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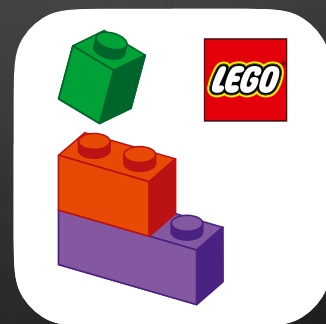


BUILDER



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Notre fenêtre sur l'univers

Rome ne s'est pas faite en un jour, et il faudra encore plusieurs générations pour étudier, comprendre et explorer un univers vieux de 13,8 milliards d'années. Mais ces dernières décennies, d'immenses progrès technologiques nous ont permis de mieux comprendre son immensité, son origine et sa composition – tout en nous poussant à réfléchir à notre place dans le temps et l'espace. S'appuyant sur des siècles d'observations et d'avancées scientifiques, le télescope spatial Hubble a joué un rôle clé dans certaines des découvertes les plus révolutionnaires sur notre univers au cours de ces 35 dernières années.



Novembre 1995

Une image de la nébuleuse de l'Aigle (« Piliers de la création ») révèle des colonnes de gaz et de poussière où se forment les étoiles.

Crédits : NASA, ESA/Hubble, STScI, J. Hester et P. Scowen (Arizona State University)



Janvier 2005

La galaxie spirale Messier 51, dite « galaxie du Tourbillon », abrite des centaines de milliards d'étoiles et des nébuleuses actives où se forment des étoiles.

Crédits : NASA, ESA, S. Beckwith (STScI), et The Hubble Heritage Team (STScI/AURA)



Juillet 2009

La nébuleuse du Papillon offre un aperçu des gaz émis par une étoile en fin de vie et de la formation d'une nébuleuse lumineuse.

Crédits : NASA, ESA et l'équipe Hubble SM4 ERO



Le mot de l'équipe de designers LEGO® Icons

Les images et données stupéfiantes fournies par le télescope spatial Hubble ont rendu les confins de l'univers plus proches que jamais de la Terre. Nous commençons à peine à mesurer son importance historique, et il continue d'inspirer les scientifiques et de stimuler l'imagination du public. Nous avions à cœur d'honorer cet héritage. Avec ce modèle, construit à l'échelle des minifigurines LEGO®, vous pouvez explorer l'intérieur du télescope et certains de ses instruments, mais aussi recréer et exposer des éléments de sa mission en cours. Chaque détail a été fidèlement reproduit en collaboration avec nos formidables partenaires de la NASA et de l'ESA. Avec leur aide, nous avons créé un modèle robuste, riche en détails, comme l'évolution visuelle des panneaux solaires. Compte à rebours enclenché : préparez-vous à construire et à explorer.



Un partenariat stellaire

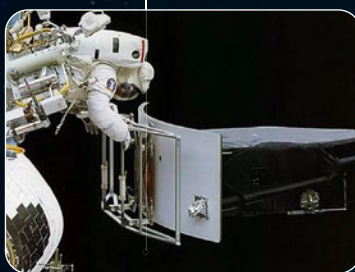
Dans le cadre d'un partenariat continu, la NASA et l'ESA unissent leurs ressources et leurs contributions au programme Hubble pour révolutionner l'astronomie. Les découvertes sont partagées, et le temps d'observation est attribué uniquement au mérite scientifique par un comité international. L'ESA bénéficie d'un accès garanti de 15 %, souvent proche de 25 %. Conçu pour être entretenu en orbite, le télescope spatial Hubble est équipé de mains courantes et de pièces remplaçables. Entre 1993 et 2009, plusieurs missions de maintenance (Servicing Missions ou SM) menées par des astronautes de la NASA et de l'ESA ont permis d'effectuer d'importantes améliorations et réparations.

1987 1988 1989 **1990** 1991 1992 **1993** 1994 1995 1996 **1997** 1998



Du 24 au 29 avril 1990

Lancement – La navette spatiale Discovery place le télescope spatial Hubble en orbite.



Du 2 au 13 décembre 1993

SM1 – Mise à niveau du télescope et correction d'un défaut sur le miroir principal de Hubble, éliminant ainsi l'aberration sphérique pour l'ensemble de ses instruments.

Du 11 au 21 février 1997

SM2 – Extension de la gamme de longueurs d'onde visibles par Hubble, grâce à un nouvel instrument, le Space Telescope Imaging Spectrograph (STIS), ainsi qu'à la caméra-spectromètre proche infrarouge et multi-objets NICMOS (*Near Infrared Camera and Multi-Object Spectrometer*).



1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010



Du 19 au 27 décembre 1999

SM3A – Le quatrième gyroscope de Hubble est tombé en panne, forçant son passage en mode sans échec. Mission en deux parties : l'équipage américain et européen de la SM3A a uni ses efforts pour rétablir les opérations.



Du 1^{er} au 12 mars 2002

SM3B – Installation de deux nouveaux panneaux solaires, et remplacement de la Caméra pour objets faibles (FOC) (dernier instrument d'origine) par la Caméra avancée pour les sondages (ACS).

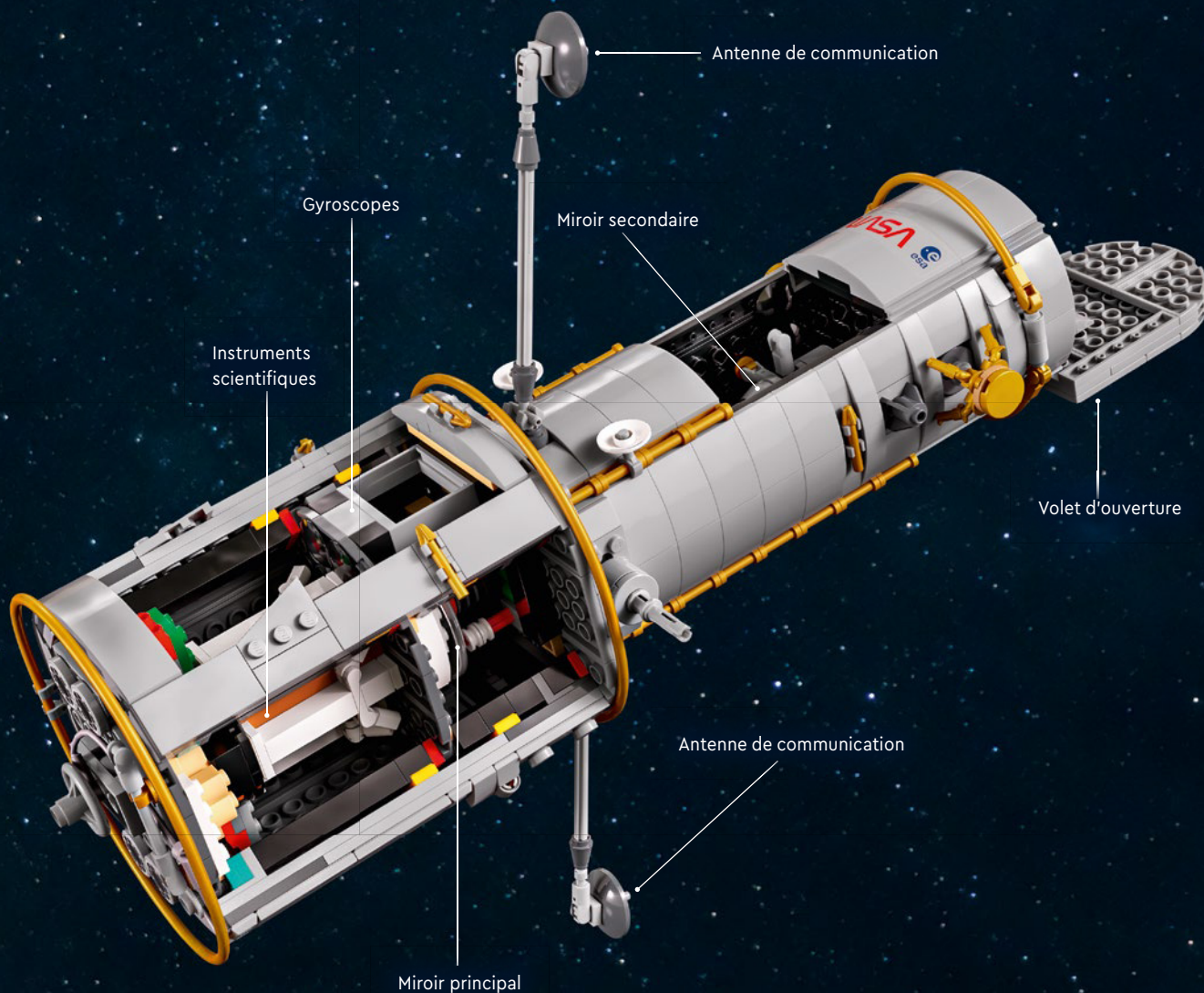


Du 11 au 24 mai 2009

SMA4 – Installation du Spectrographe des origines cosmiques (COS) et de la Caméra à grand champ 3 (Wide Field Camera 3 ou WFC3), ainsi que d'un système de pointage fin (Fine Guidance Sensor ou FGS) remis à neuf et d'un dispositif d'amarrage à Hubble

Explorez votre modèle

En collaboration étroite avec la NASA et l'ESA, nous avons recréé des détails d'ingénierie fidèles, à l'intérieur comme à l'extérieur. Chaque section de votre modèle correspond à de véritables instruments qui ont permis des découvertes majeures sur notre univers.



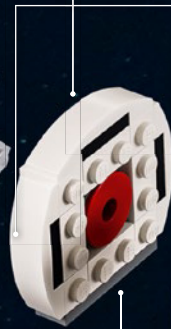


Spectrographe imageur du télescope spatial (STIS)
Spectrographe des origines cosmiques (COS)
Caméra avancée pour les sondages (ACS)
Caméra pour le proche infrarouge et spectromètre multi-objets (NICMOS)



Gyroscopes

Systèmes de pointage fin (FGS)



Caméra à grand champ

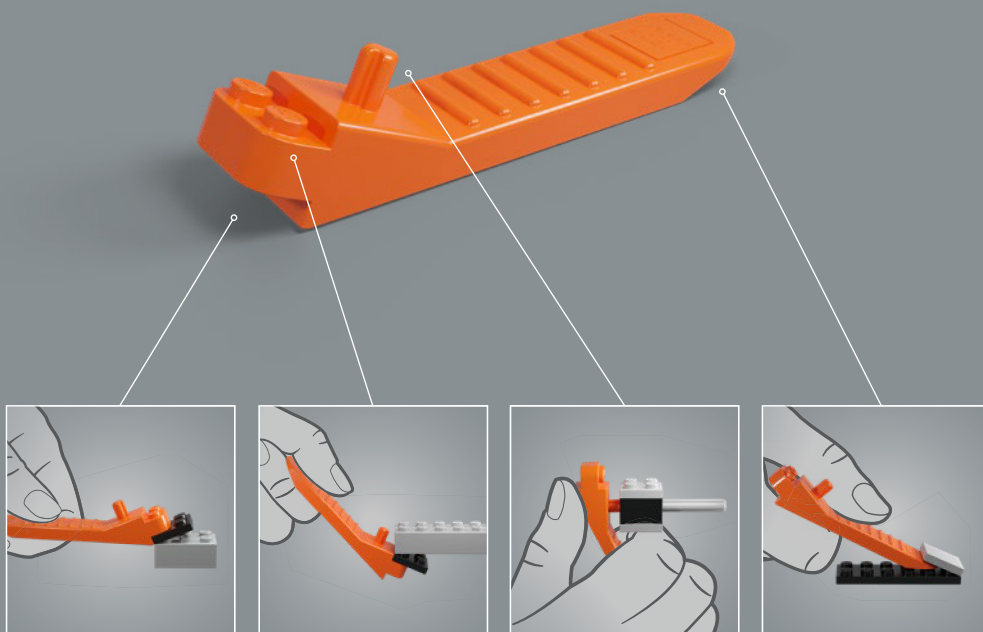
Miroir principal

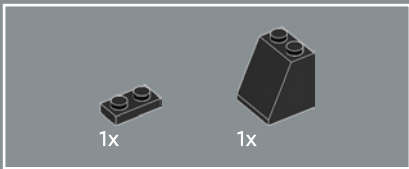


Pare-lumière central

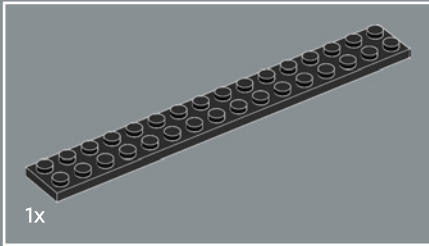
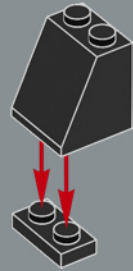
Miroir secondaire



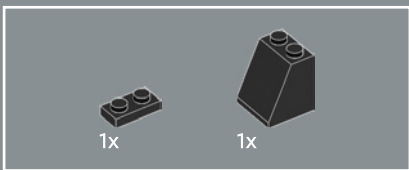
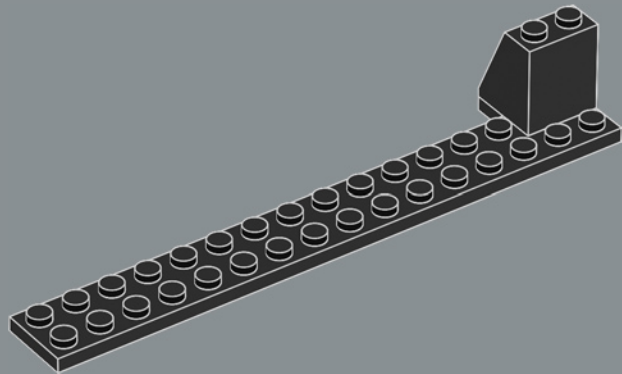




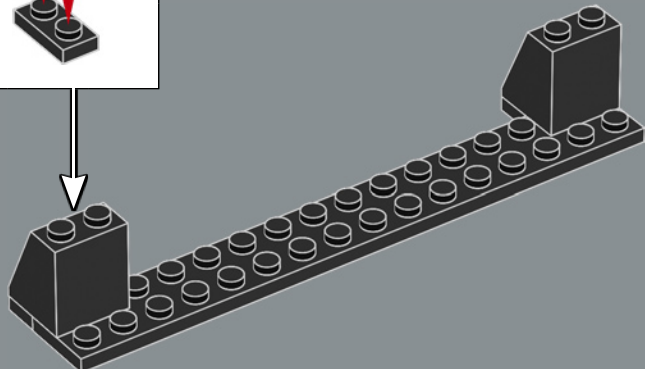
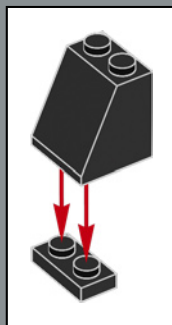
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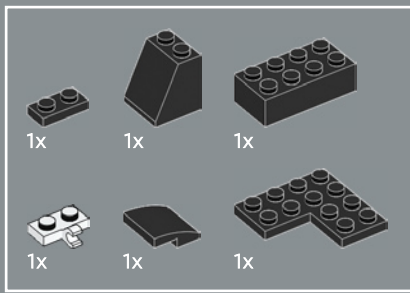


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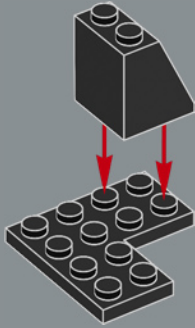
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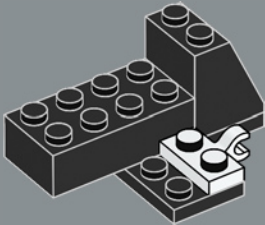


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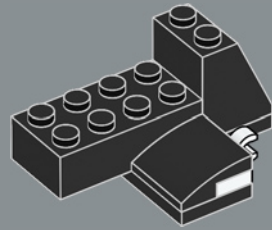
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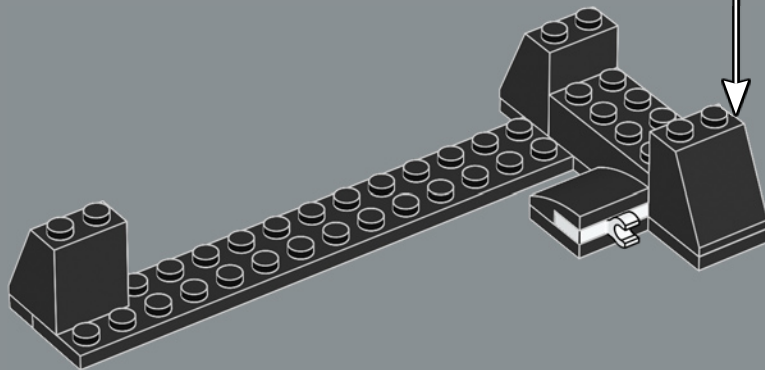
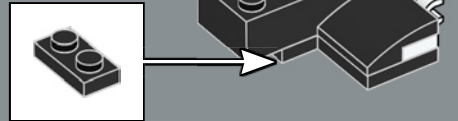
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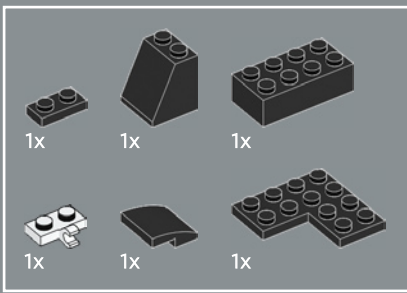


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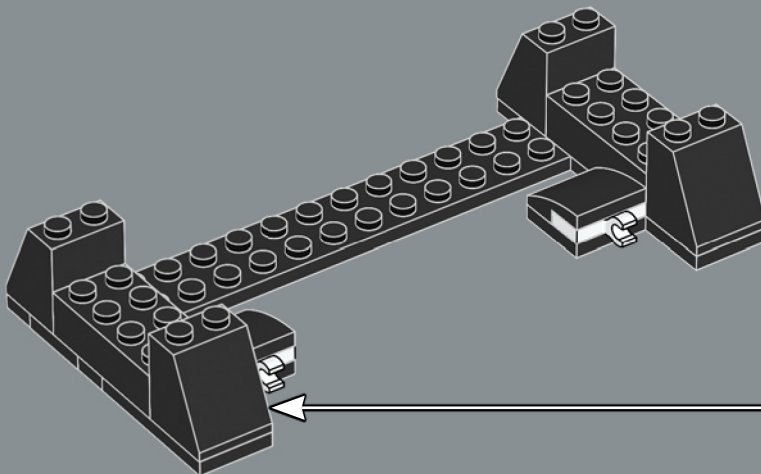
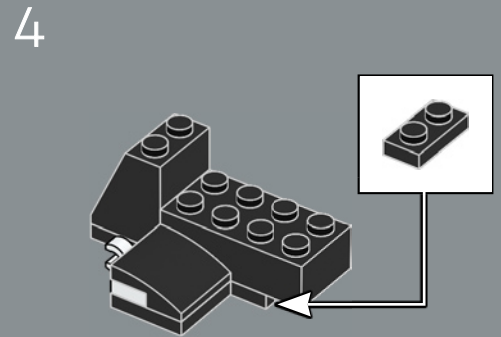
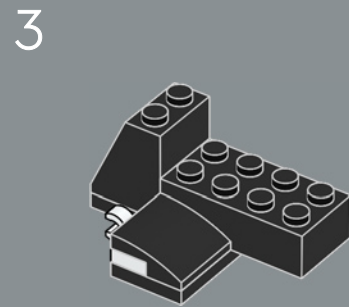
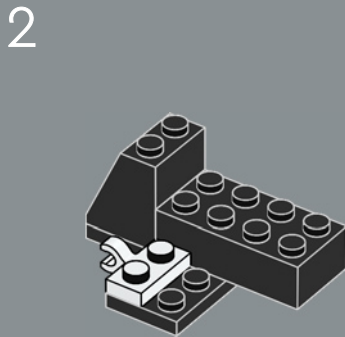
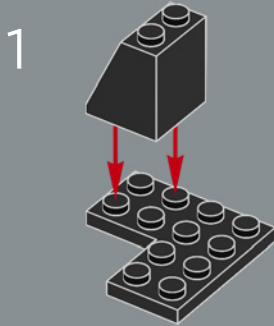


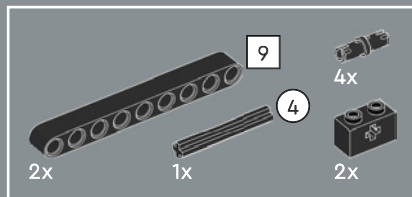
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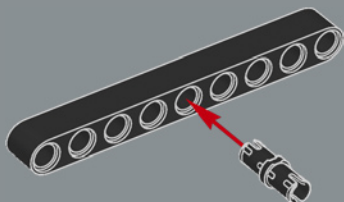
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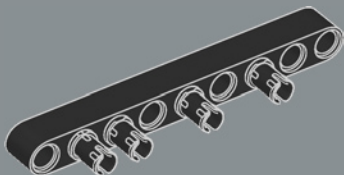


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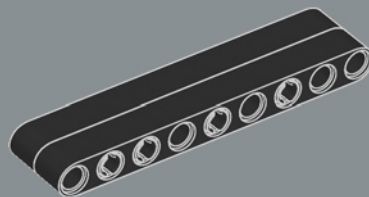
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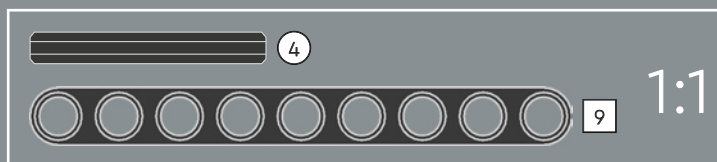
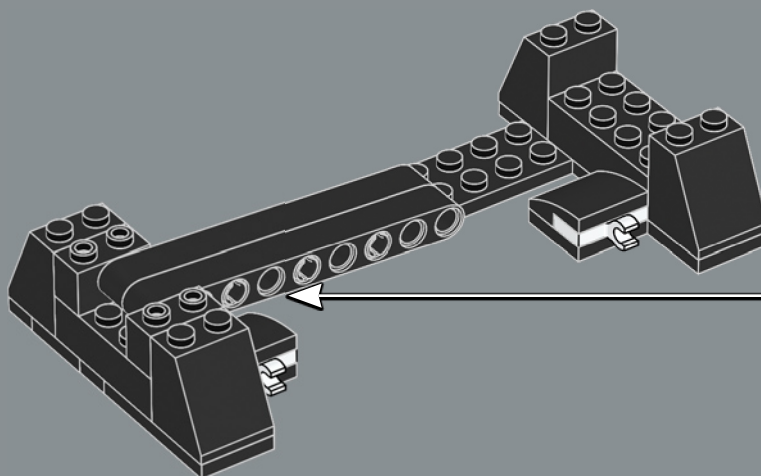
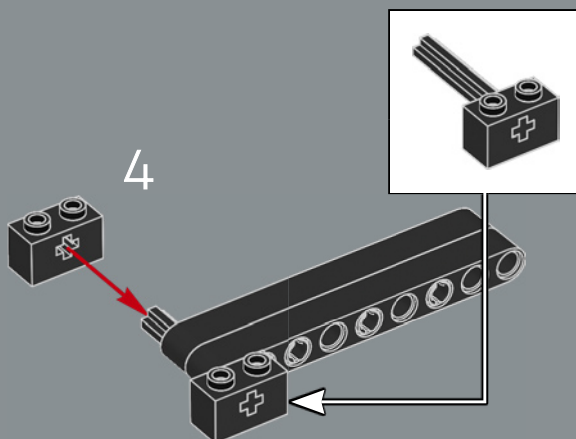
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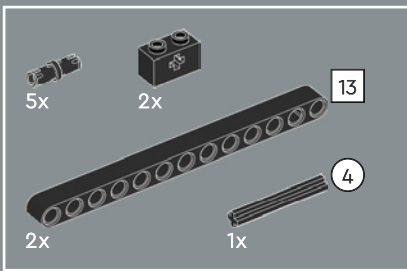


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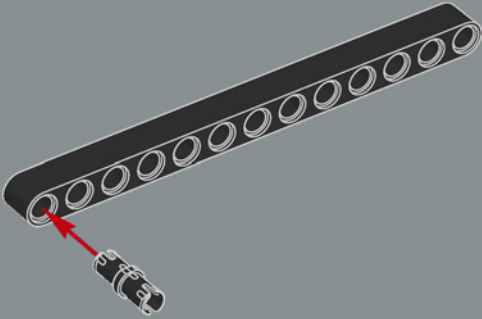
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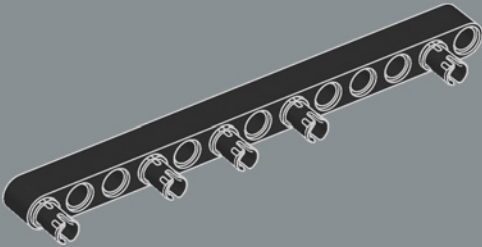


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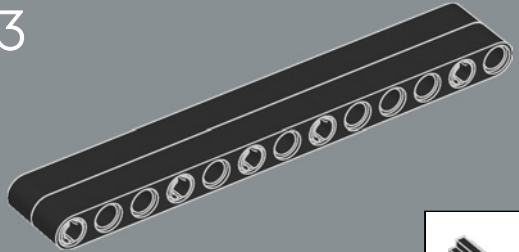
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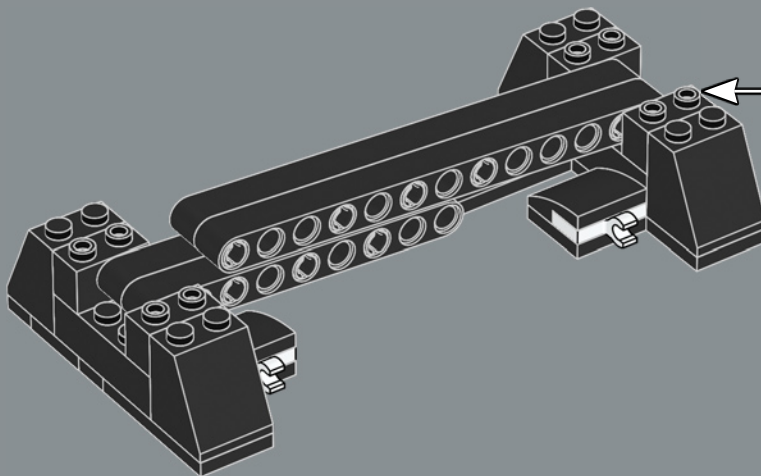
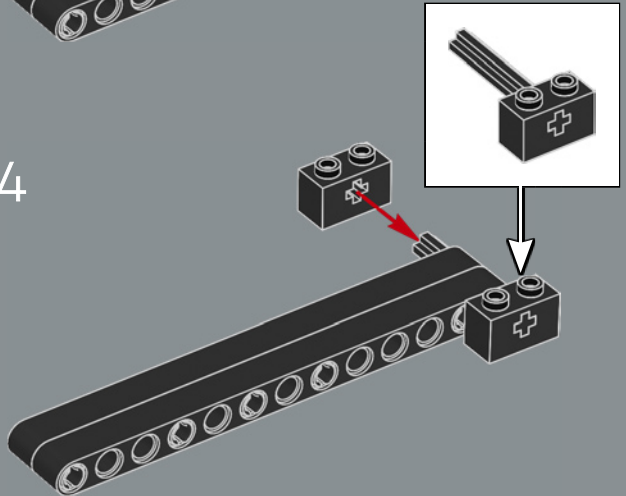
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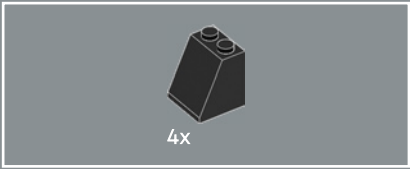


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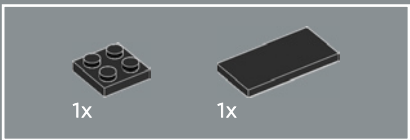
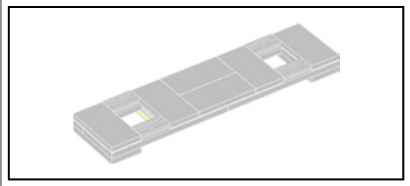
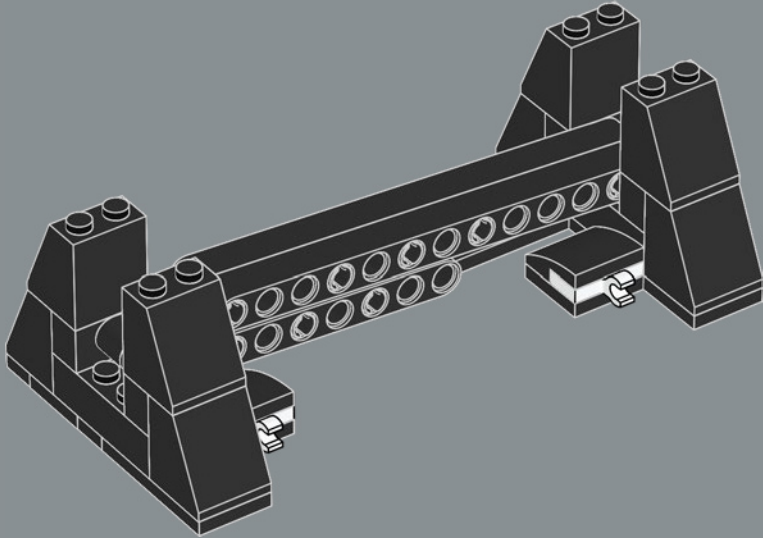


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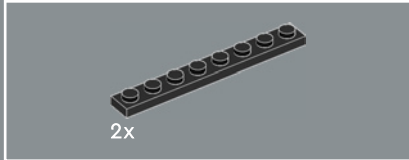
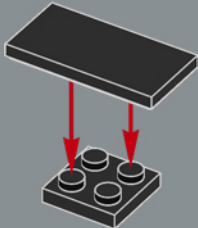




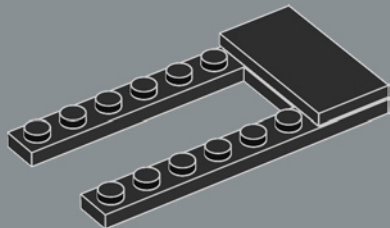
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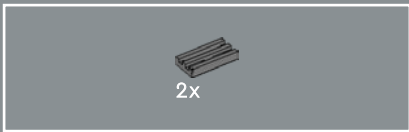


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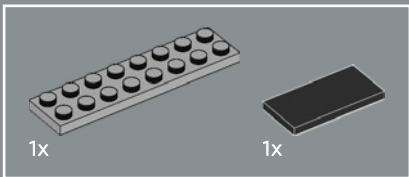
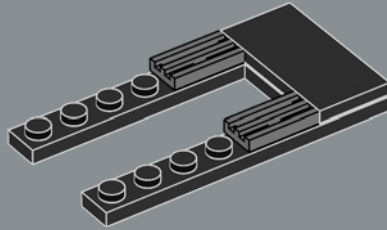


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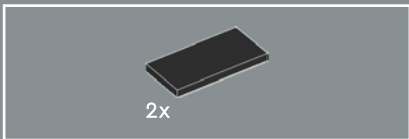
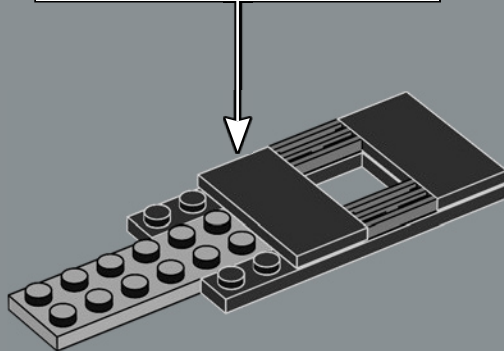
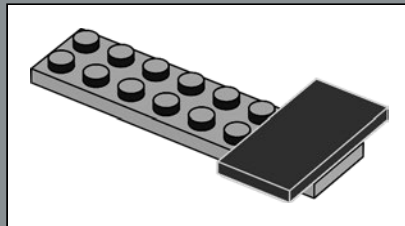




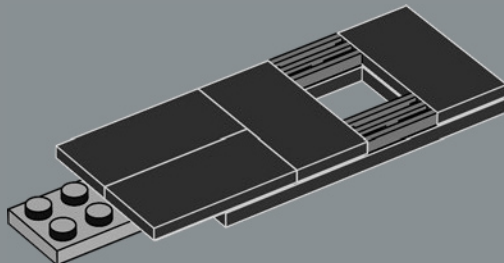
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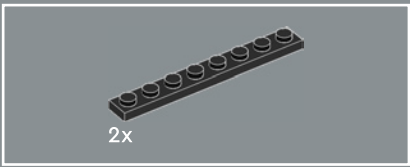


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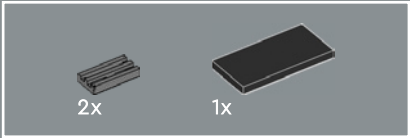
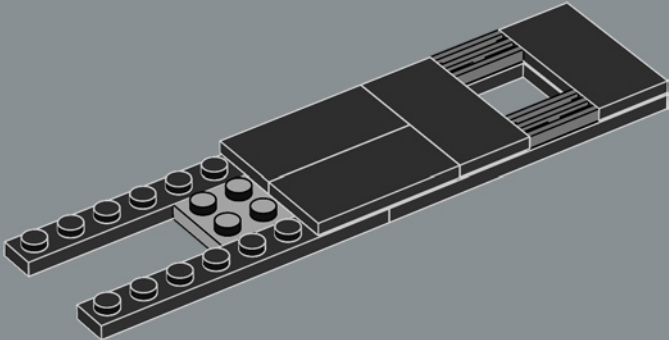


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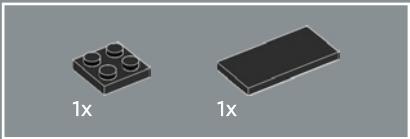
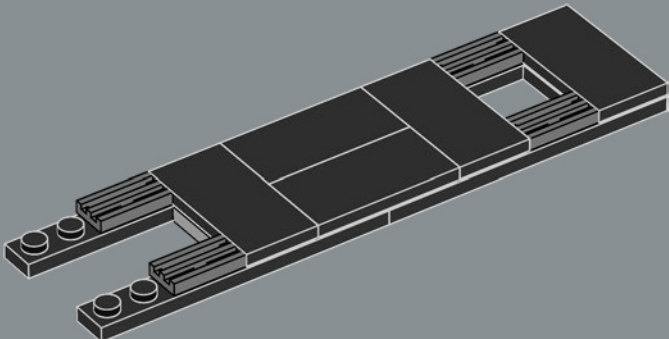




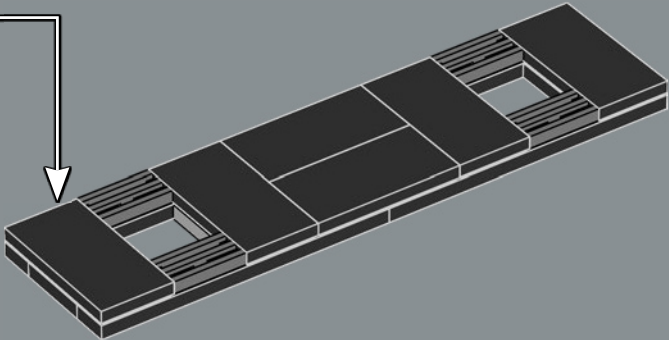
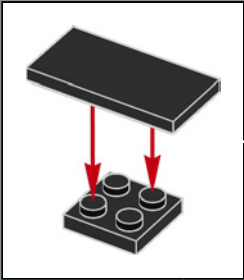
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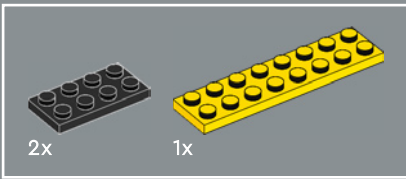


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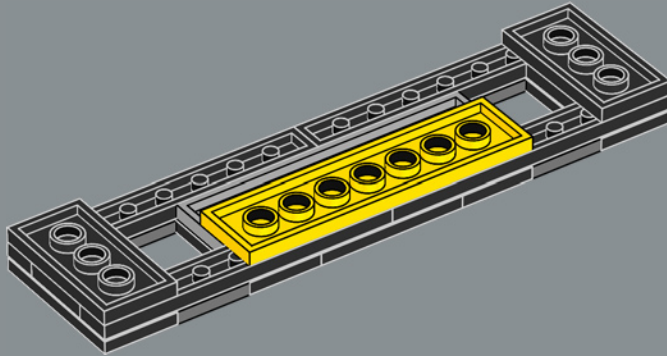


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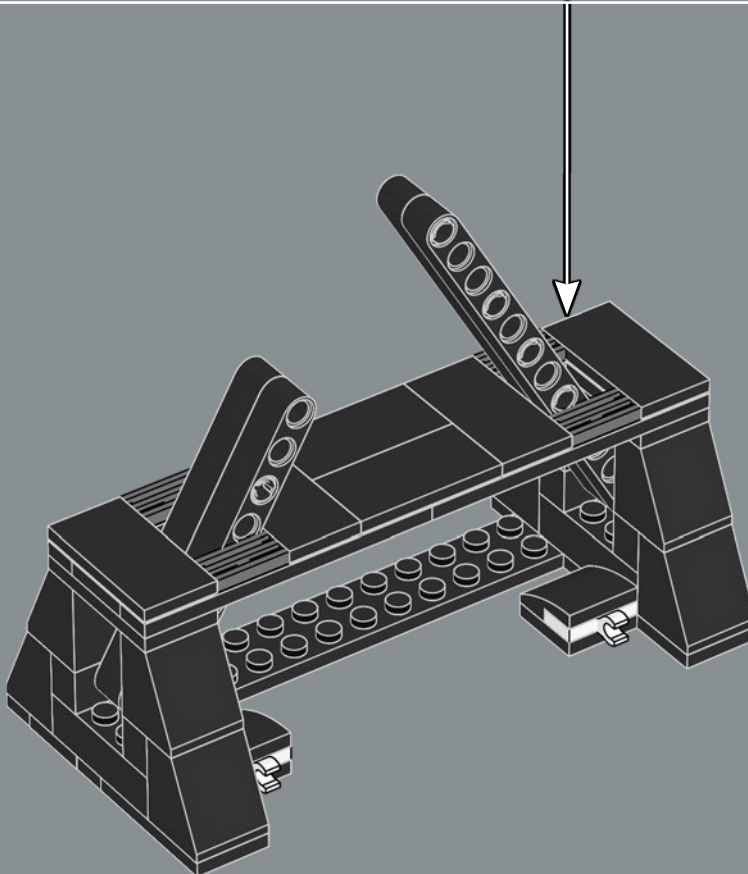


