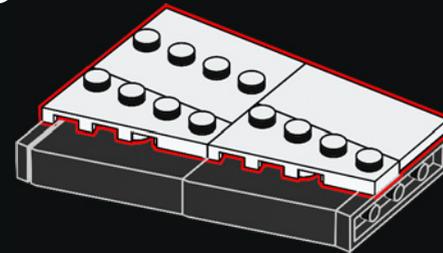
387



388

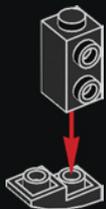


389





391



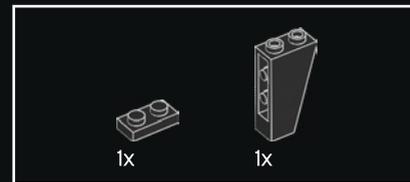
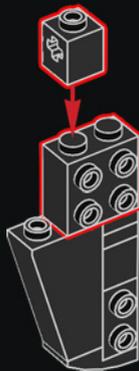
392



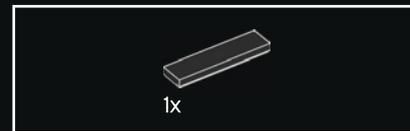
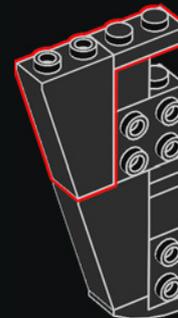
393



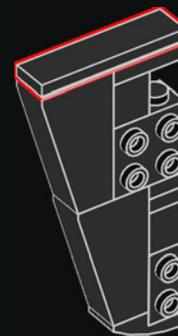
394

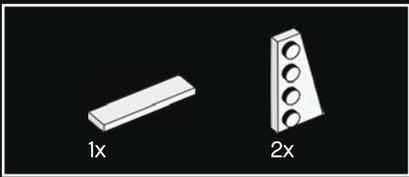


395

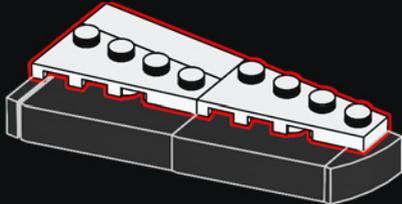


396

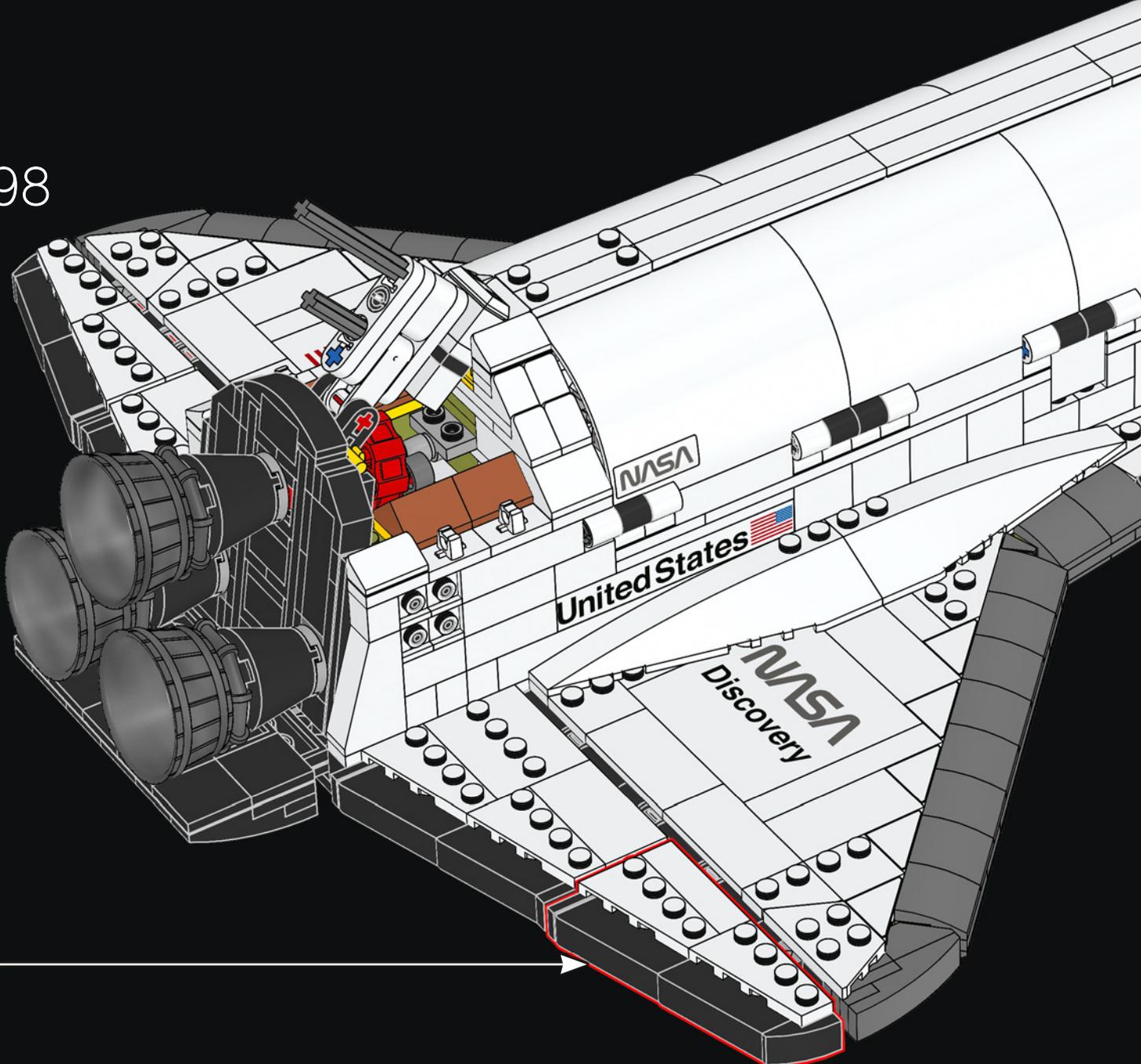


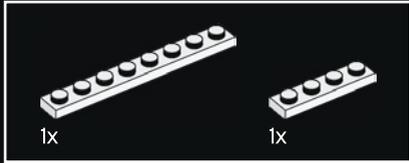
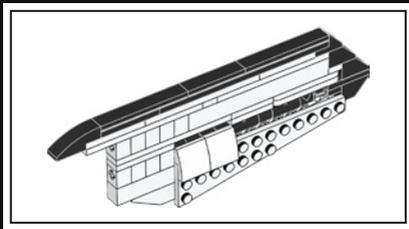


397

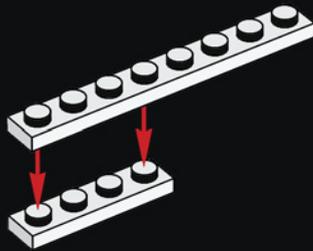


398

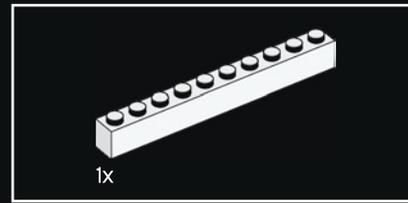
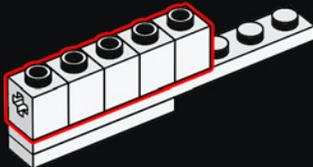




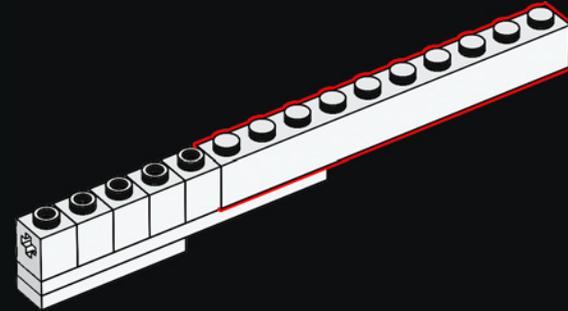
399



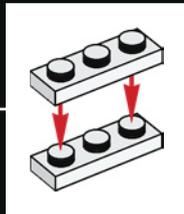
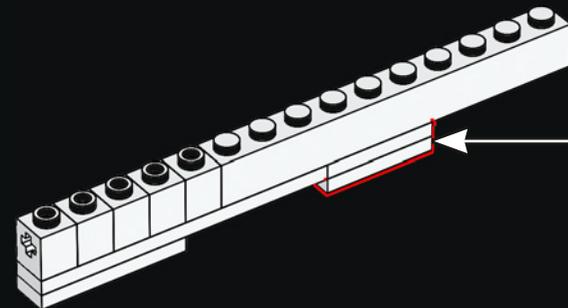
400



401



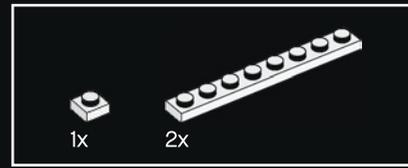
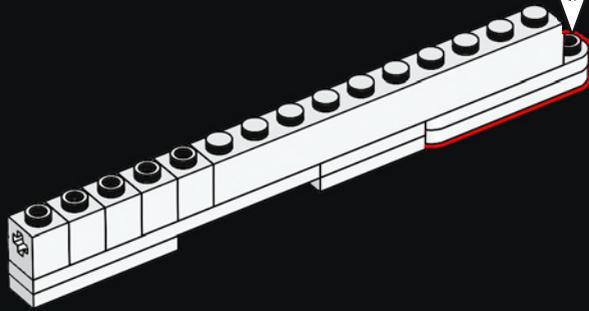
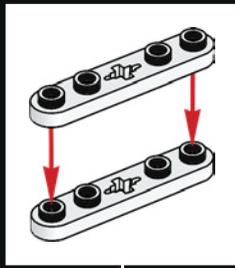
402





2x

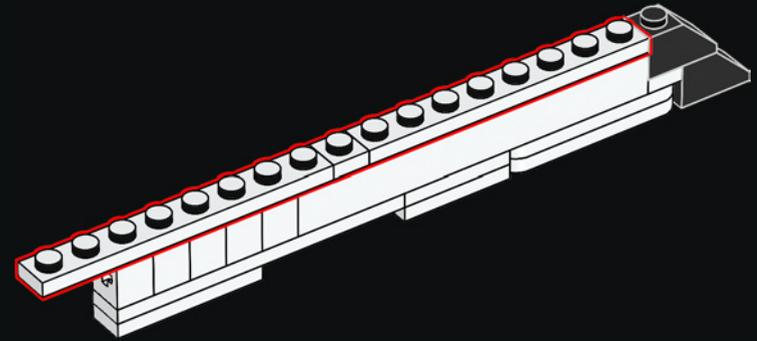
403



1x

2x

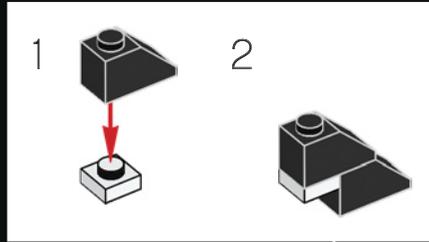
405



1x

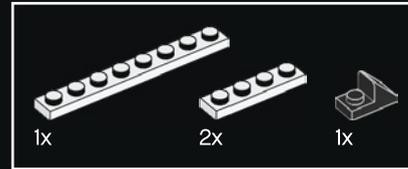
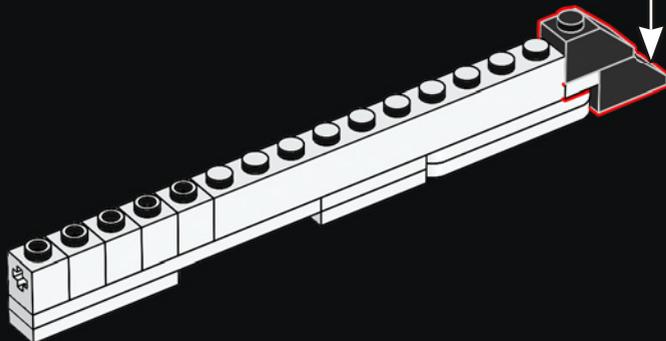
2x

404



1

2

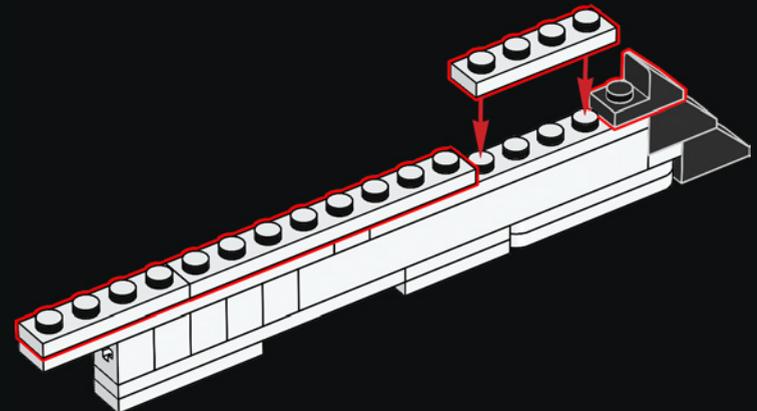


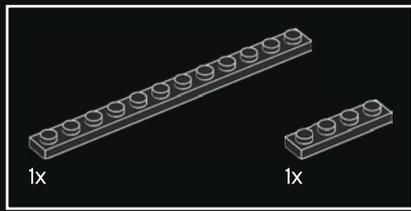
1x

2x

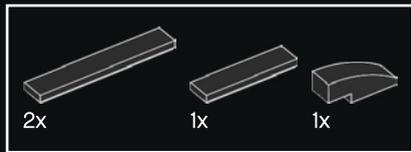
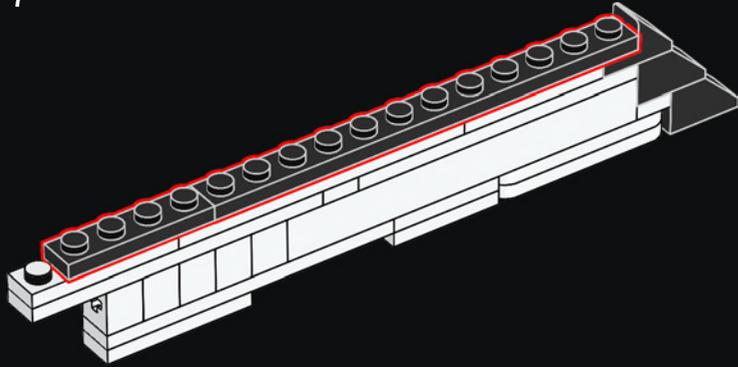
1x