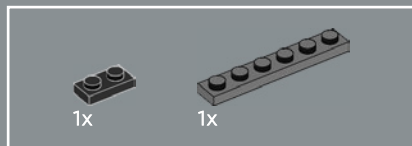


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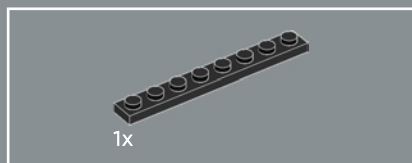
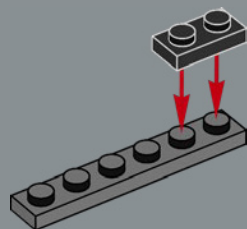


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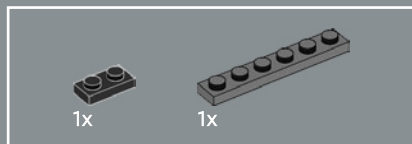
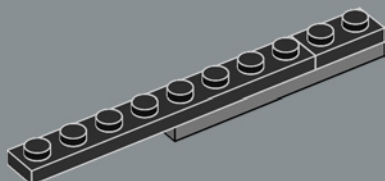




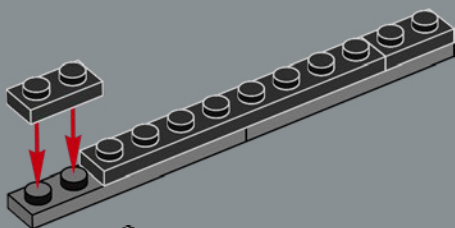
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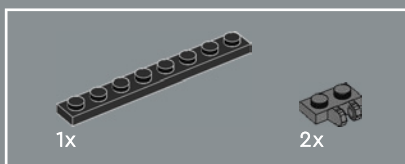
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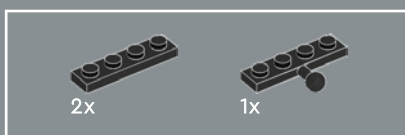
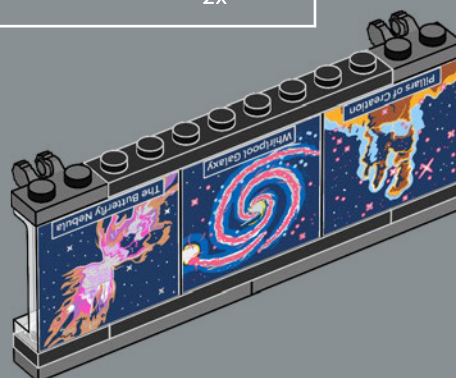
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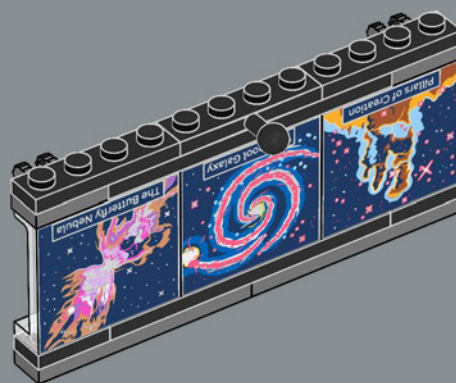
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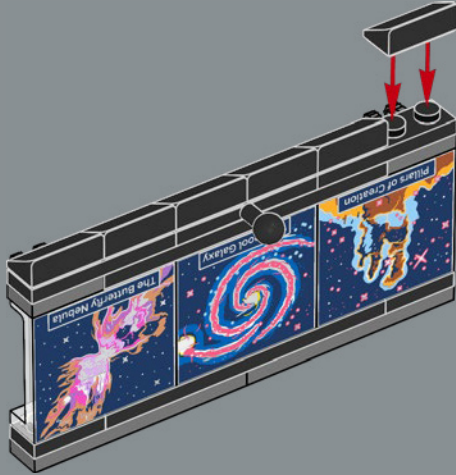


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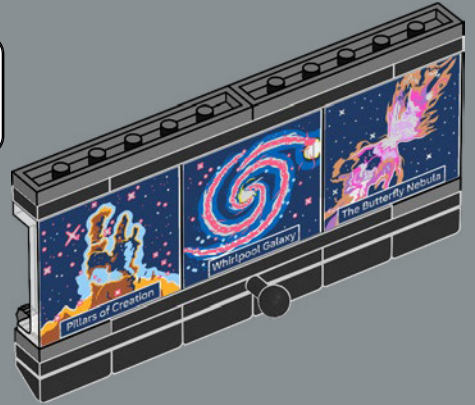
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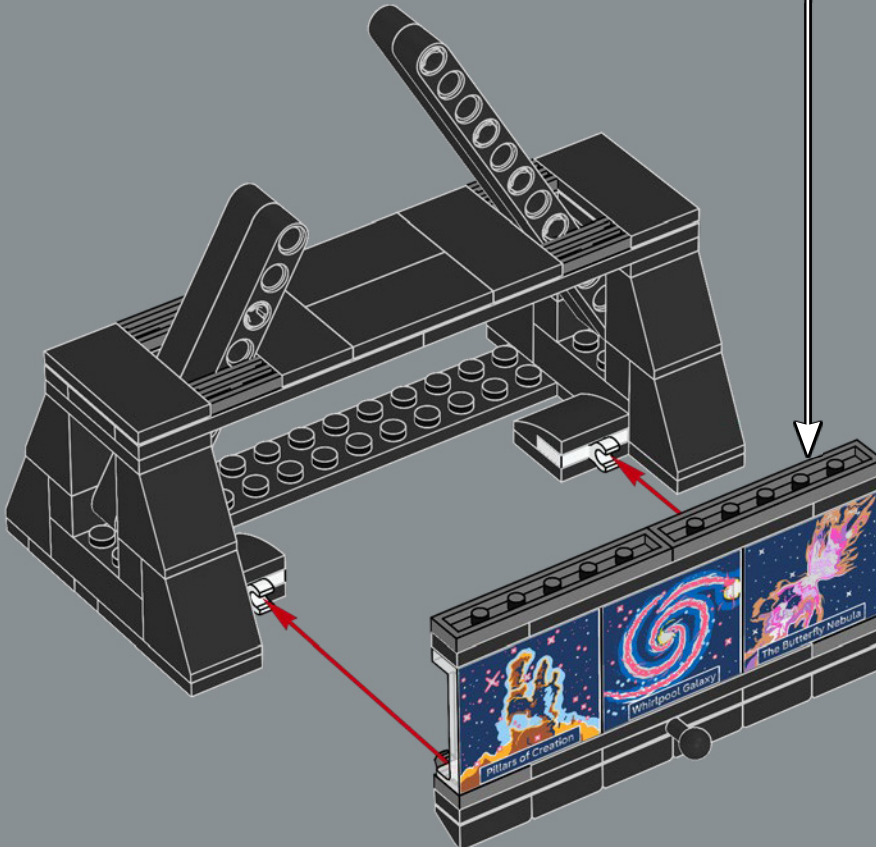
Avec ses célèbres images du champ profond, Hubble a regardé plus loin dans l'espace – et plus loin dans le temps – que tout autre télescope avant lui.

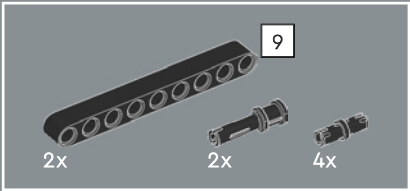


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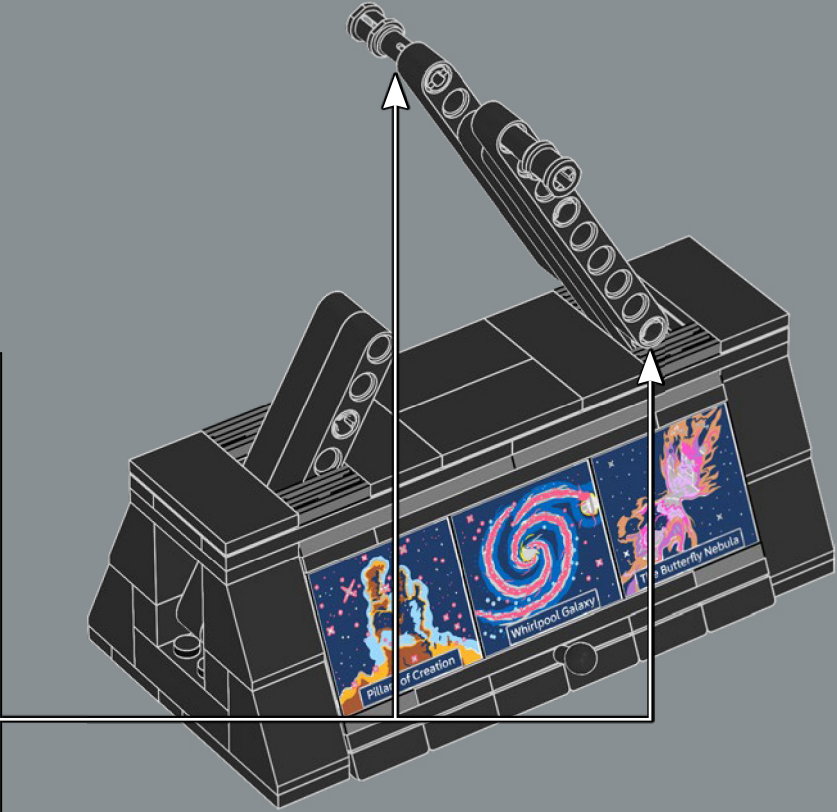
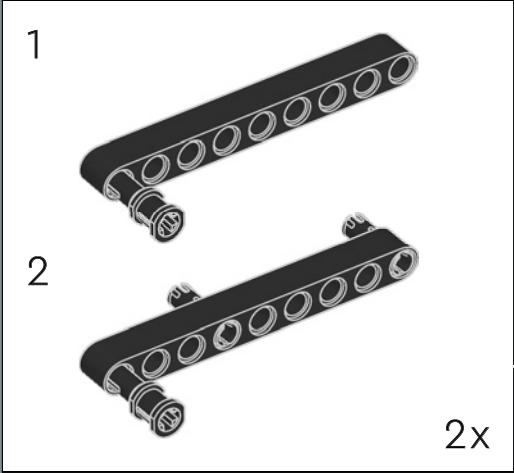


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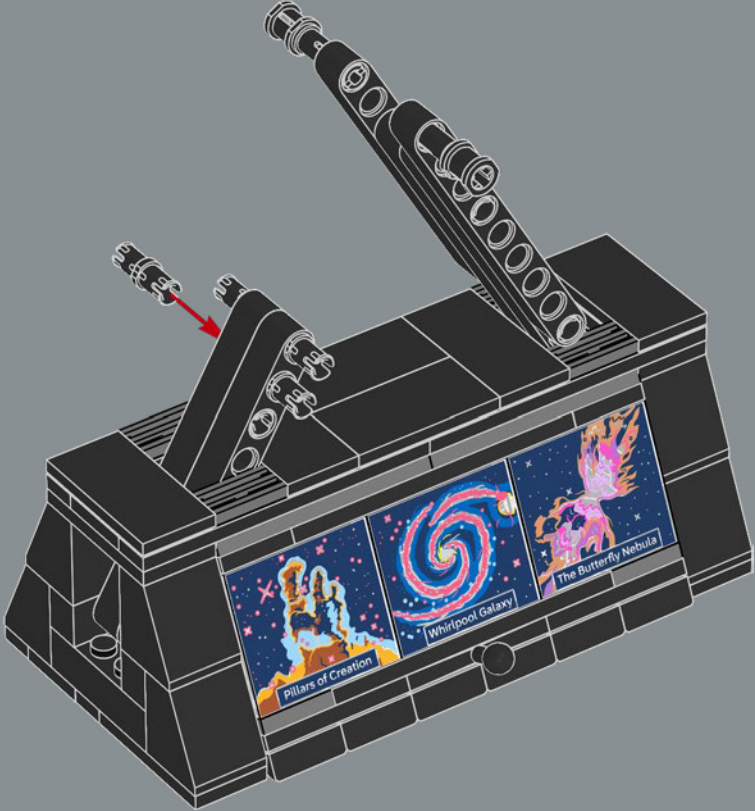


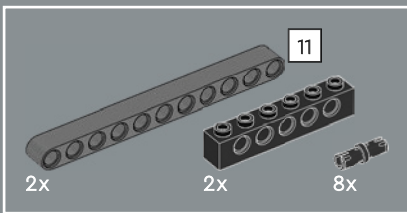


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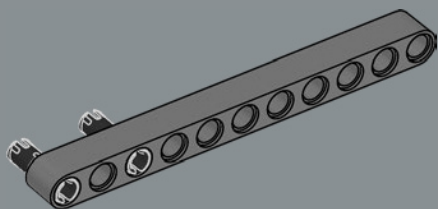
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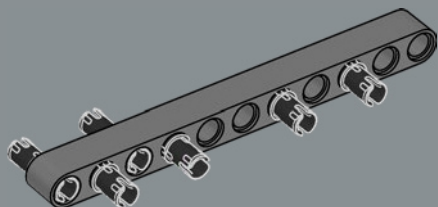


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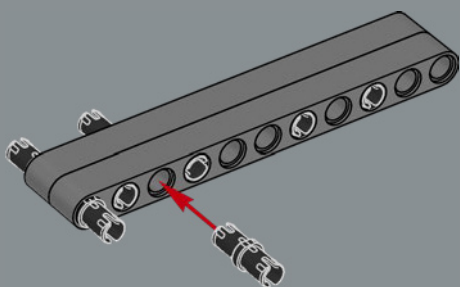
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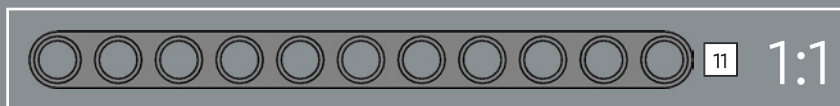
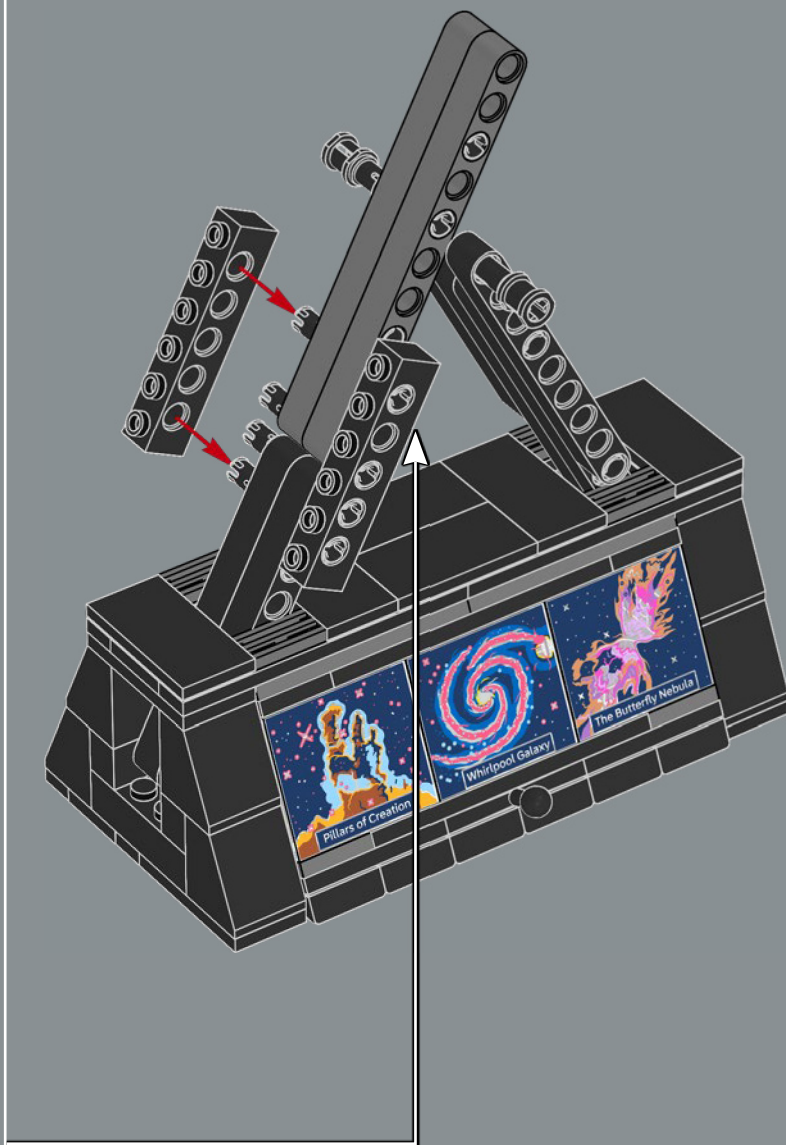
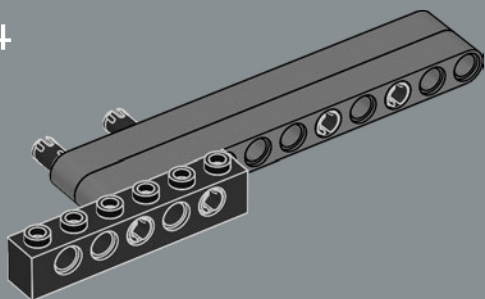
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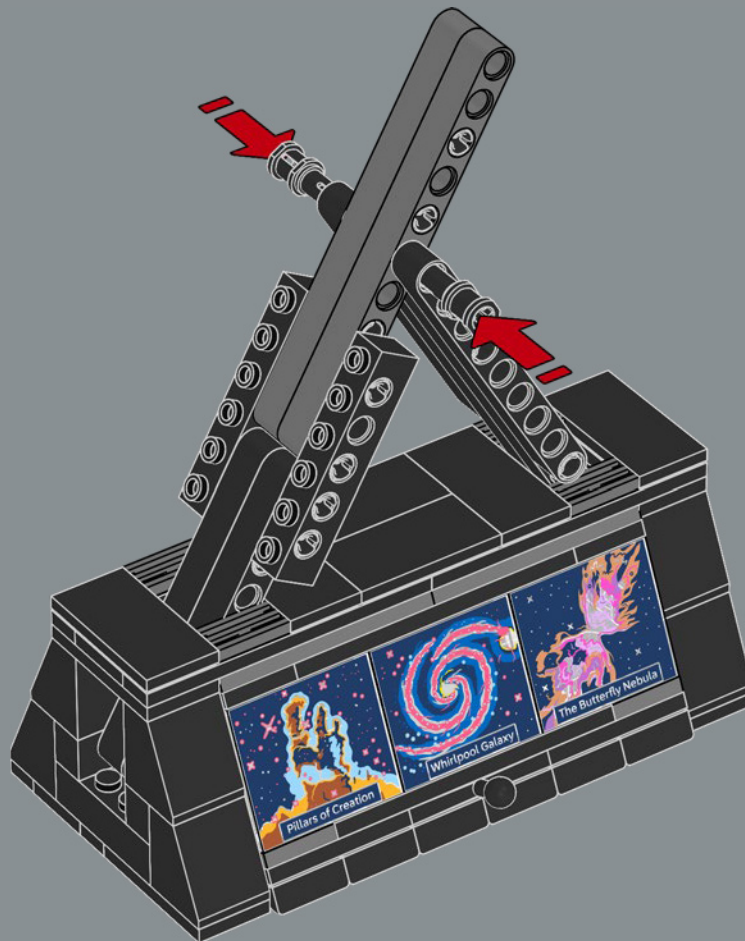
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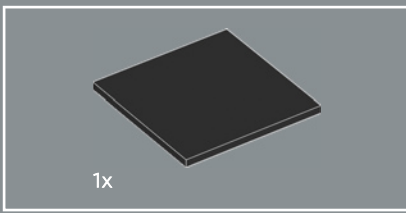


Depuis 1990, il a enregistré plus de 1,7 million
d'observations et collecté des données sur plus
de 108 millions d'objets célestes.

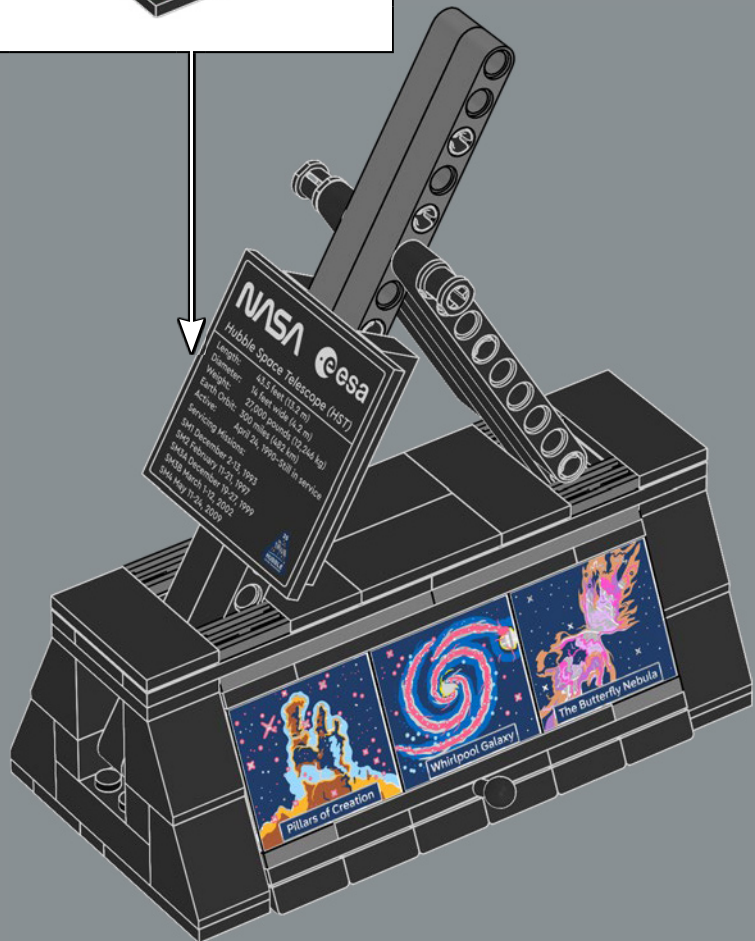
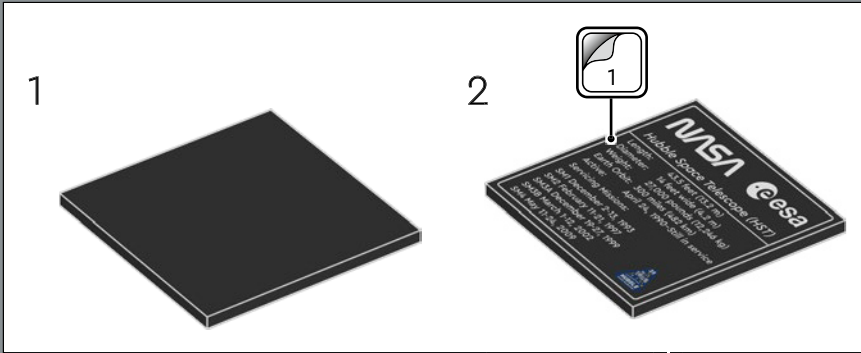


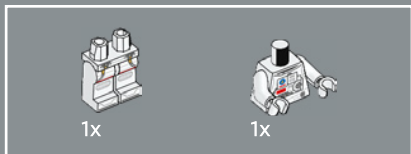
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32

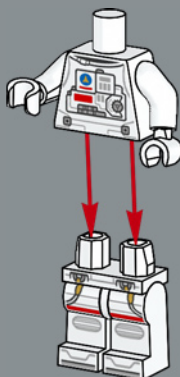




Même après plus de 35 ans en orbite, il continue de produire des découvertes majeures et a inspiré des instruments comme le télescope spatial James Webb.

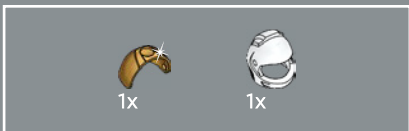
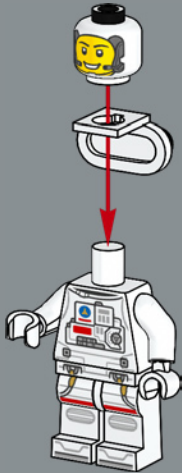


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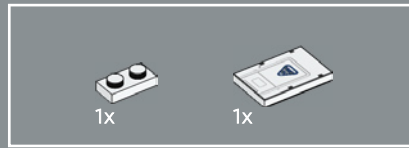
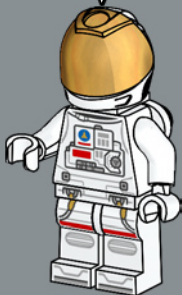
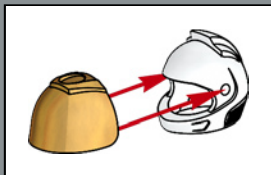




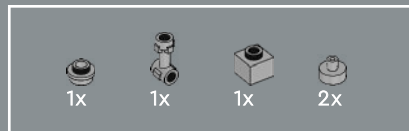
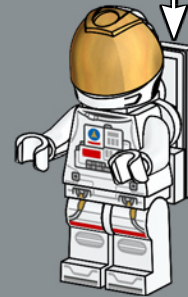
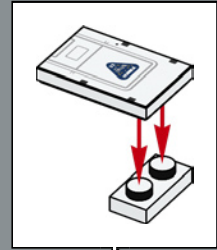
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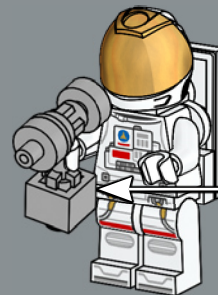
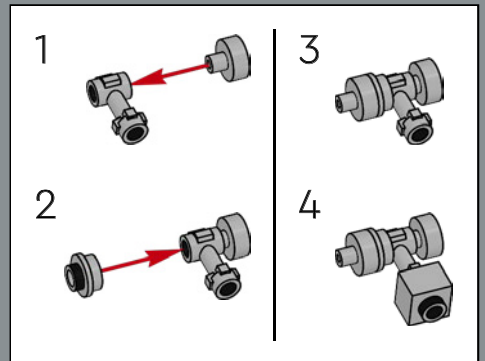
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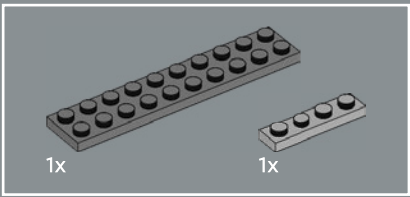


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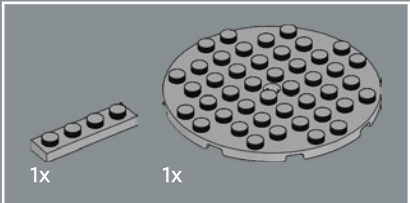
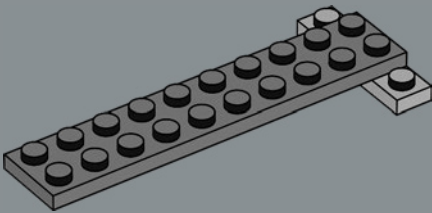


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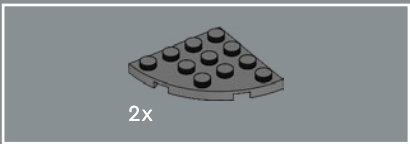
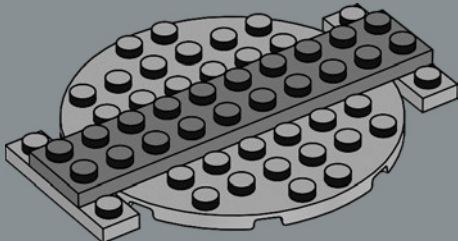




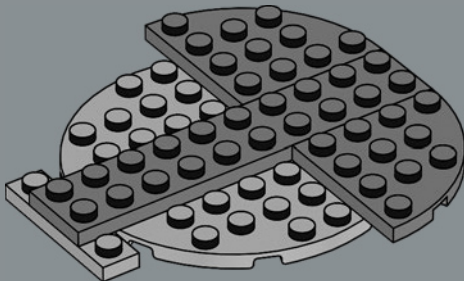
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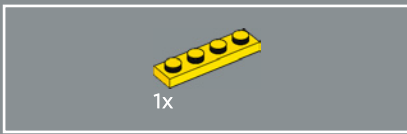


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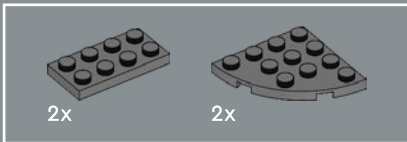
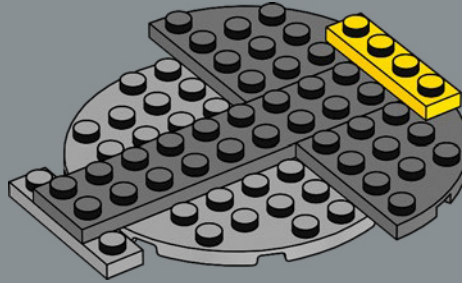


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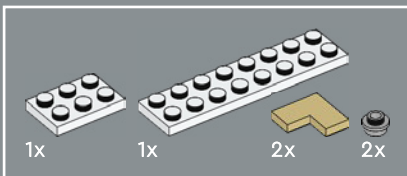
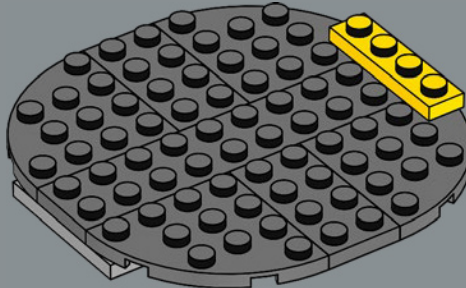




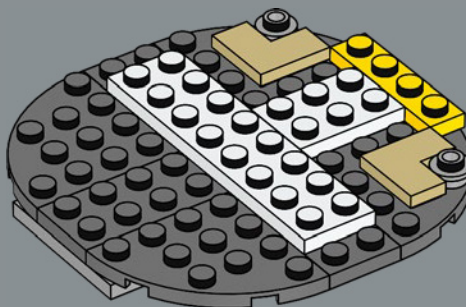
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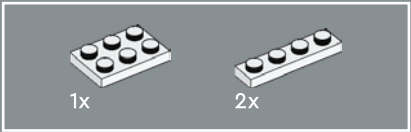


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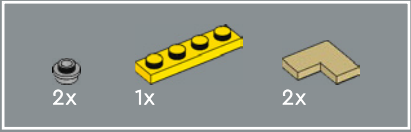
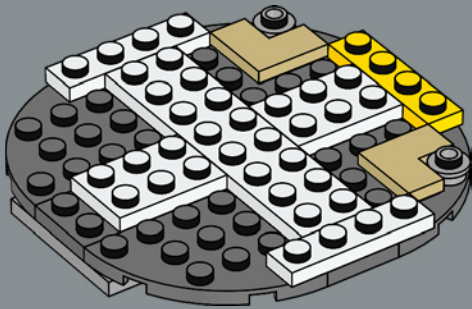


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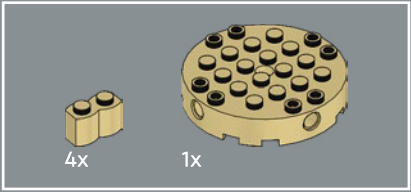
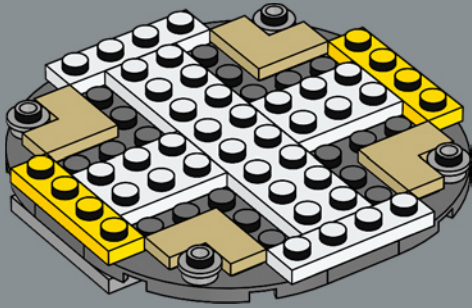




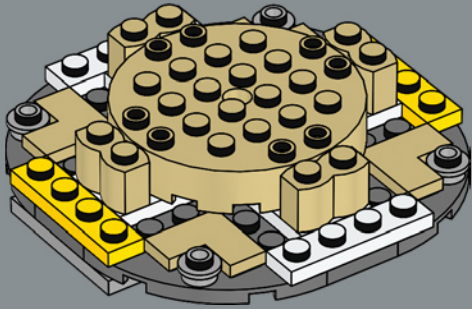
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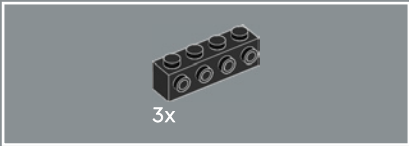


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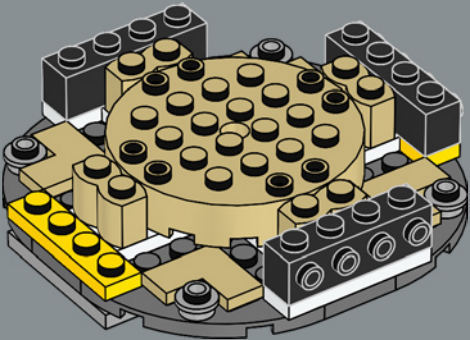


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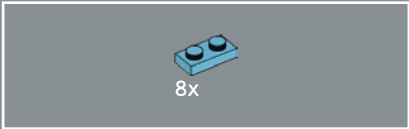
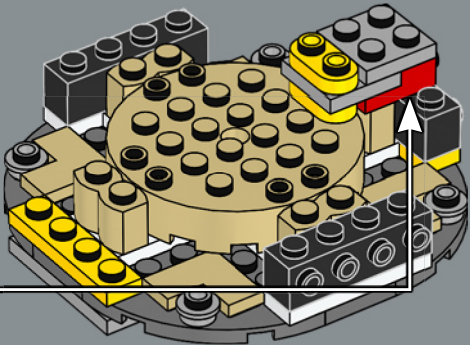
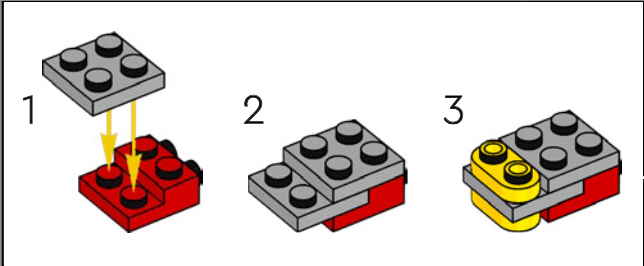




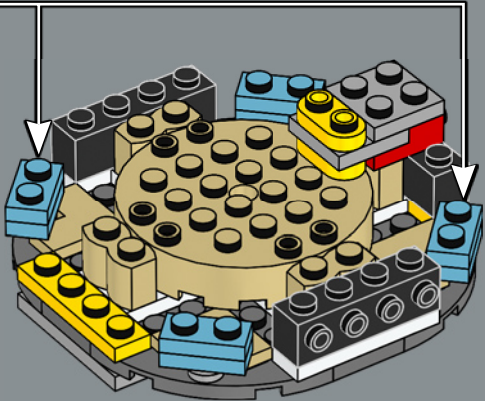
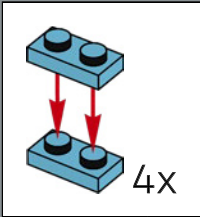
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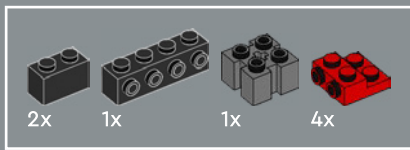


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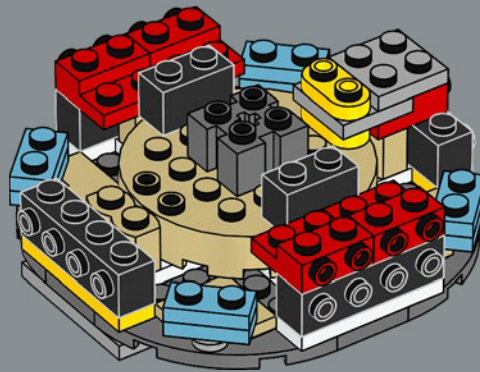


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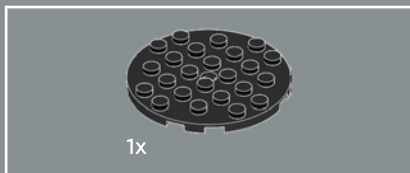
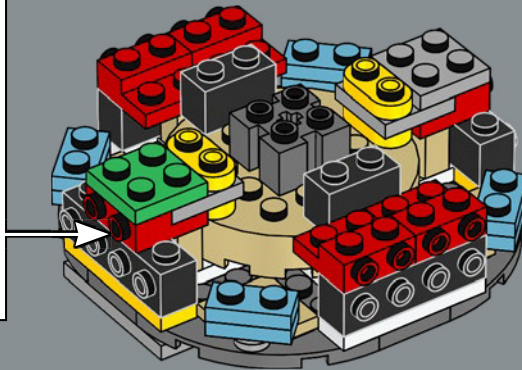
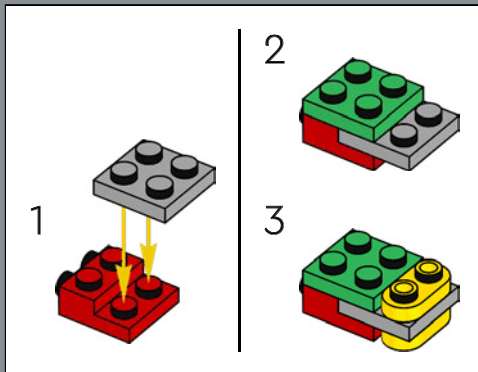




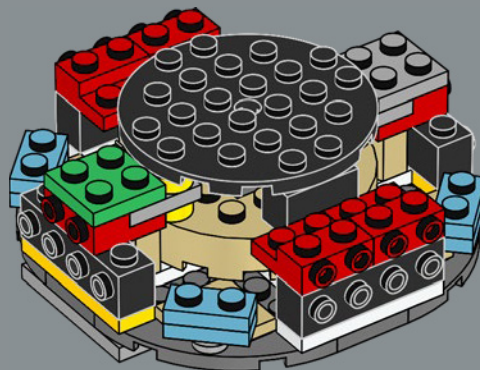
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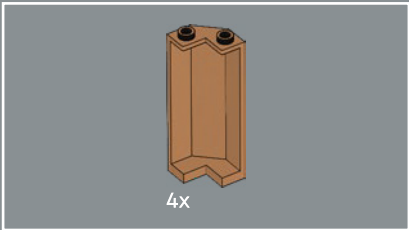
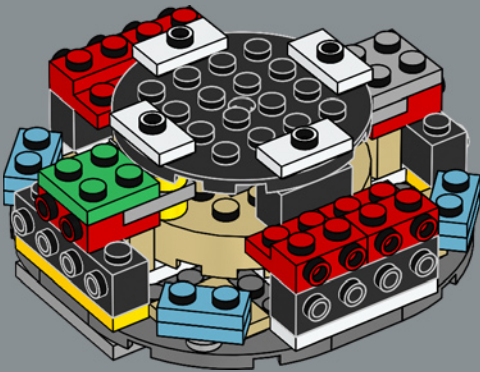