406

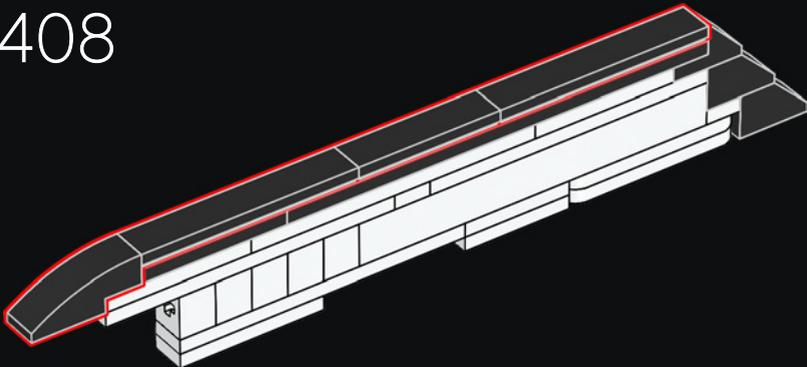




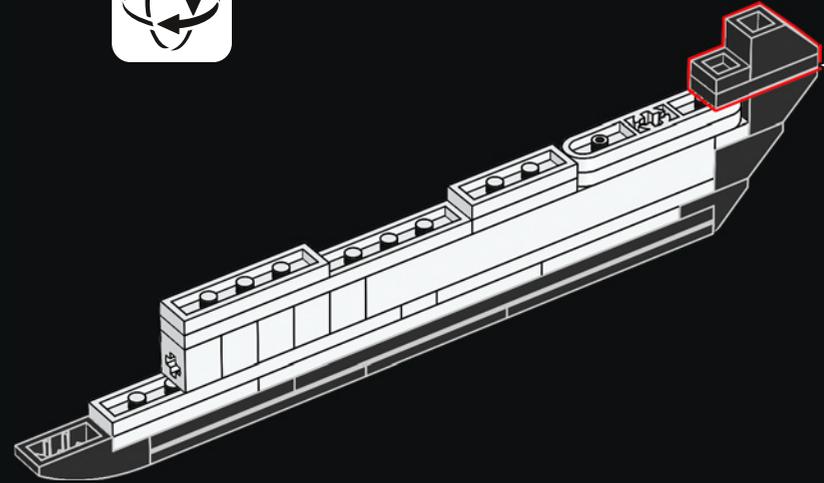
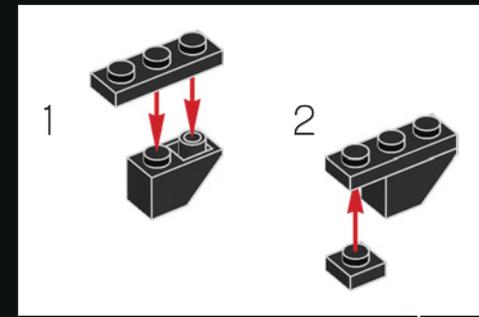
407



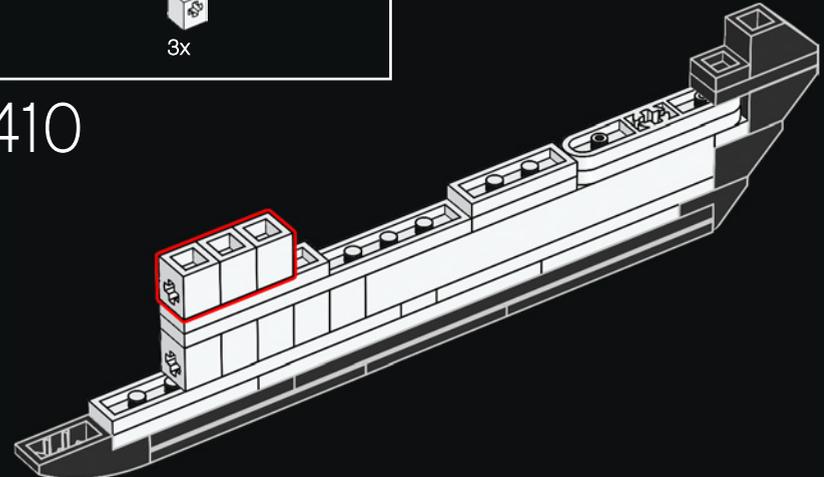
408

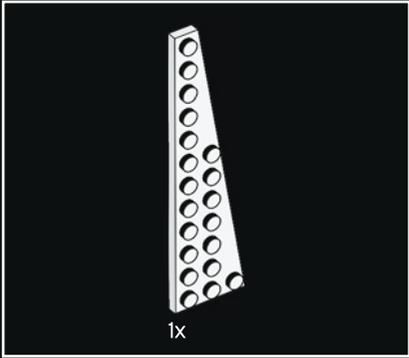
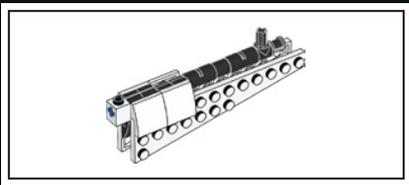


409

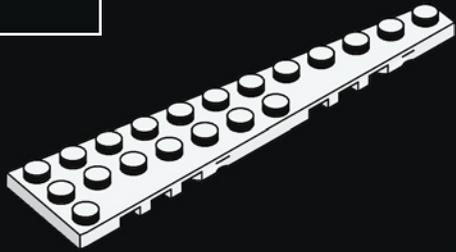


410

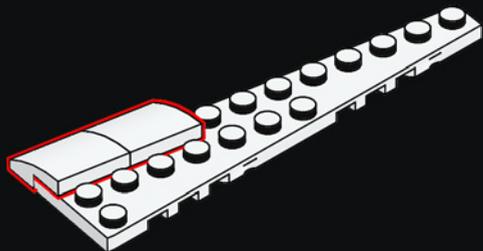




411

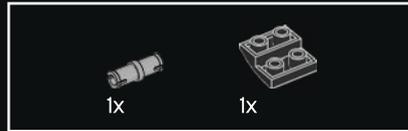
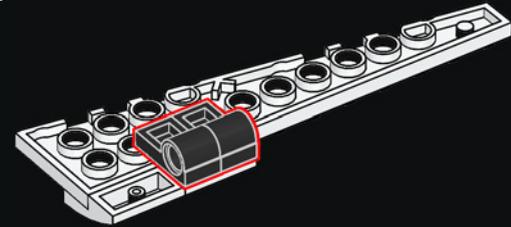


412



2x

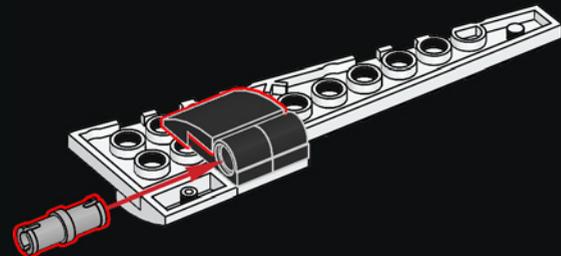
413



1x

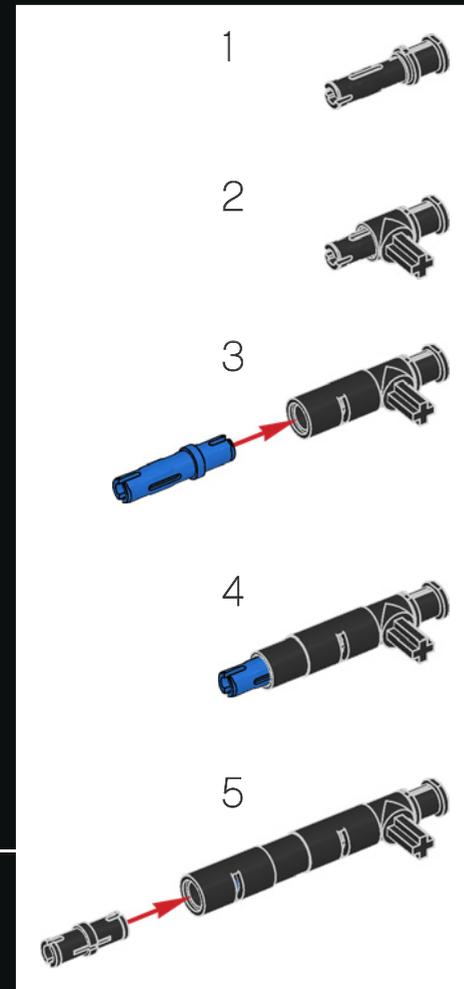
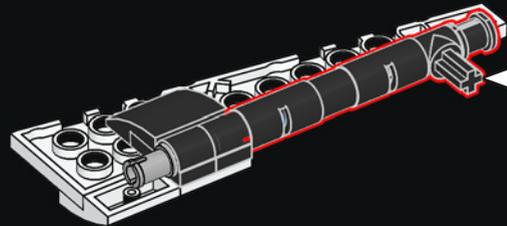
1x

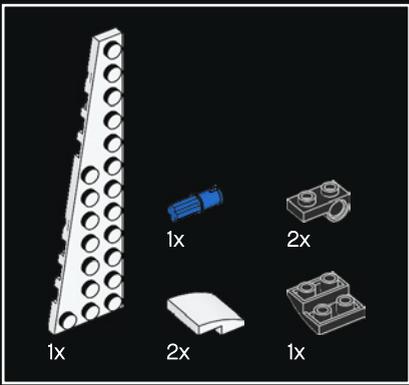
414



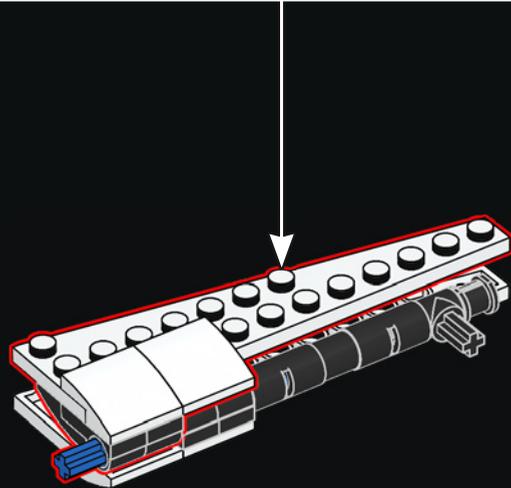
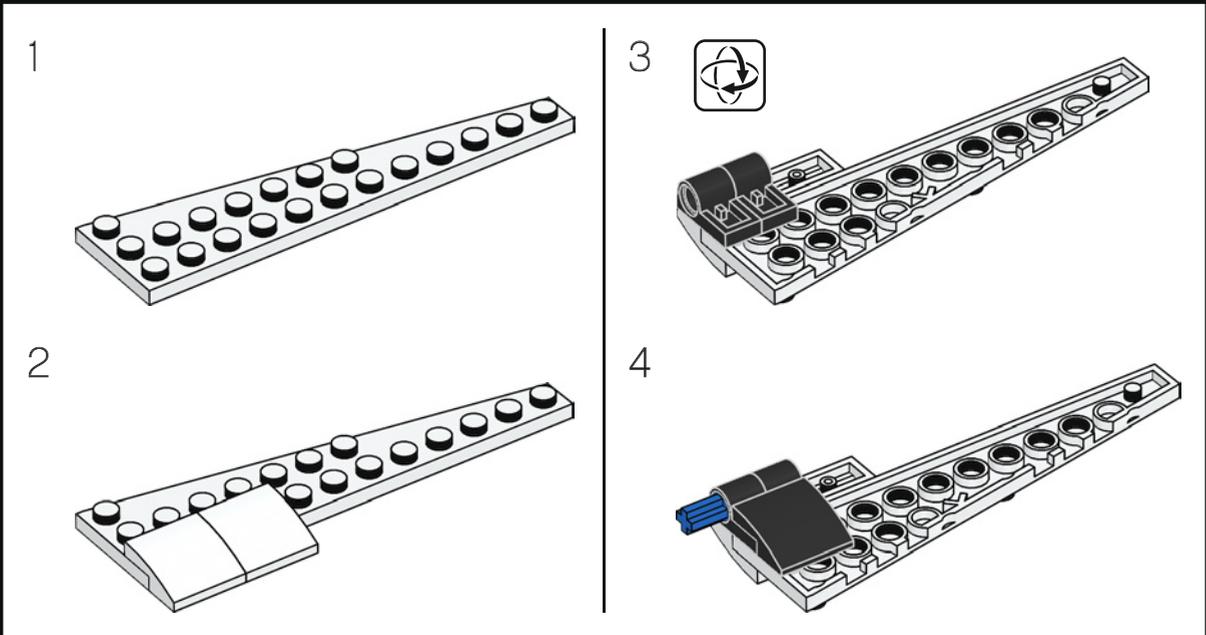


415



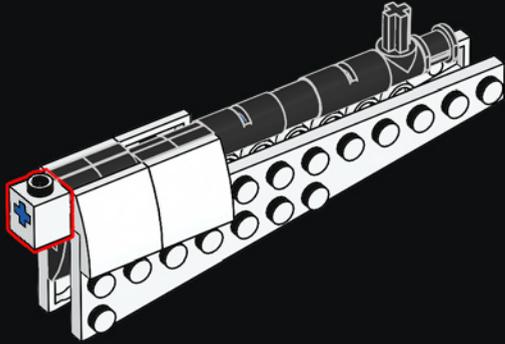


416

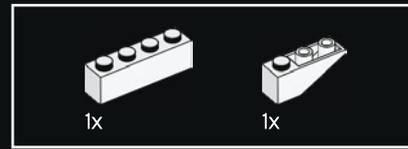
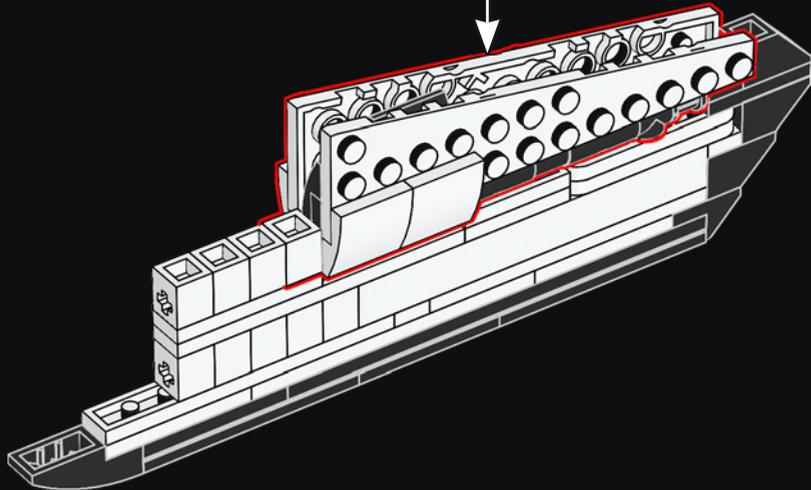