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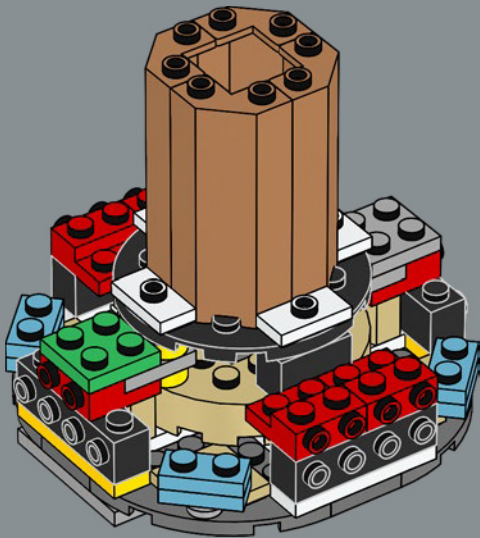


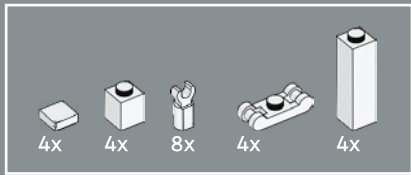


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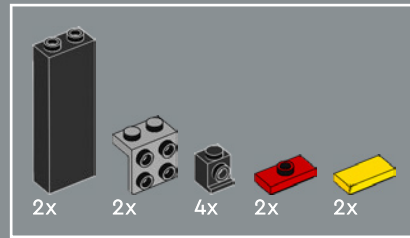
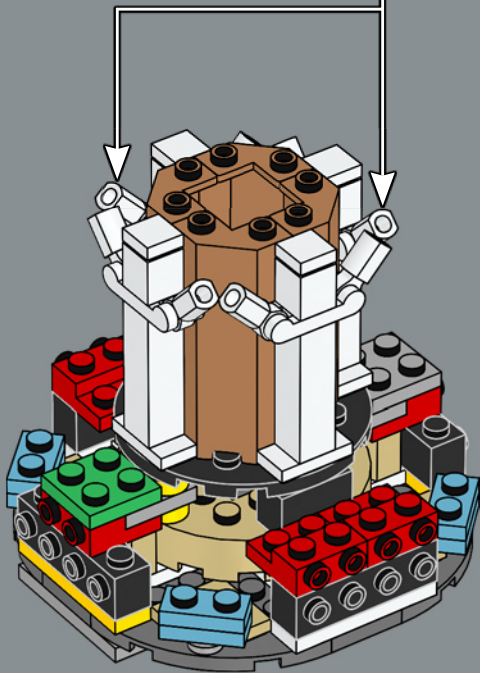
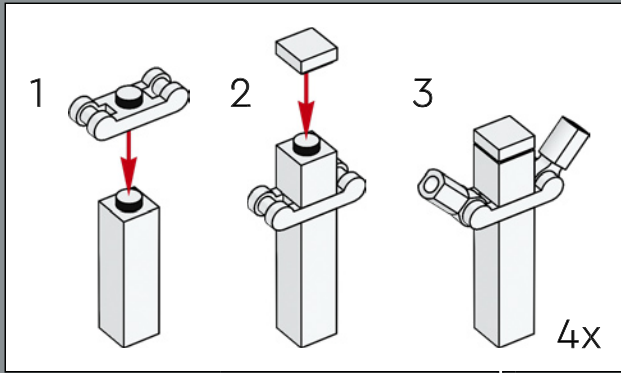


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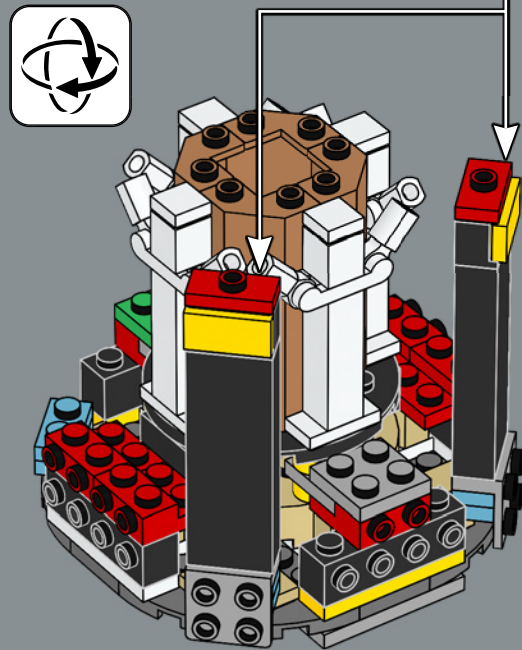
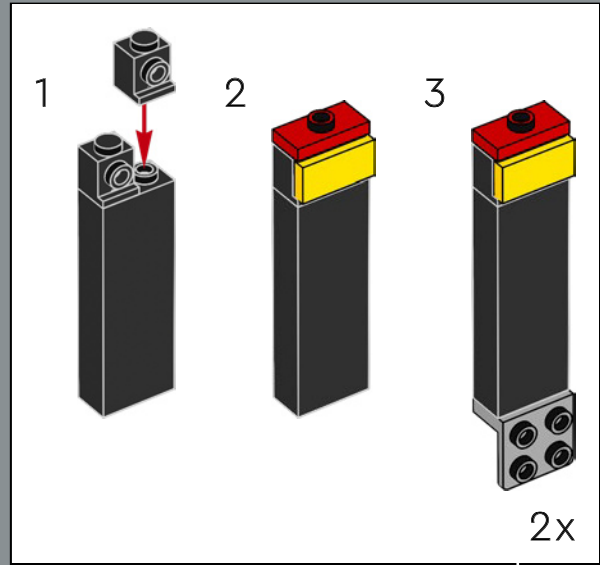


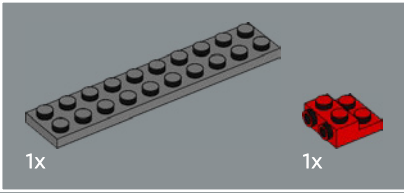
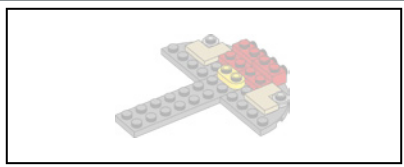


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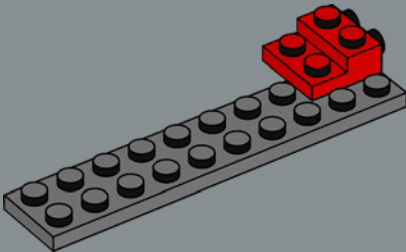


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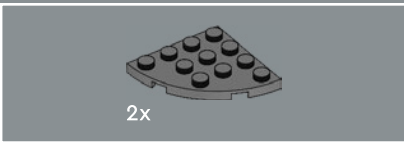
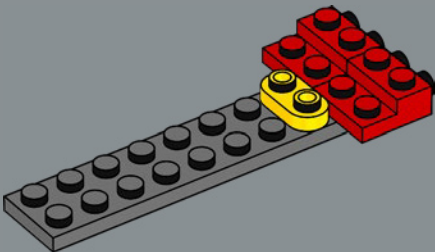




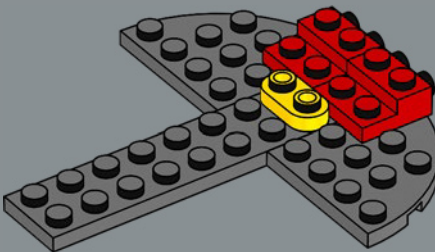
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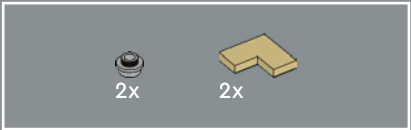


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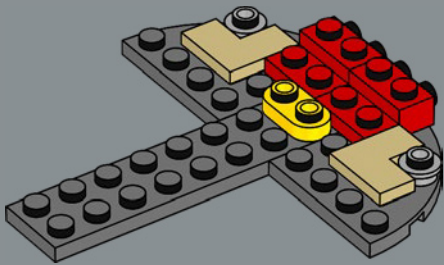


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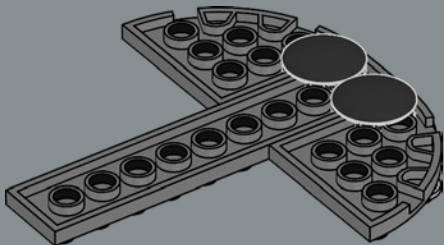




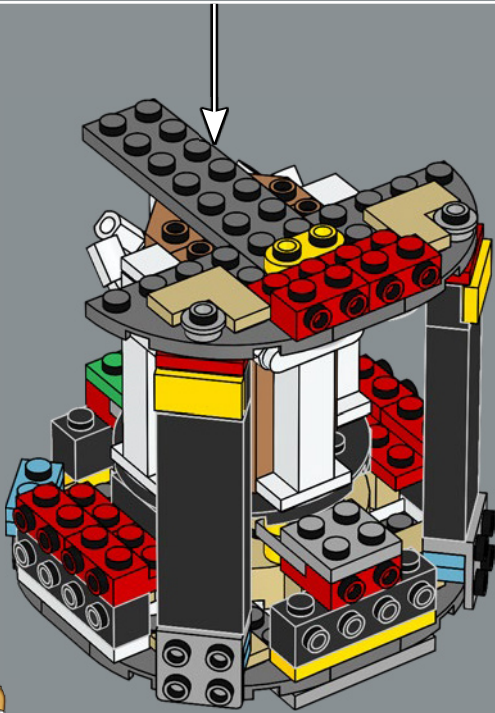
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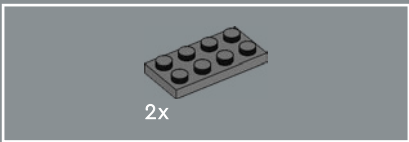


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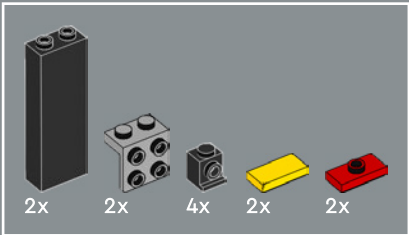
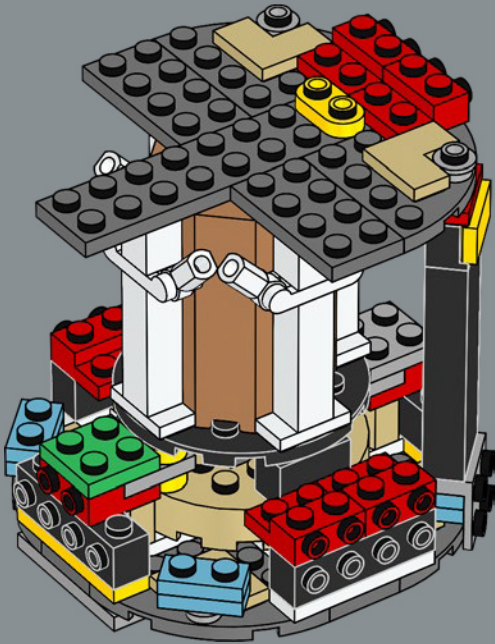


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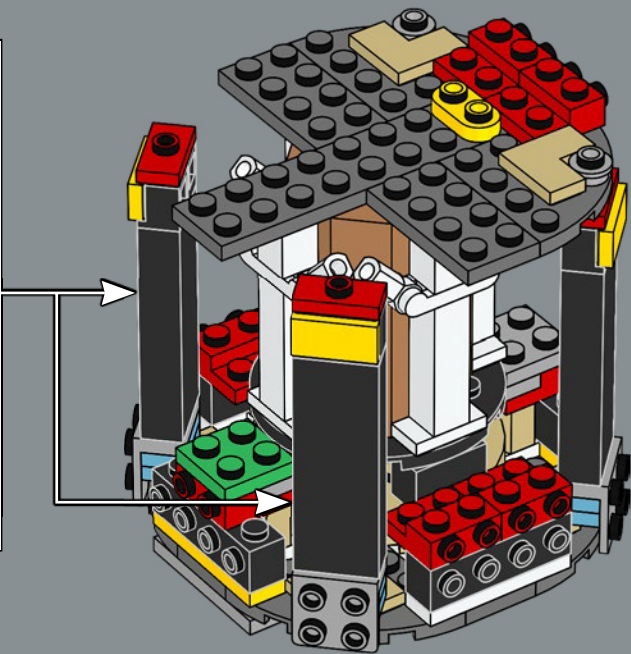
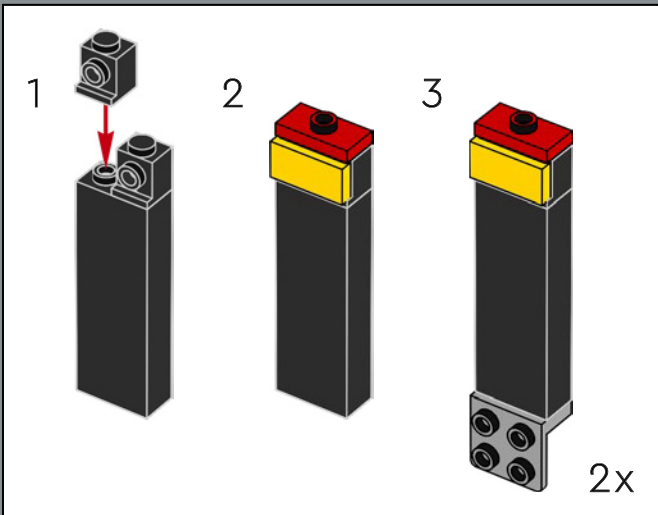


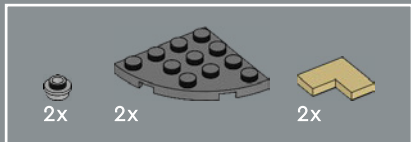


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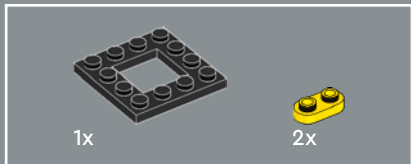
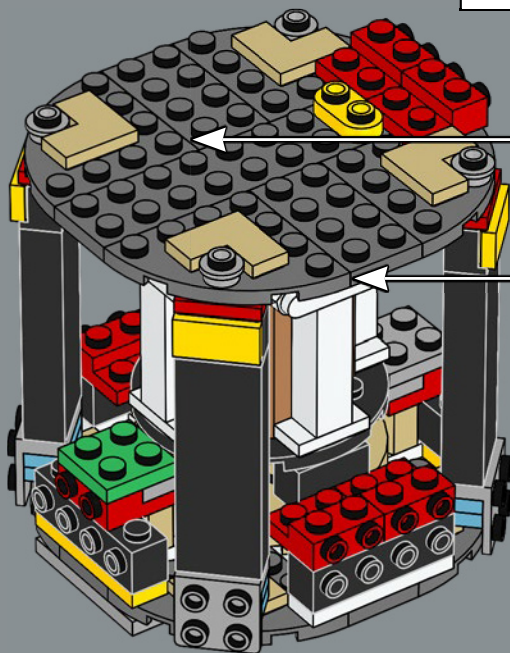
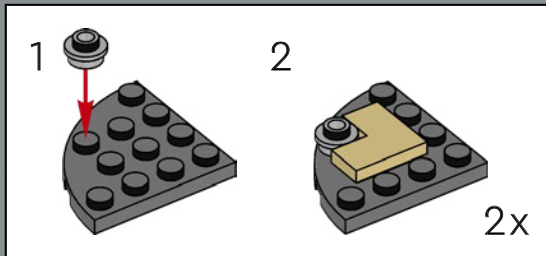


64





65



66



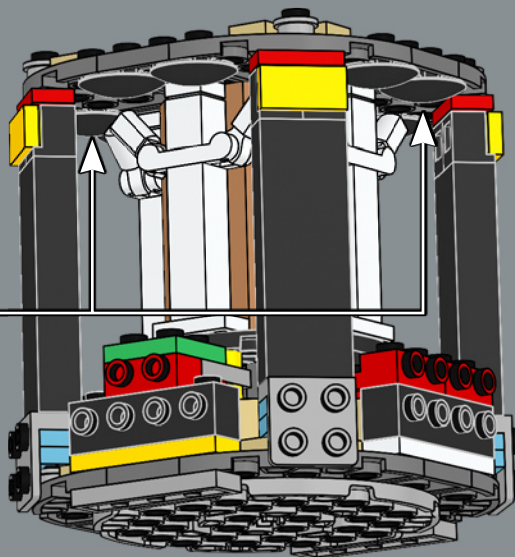


6x

67



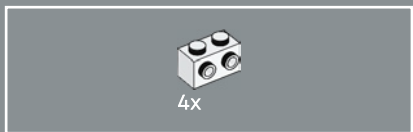
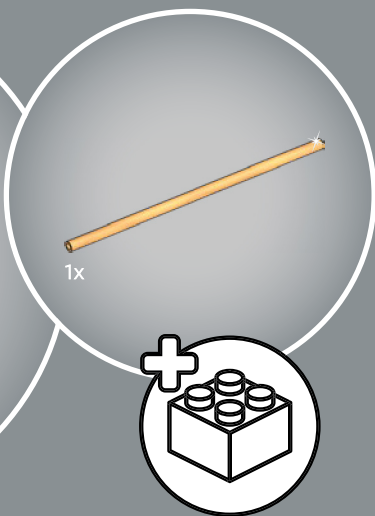
6x



4x

68

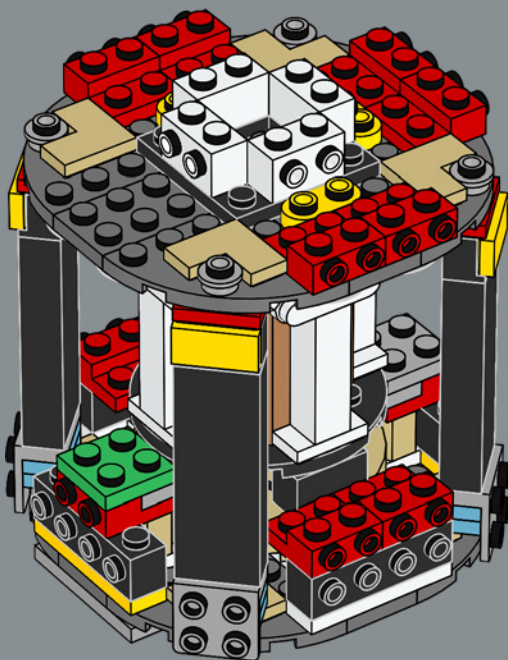




Grâce à l'effet de lentille gravitationnelle, Hubble a cartographié la matière noire invisible dans l'univers.



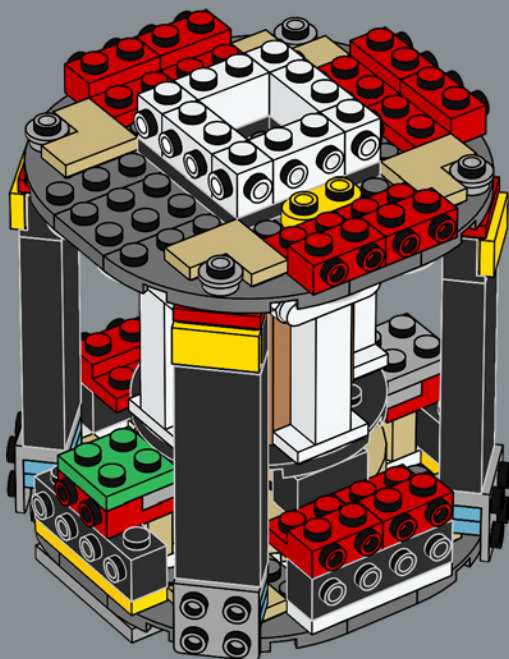
69





4x

70

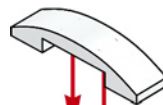
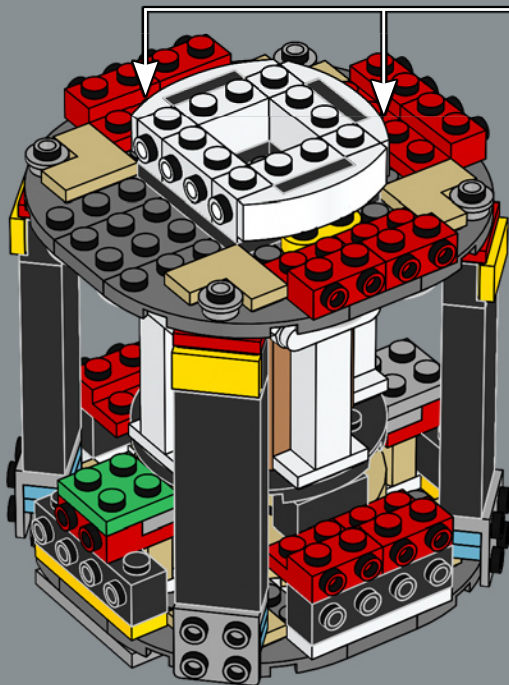


3x

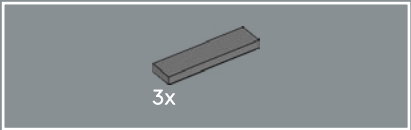


3x

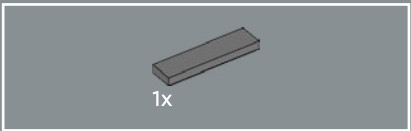
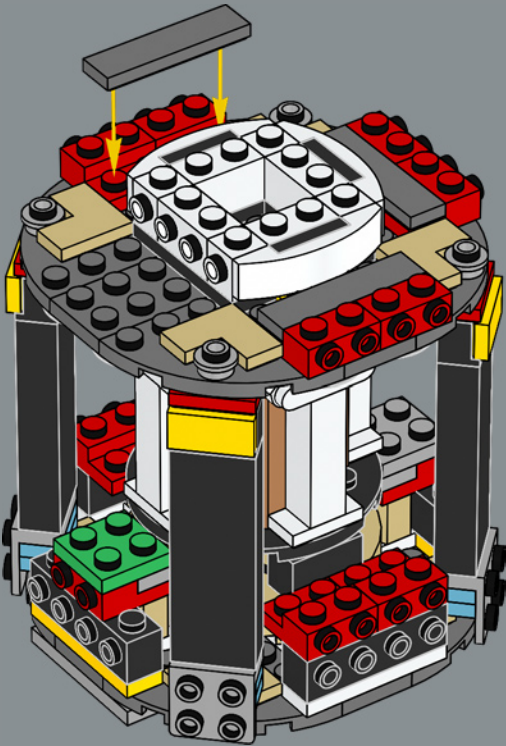
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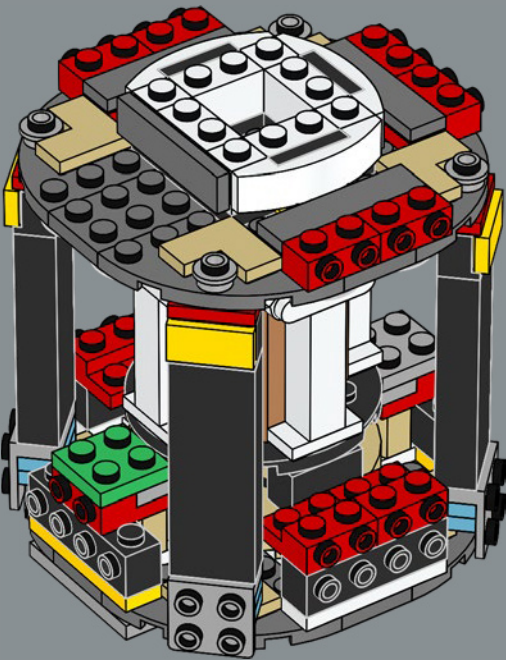
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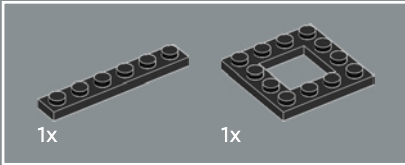
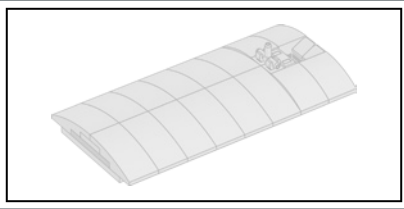


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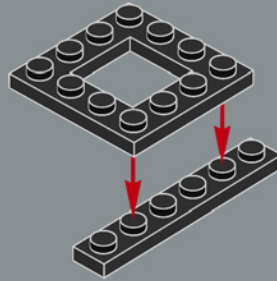


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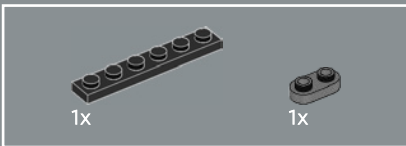
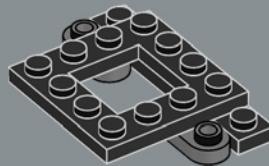




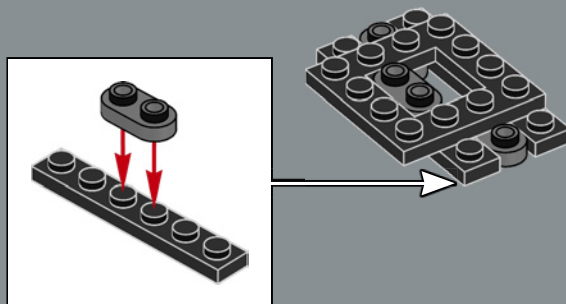
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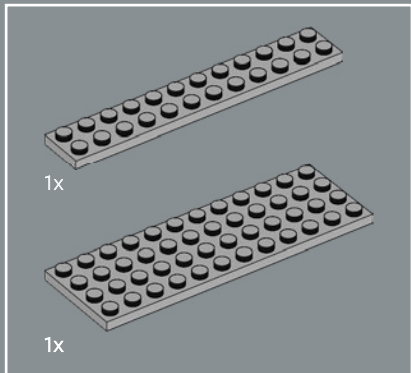


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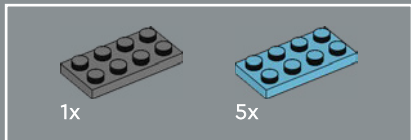
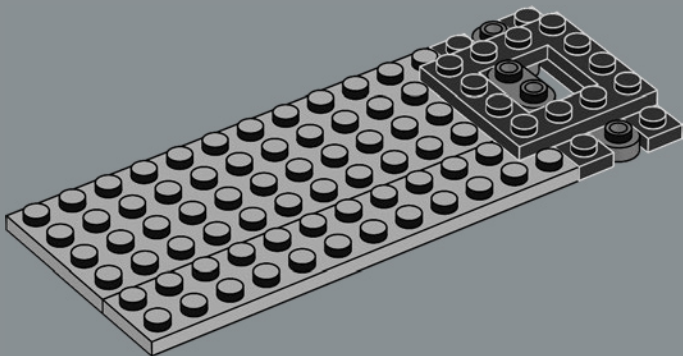


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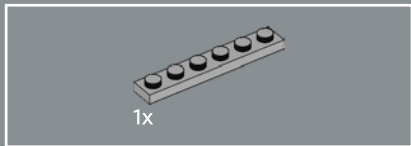
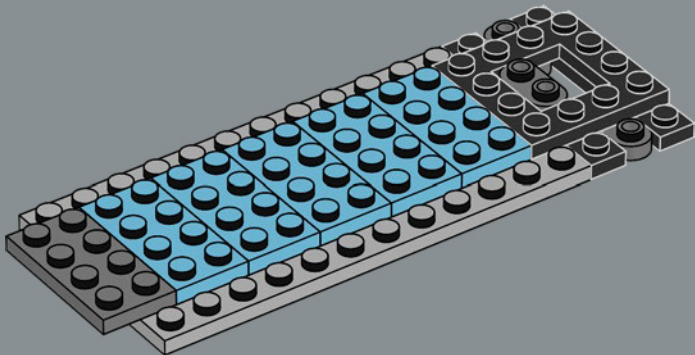




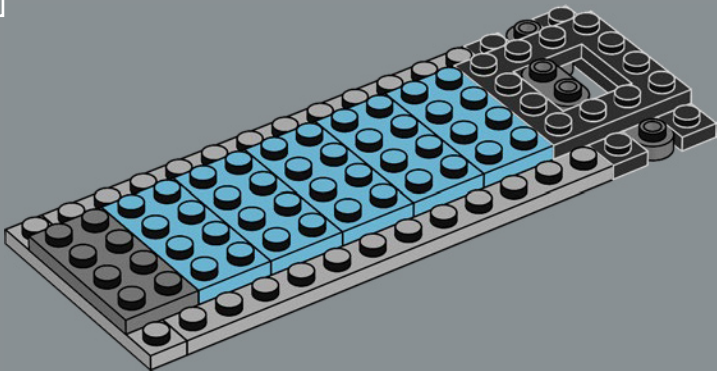
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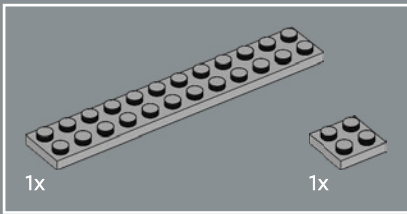


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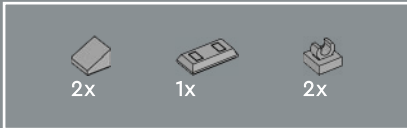
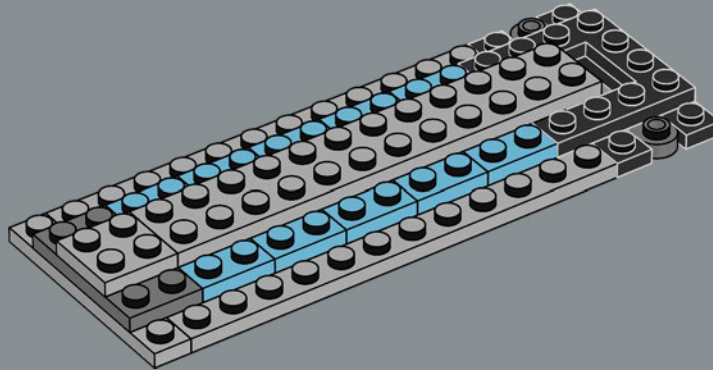


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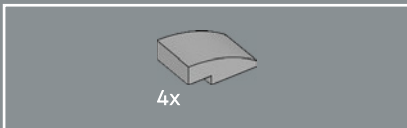
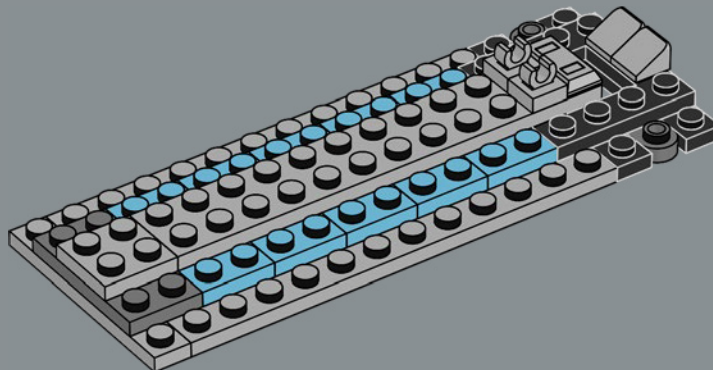




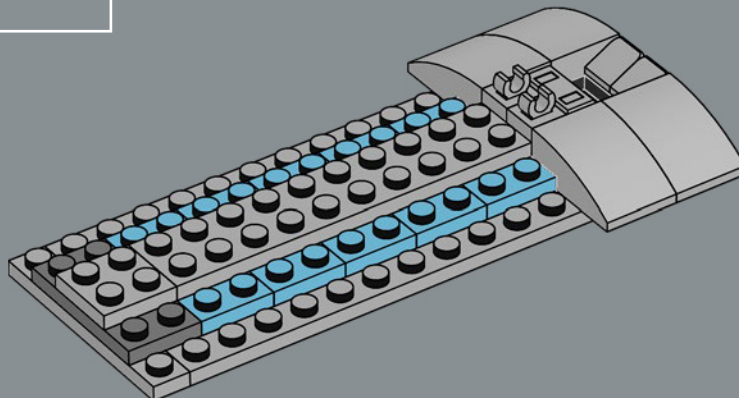
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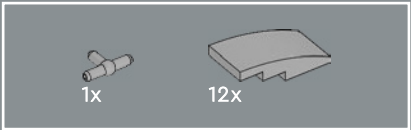


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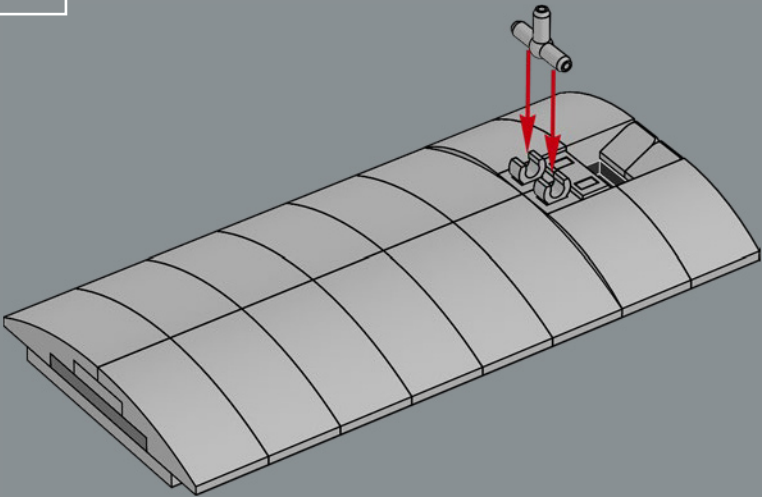


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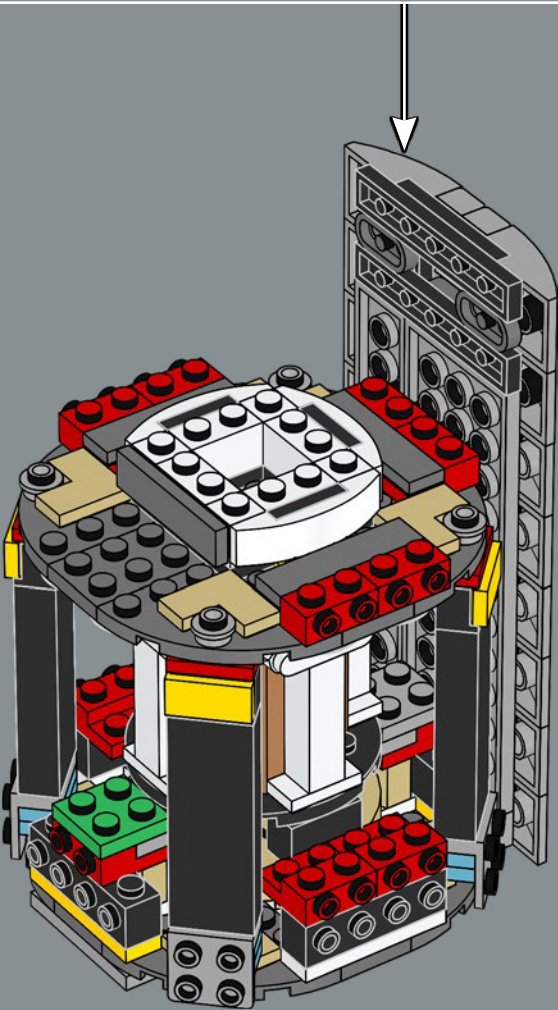


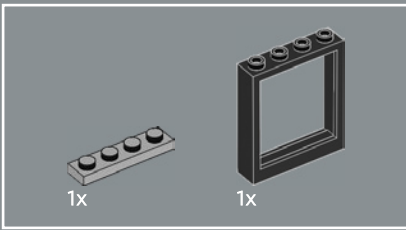


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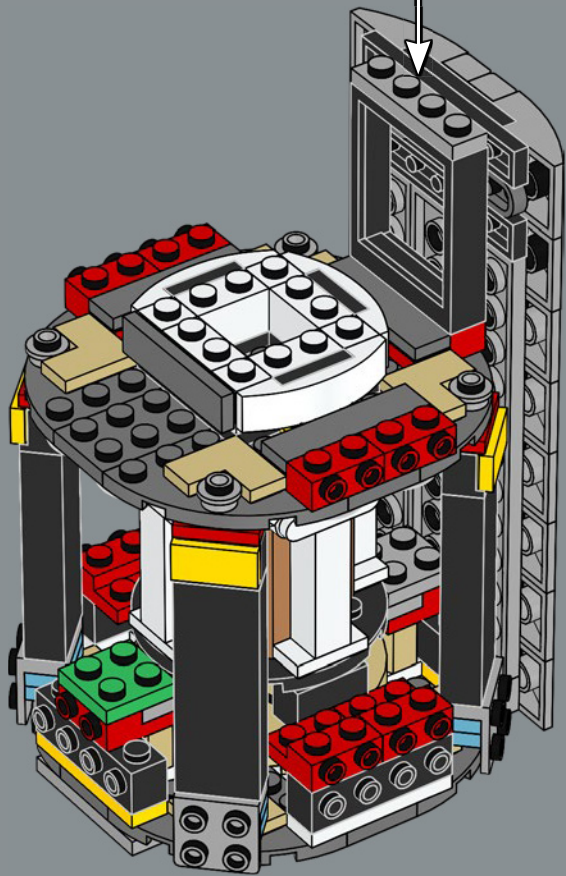
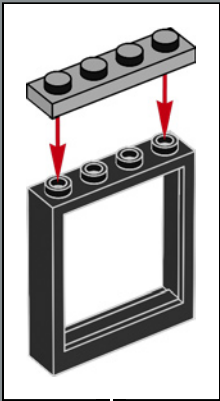


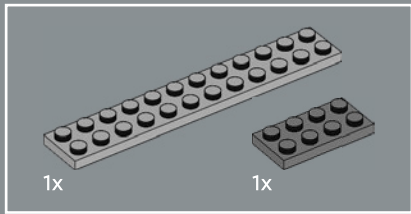
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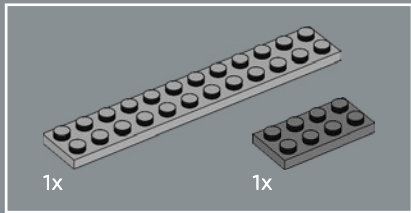
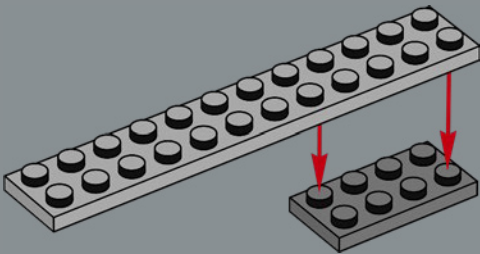


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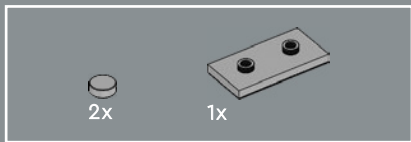
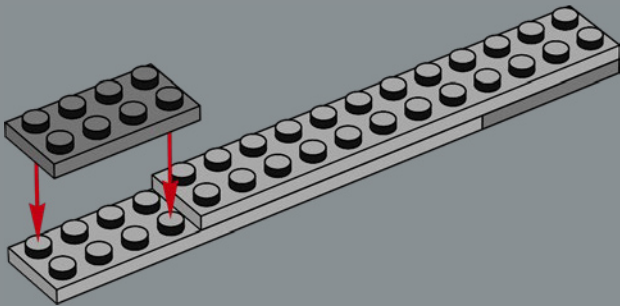




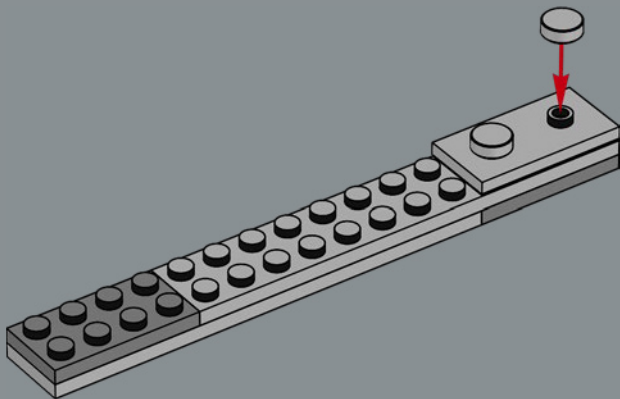
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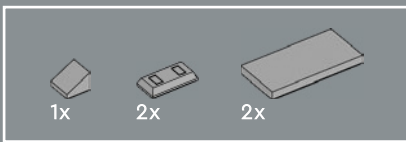


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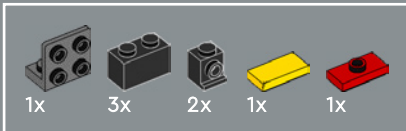
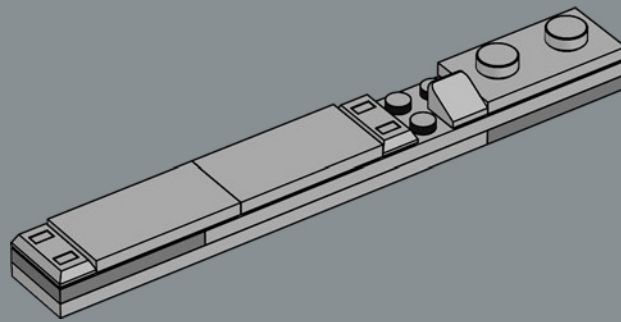


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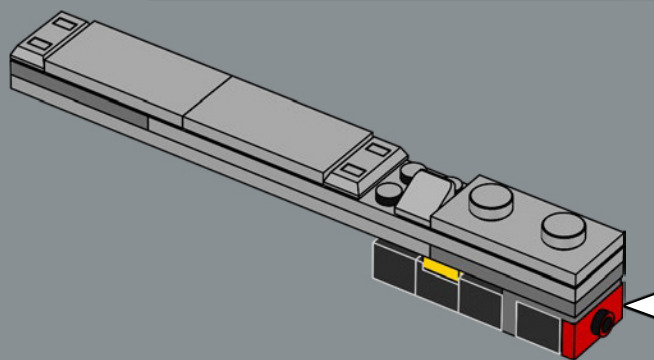
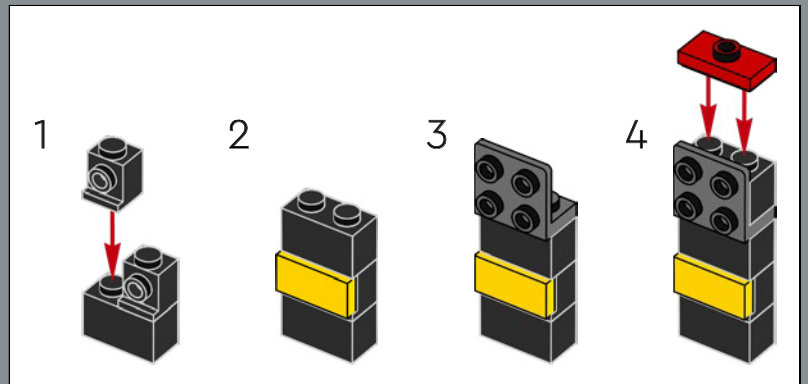


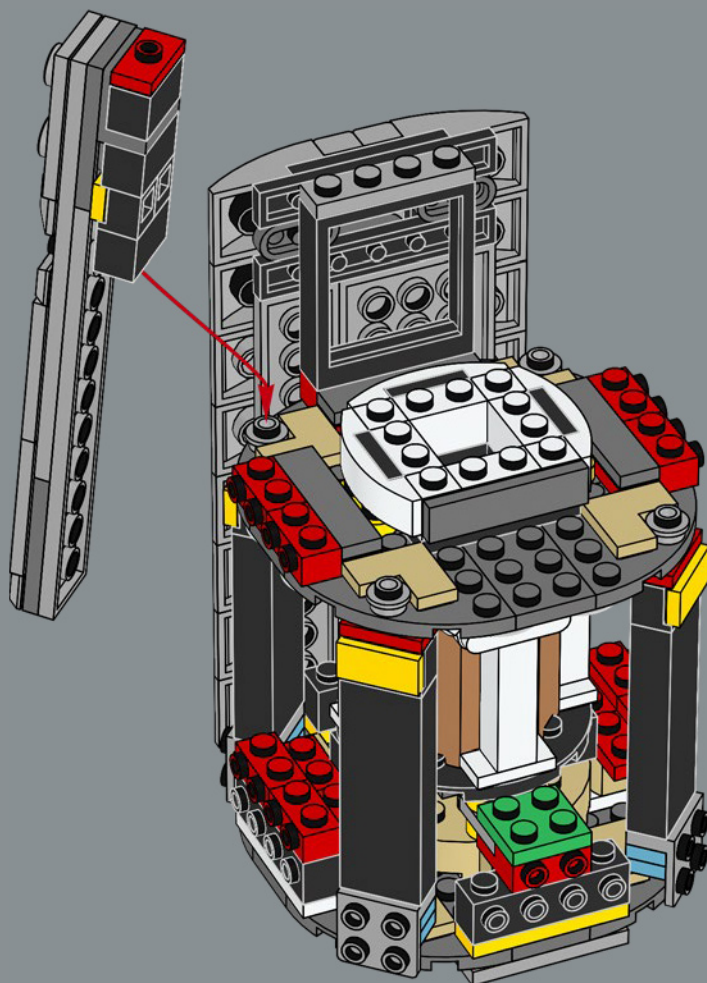


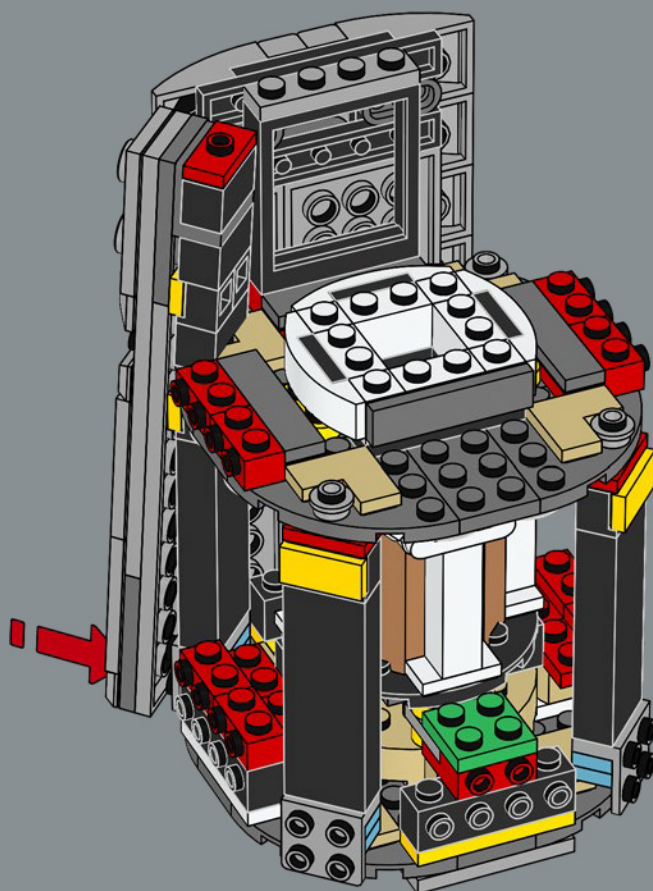
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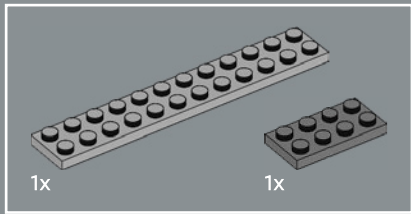


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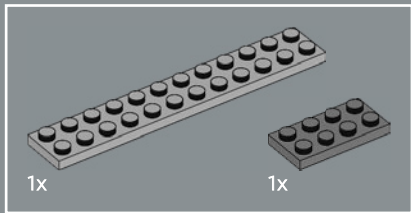
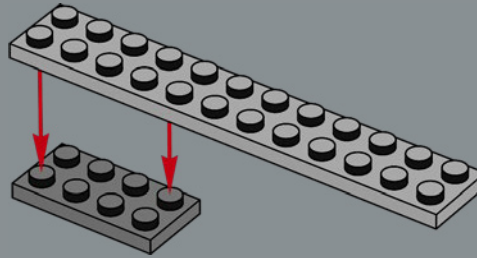




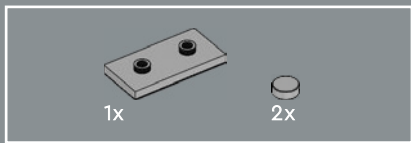
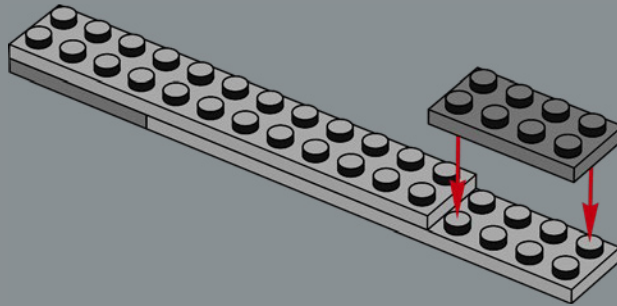




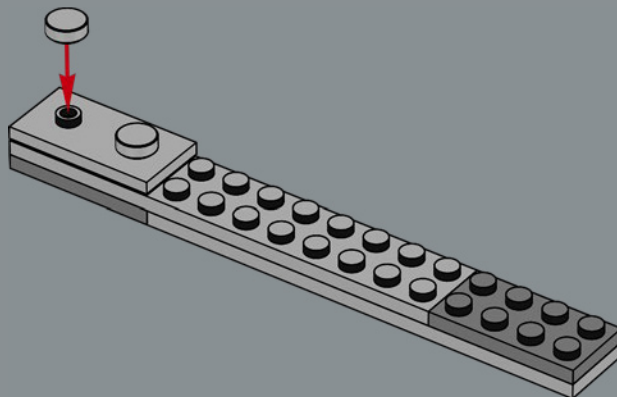
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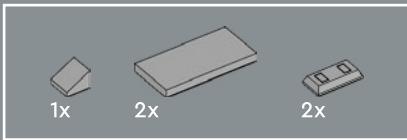


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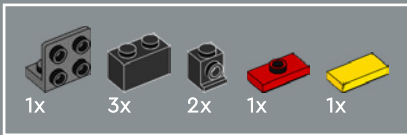
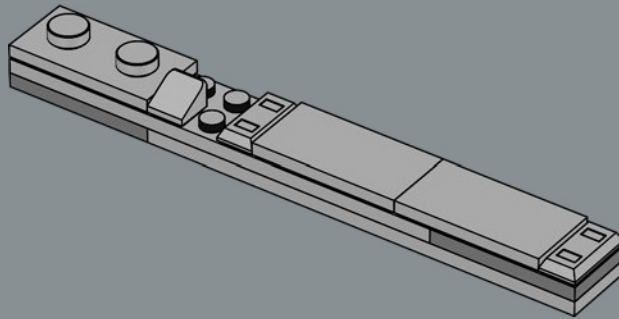


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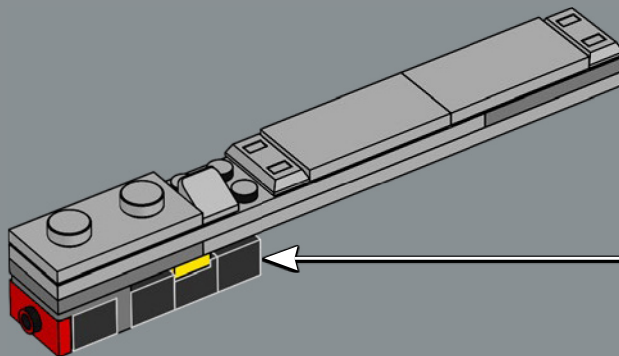
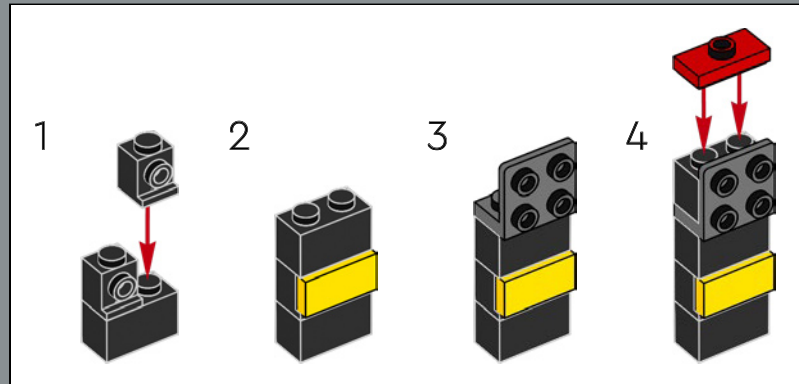


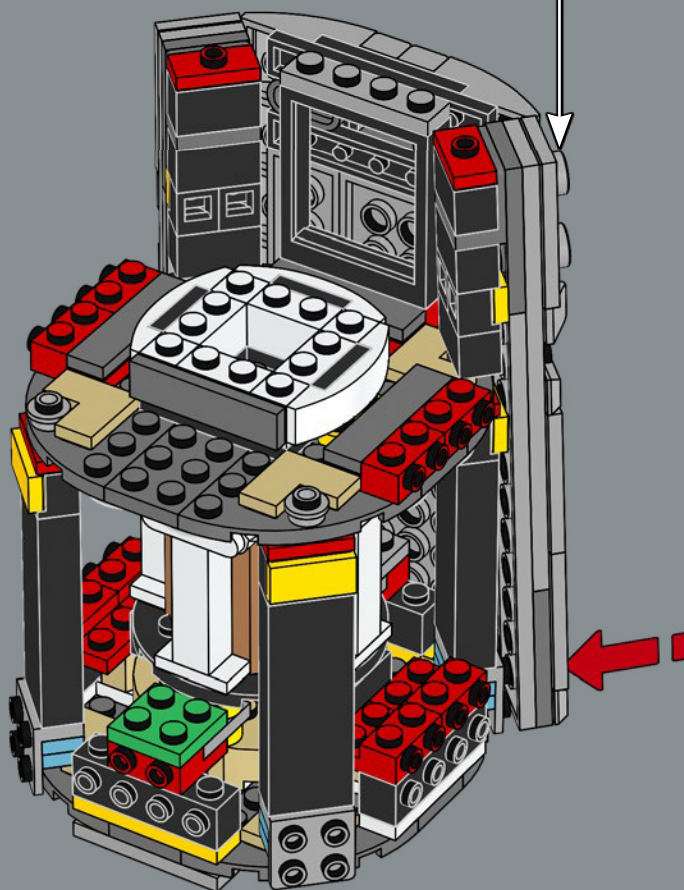


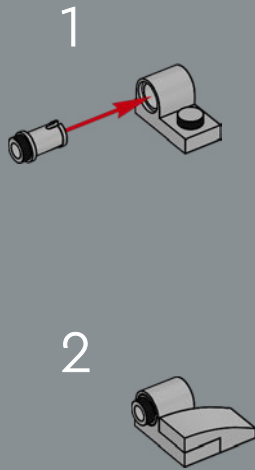
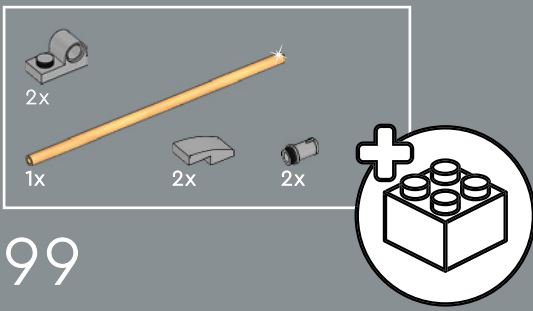
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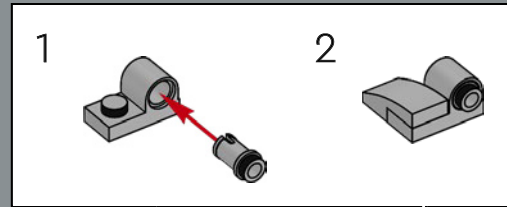
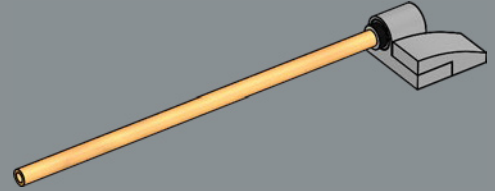
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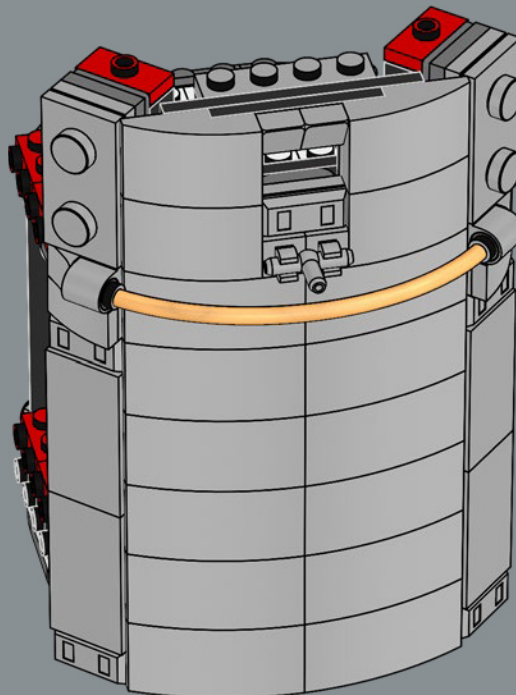
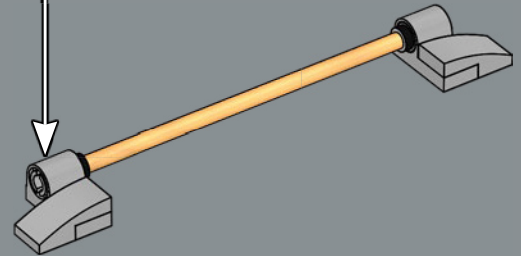


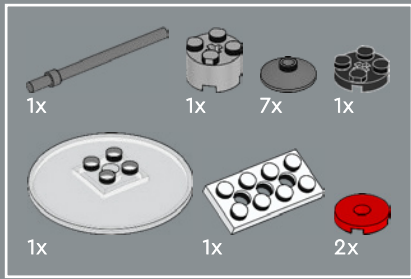


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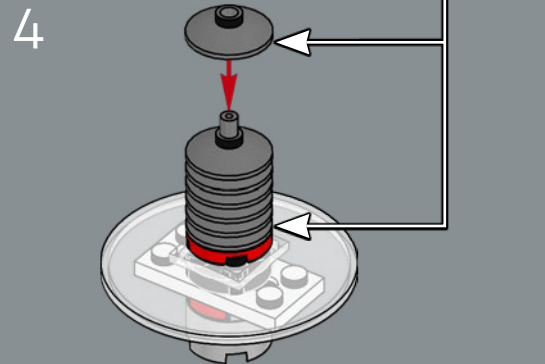
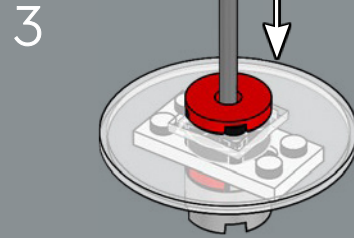
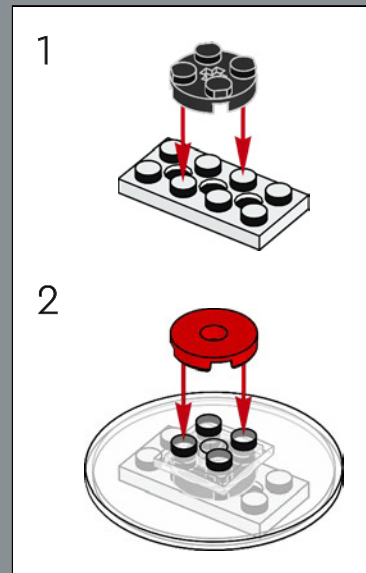
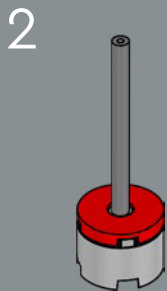
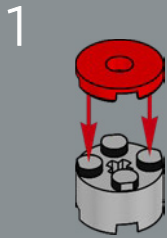


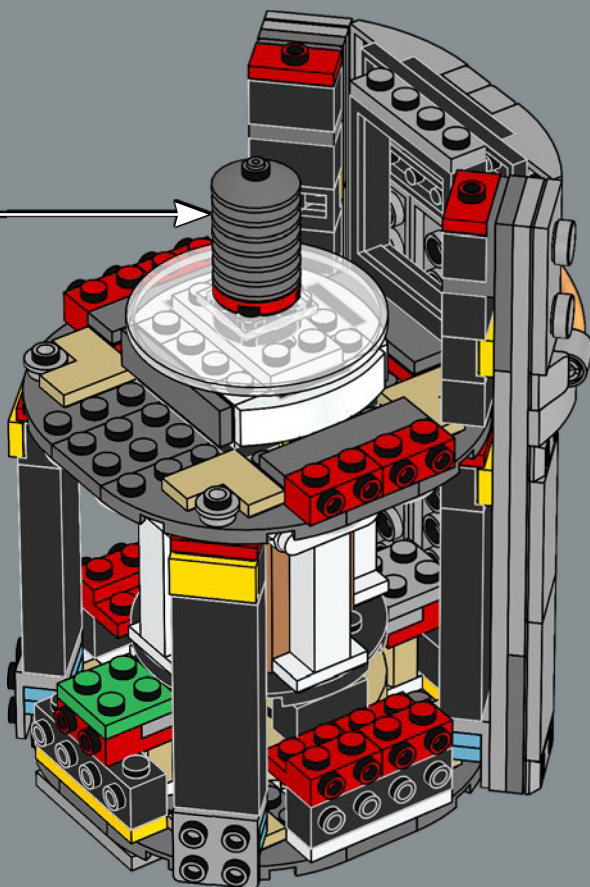
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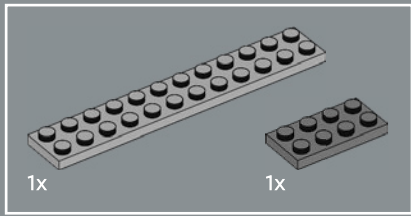




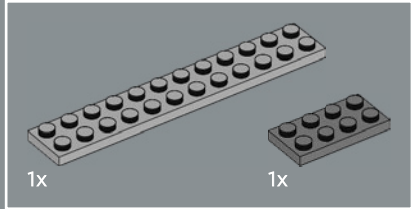
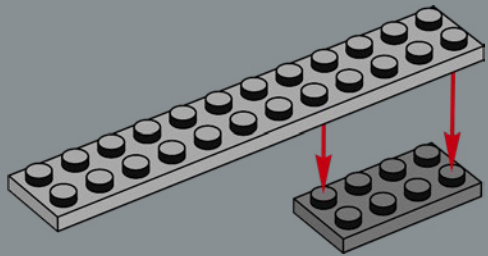
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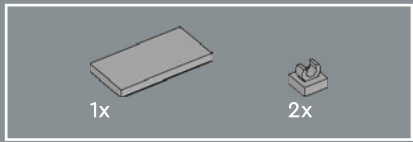
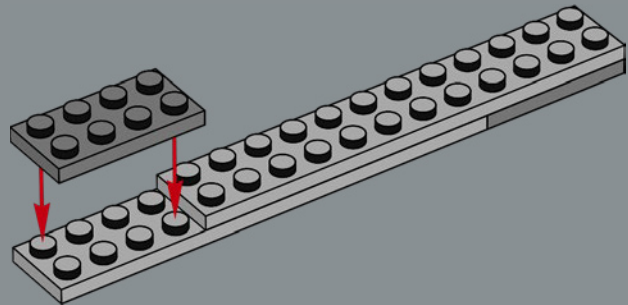




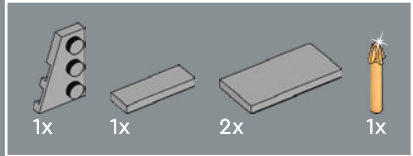
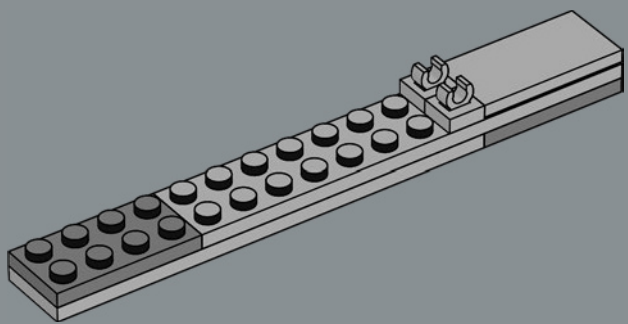
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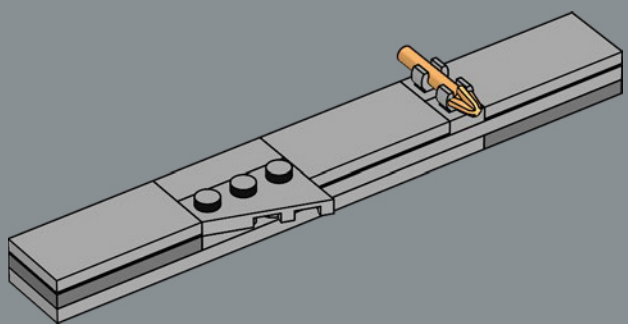
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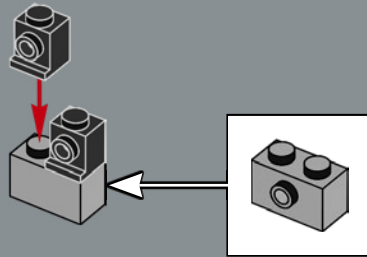
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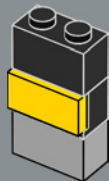
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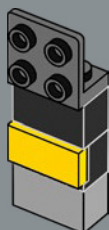
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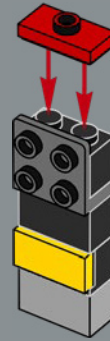
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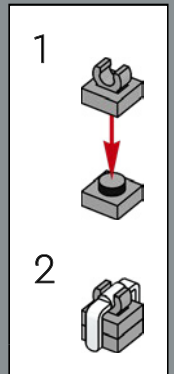
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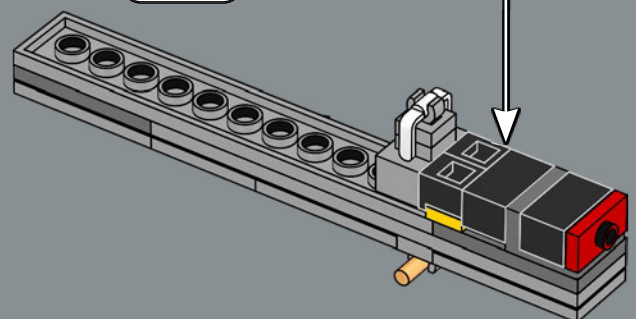
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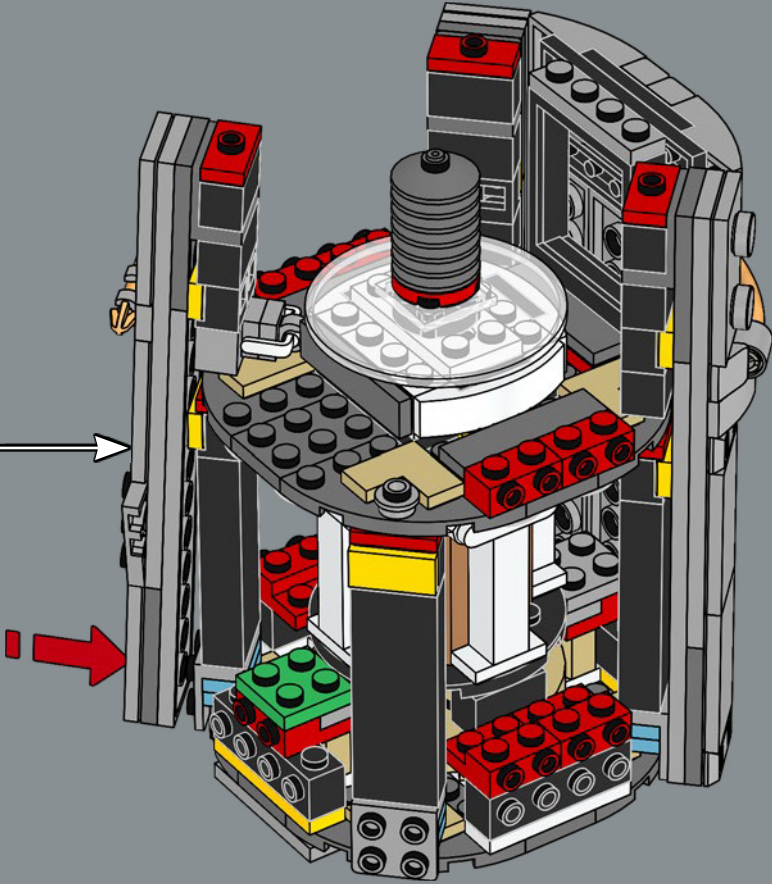


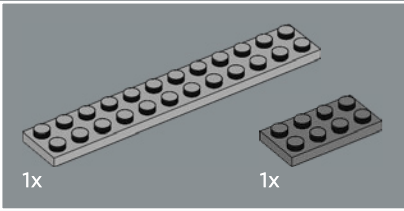
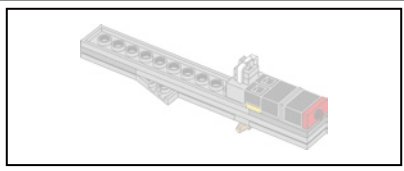
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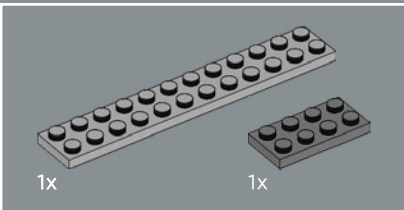
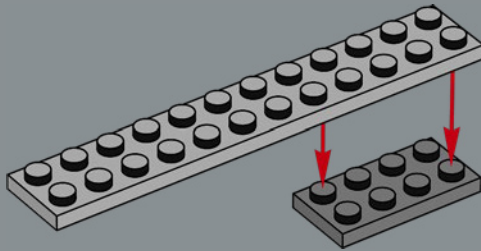
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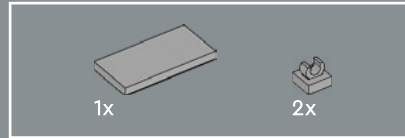
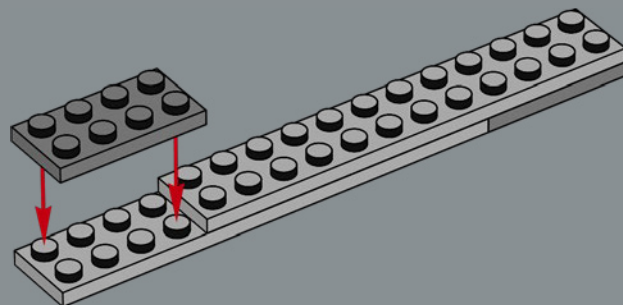




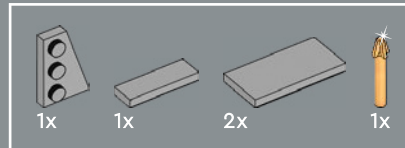
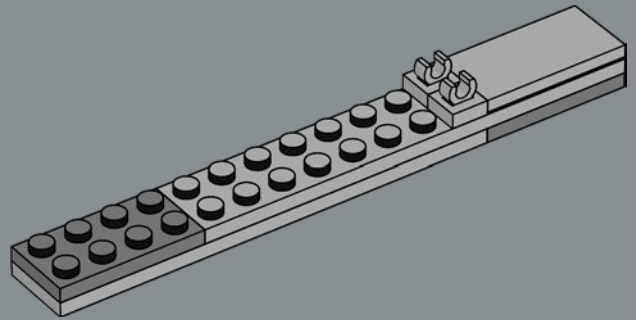
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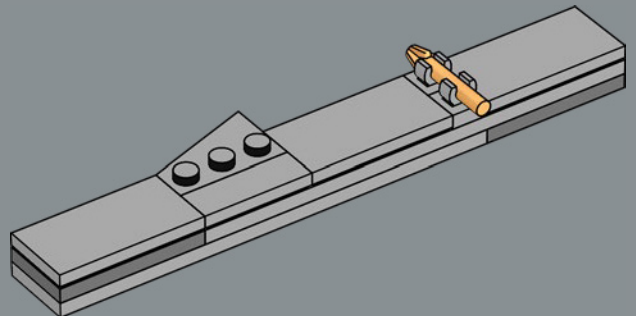
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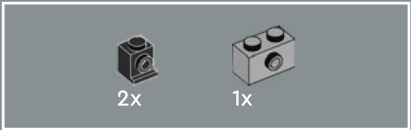


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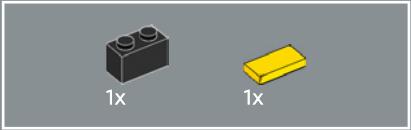
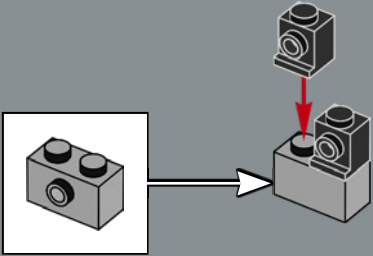


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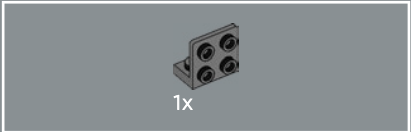
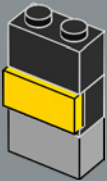




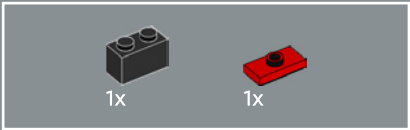
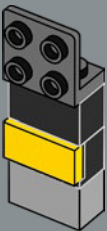
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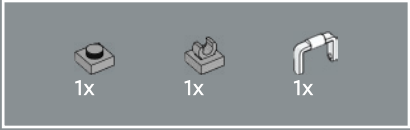
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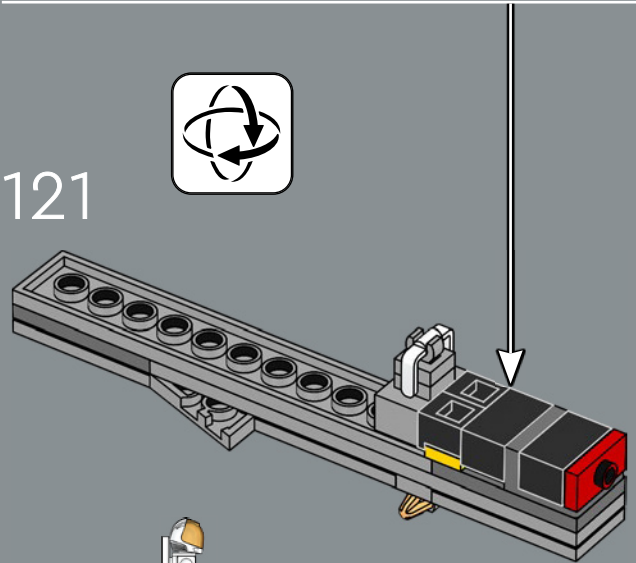
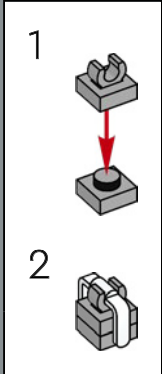
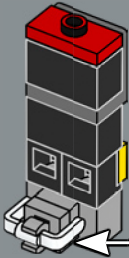
118



119



120



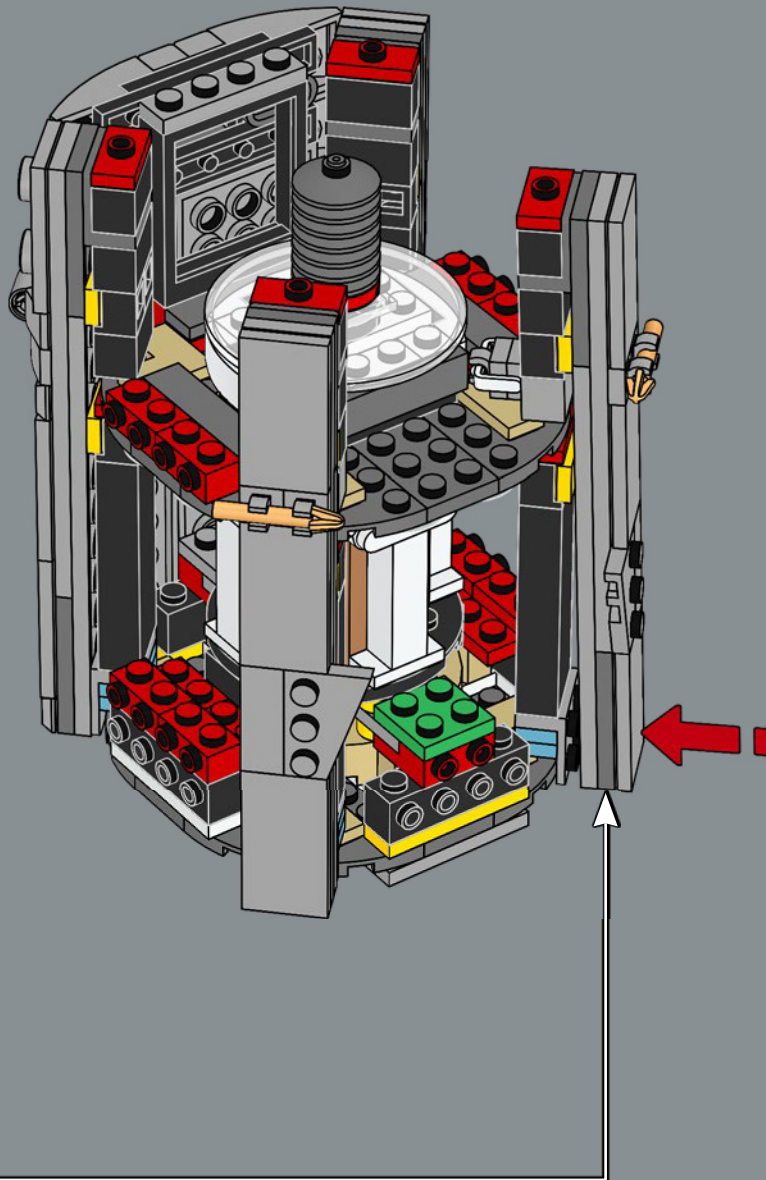
121

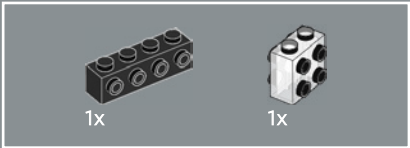
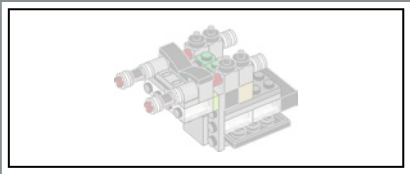


Perdu dans l'espace ? Un GPS couvrant
l'univers, ce n'est pas pour tout de suite...
À ce jour, seulement 0,1 % du ciel a été observé.