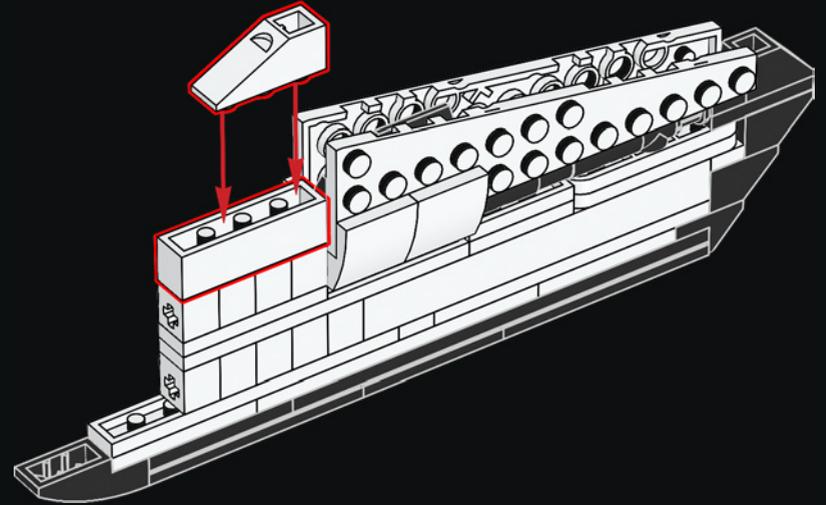
417



418



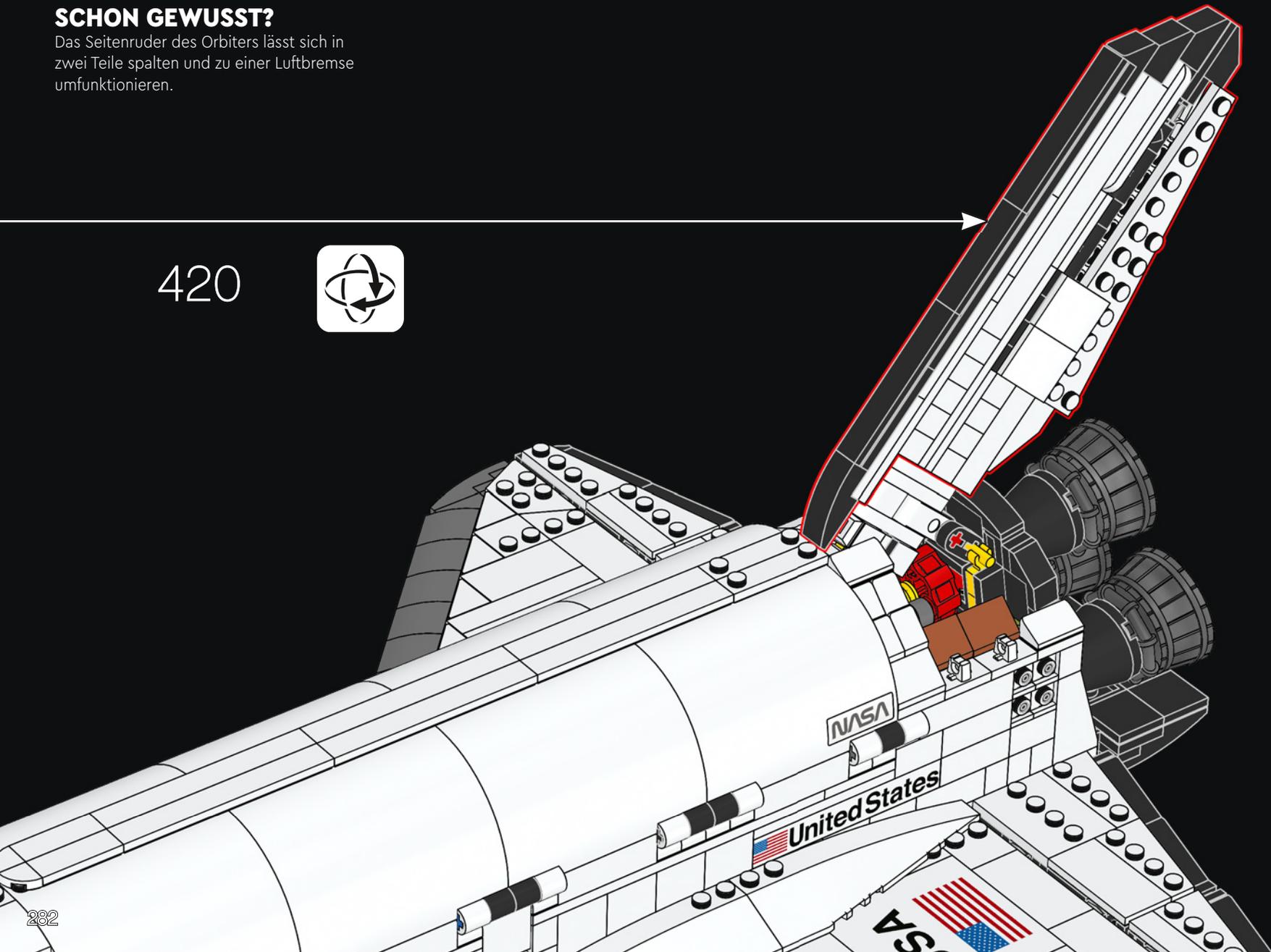
419

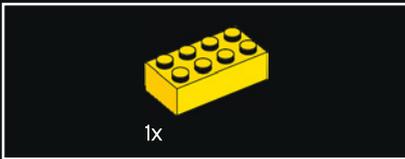
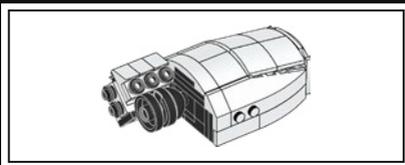
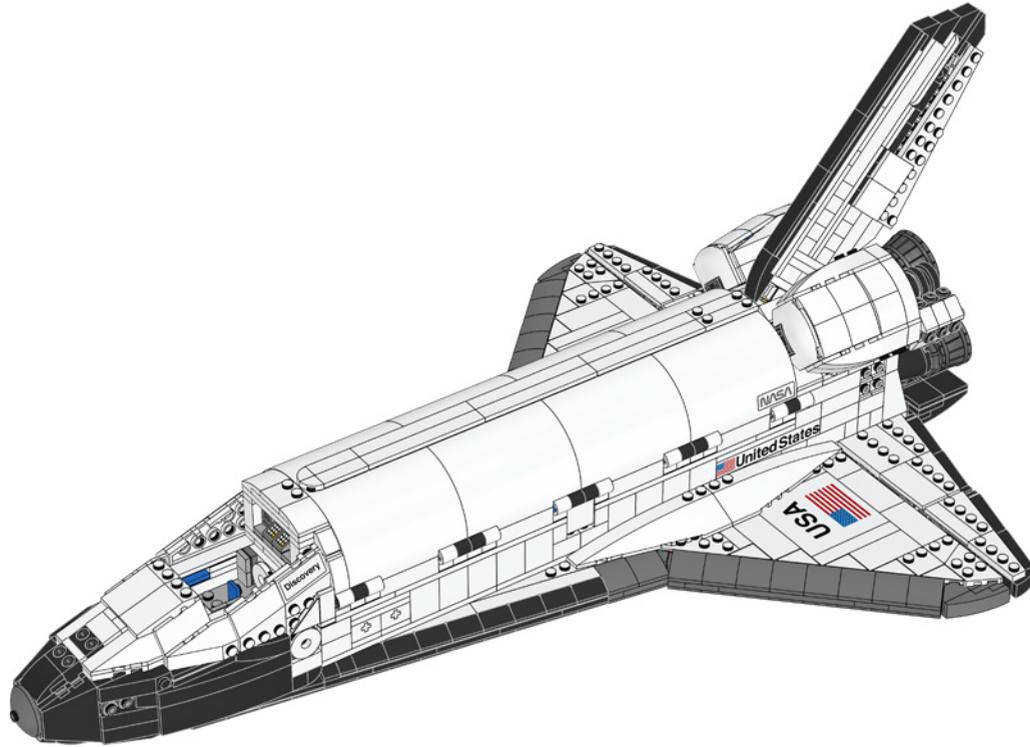


SCHON GEWUSST?

Das Seitenruder des Orbiters lässt sich in zwei Teile spalten und zu einer Luftbremse umfunktionieren.

420





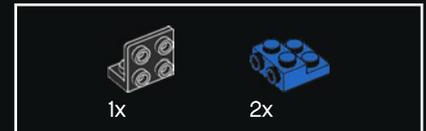
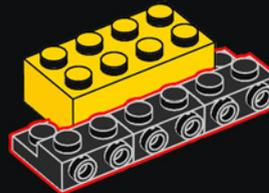
421

1x



3x

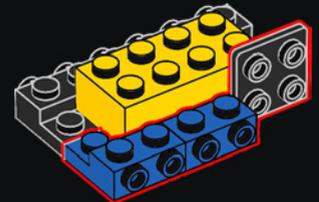
422



1x

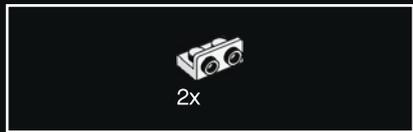
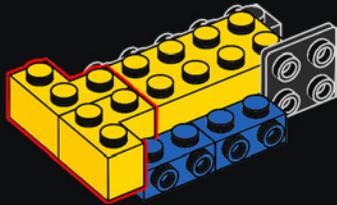
2x

423

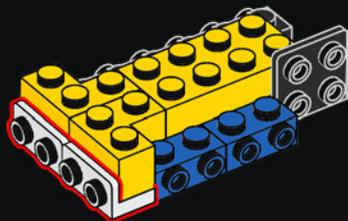




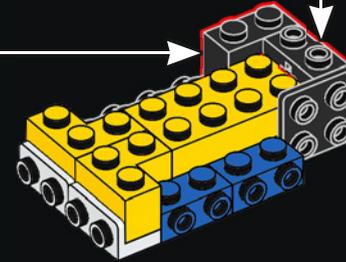
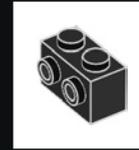
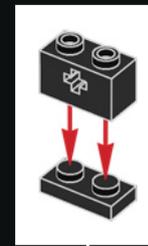
424



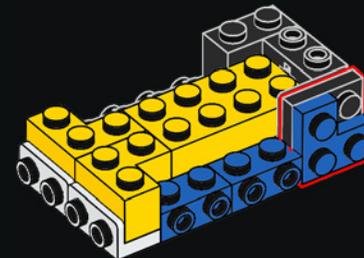
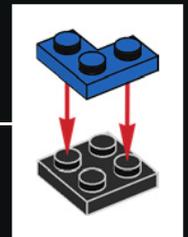
425



426

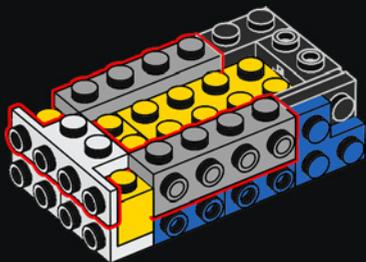


427

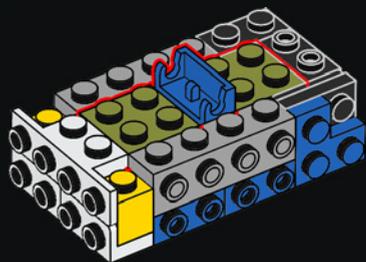




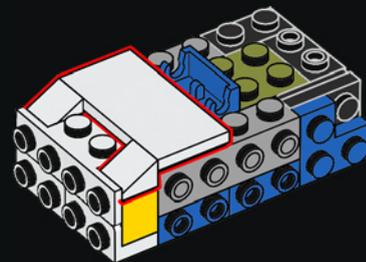
428



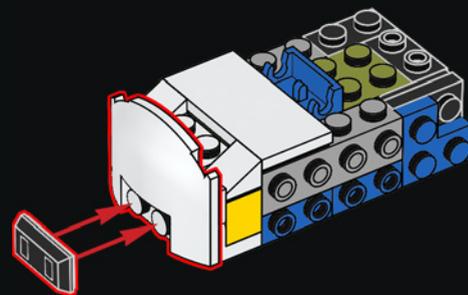
429

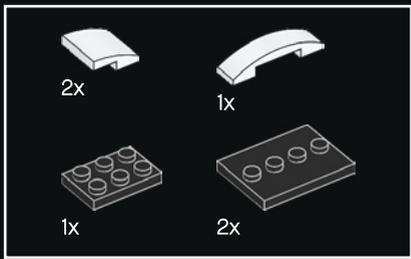


430

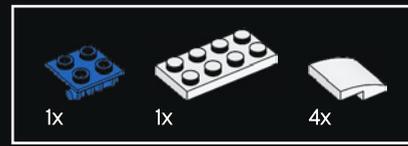
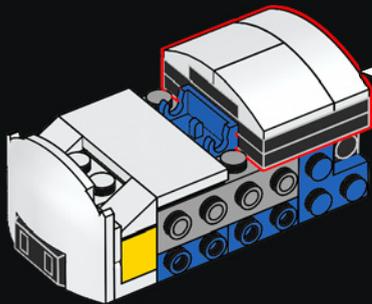
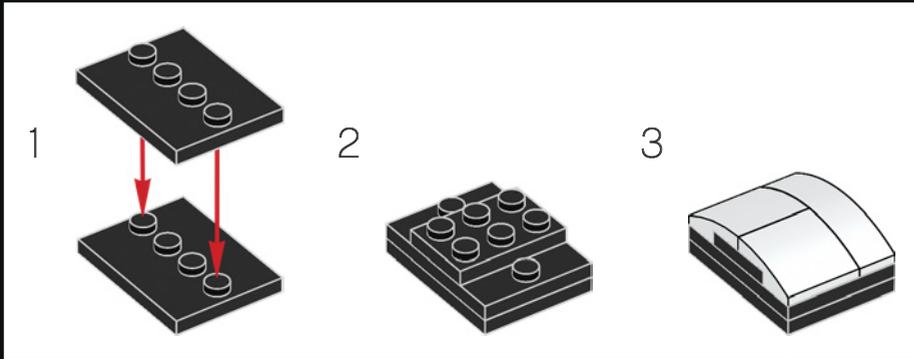


431

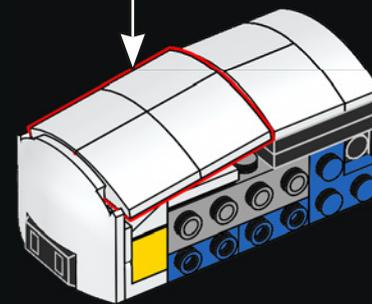
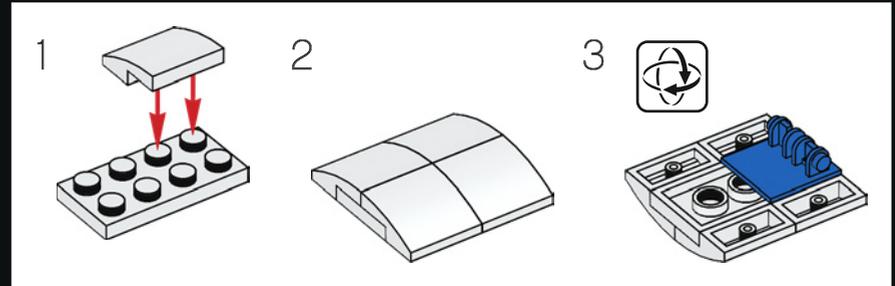