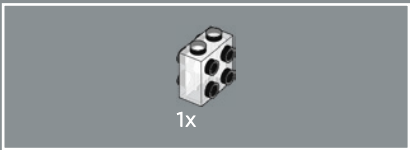
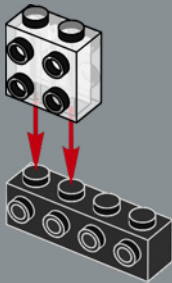


122

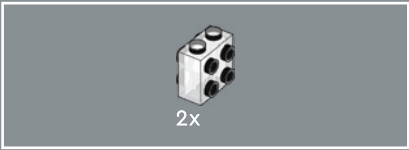
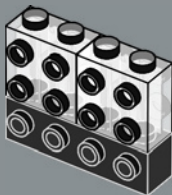




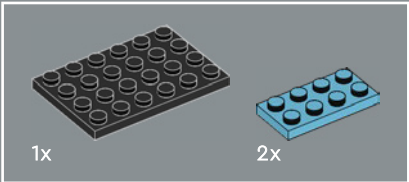
123



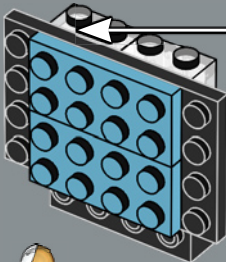
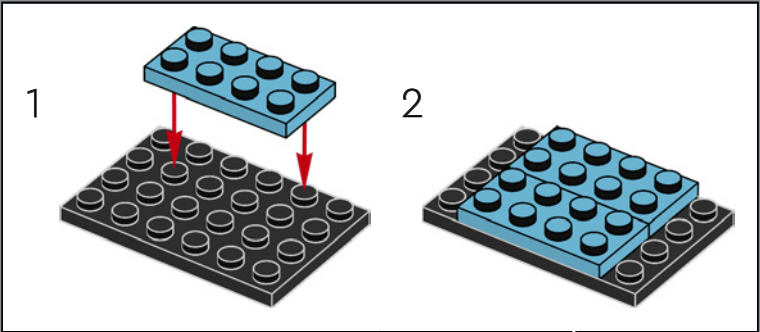
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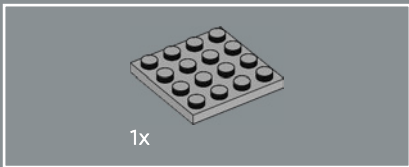


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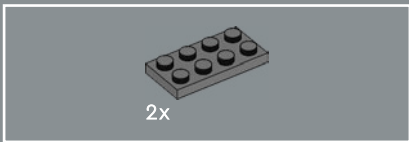
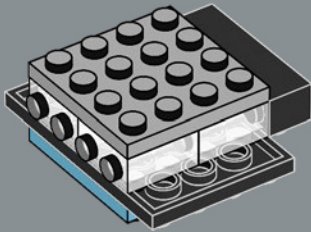


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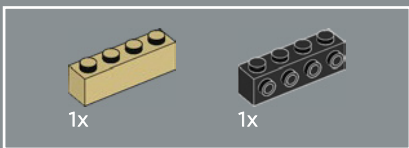
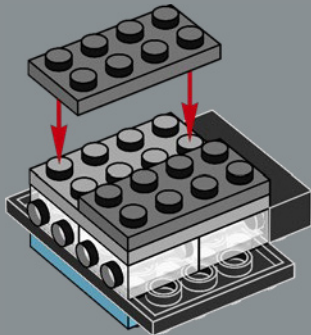




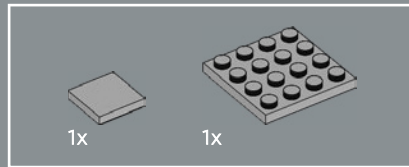
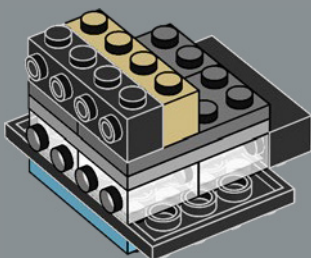
127



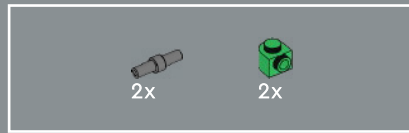
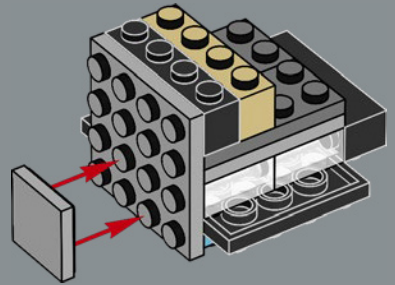
128



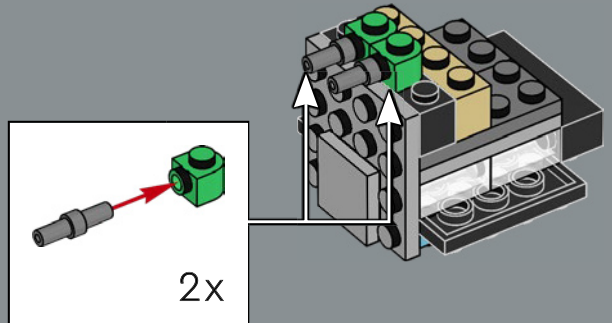
129



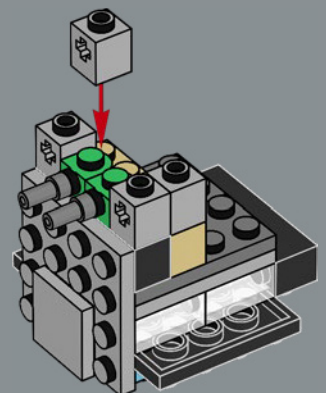
130



131

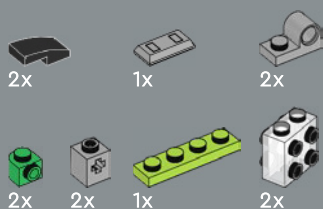
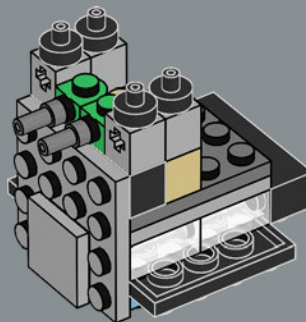


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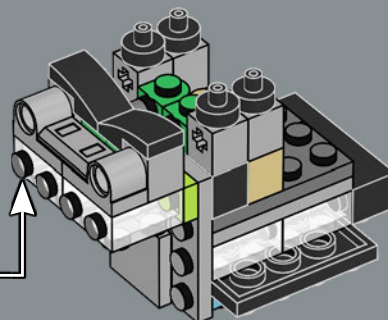
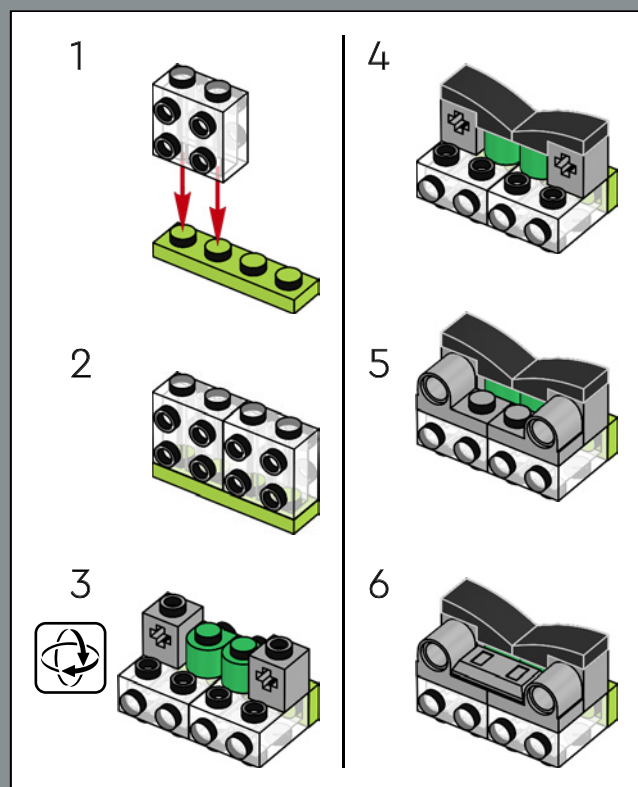


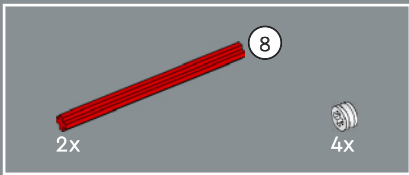
4x

133

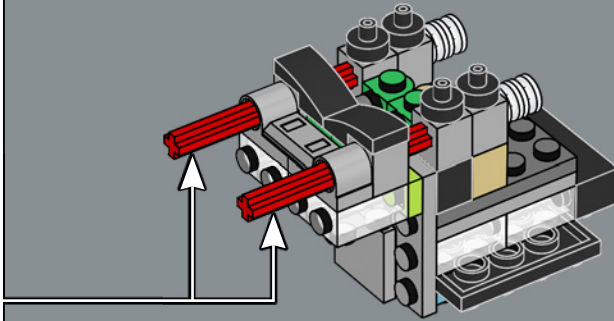
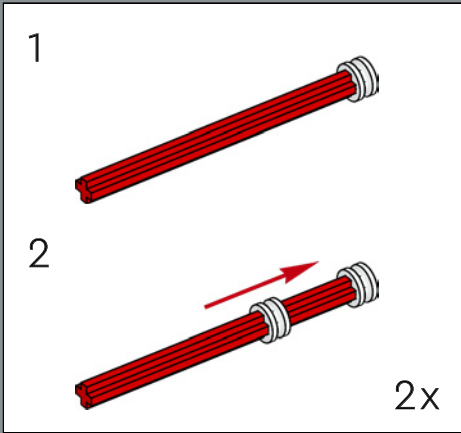


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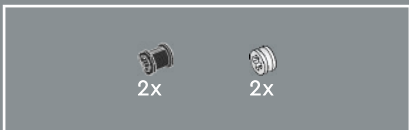
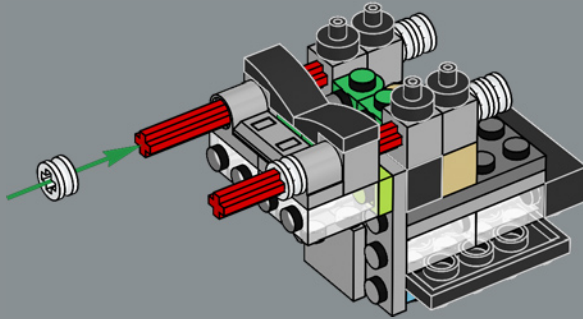




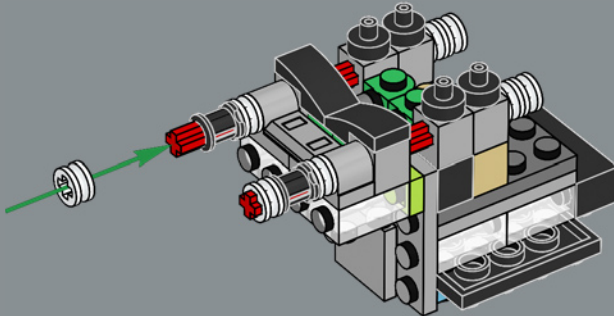
135



136



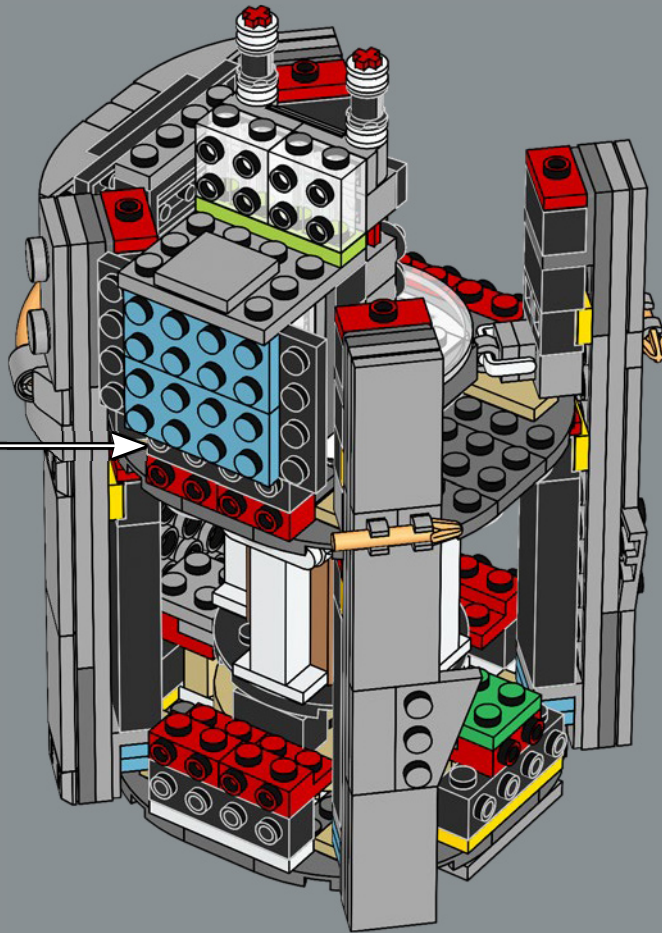
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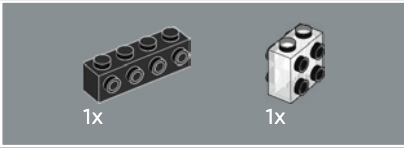
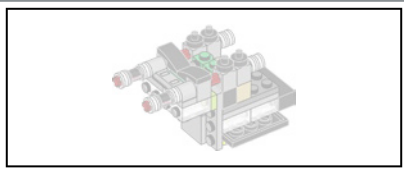


Orbitant à environ 483 km au-dessus de la Terre,
Hubble file en moyenne à 27 000 km/h.

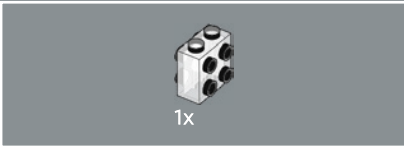
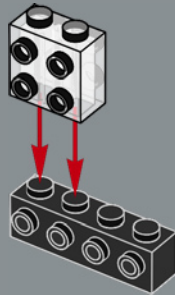


138

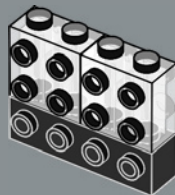




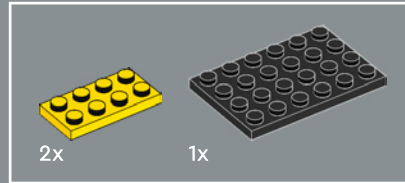
139



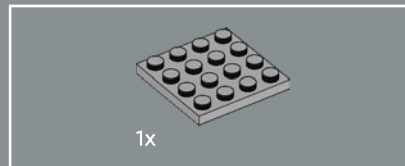
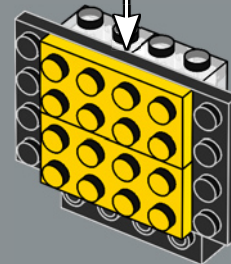
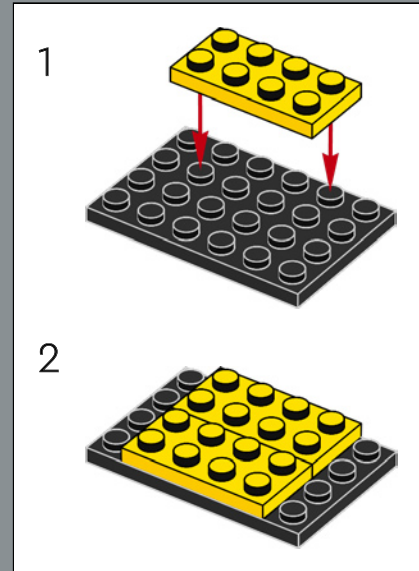
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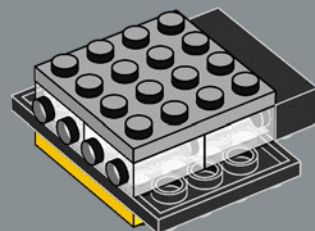
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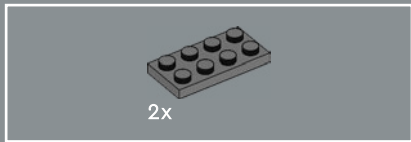


142

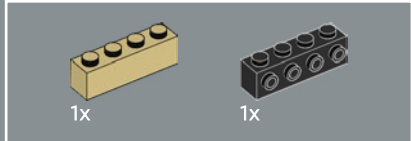
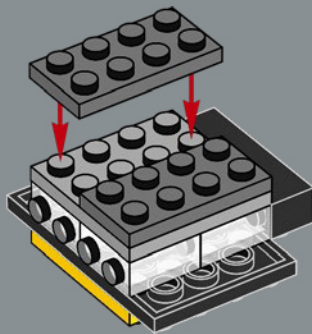


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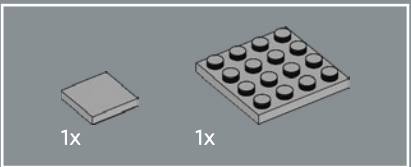
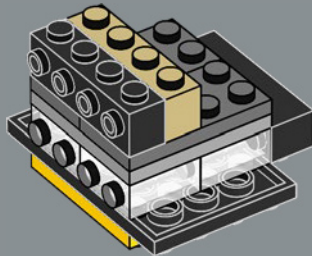




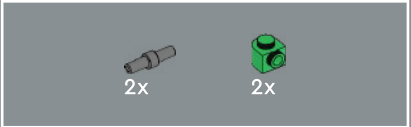
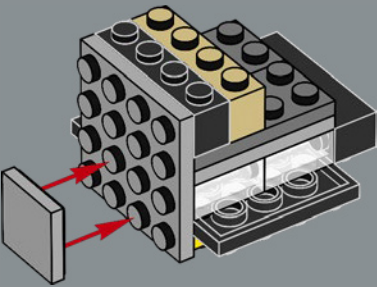
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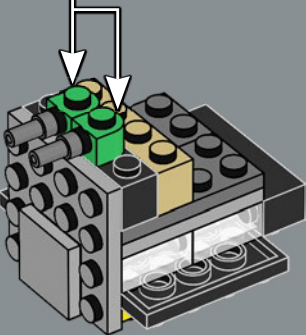
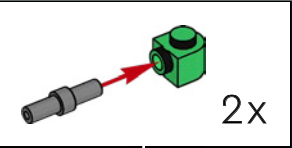
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146



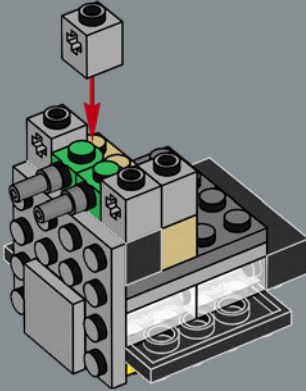
147





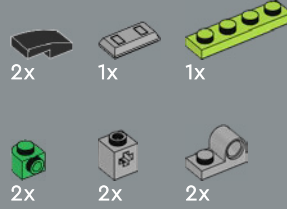
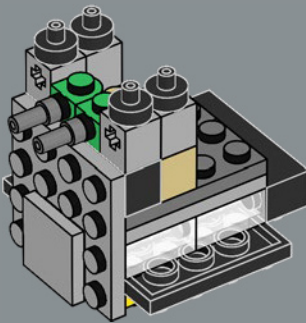
4x

148



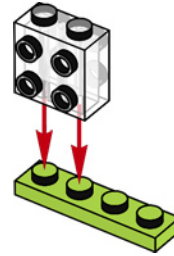
4x

149

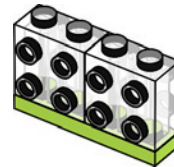


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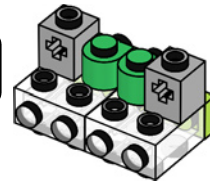
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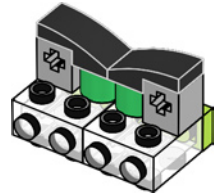
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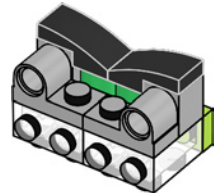
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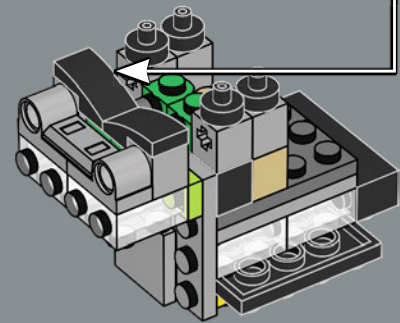
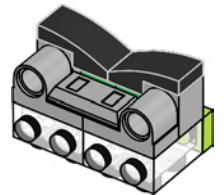
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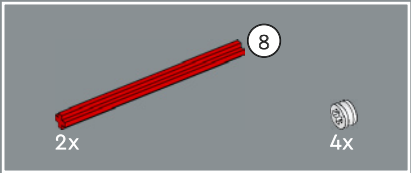


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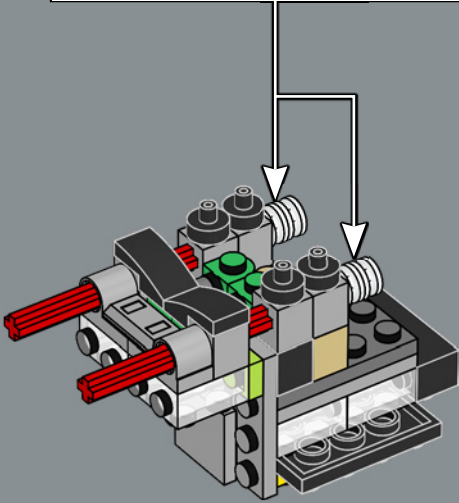
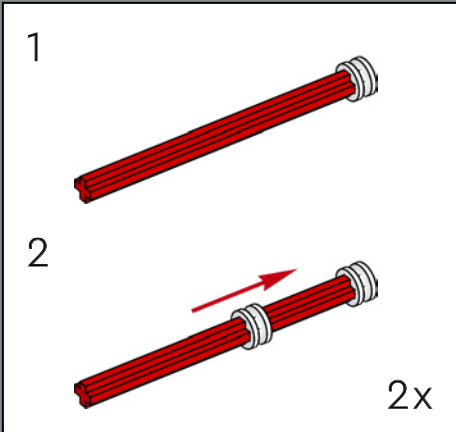


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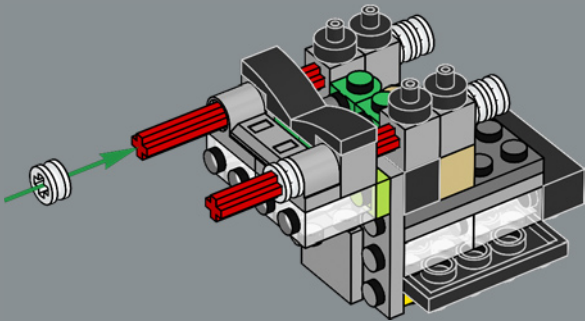




151



152



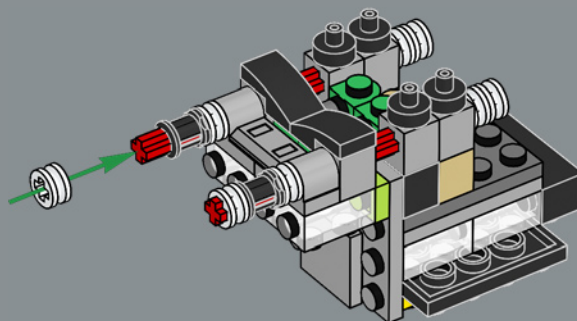


2x

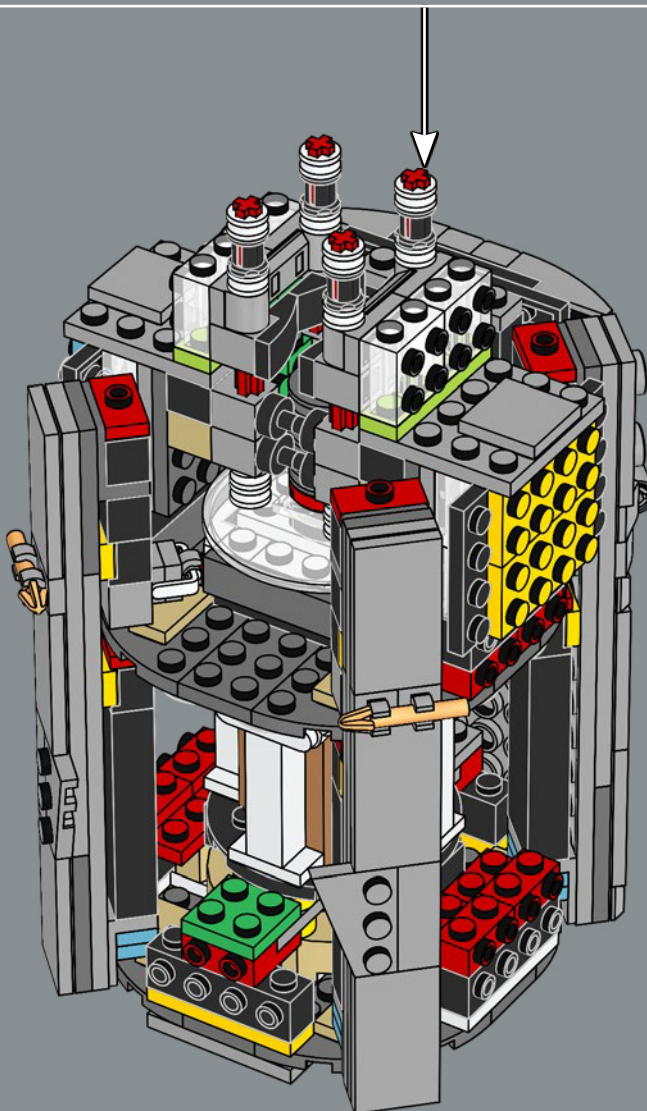


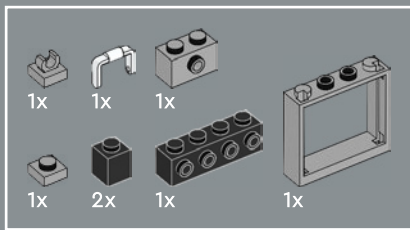
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153

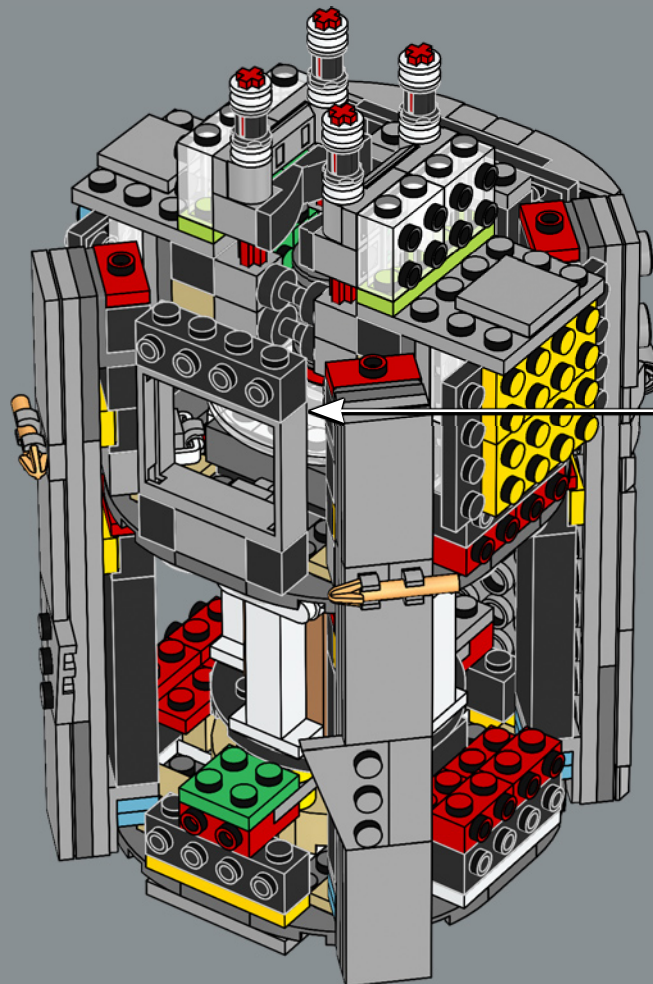
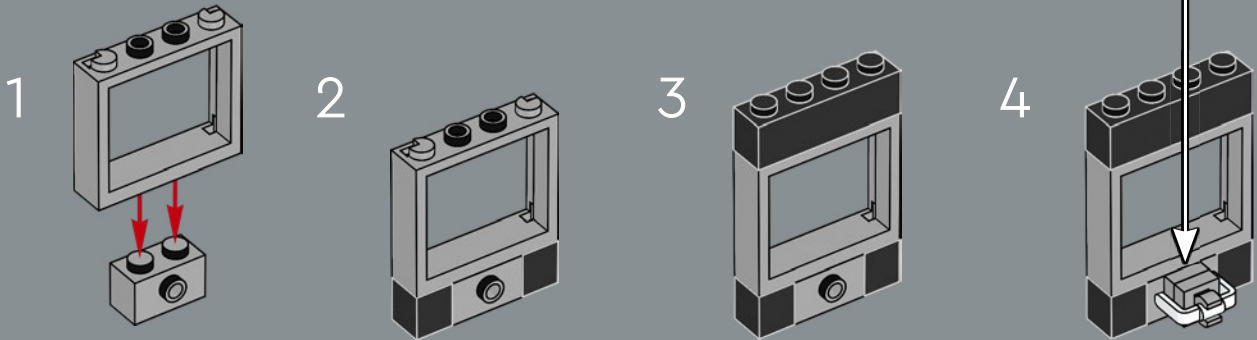
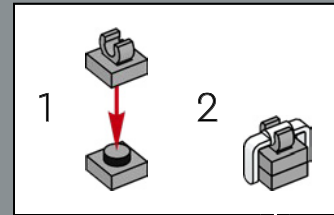


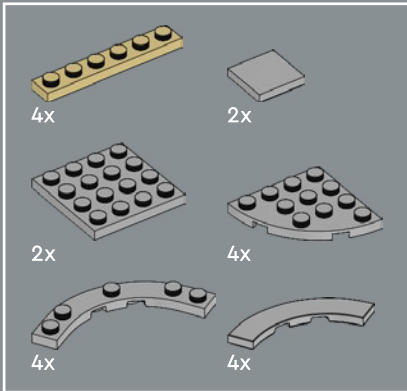
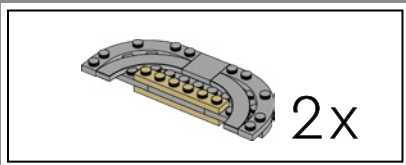
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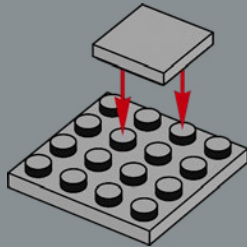
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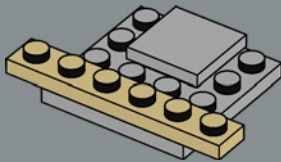


156

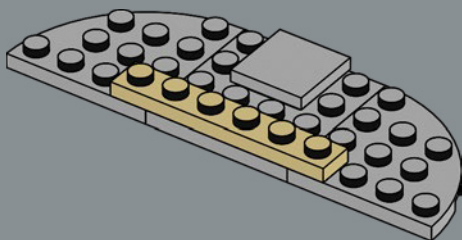
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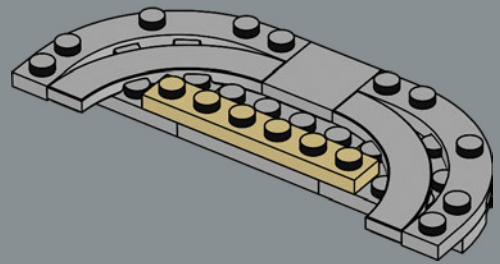
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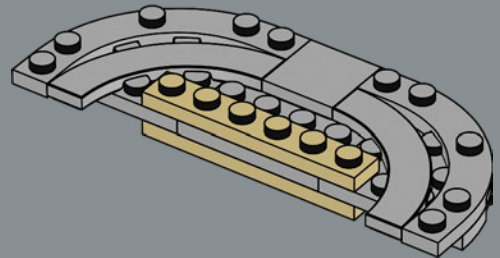
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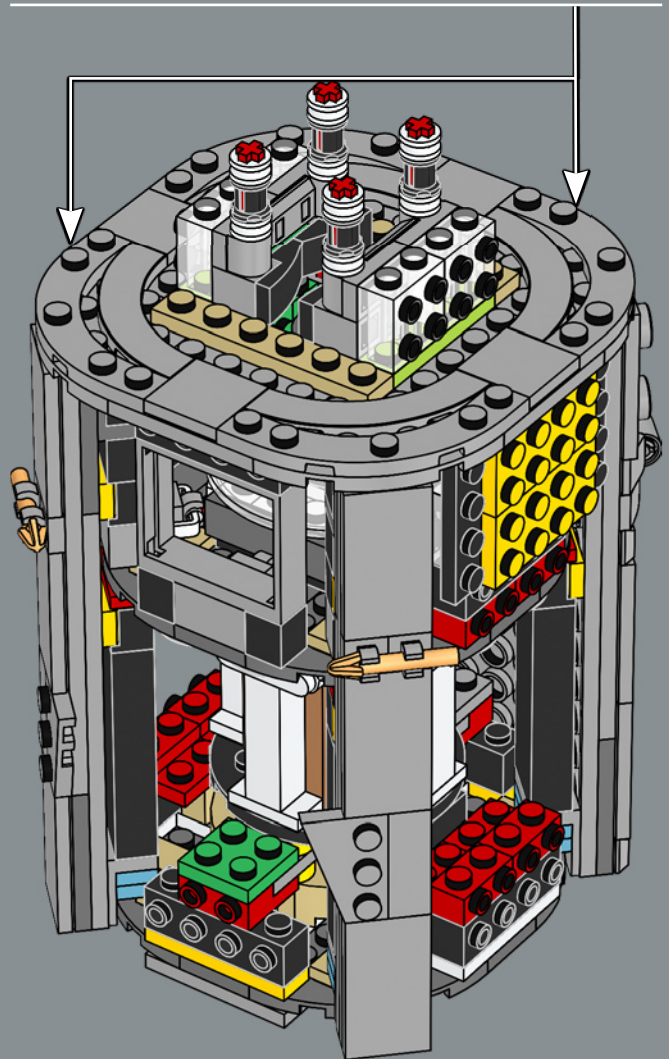
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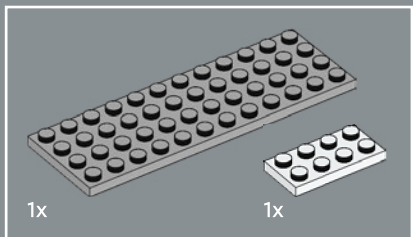
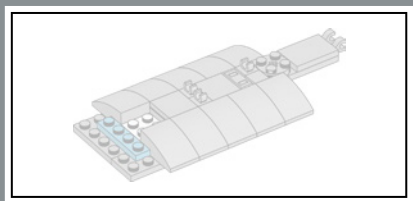


5

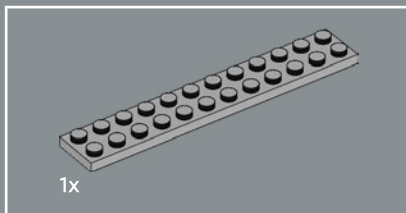
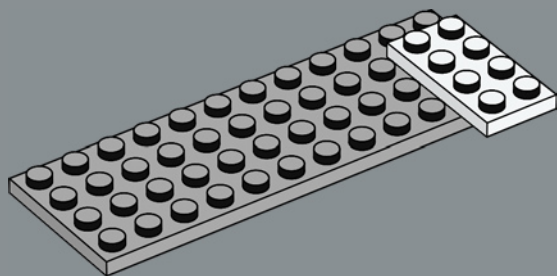


2x

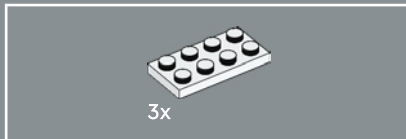
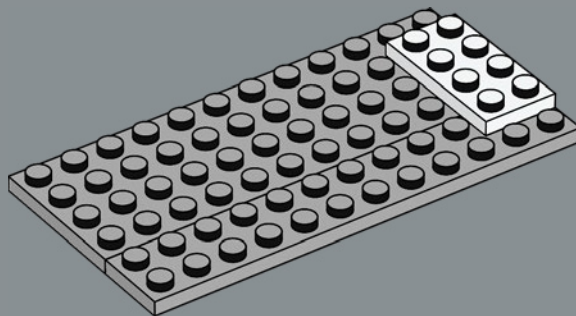




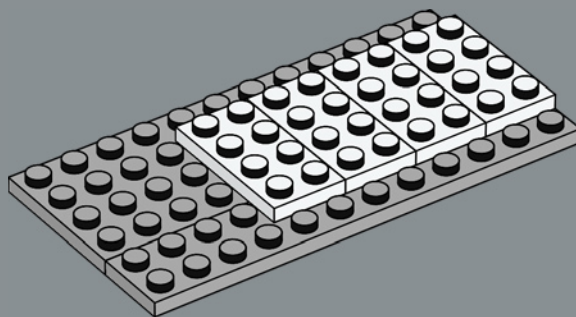
157

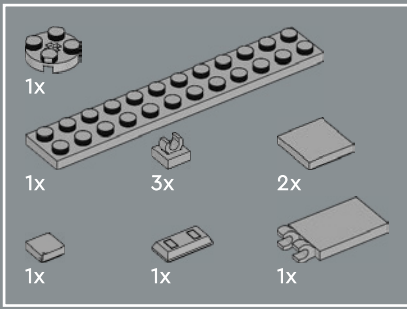


158

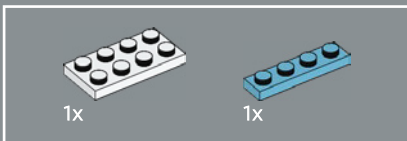
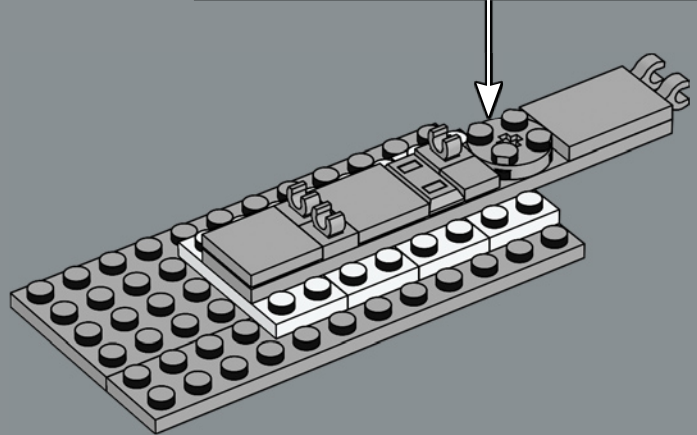
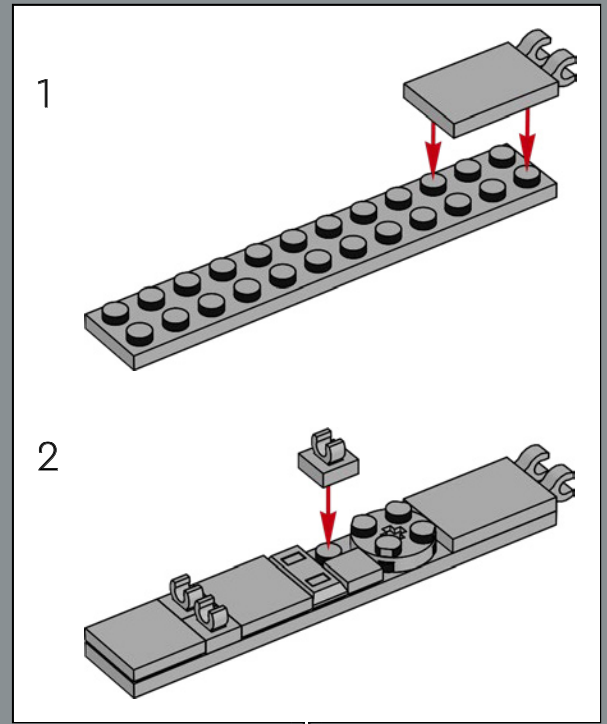


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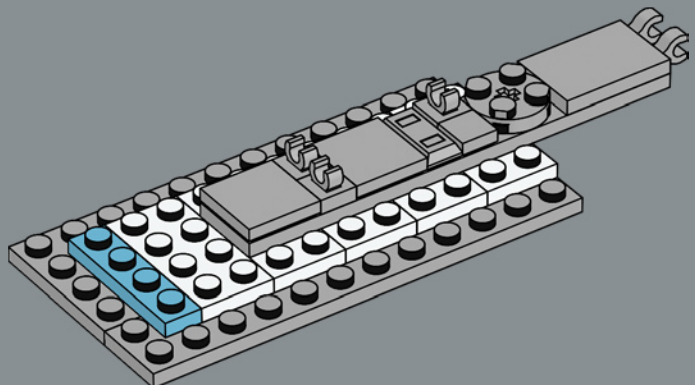


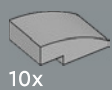


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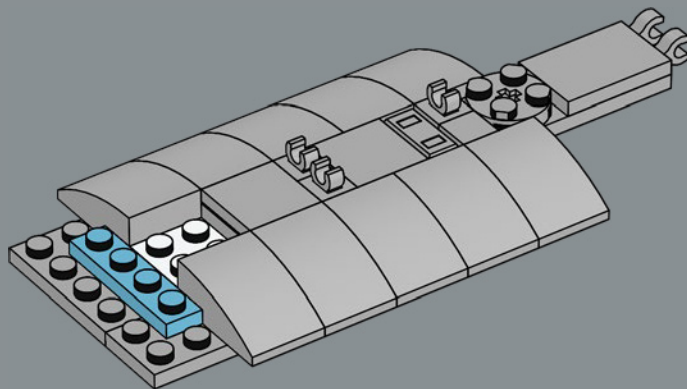
161



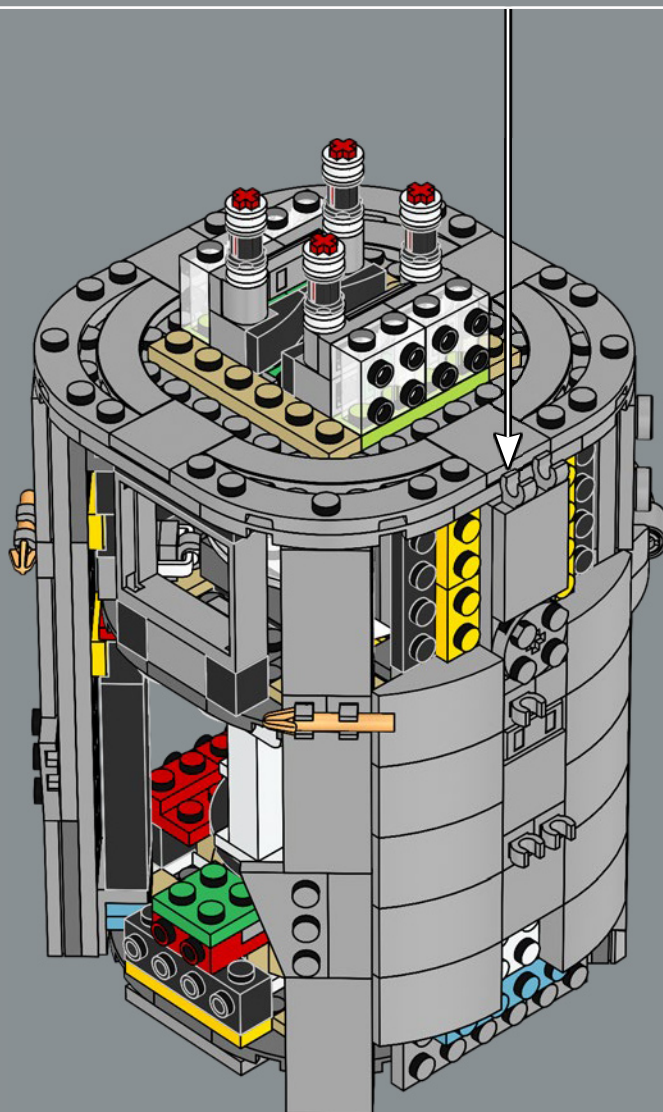


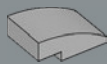
10x

162



163



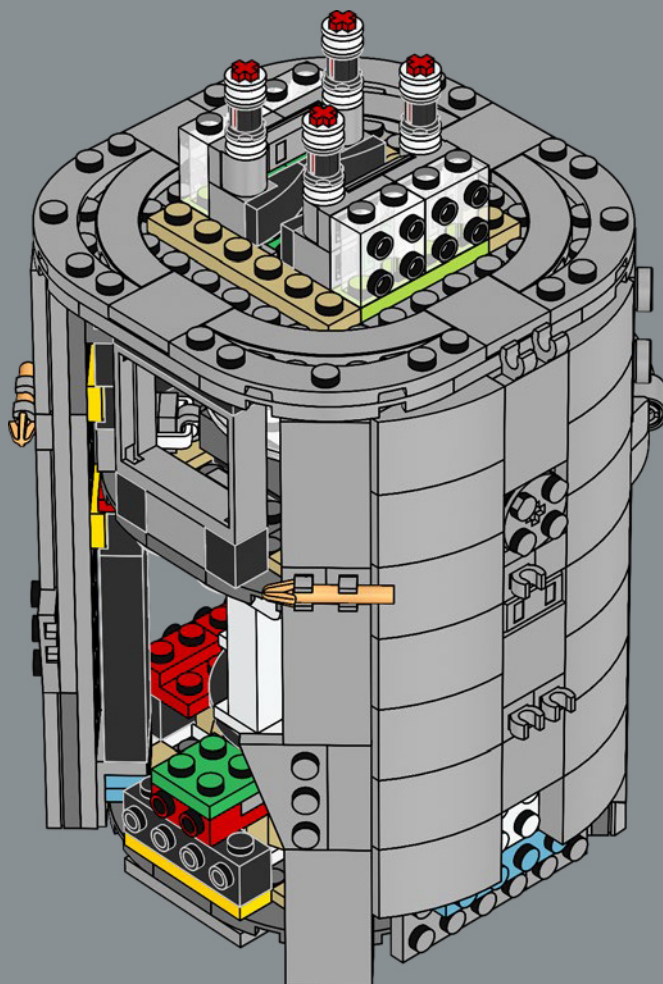


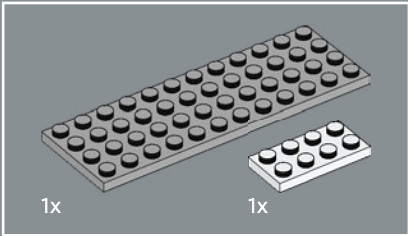
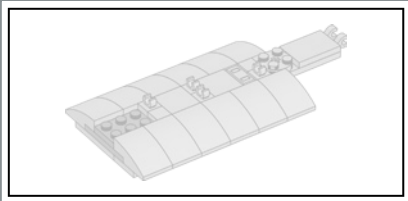
4x

Avec plus de 184 000 orbites terrestres à son actif,
il a parcouru plus de 8 milliards de kilomètres.

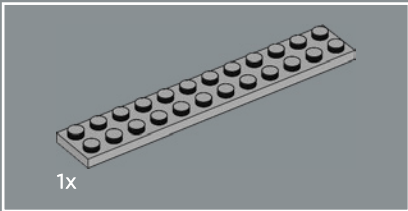
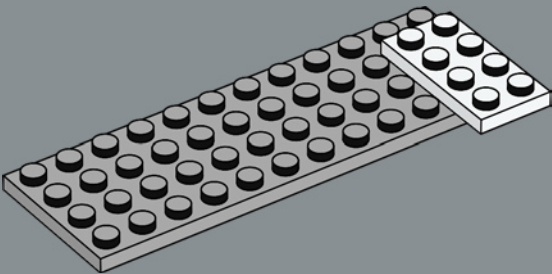


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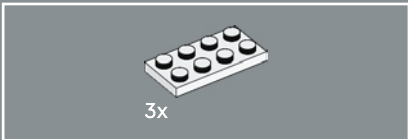
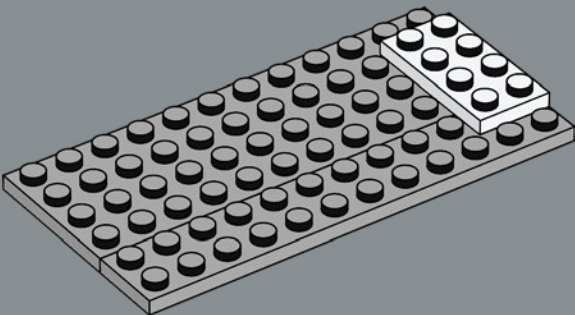




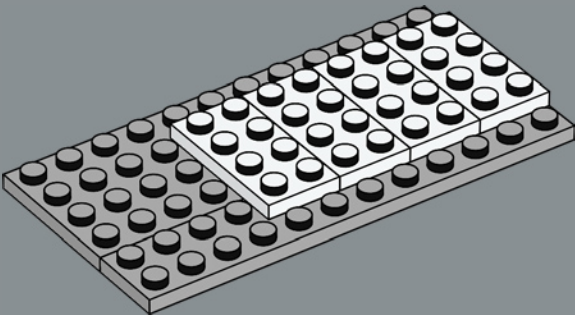
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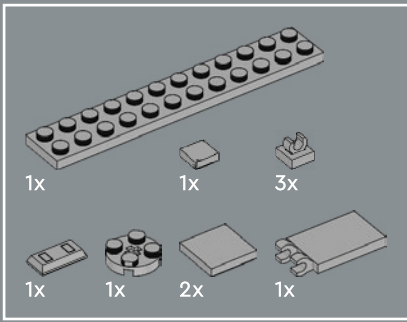


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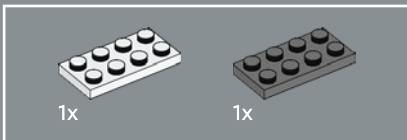
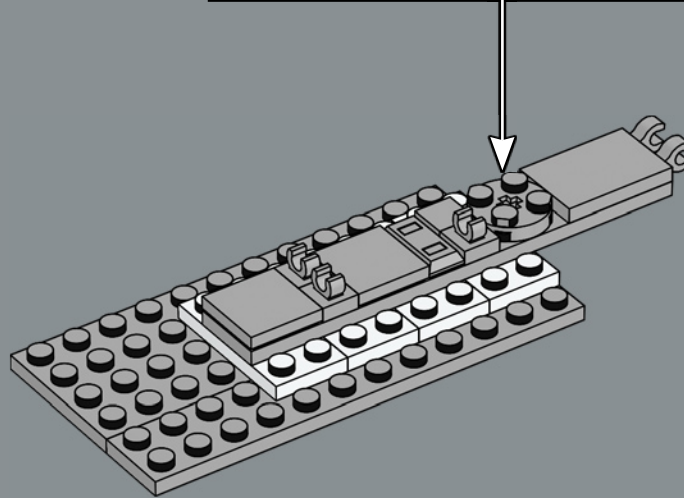
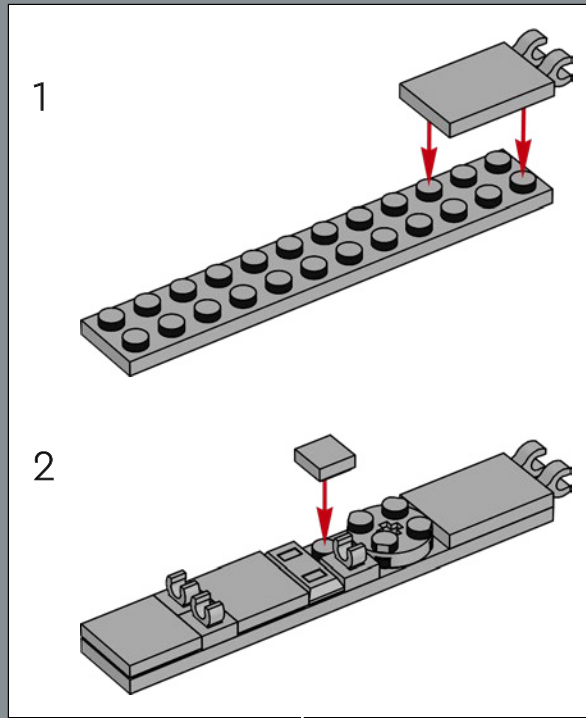


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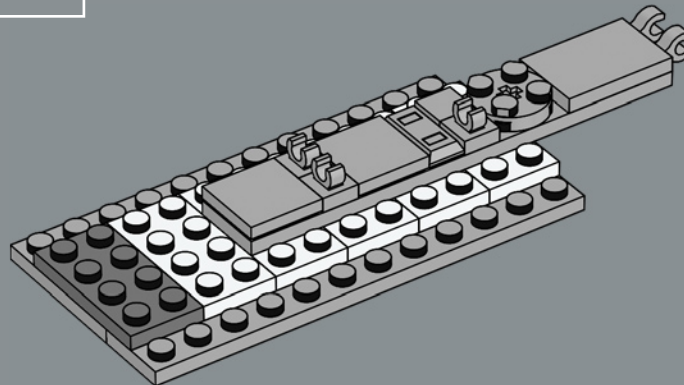




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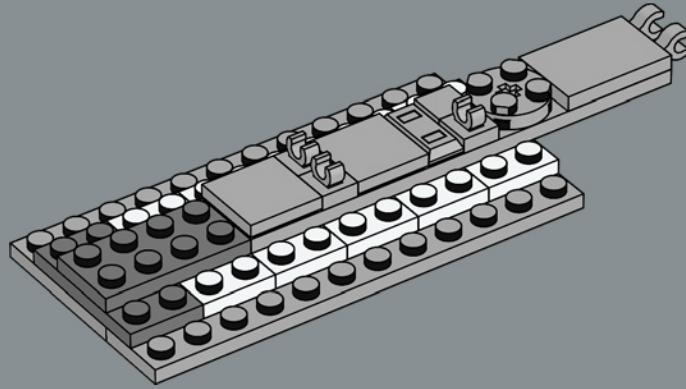
169





1x

170

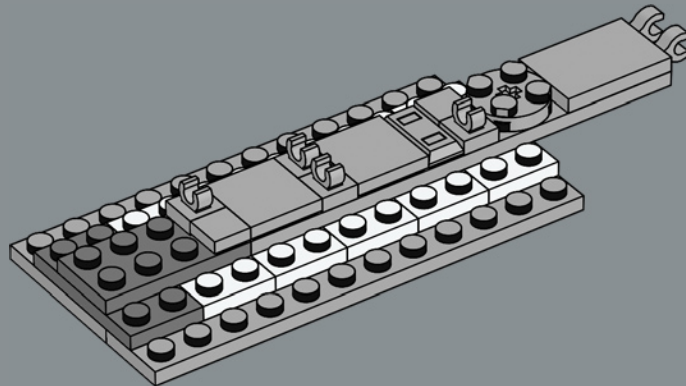


1x



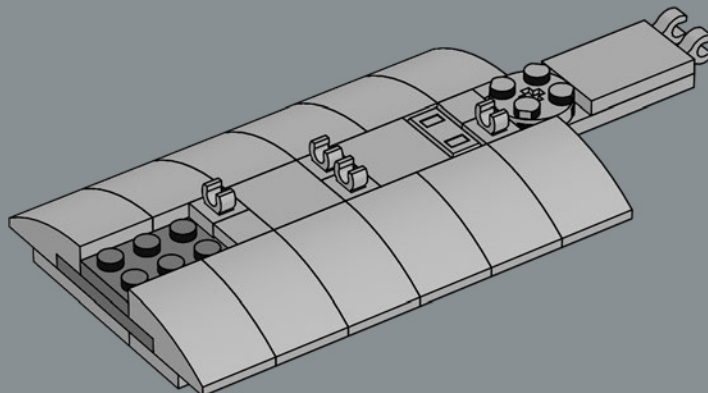
1x

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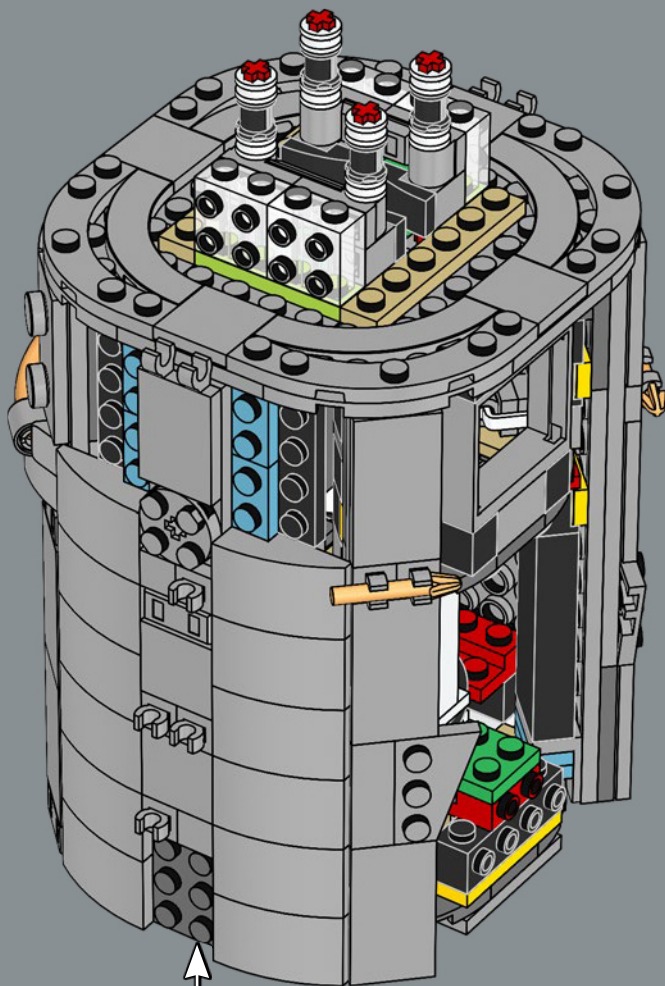


12x

172



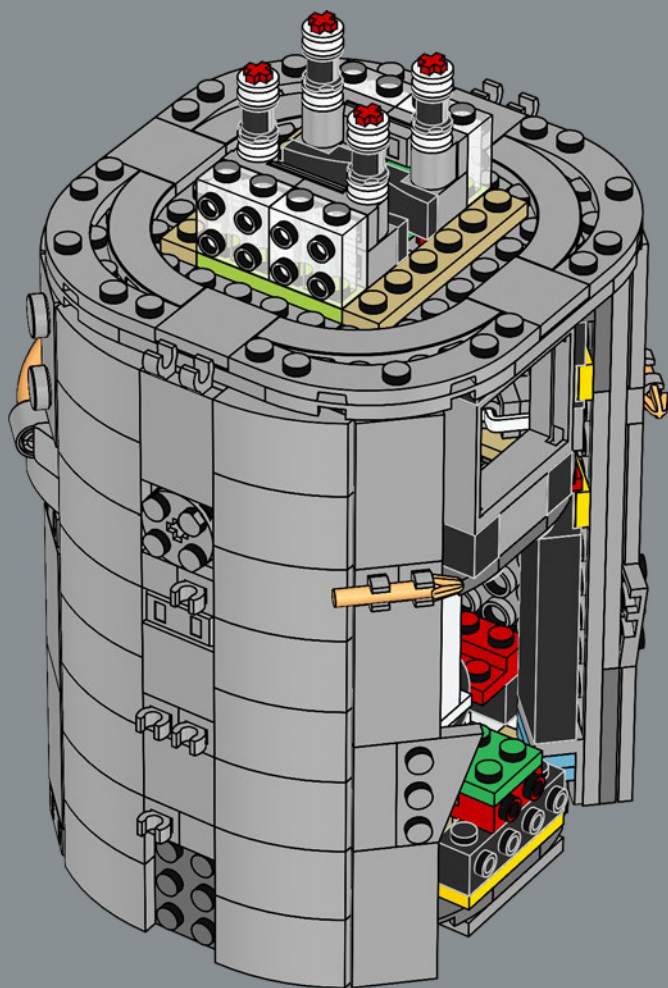
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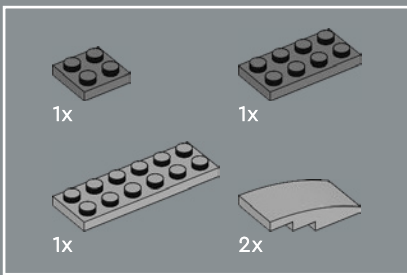




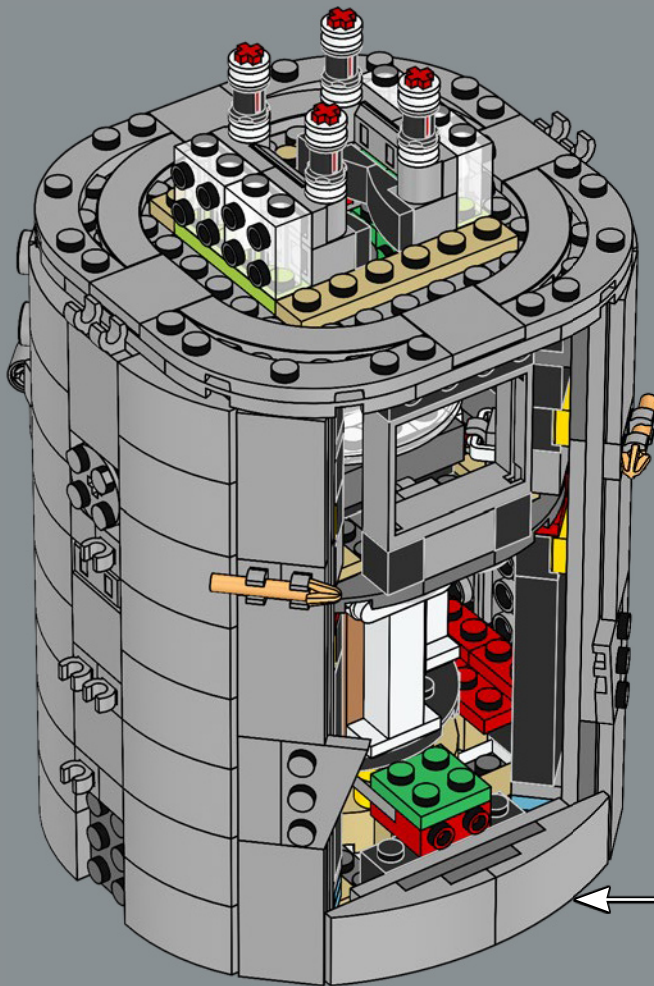
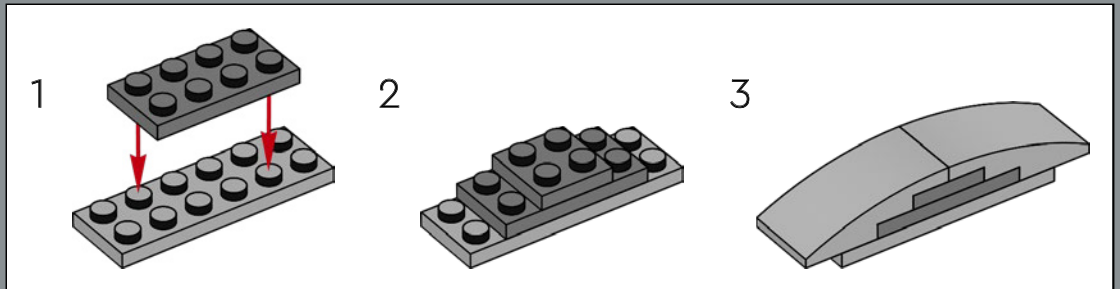
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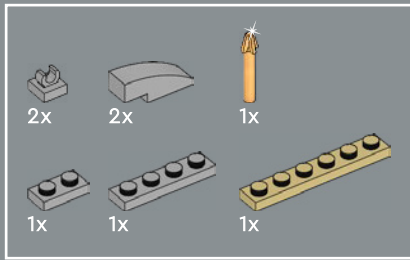
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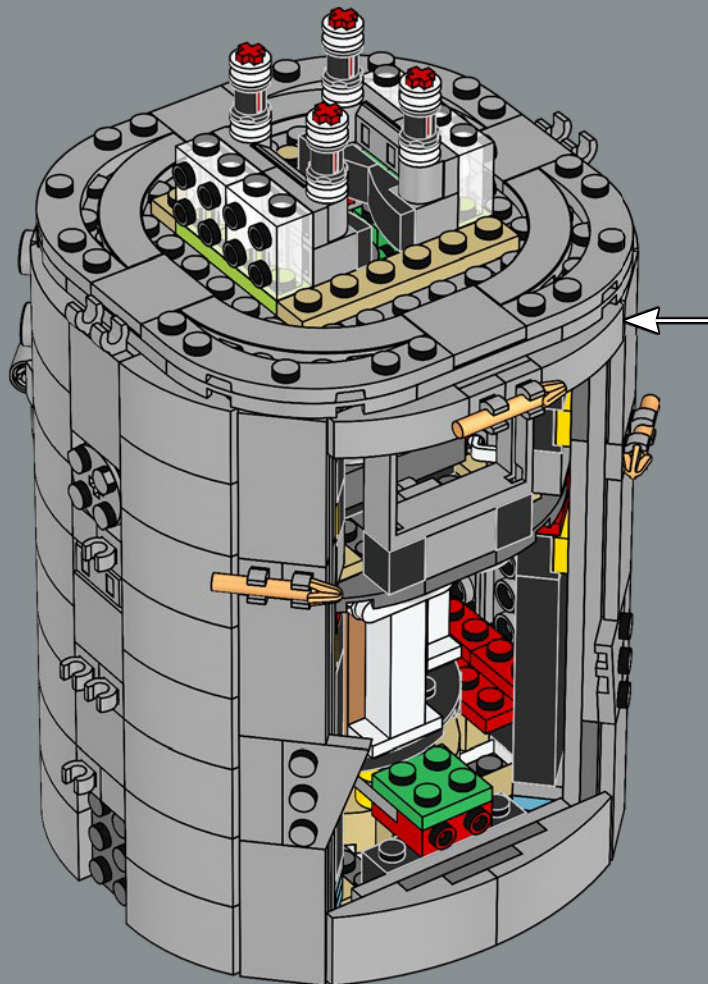
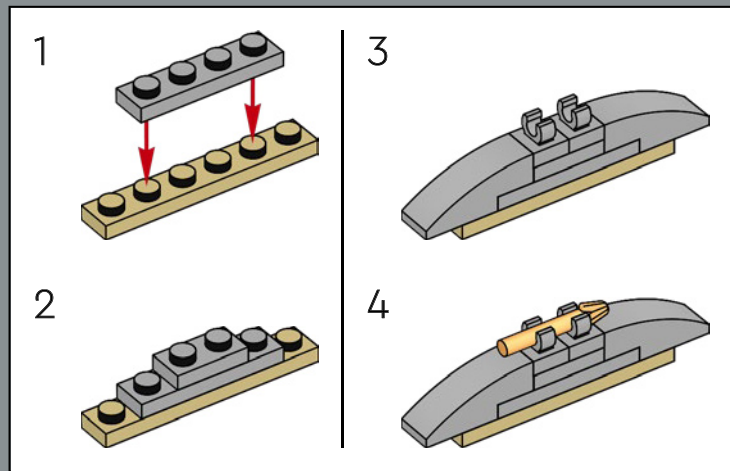


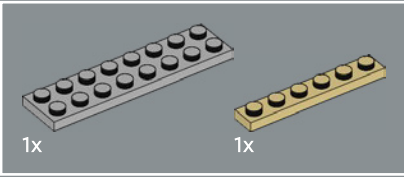
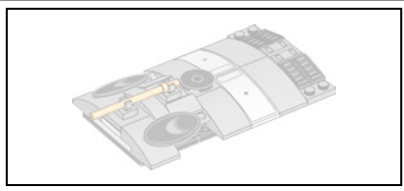
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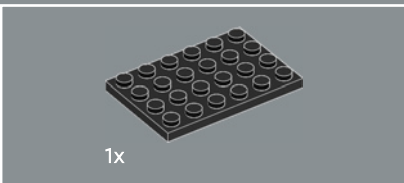
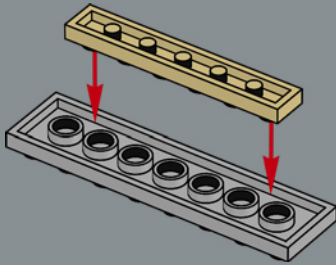


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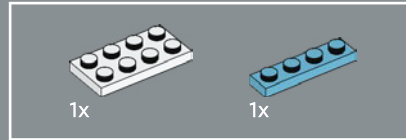
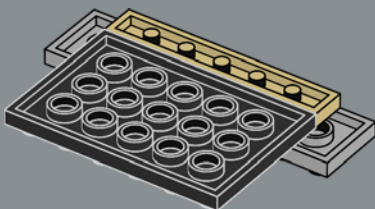




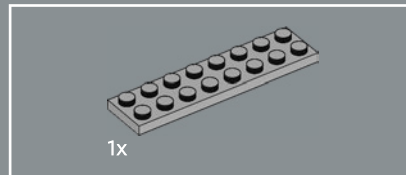
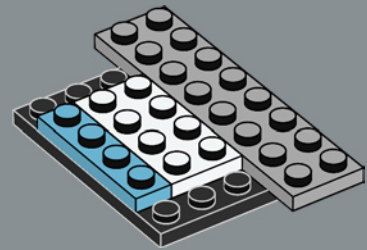
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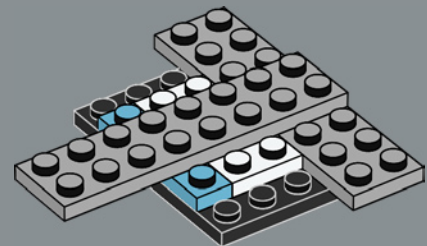
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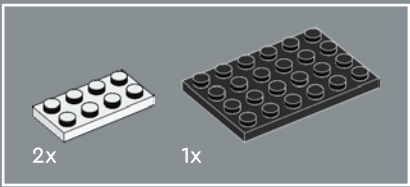


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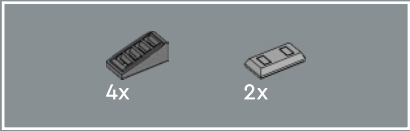
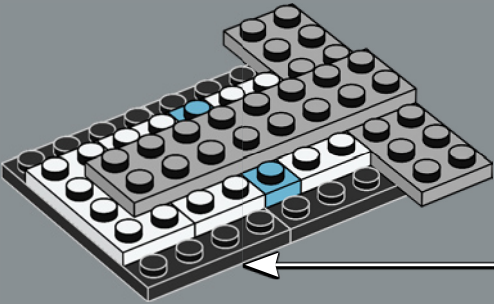
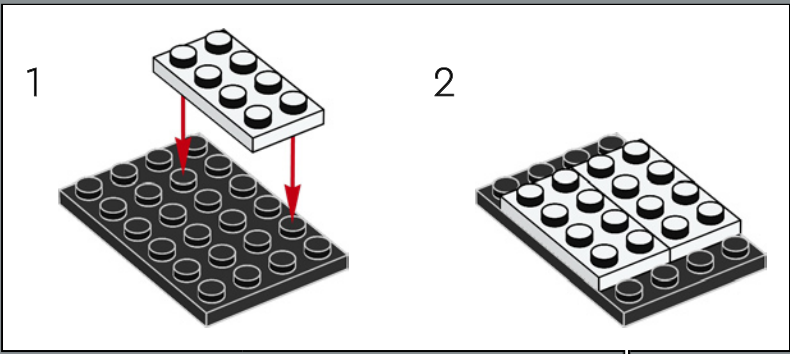


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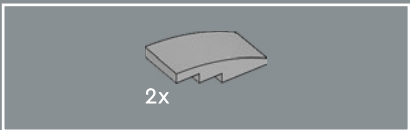
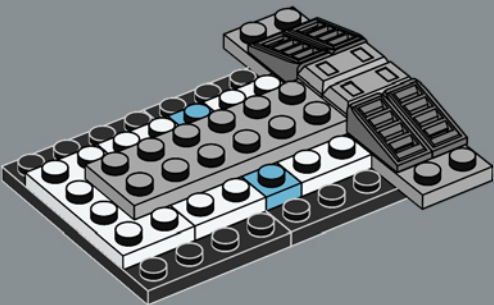




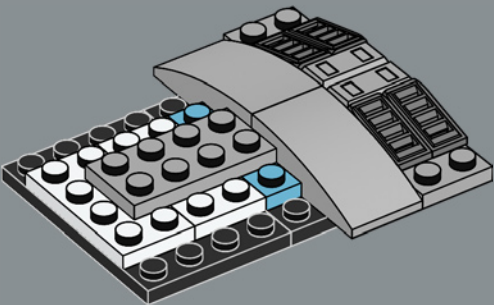
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182

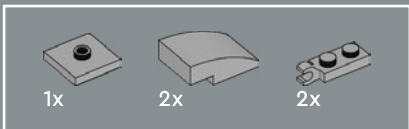
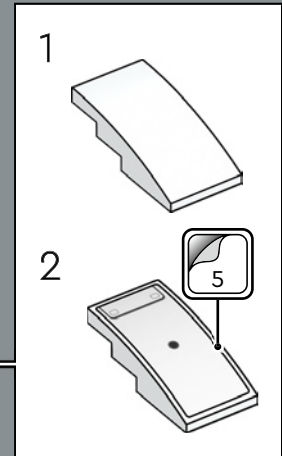
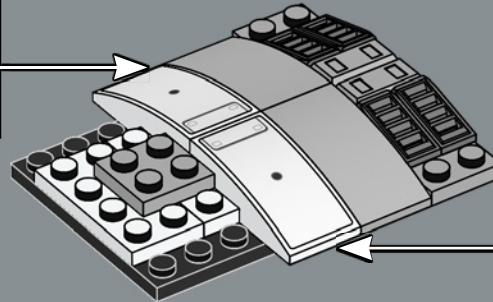
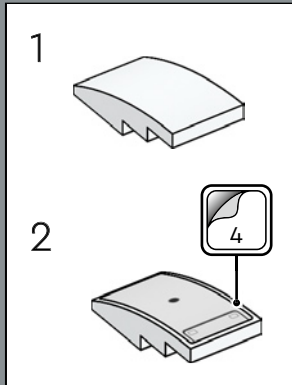