432

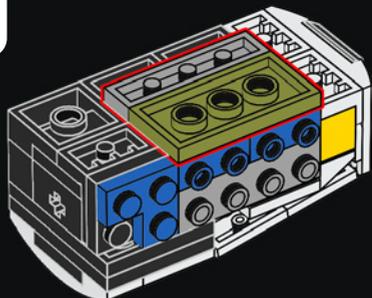


433

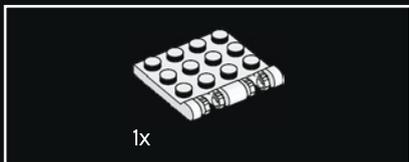
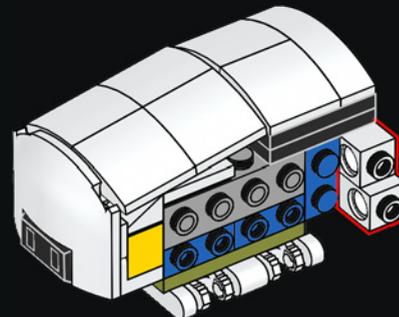




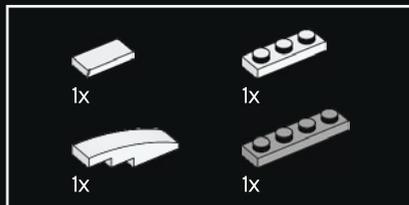
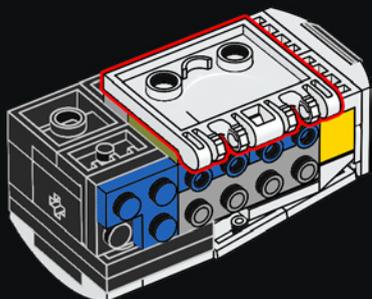
434



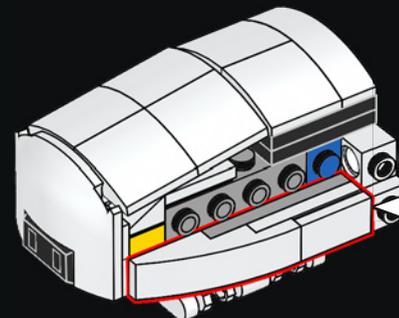
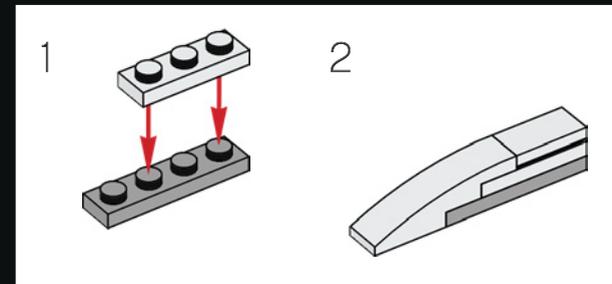
436



435

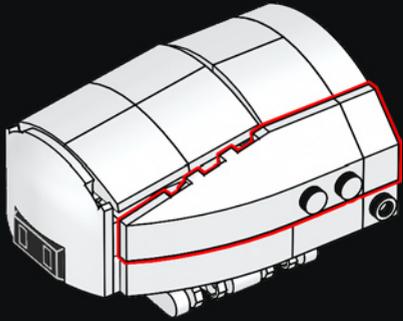


437

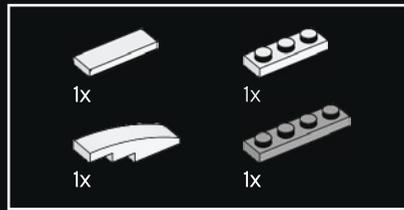
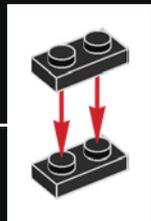
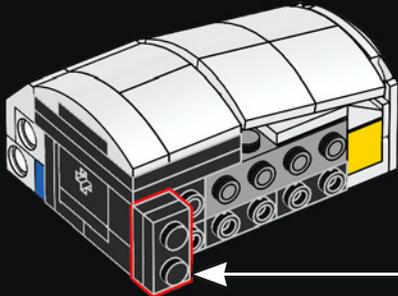




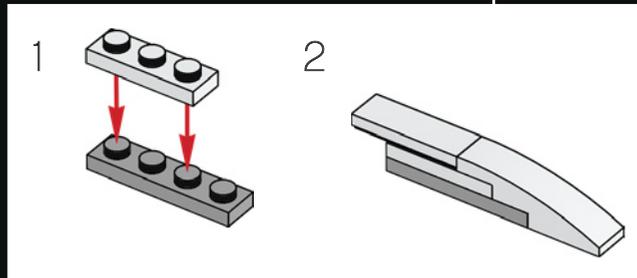
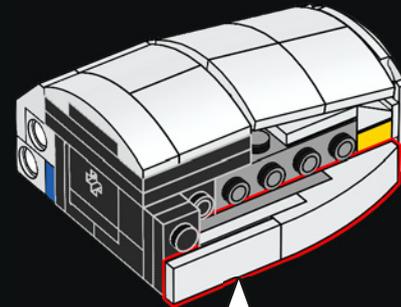
438

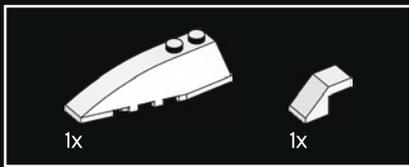


439

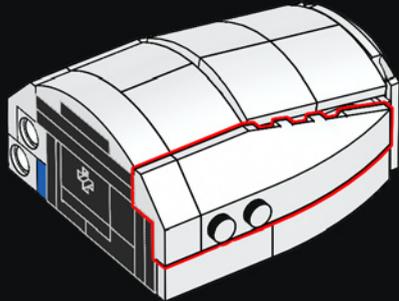


440

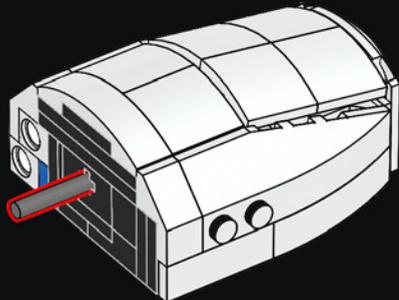




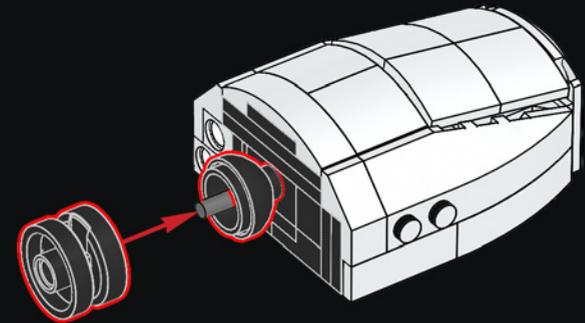
441

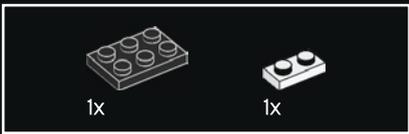


442

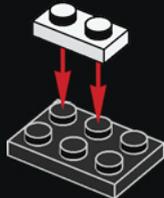


443

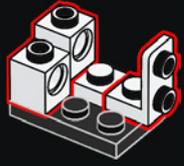




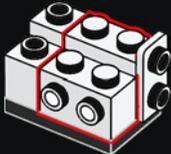
444



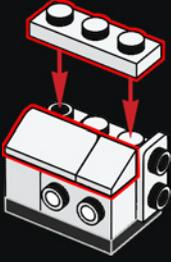
445



446



447

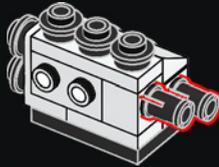




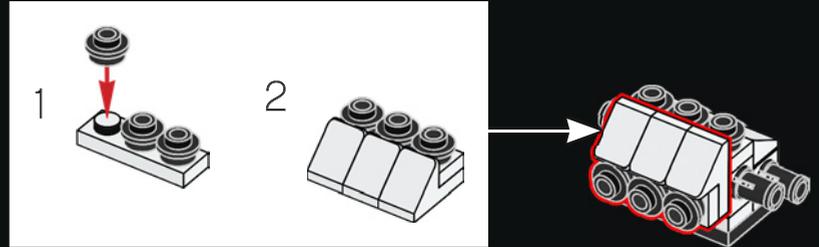
448



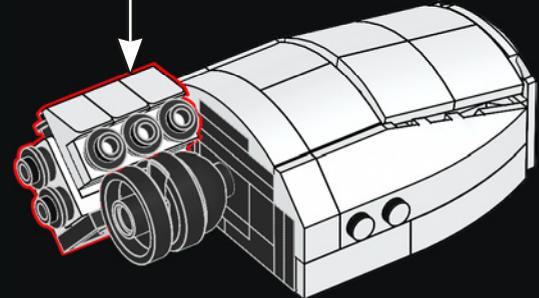
449



450



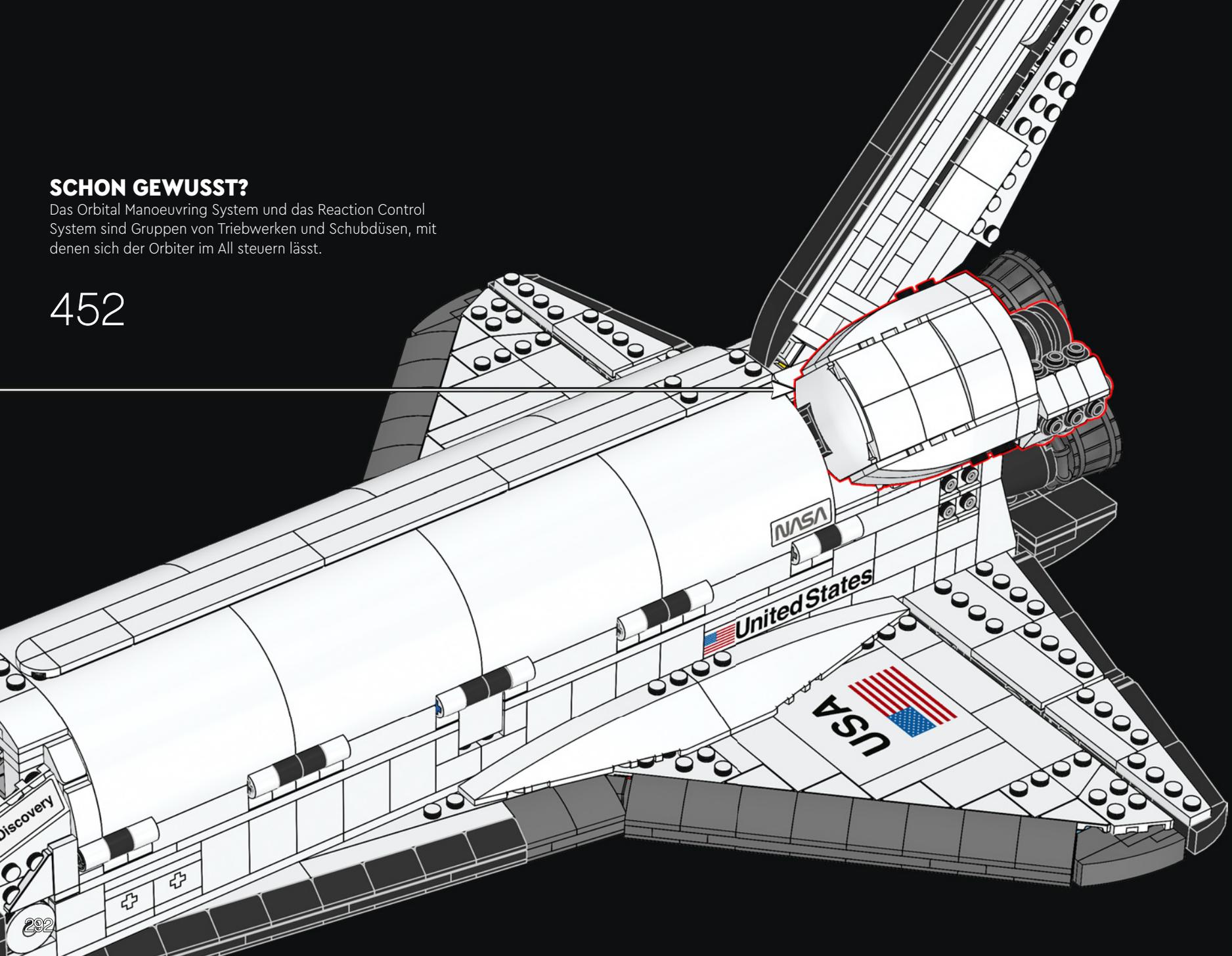
451



SCHON GEWUSST?

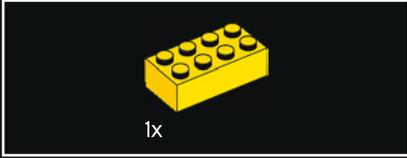
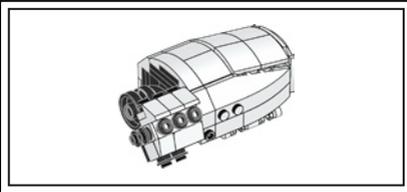
Das Orbital Manoeuvring System und das Reaction Control System sind Gruppen von Triebwerken und Schubdüsen, mit denen sich der Orbiter im All steuern lässt.

452



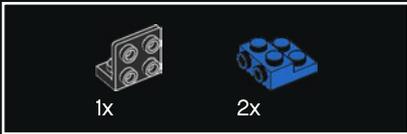
Discovery

292



1x

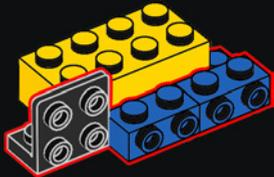
453



1x

2x

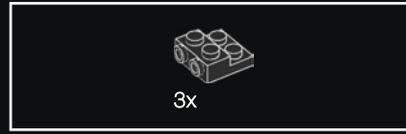
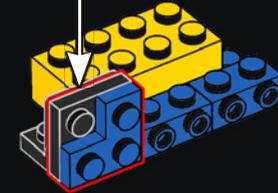
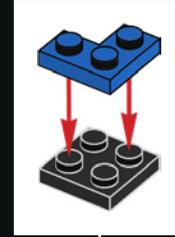
454



1x

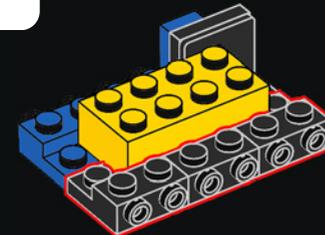
1x

455



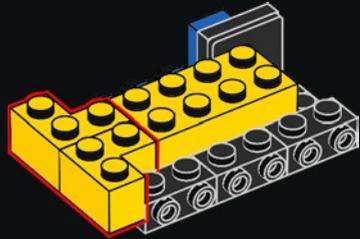
3x

456

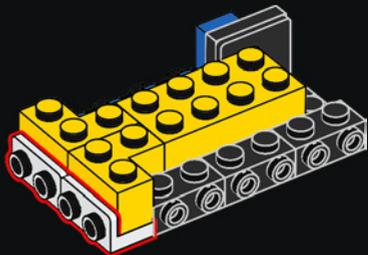




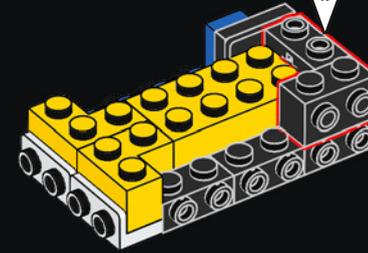
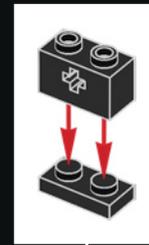
457



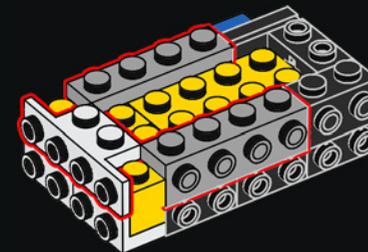
458



459

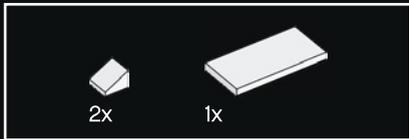
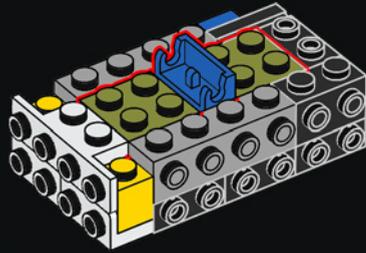


460

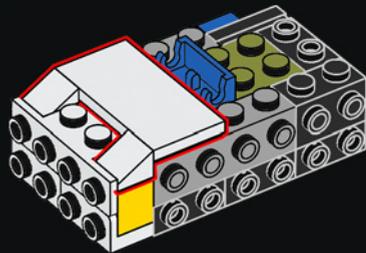




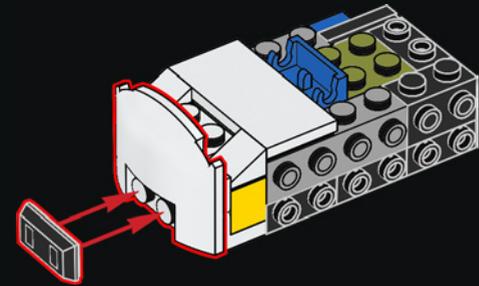
461

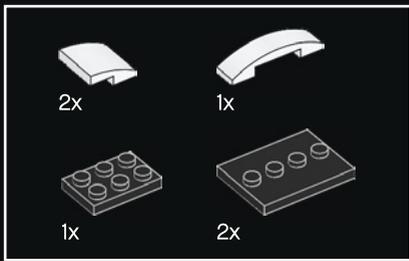


462

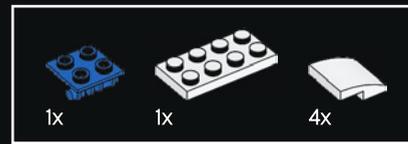
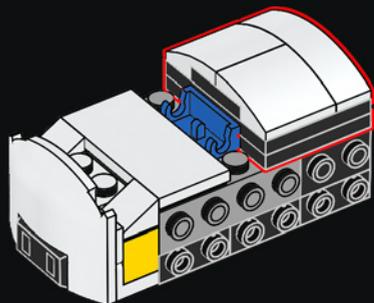
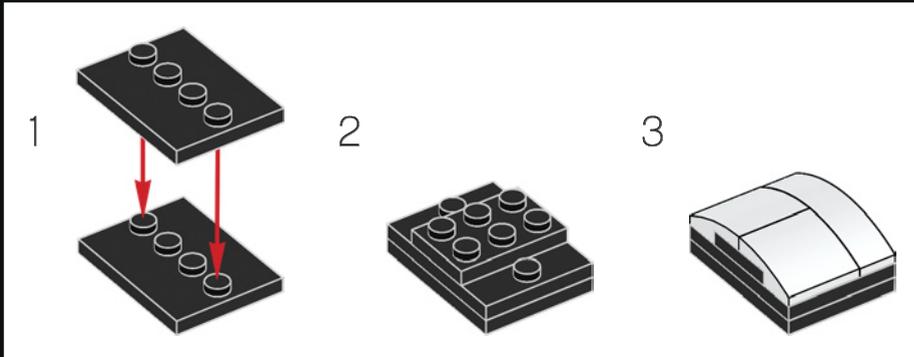


463

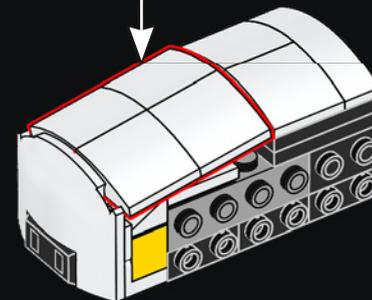
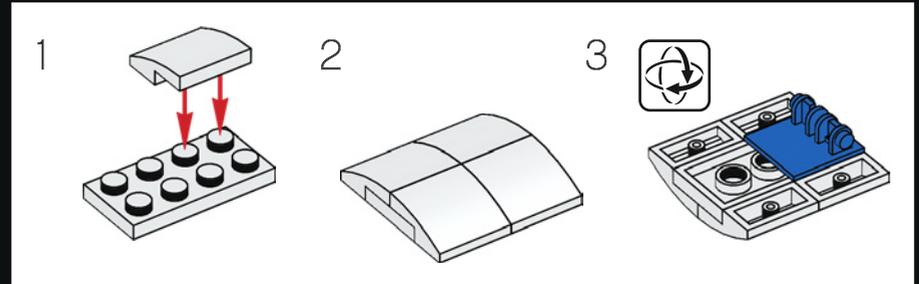




464

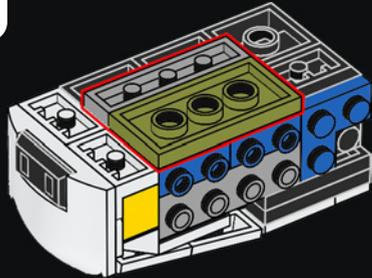


465

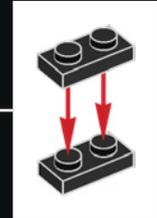
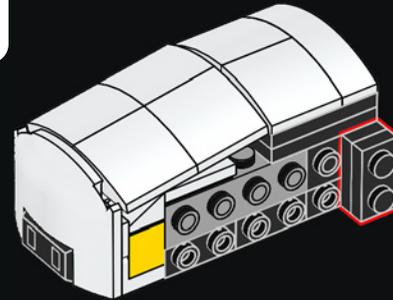




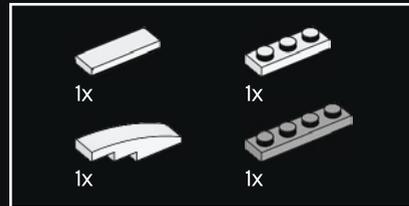
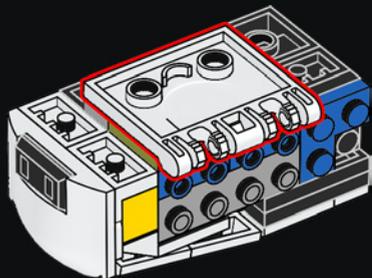
466



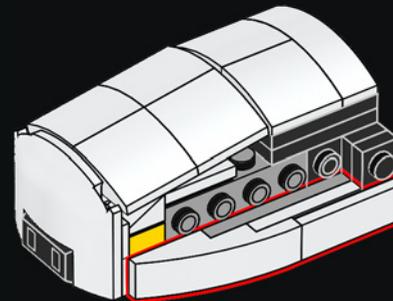
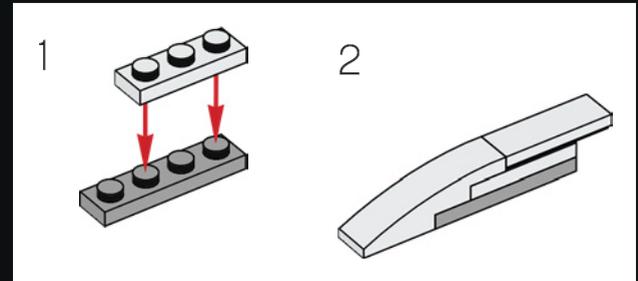
468



467

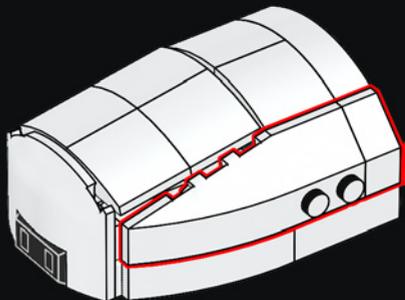


469

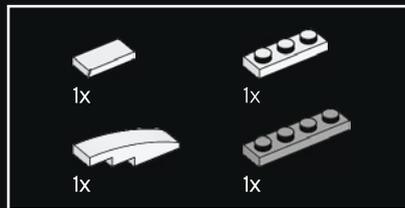
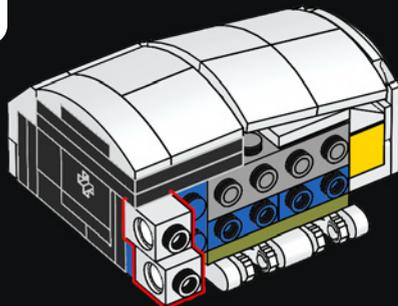




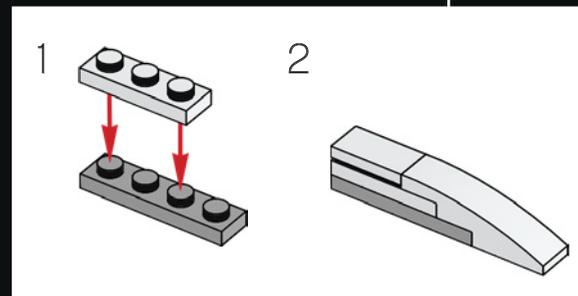
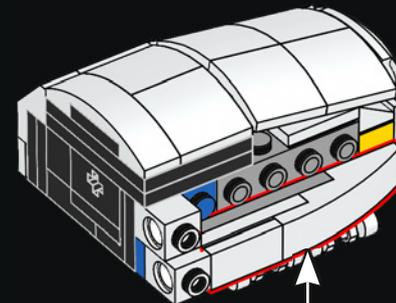
470

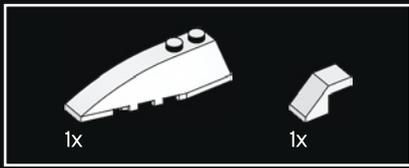


471

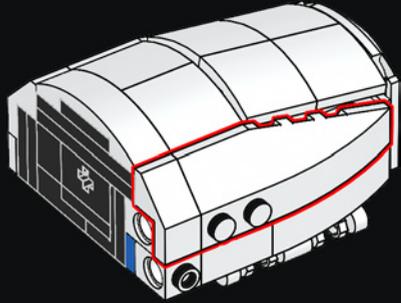


472

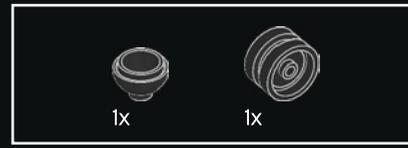
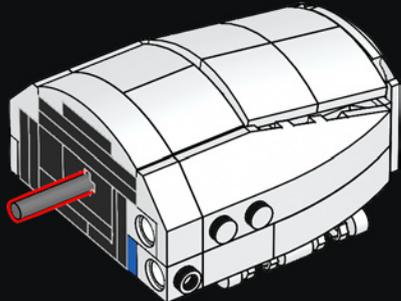




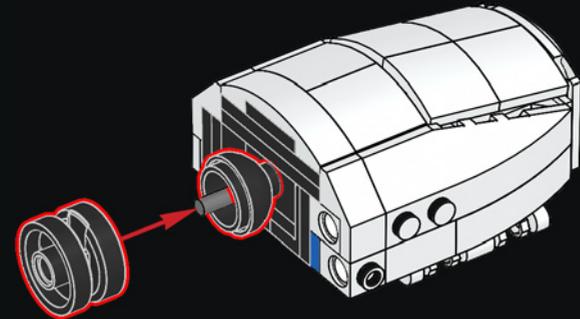
473



474

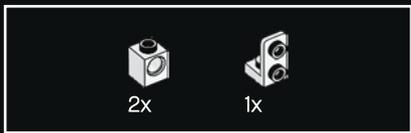
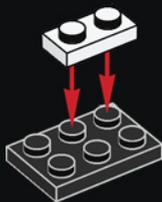


475

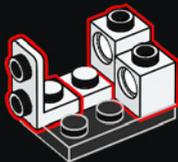




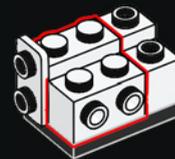
476



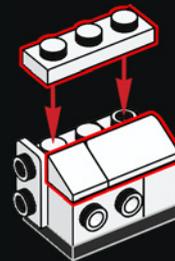
477



478

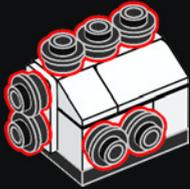


479

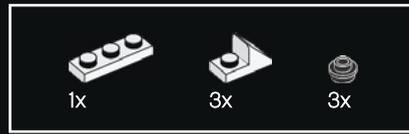
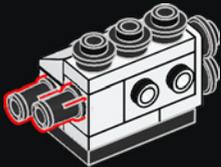




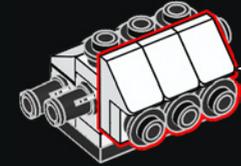
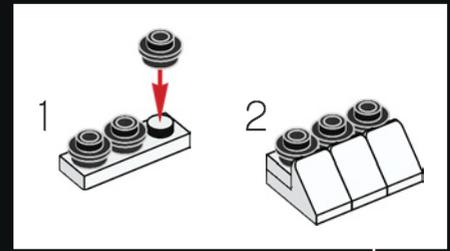
480