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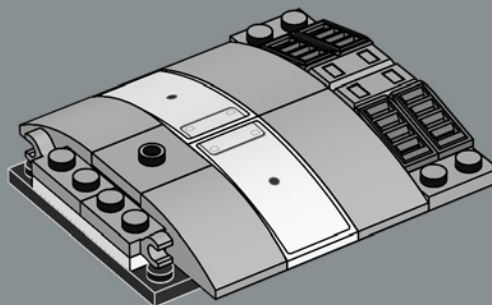


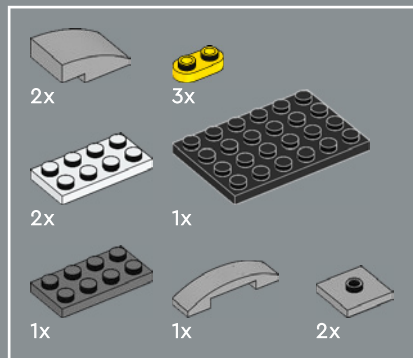


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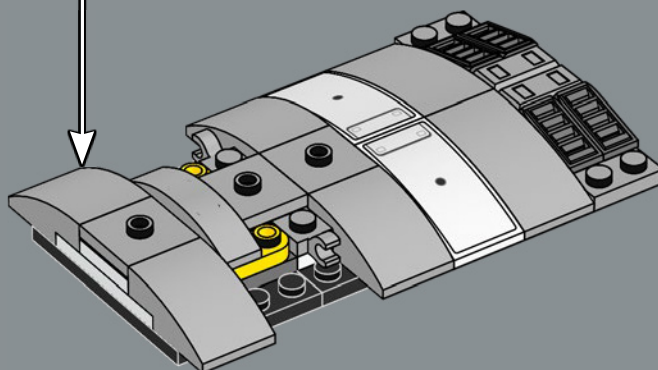
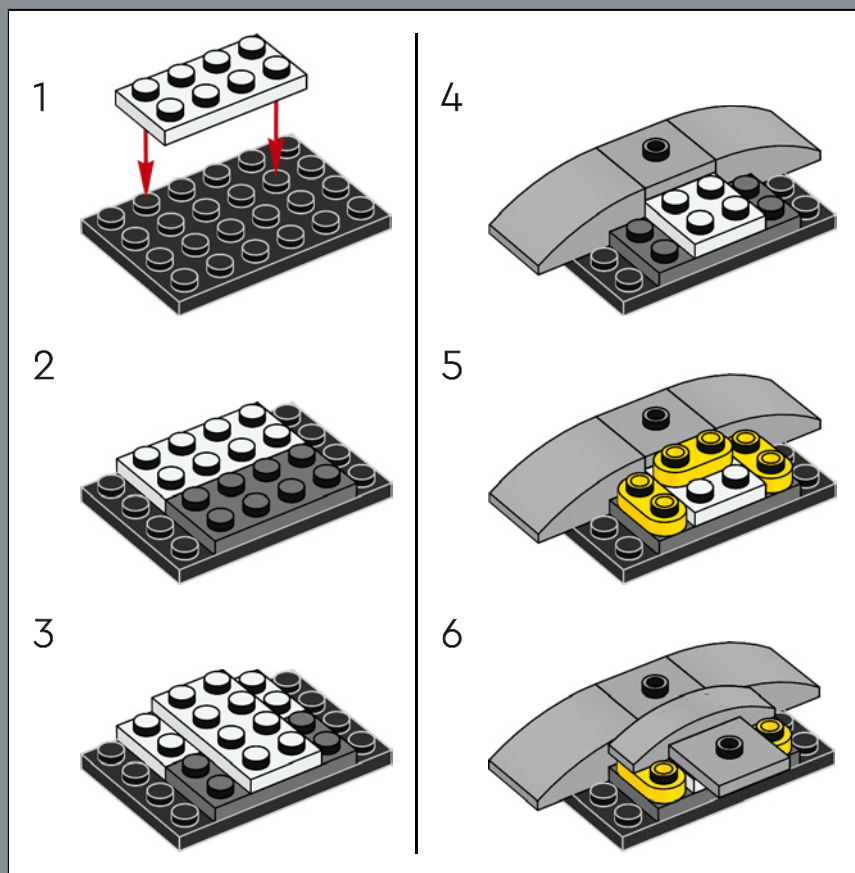


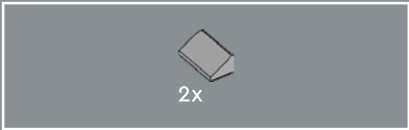
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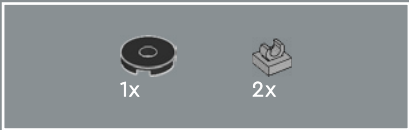
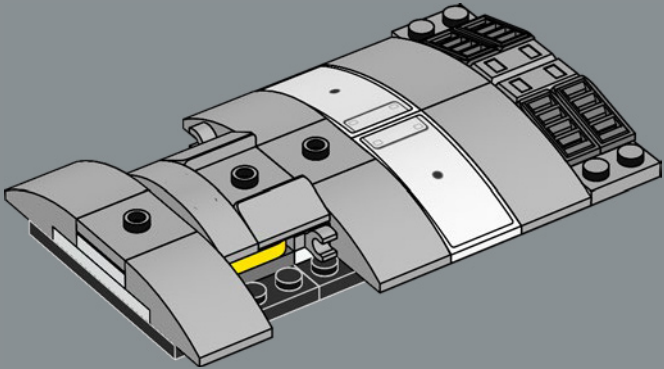


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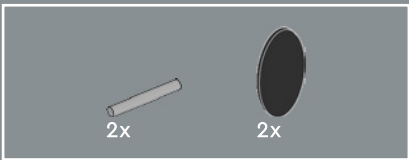
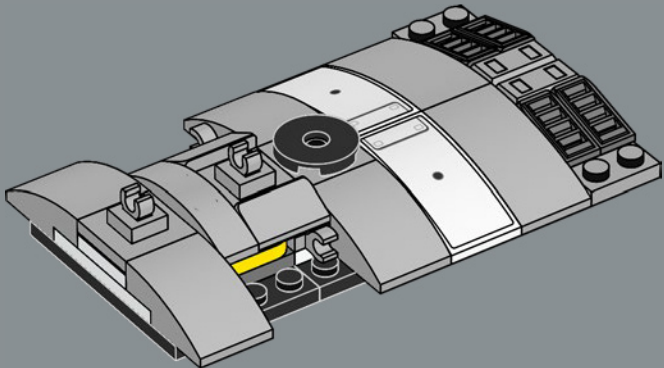




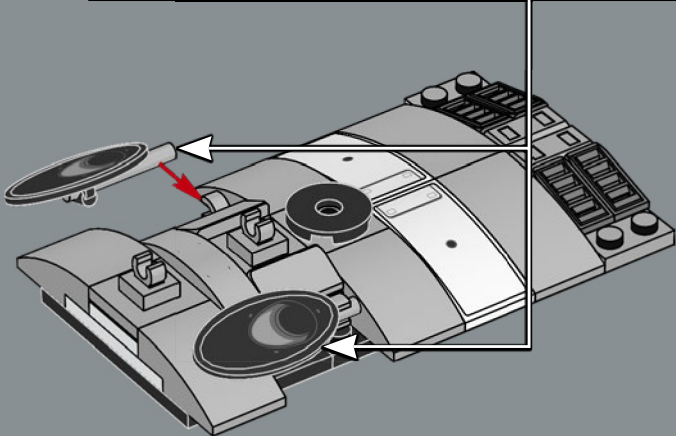
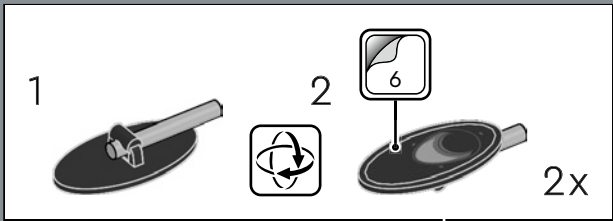
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188

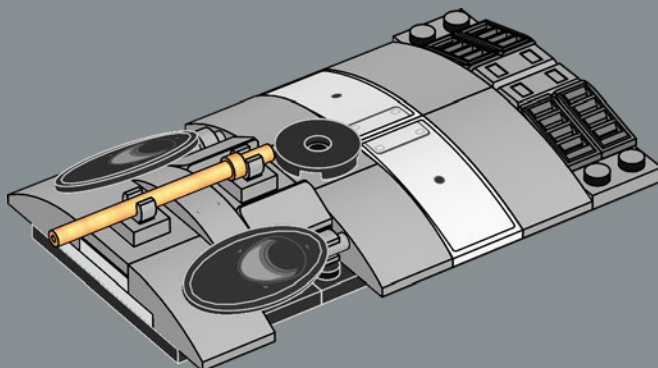


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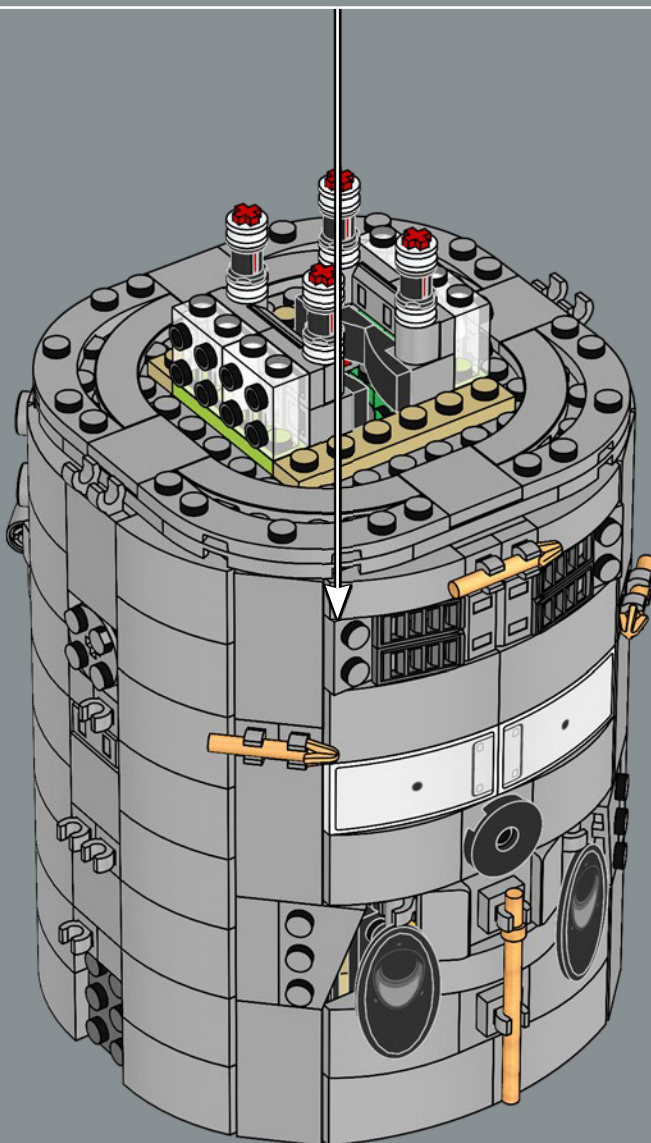


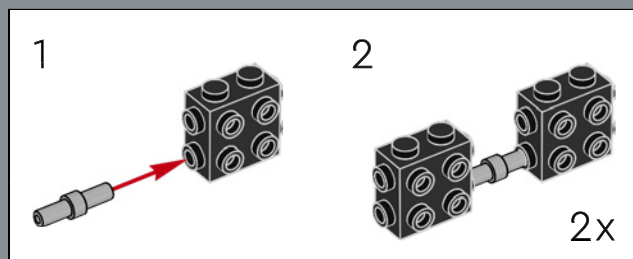
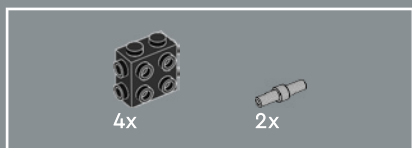


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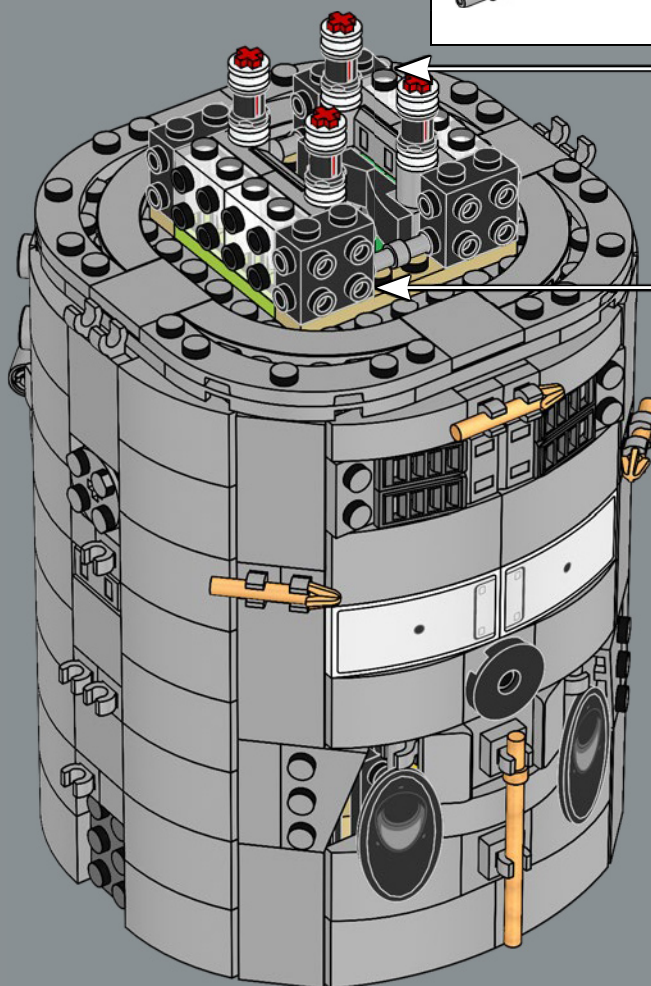


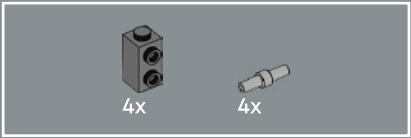
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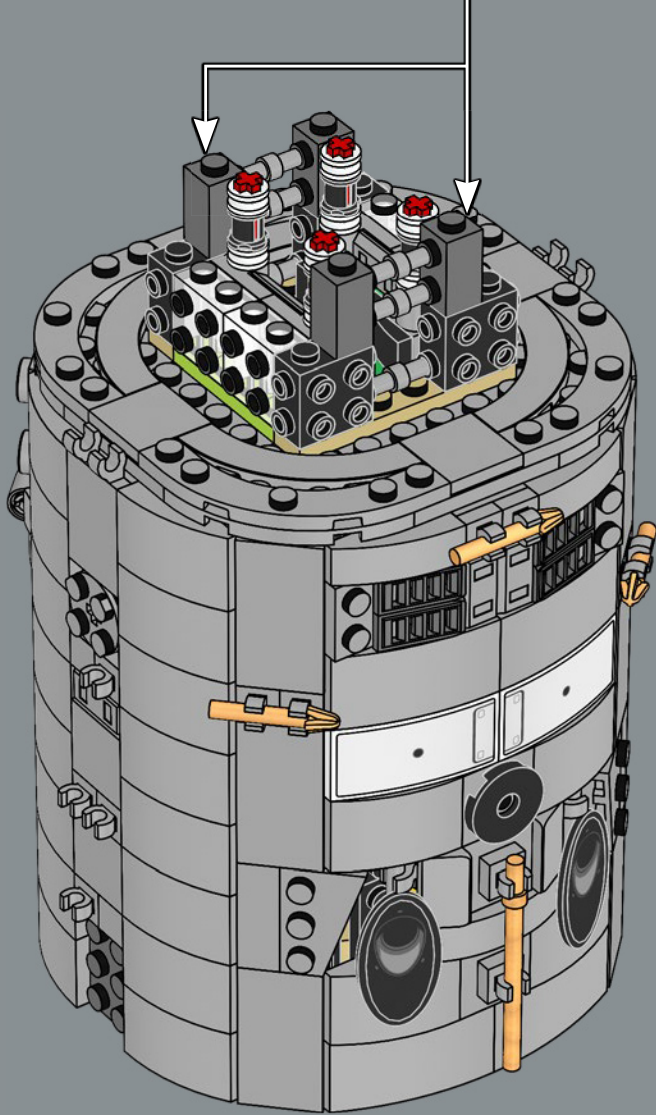
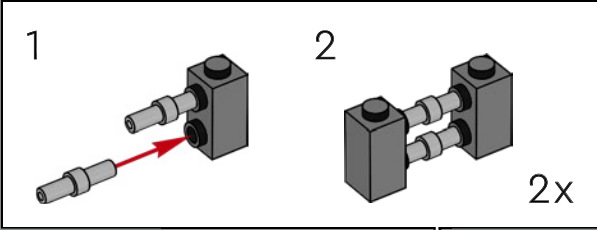


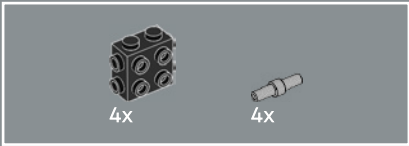
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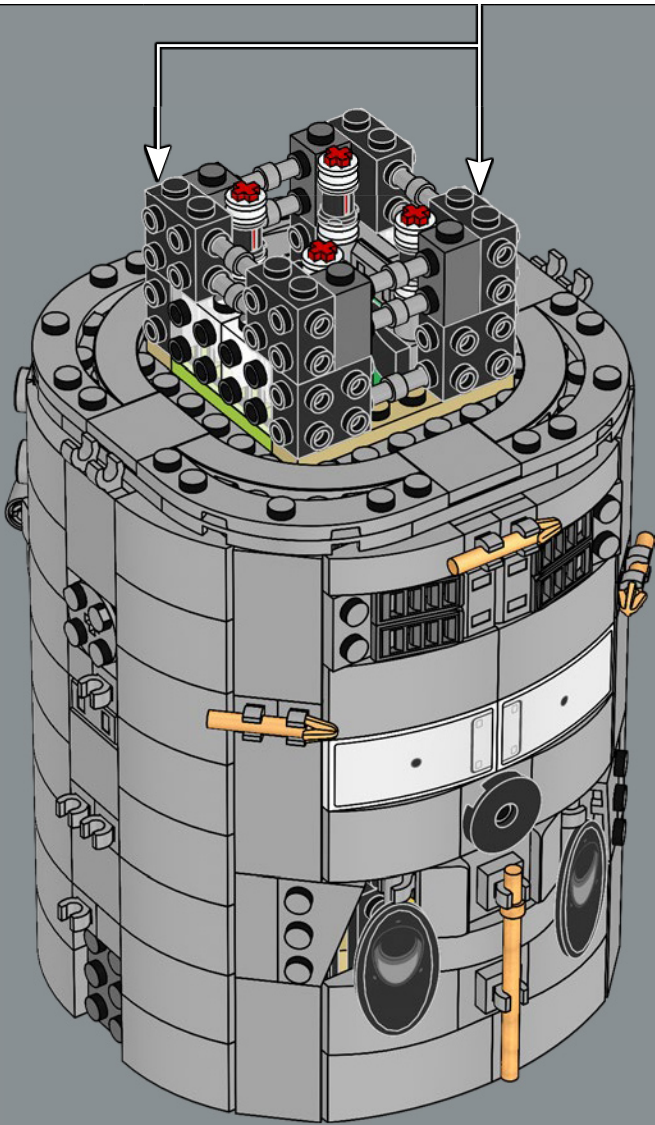
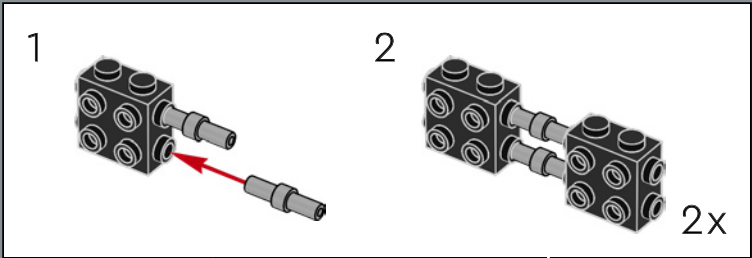


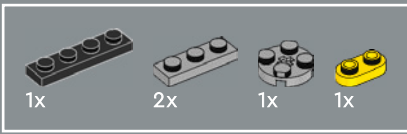
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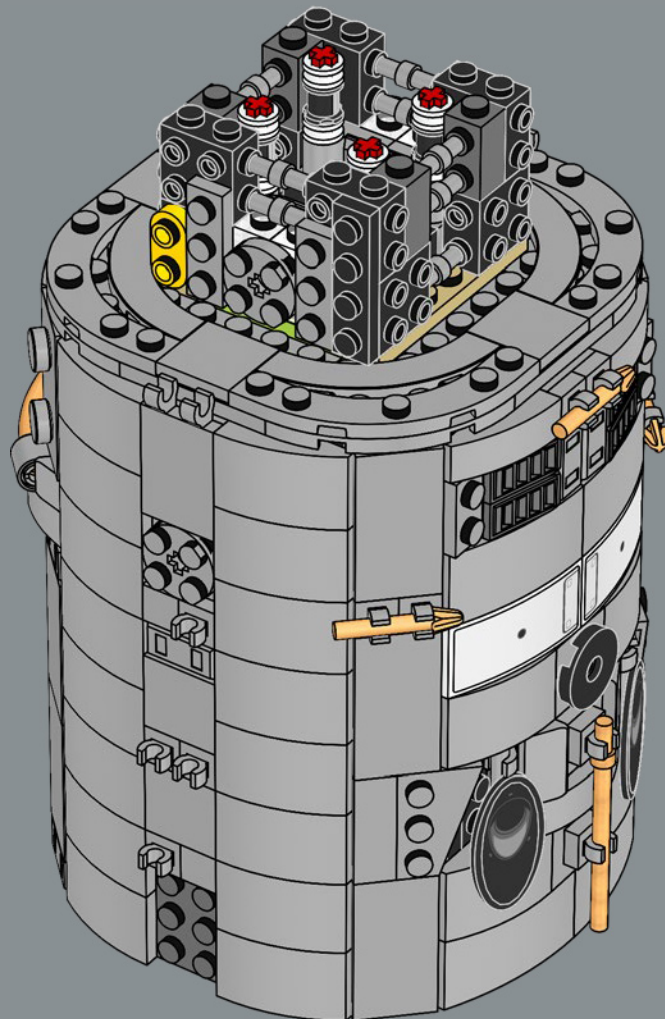


194





195



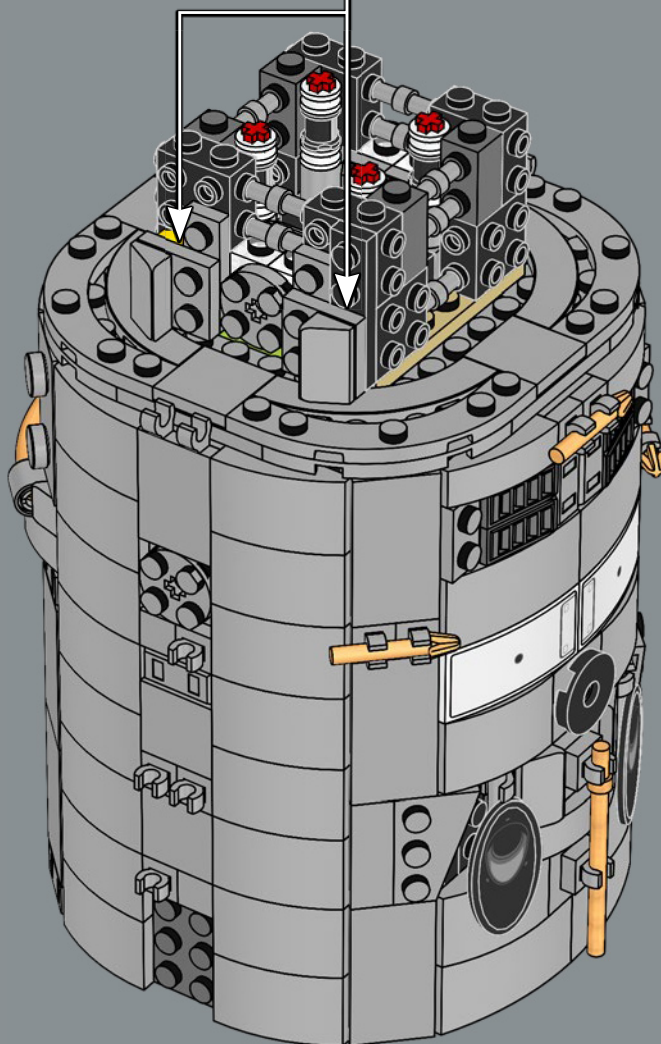
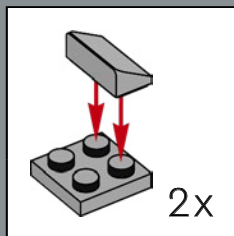


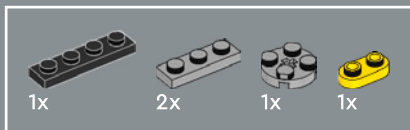
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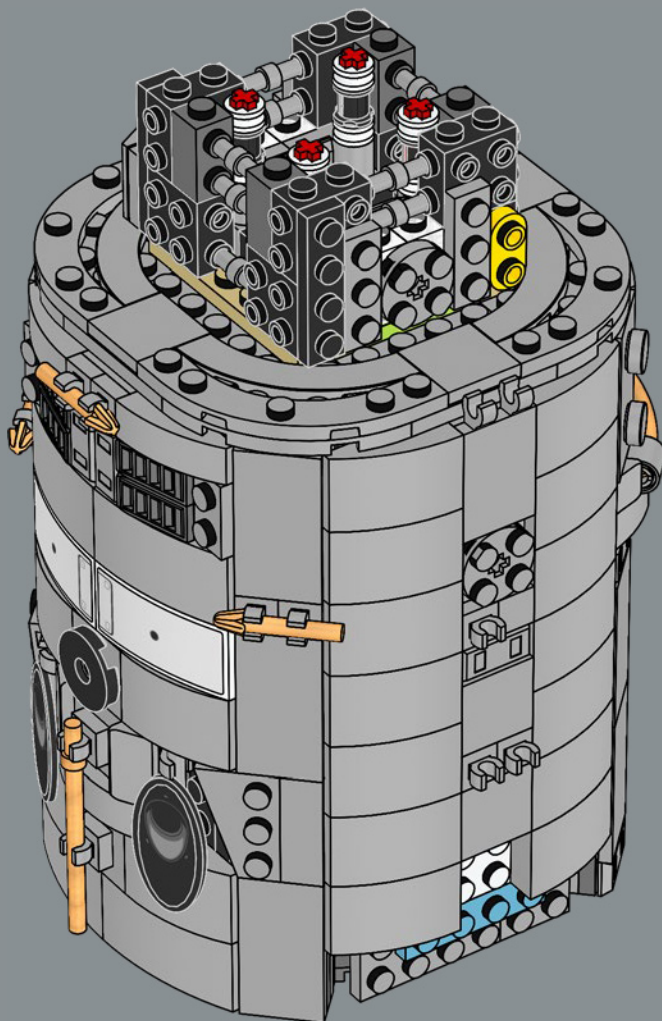
2x

196





197



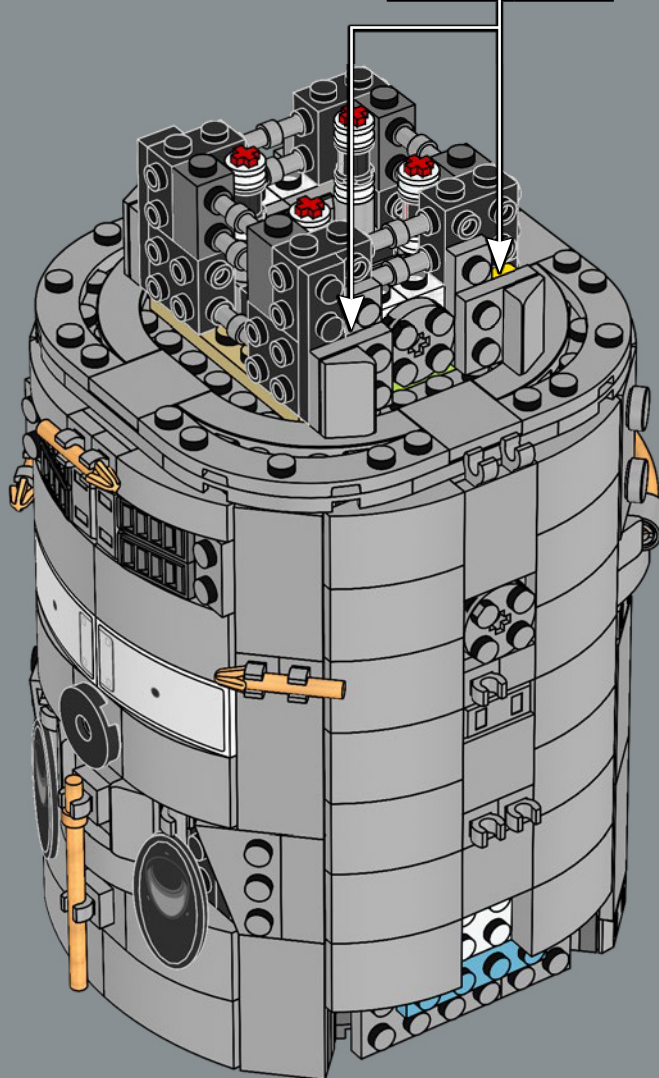
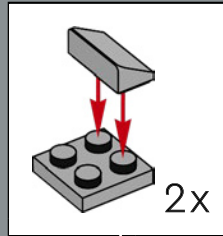


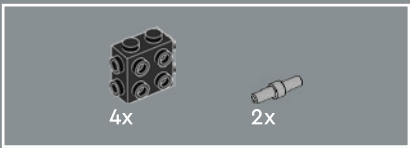
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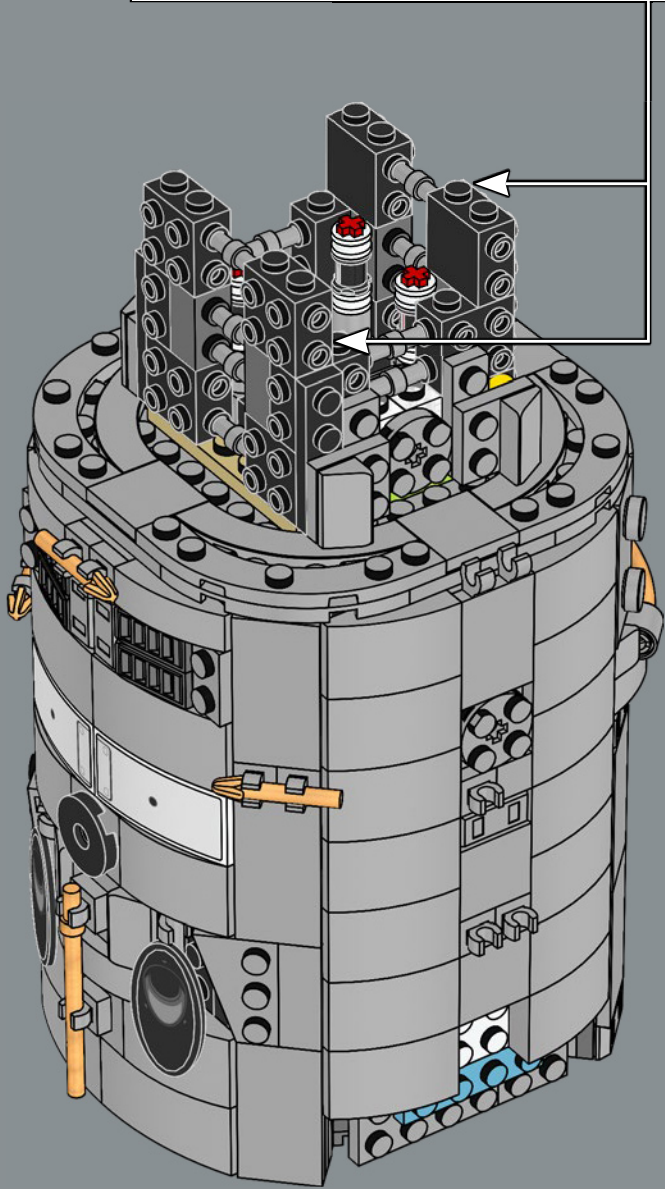
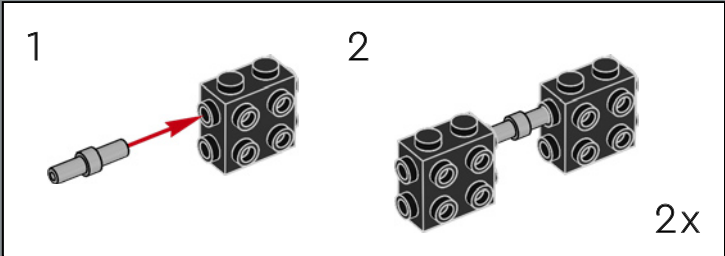
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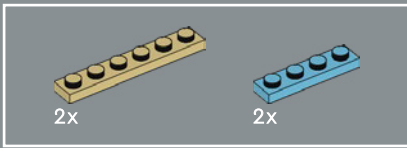
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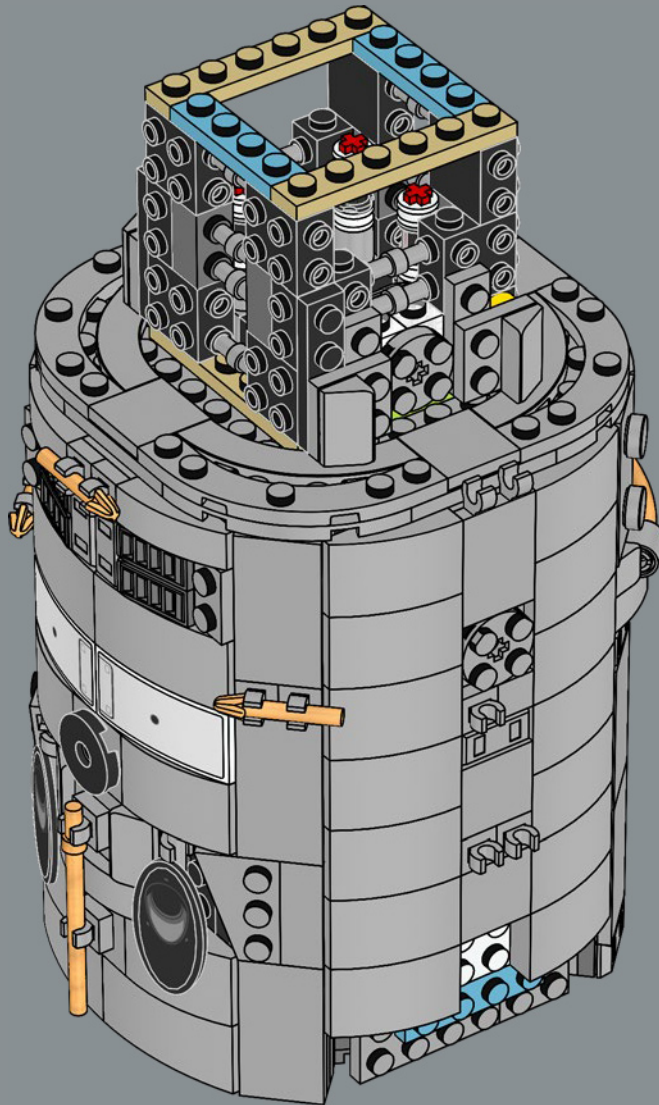


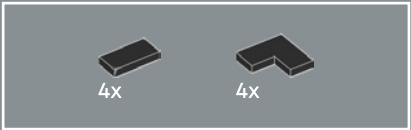
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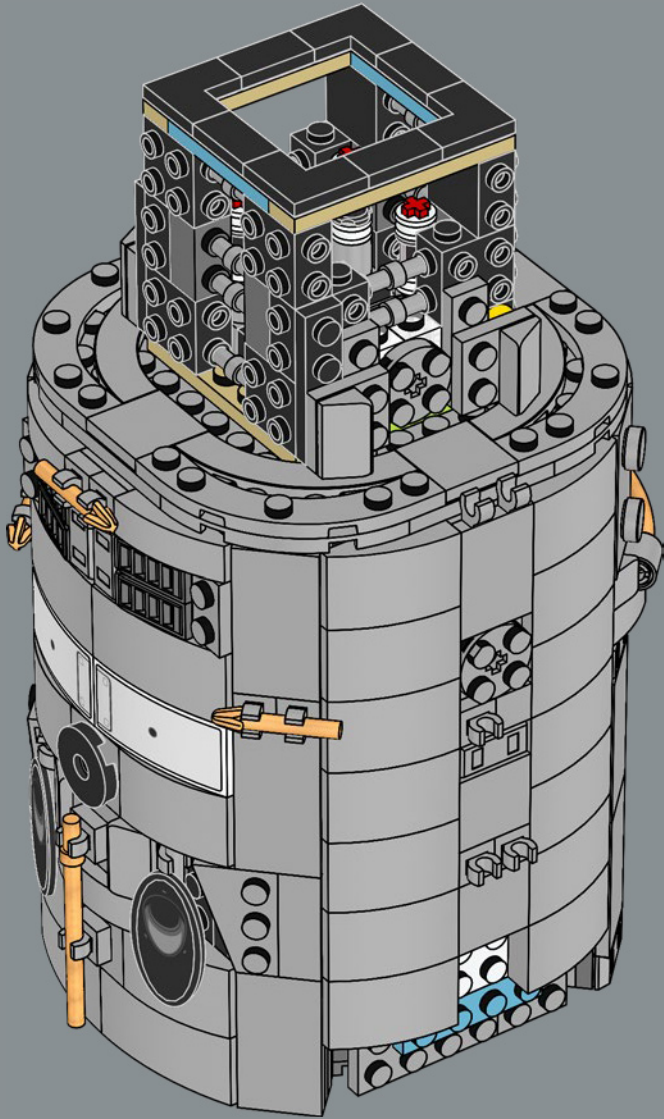