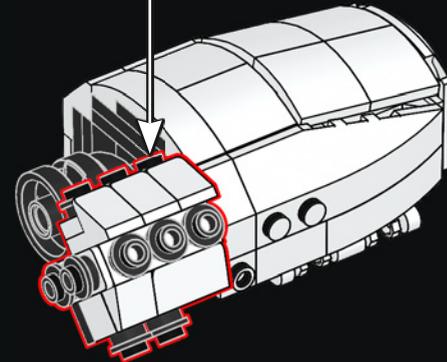
481

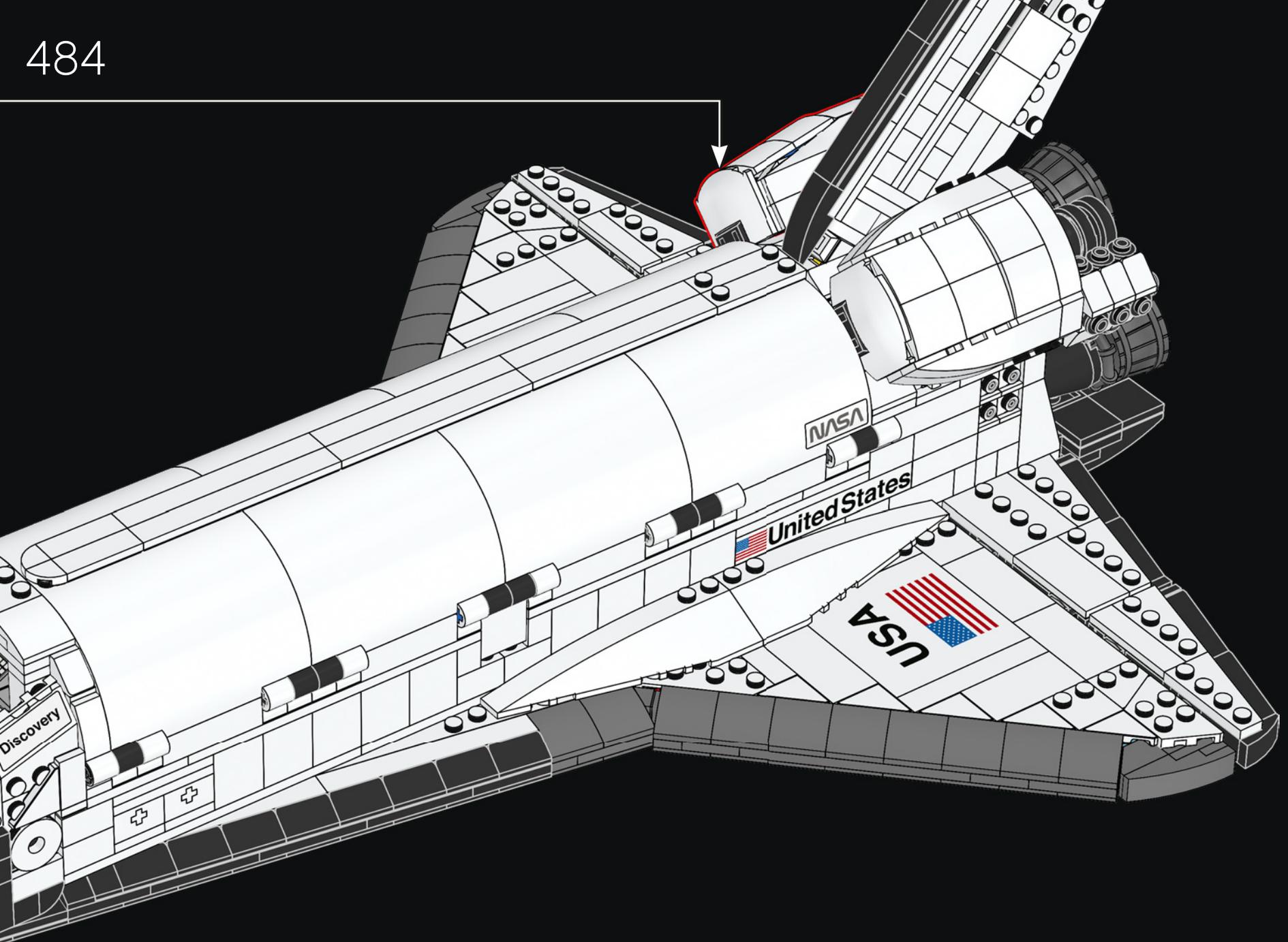


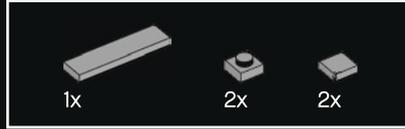
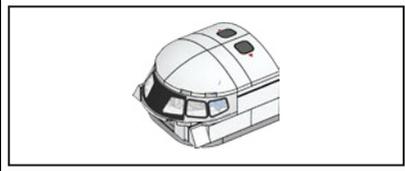
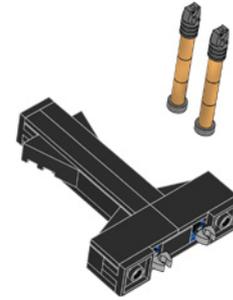
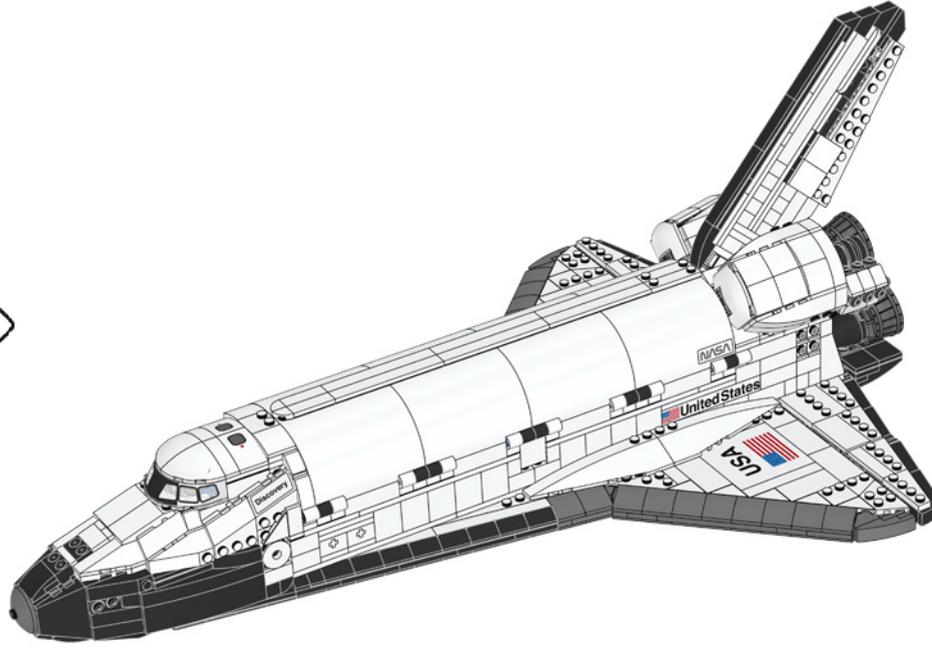
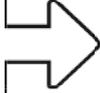
482



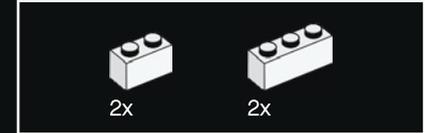
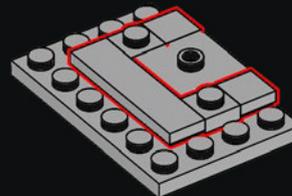
483



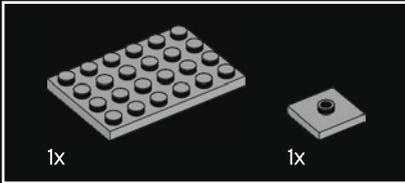
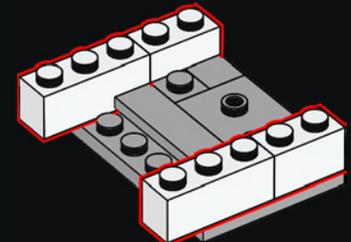




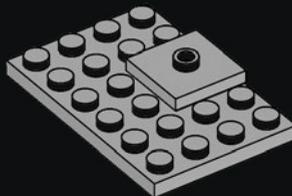
486



487

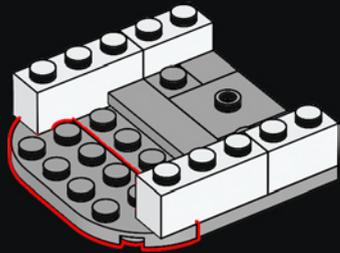


485

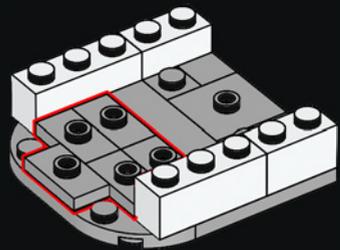




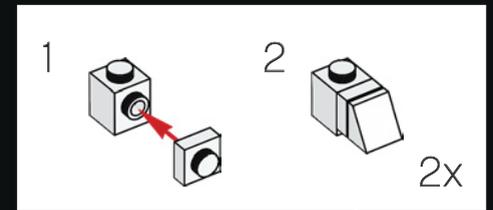
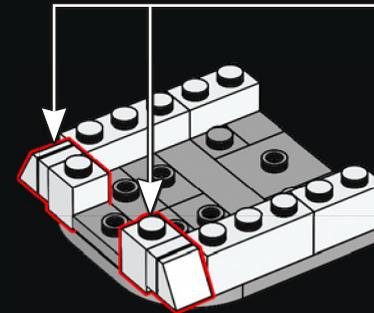
488



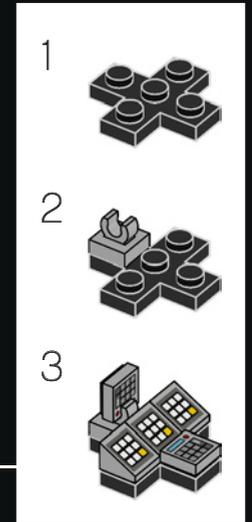
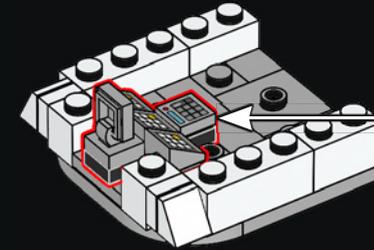
489



490



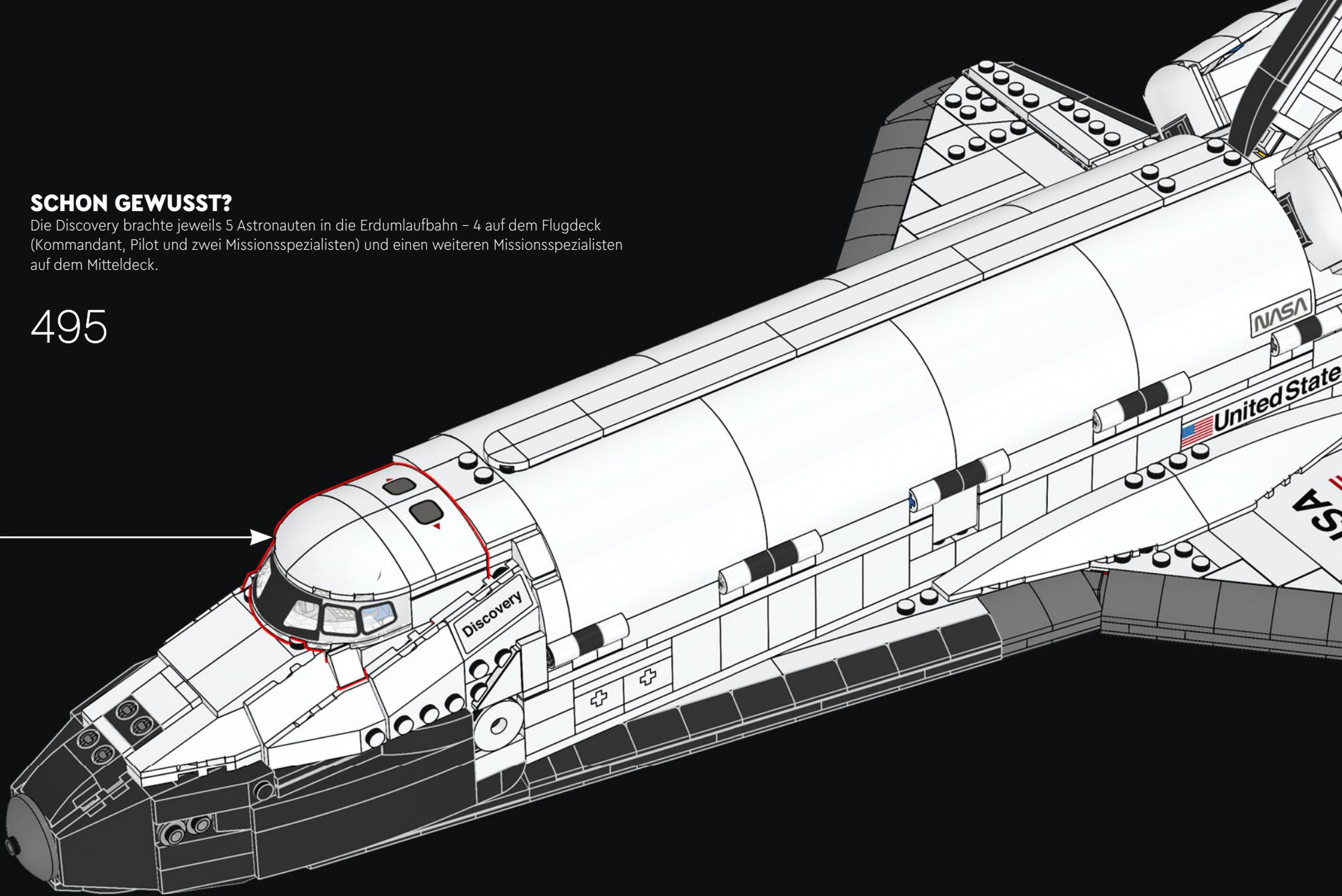
491

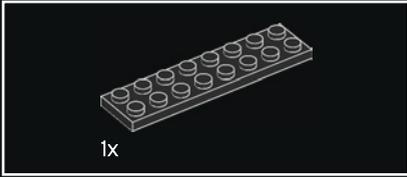
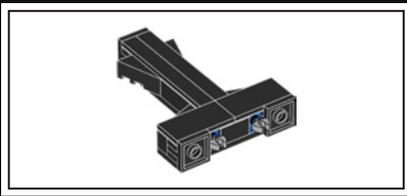


SCHON GEWUSST?

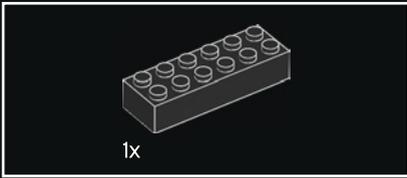
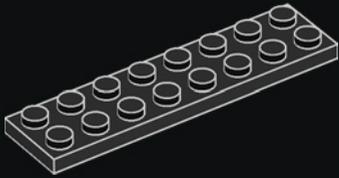
Die Discovery brachte jeweils 5 Astronauten in die Erdumlaufbahn – 4 auf dem Flugdeck (Kommandant, Pilot und zwei Missionsspezialisten) und einen weiteren Missionsspezialisten auf dem Mitteldeck.

495

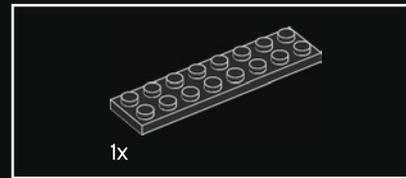
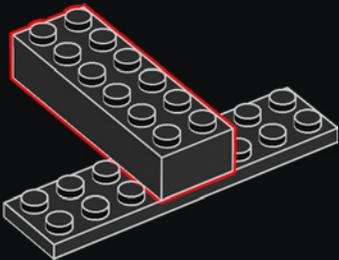




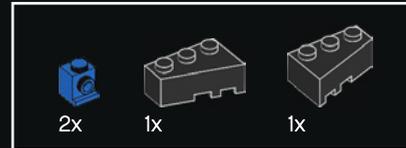
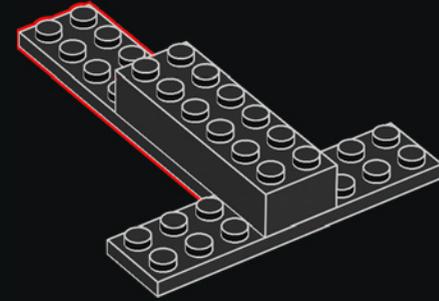
496



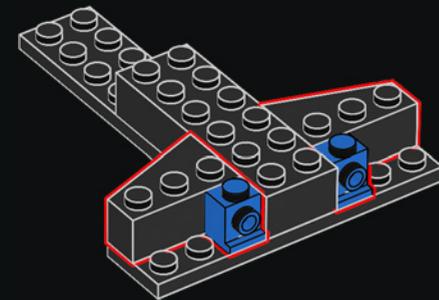
497



498

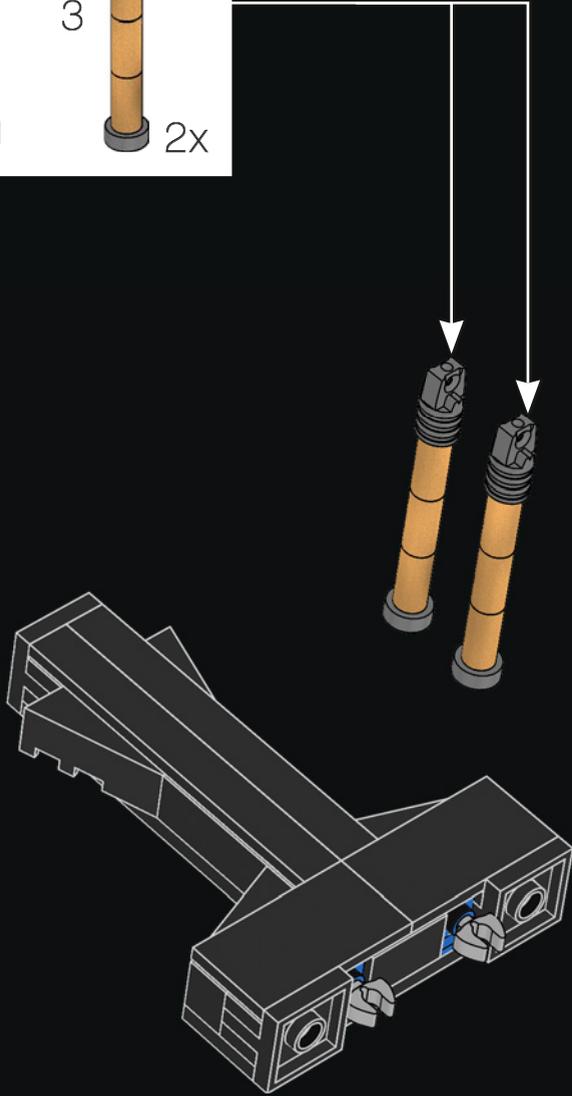
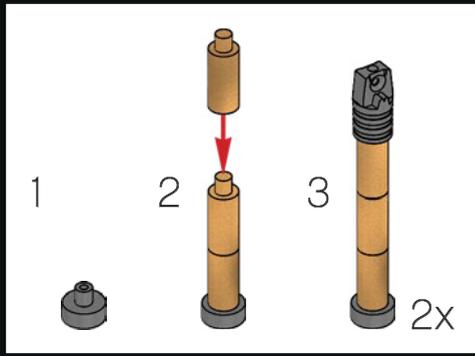


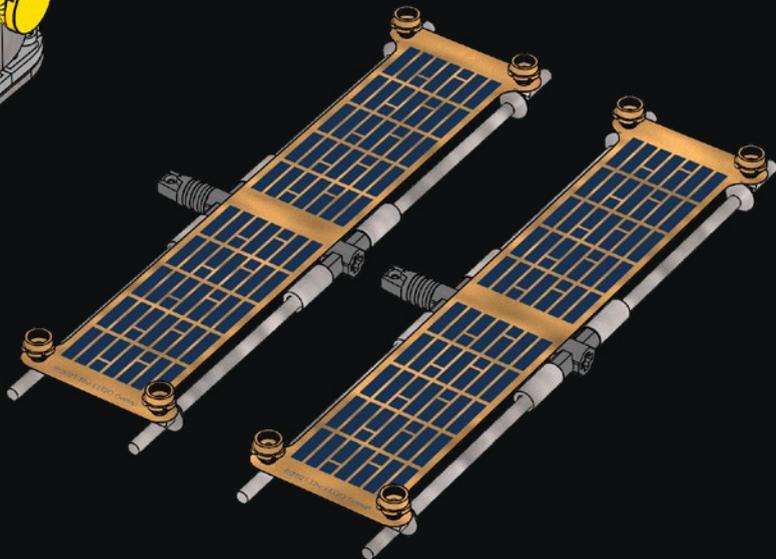
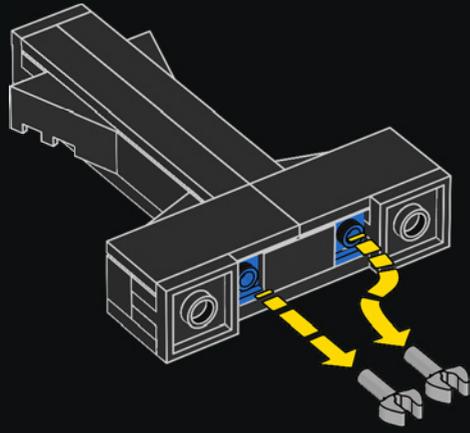
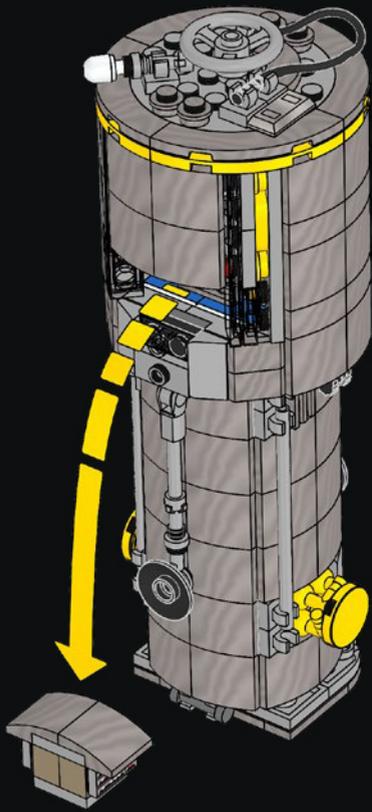
499

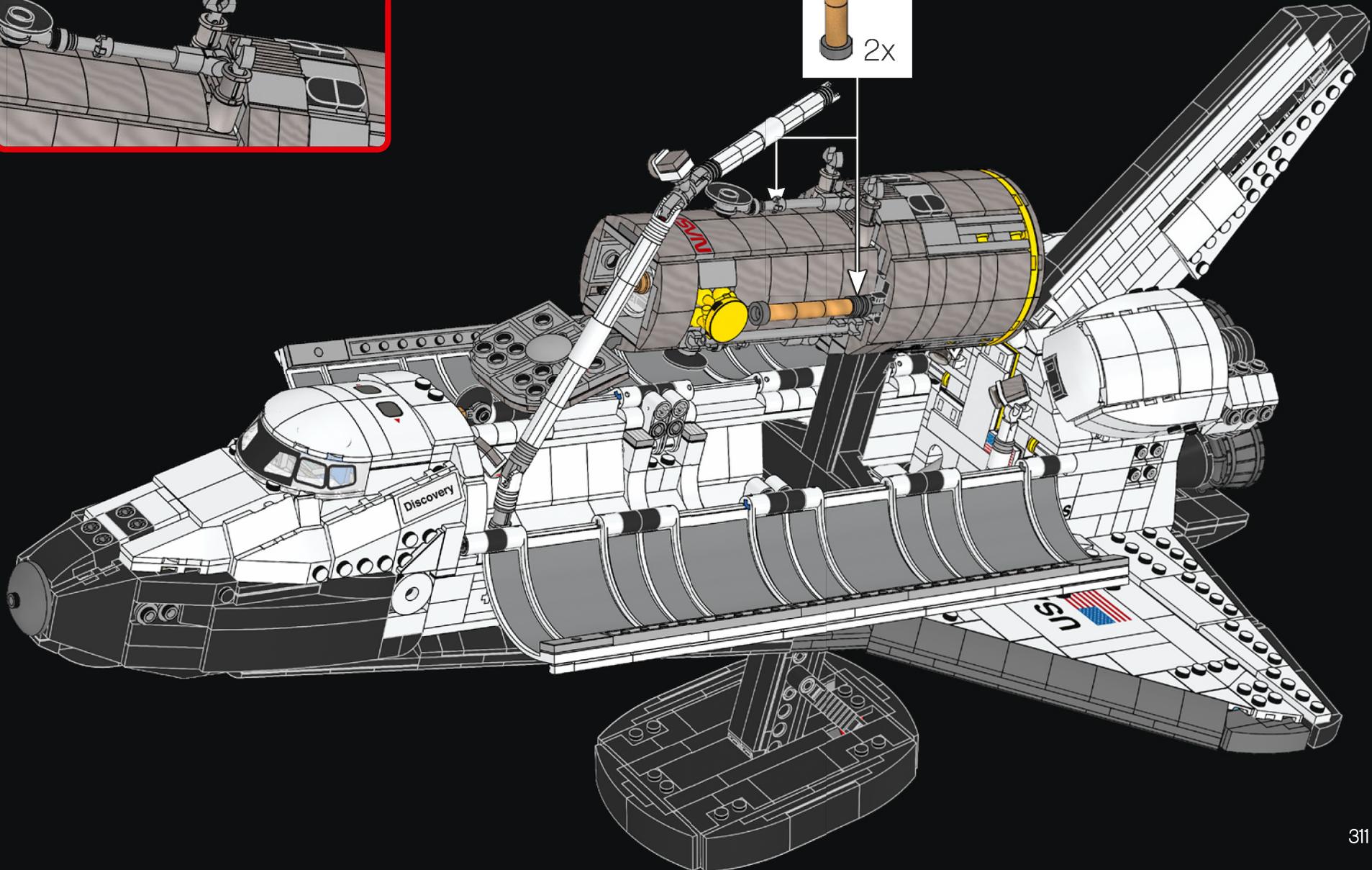
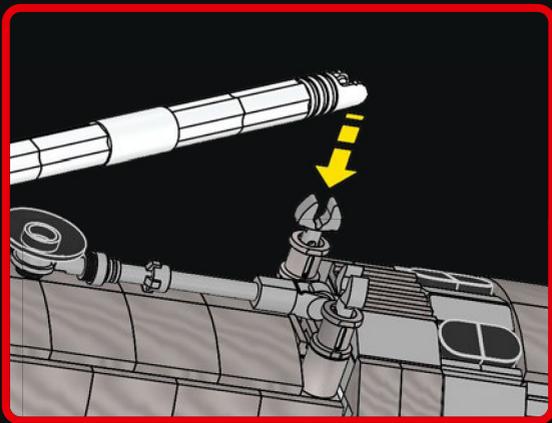


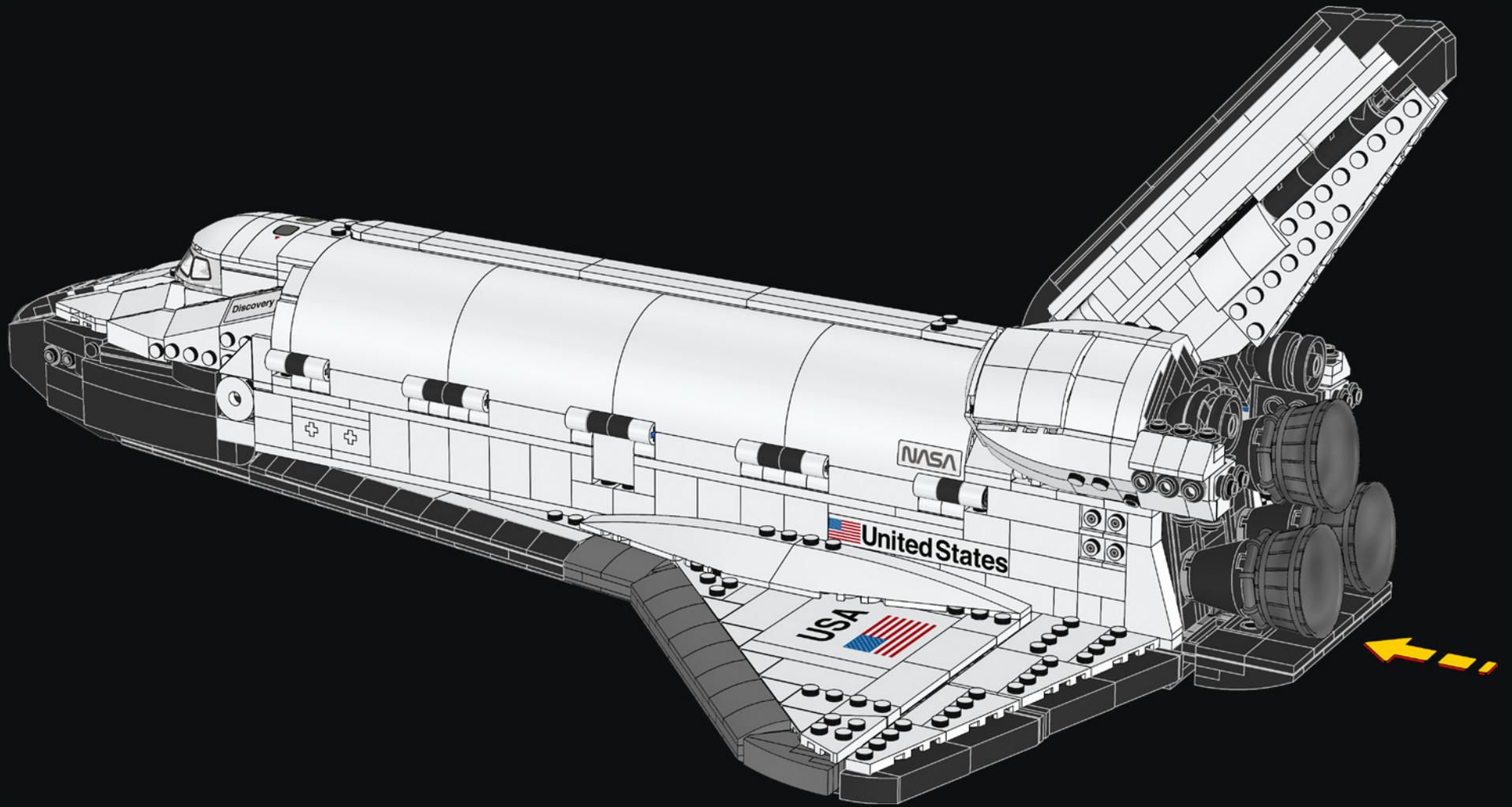


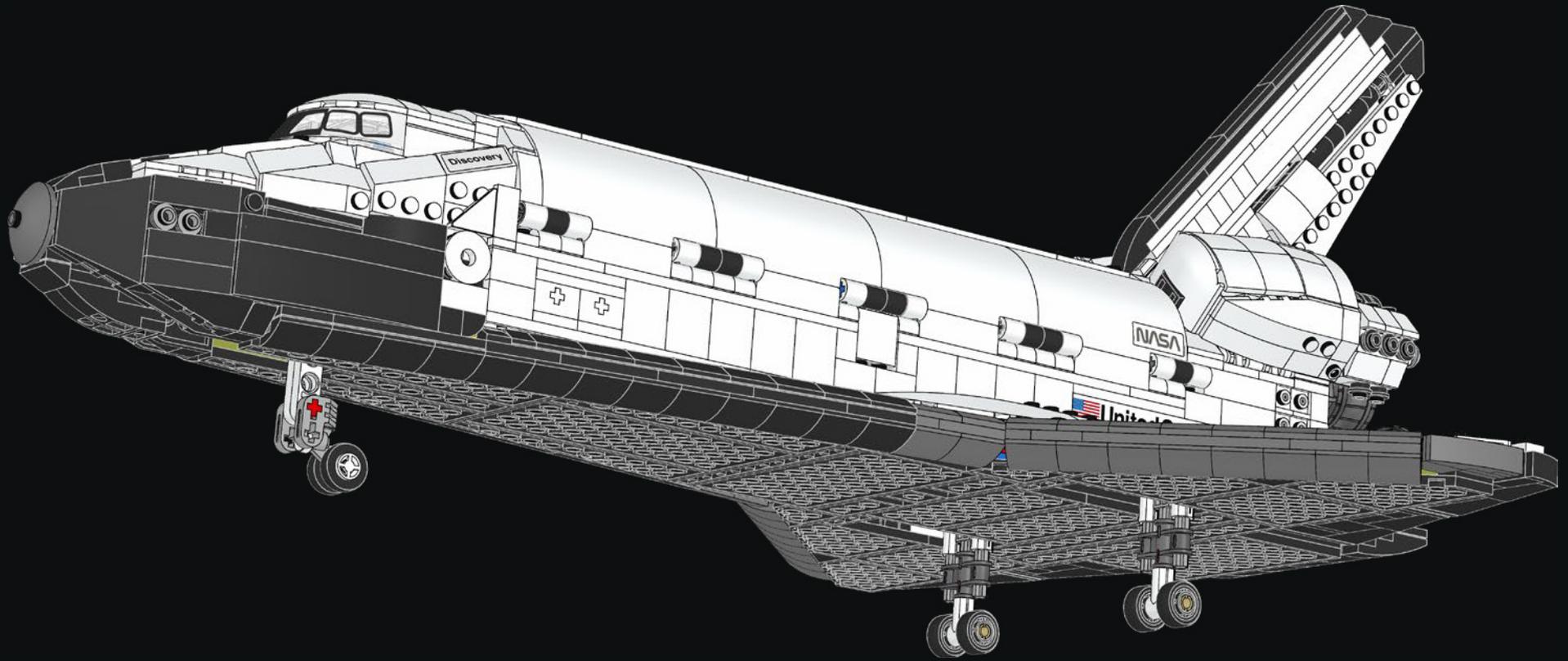
503













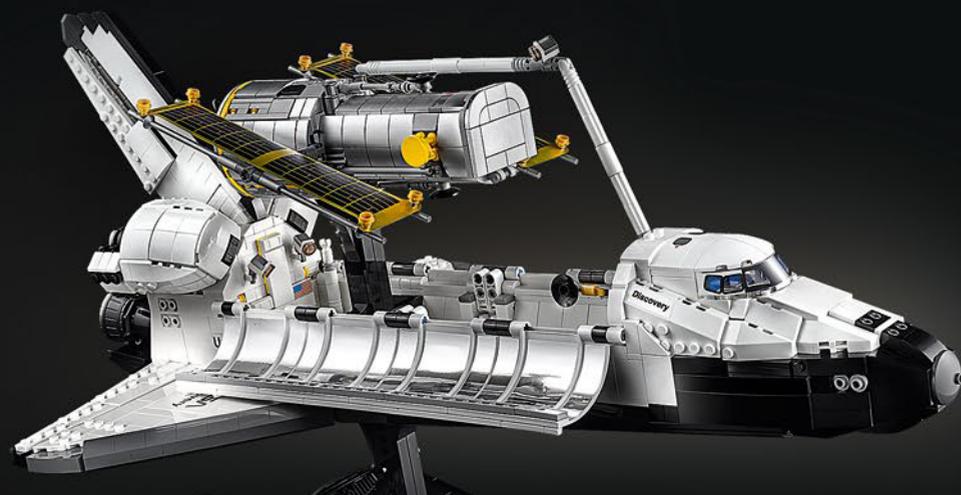
NASA
Space Shuttle Discovery STS-31

Orbiters	2
External Tanks	1
Boosters	2
Weight	24,000 lbs
Length	115.5 ft
Height	77.9 ft
Wingspan	145.6 ft
Speed	17,000 mph
Time in Space	1 year, 33 days, 14 minutes, 57 seconds



NASA **esa**
Hubble Space Telescope

Weight	11,000 kg
Length	13.2 m
Width	2.4 m
Height	7.1 m
Wingspan	12.8 m
Speed	29,000 mph
Time in Space	25 years, 15 months, 16 days, 14 hours, 56 minutes, 45 seconds



NASA **esa**
Hubble Space Telescope

Weight	11,000 kg
Length	13.2 m
Width	2.4 m
Height	7.1 m
Wingspan	12.8 m
Speed	29,000 mph
Time in Space	25 years, 15 months, 16 days, 14 hours, 56 minutes, 45 seconds

NASA
Space Shuttle Discovery STS-31

Orbiters	2
External Tanks	1
Boosters	2
Weight	24,000 lbs
Length	115.5 ft
Height	77.9 ft
Wingspan	145.6 ft
Speed	17,000 mph
Time in Space	1 year, 33 days, 14 minutes, 57 seconds





FEEDBACK AND WIN



FEEDBACK AND WIN

Your feedback will help shape the future development of this product series.

Please visit:

FEEDBACK UND GEWINNEN

Dein Feedback trägt zur Weiterentwicklung dieser Produktreihe bei.

Geh auf:

COMMENTEZ ET GAGNEZ

Vos commentaires nous aideront à concevoir les futurs produits de cette gamme.

Rendez-vous sur :

COMENTA Y GANA

Tu opinión nos ayudará a dar forma al desarrollo de esta serie de productos en el futuro.

Visita:

反馈有奖

您的反馈将有助于我们在今后改进本系列产品。

请访问：

[LEGO.com/productfeedback](https://www.lego.com/productfeedback)

By completing, you will automatically enter a drawing to win a LEGO® set.

Terms & Conditions apply.

Durch Ausfüllen nimmst du automatisch an der Verlosung eines LEGO® Preises teil.

Es gelten die Teilnahmebedingungen.

En envoyant vos commentaires, vous serez automatiquement inscrit(e) à un tirage au sort qui vous permettra de remporter un prix LEGO®.

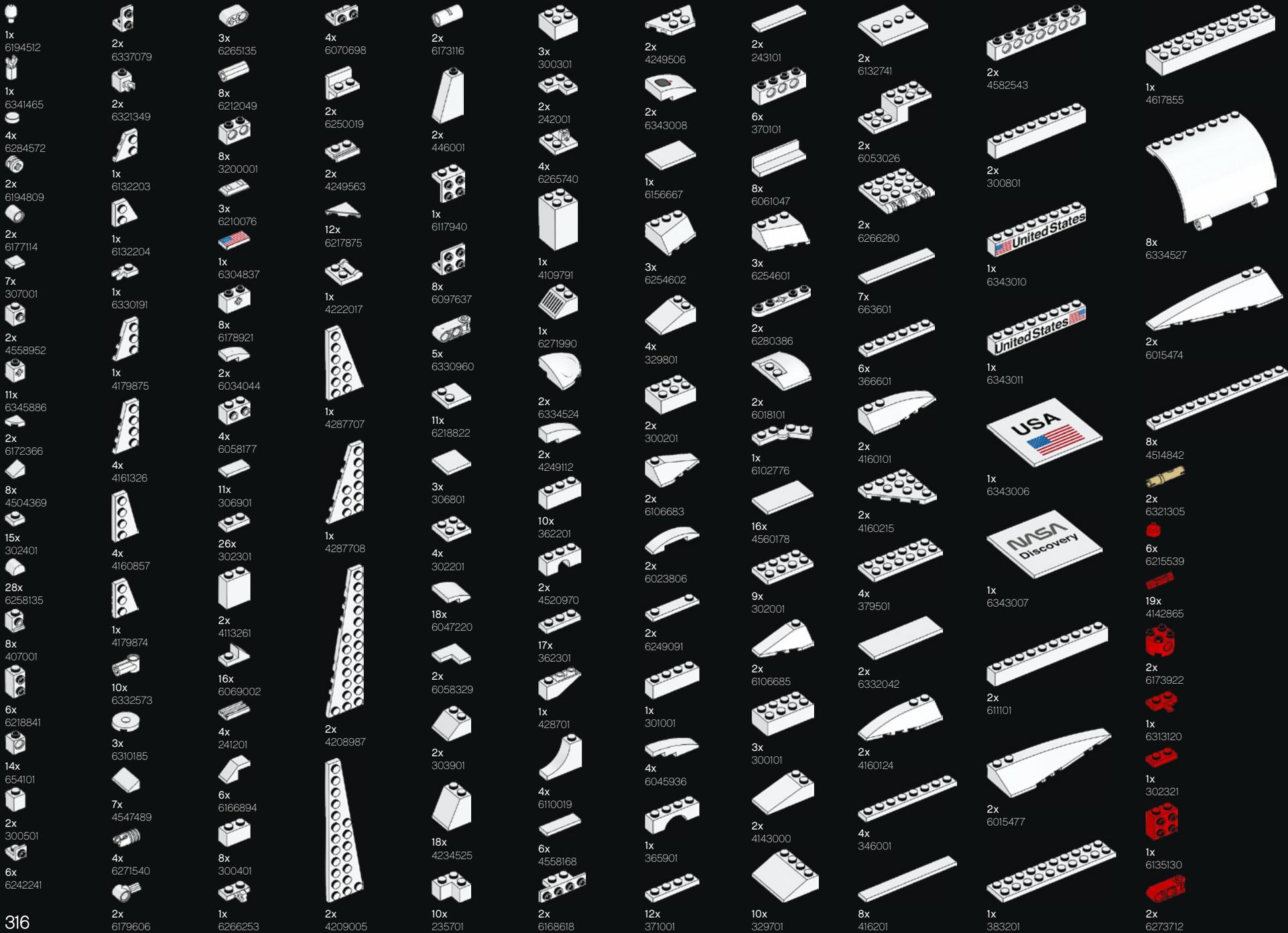
Offre soumise à conditions.

Al contestar, participarás automáticamente en el sorteo y podrás ganar un set LEGO®.

Sujeto a Términos y Condiciones.

完成我们的反馈调查，即可自动进入抽奖环节，赢取乐高®套装。

适用《条款和条件》。





1x
6290416



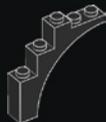
2x
6170702



2x
4514845



2x
383226



4x
6075062



2x
416226



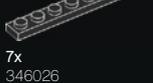
2x
389526



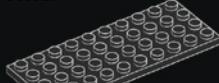
1x
4161067



2x
4116854



7x
346026



2x
303026



1x
4161067



2x
6296083



3x
303426



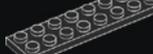
1x
303326



2x
6315800



4x
6076678



3x
303426



1x
303326



4x
6274744



2x
6344219



1x
6037390



2x
302826



2x
6310835



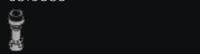
12x
663626



1x
6037390



2x
302826



3x
4539481



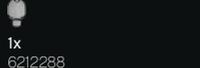
2x
6327430



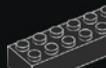
2x
395826



2x
370326



1x
6212288



1x
4181144



4x
4106977



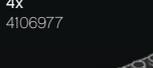
2x
428226



1x
6240515



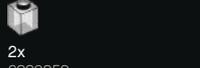
4x
379526



1x
447726



2x
6037664



2x
6220959



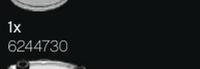
2x
6318582



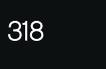
2x
6037664



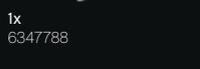
1x
4603646



1x
6244730



1x
6347788



1x
6163478



4x
6326748



3x
6343976



6x
6168647



1x
6271165



2x
6278156



1x
6275844



8x
4211483



6x
4558953



13x
6308012



9x
4211399



4x
6329583



4x
4211415



4x
4211476



5x
6343004



8x
6286223



1x
6163477



2x
6265704



2x
6296894



4x
6227897



1x
4278273



8x
4568637



5x
4211475



3x
6179186



1x
6331440



5x
4211807



4x
6123815



2x
4212363



2x
6313114



4x
6186657



16x
4211398



2x
4211469



2x
4211470



7x
6066097



2x
6123809



3x
4654580



4x
6337268



1x
6267112



4x
6319336



2x
6093527



2x
6279023



1x
6126082



4x
6132886



4x
4211397



1x
6045988



8x
4211815



2x
6043639



25x
4654577



2x
4211536



2x
4560183



2x
4565433



1x
4580510



12x
4211429



4x
6319336



2x
6347992



1x
6343005



3x
4211356



3x
4211356



6x
4211445



4x
4211636



3x
6257593



2x
4645412



1x
4211395



2x
4211639



1x
6028811



3x
6105964



8x
4211438



2x
4211549



1x
4211837



2x
4243797



1x
6015349



1x
4211805





LEGO and the LEGO logo are trademarks of the LEGO Group. ©2021 The LEGO Group.

NASA Insignia and identifiers provided and used with permission of NASA.

This product is developed in collaboration with the European Space Agency (ESA) for the purpose of fostering children's interest in space science. ESA is not involved in the manufacturing and commercialisation of this product.