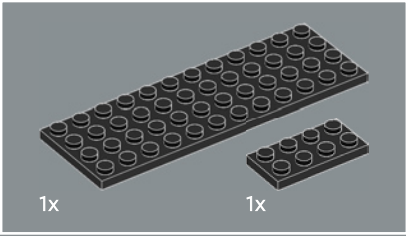
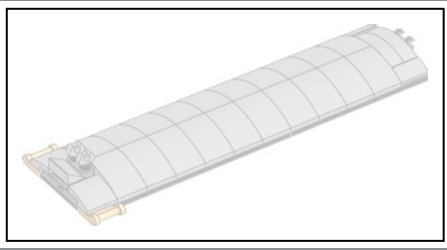
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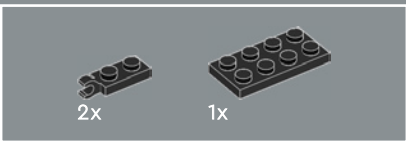
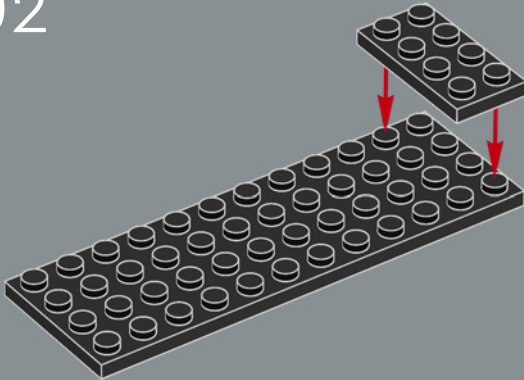


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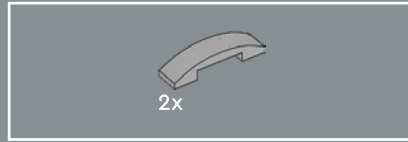
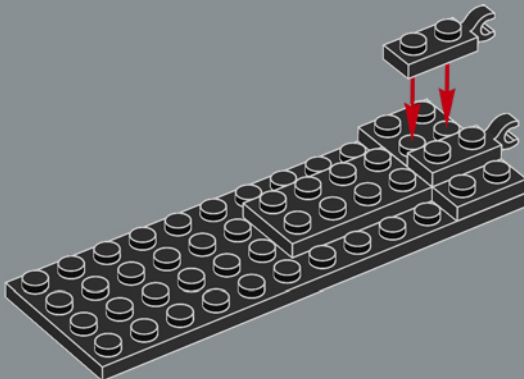




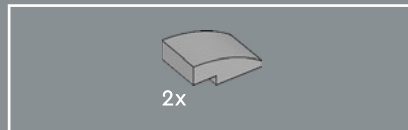
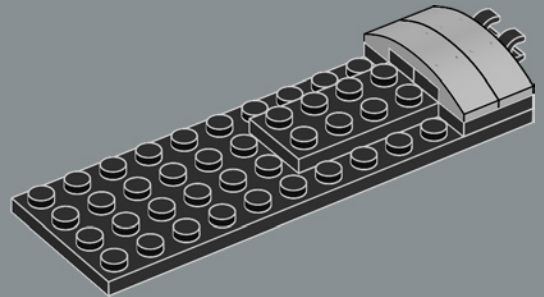
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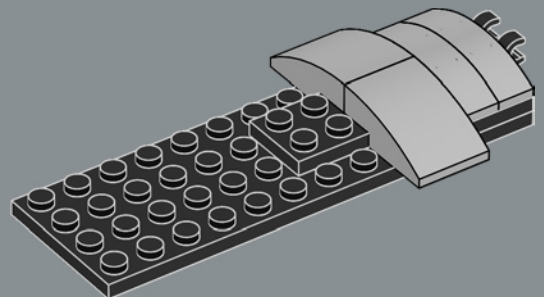
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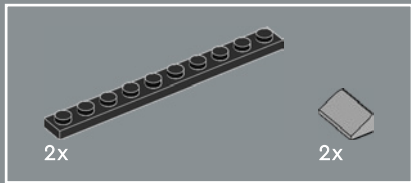


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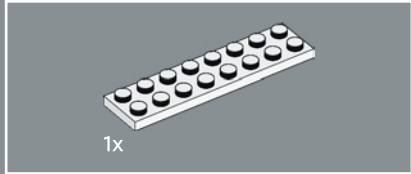
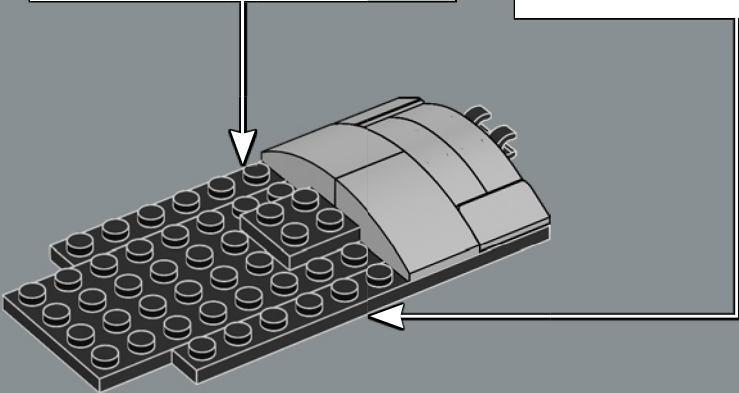
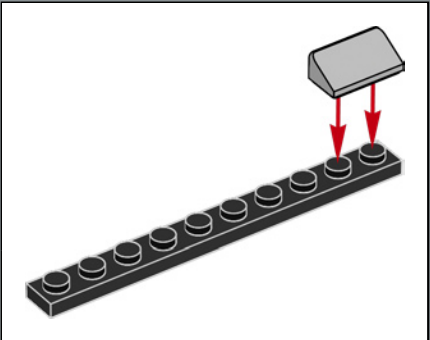
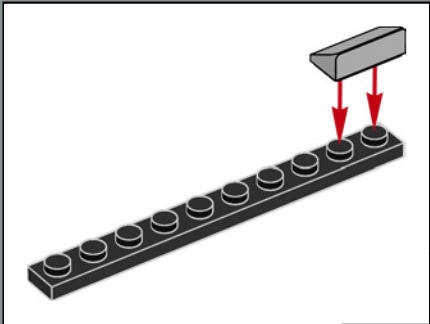


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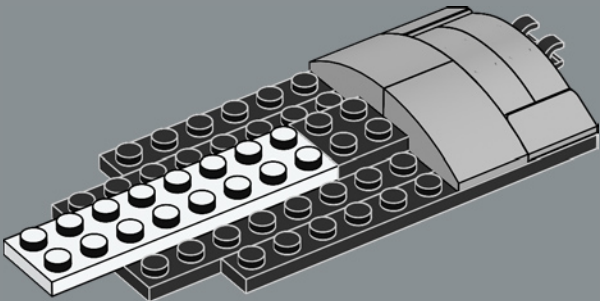


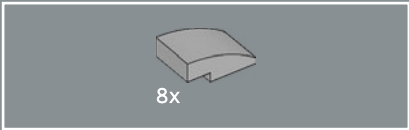


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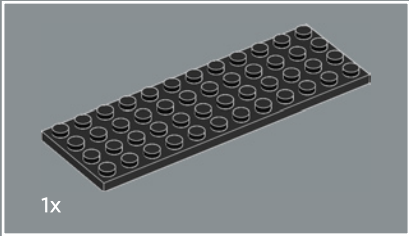
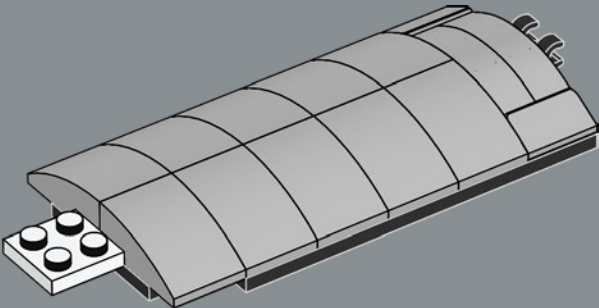


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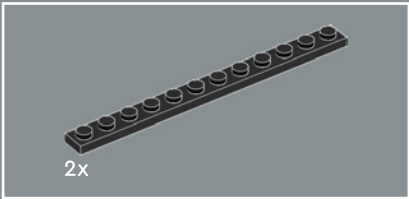
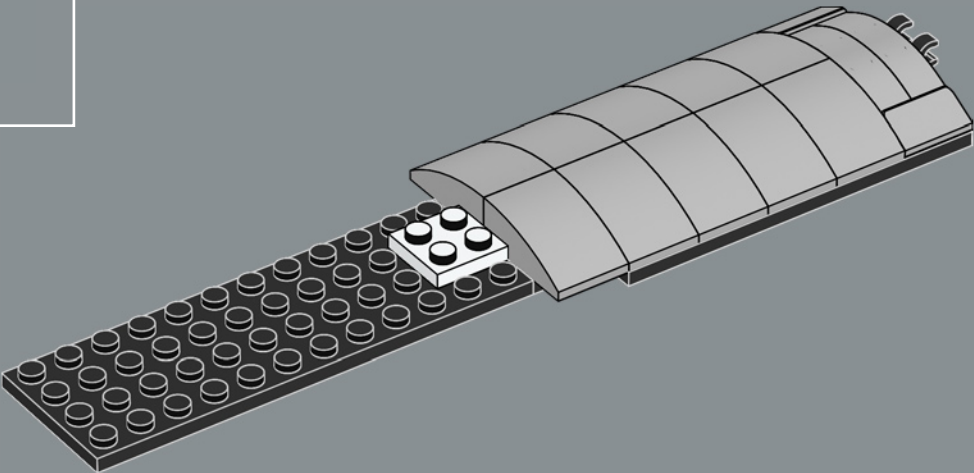




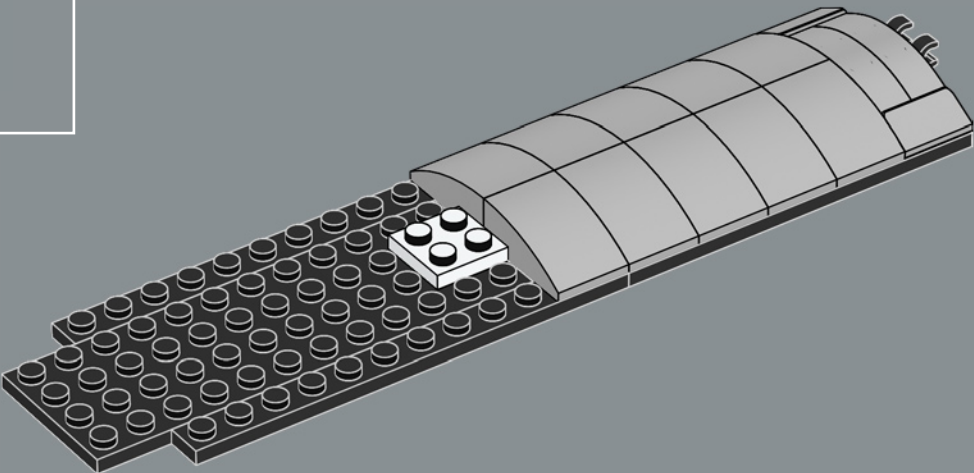
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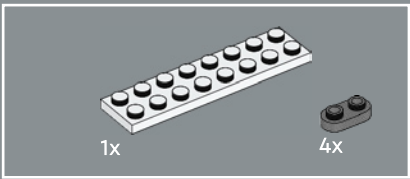


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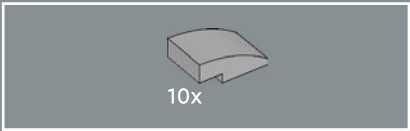
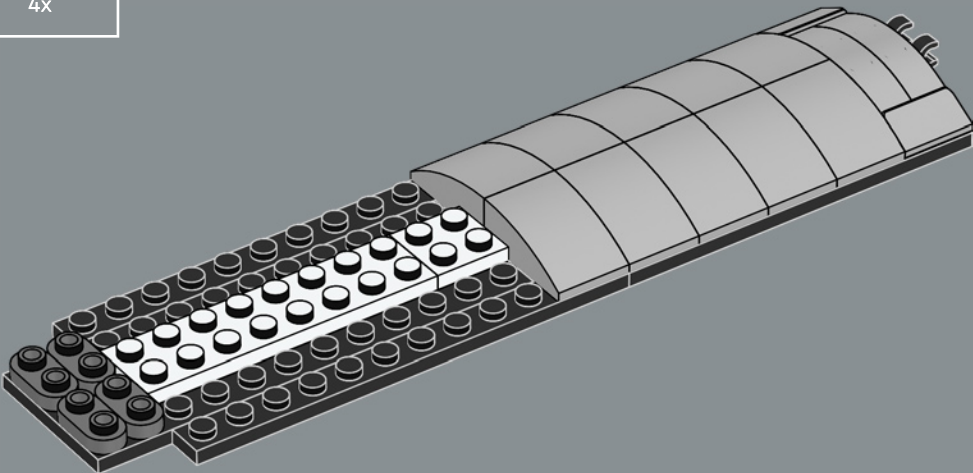


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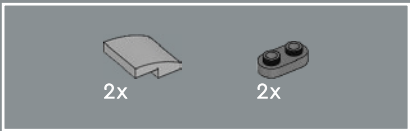
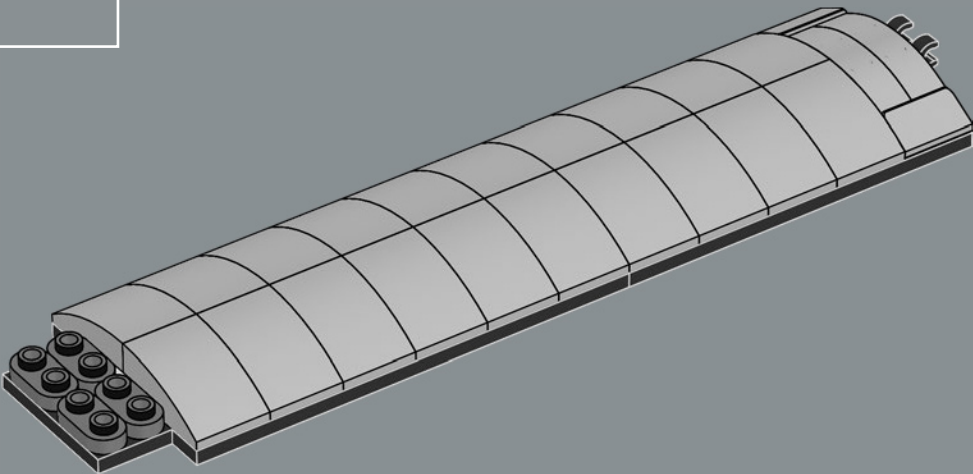




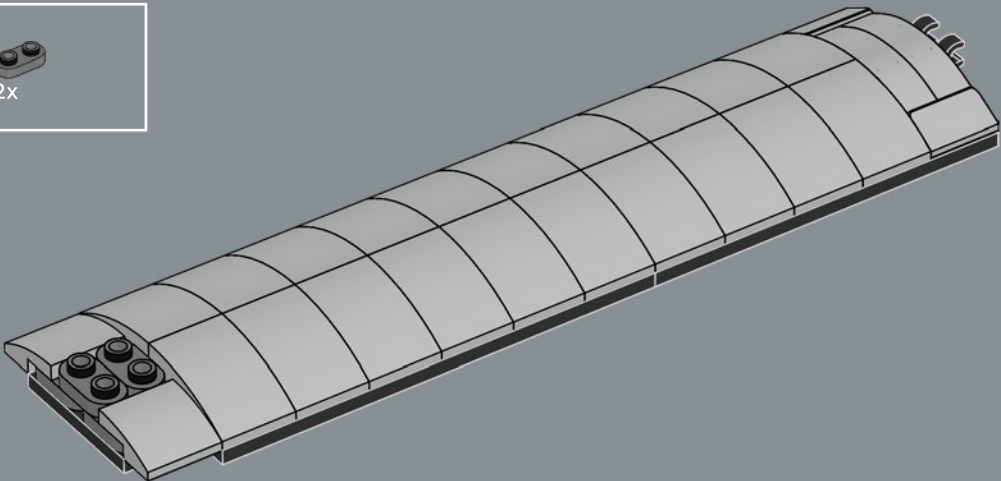
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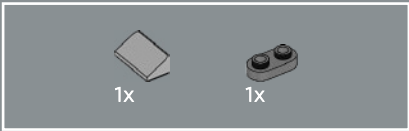
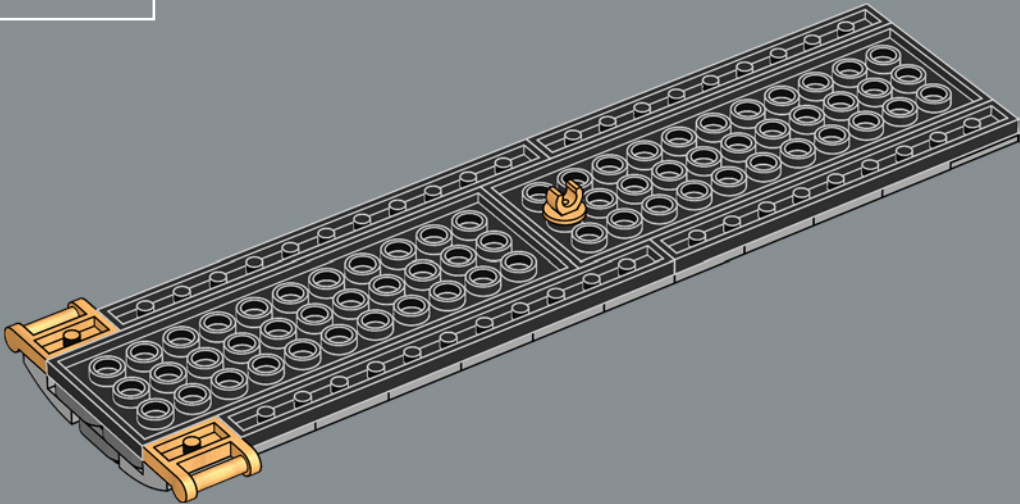


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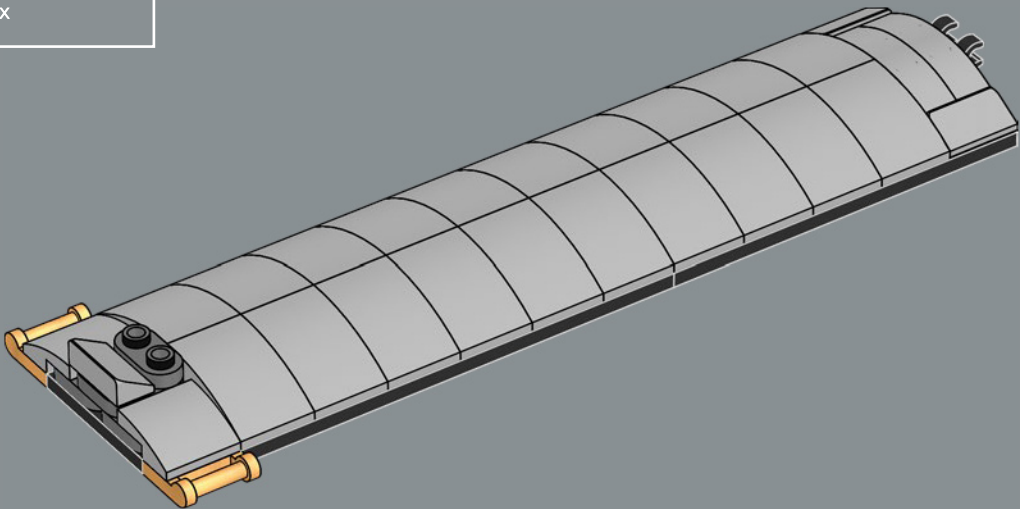




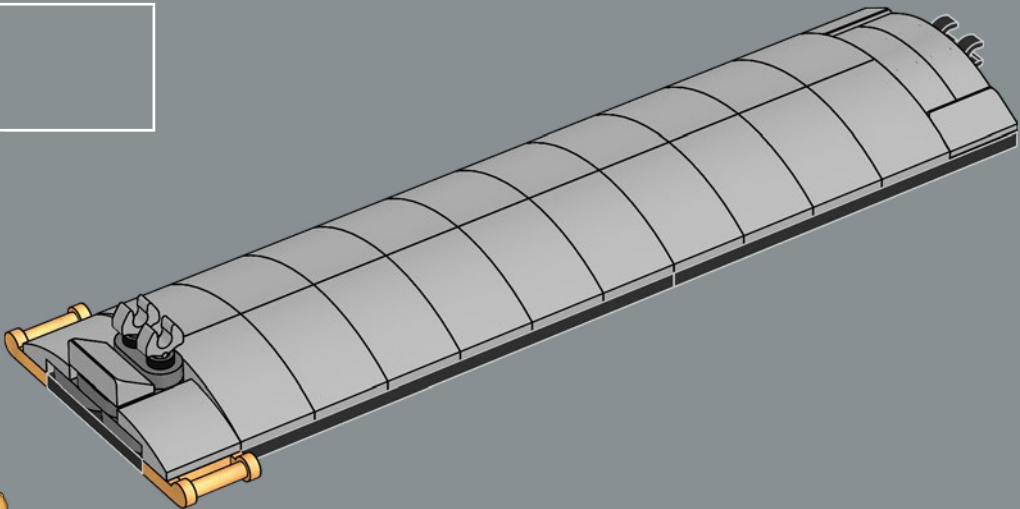
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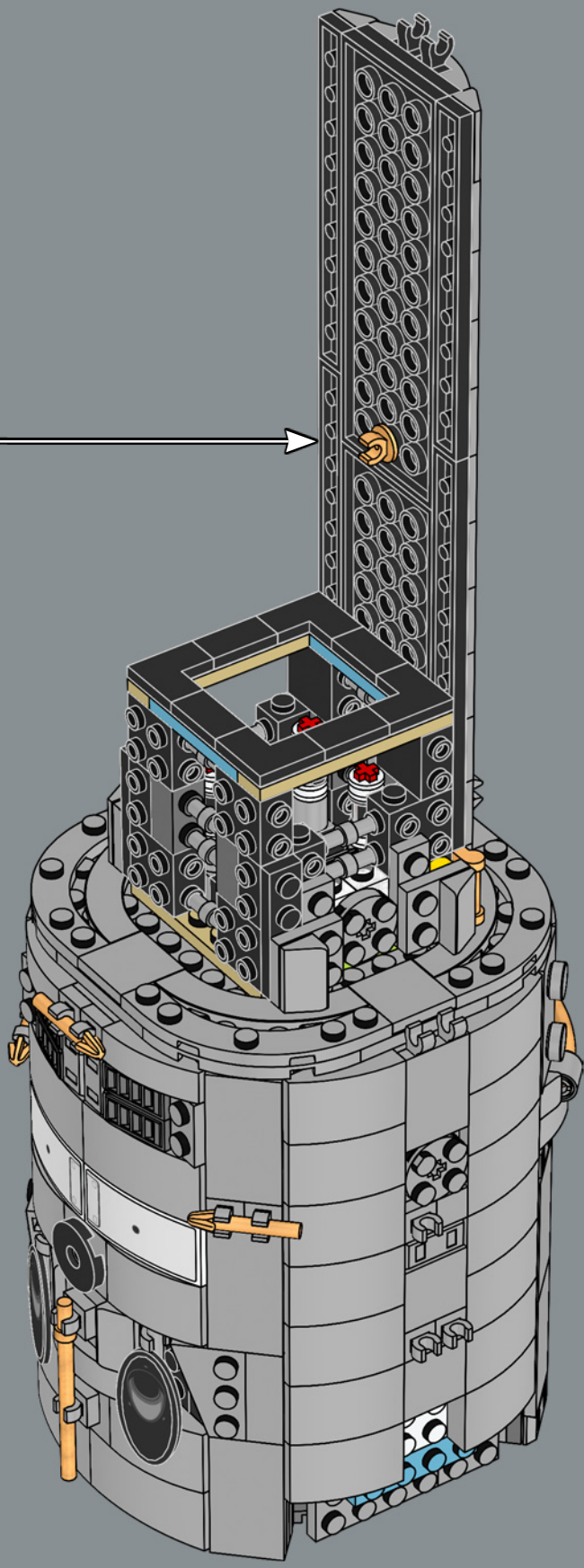


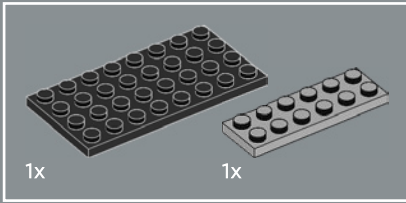
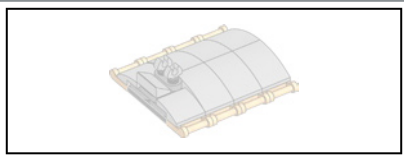
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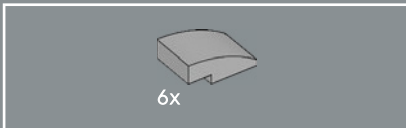
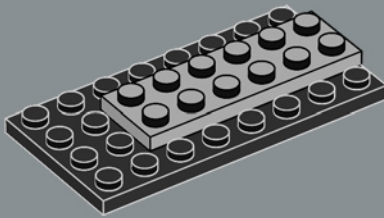
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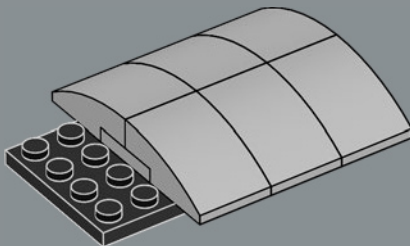




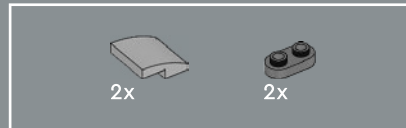
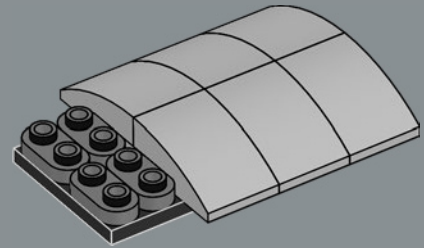
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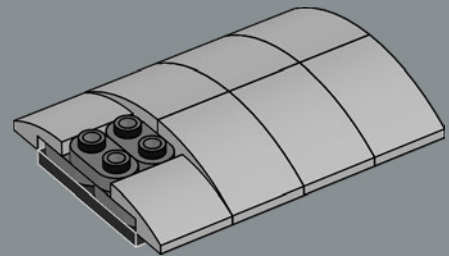
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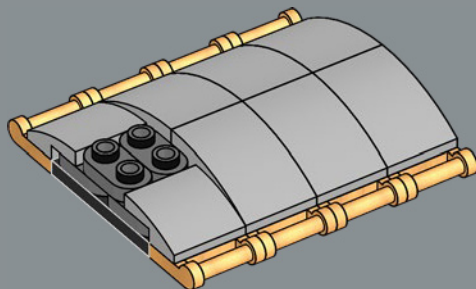
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8x

222

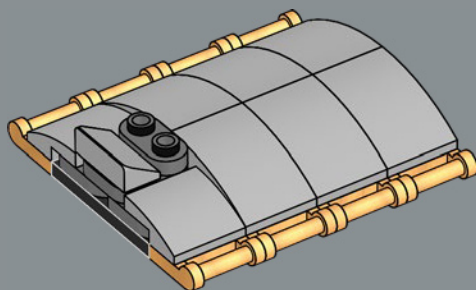


1x



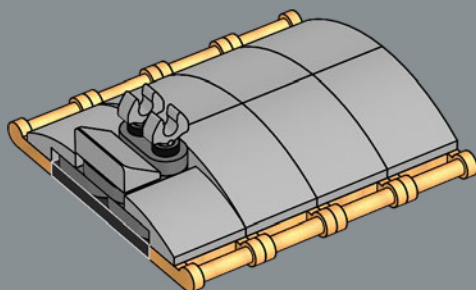
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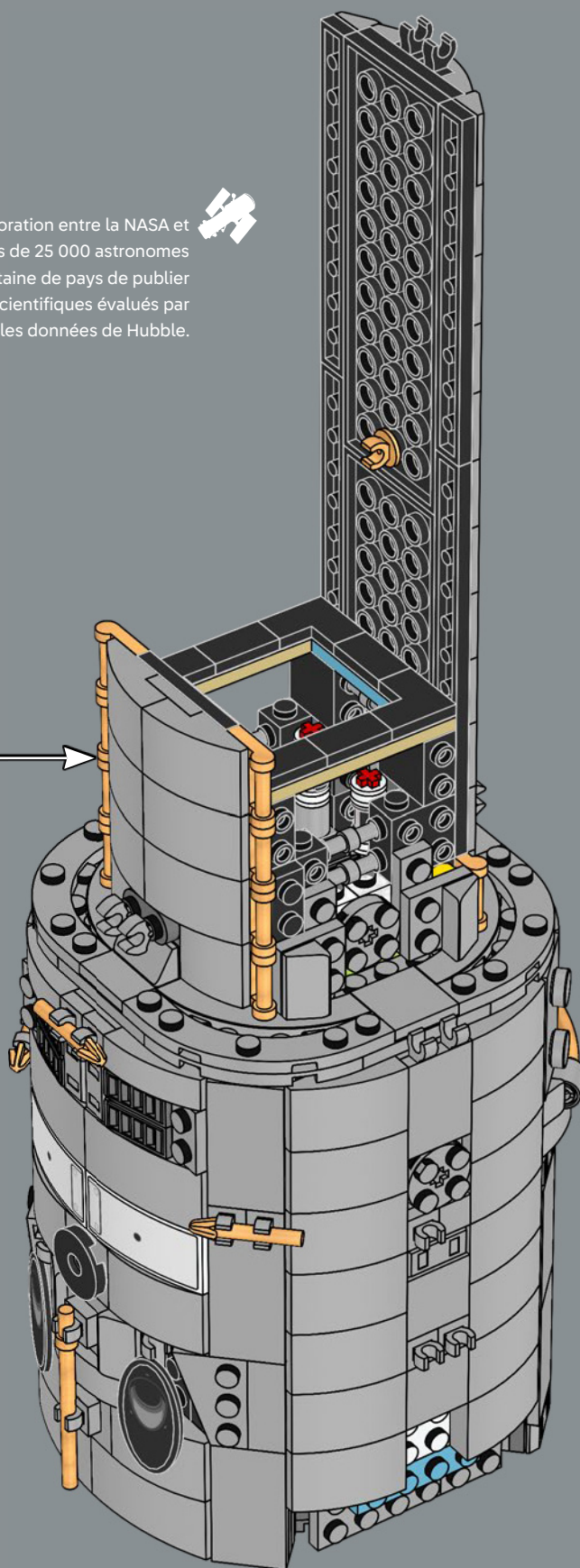
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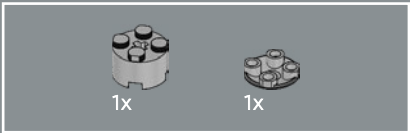
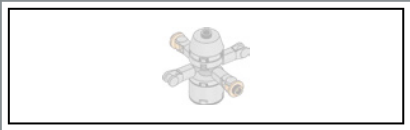
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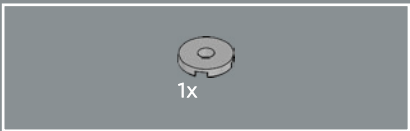
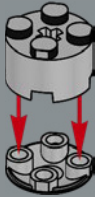
225

La solide collaboration entre la NASA et l'ESA a permis à plus de 25 000 astronomes issus d'une quarantaine de pays de publier 22 000 articles scientifiques évalués par des pairs, basés sur les données de Hubble.

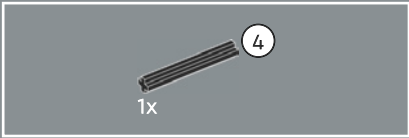




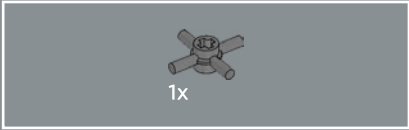
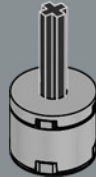
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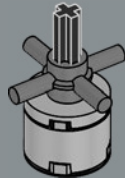
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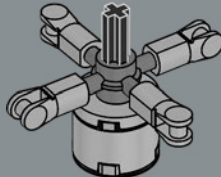
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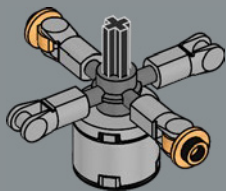


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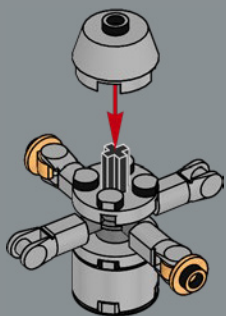




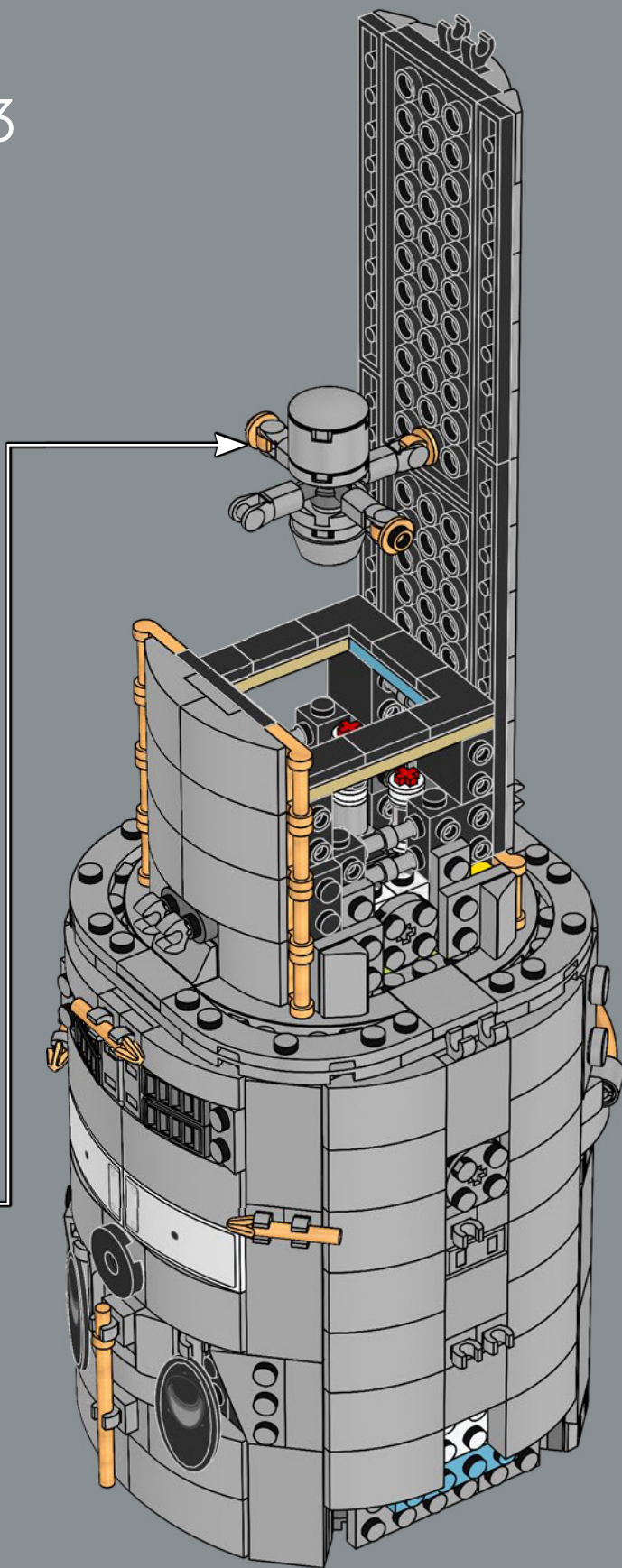
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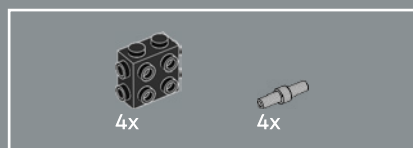
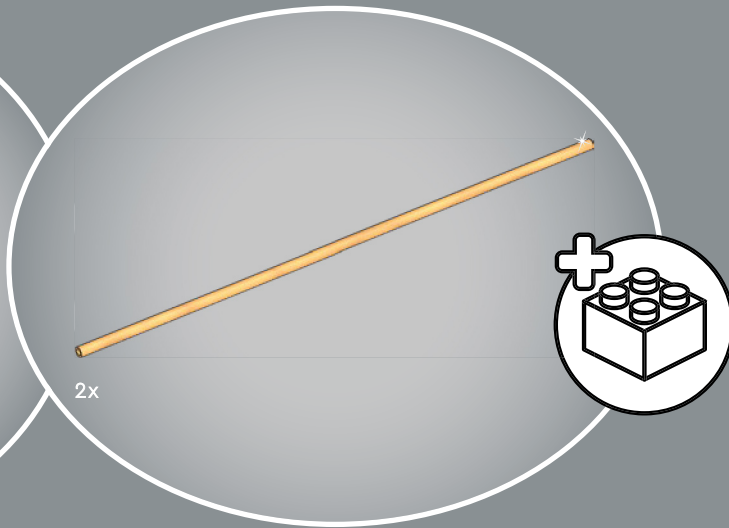


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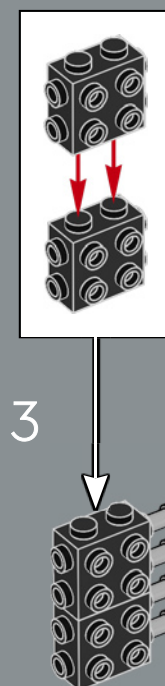
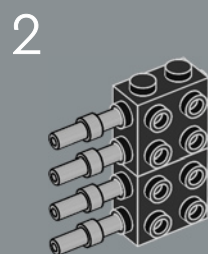
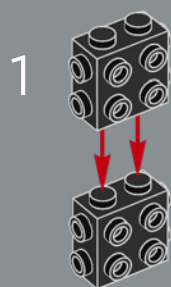


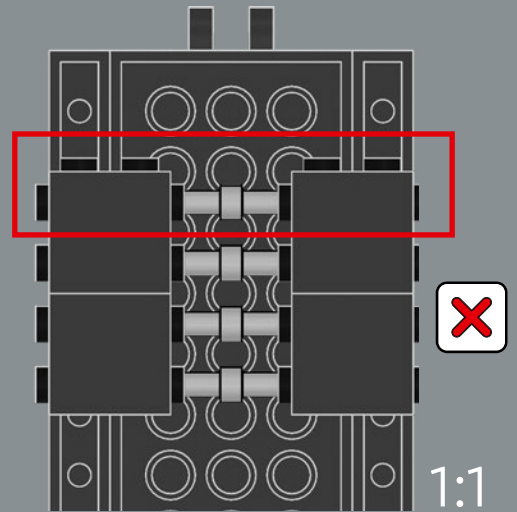
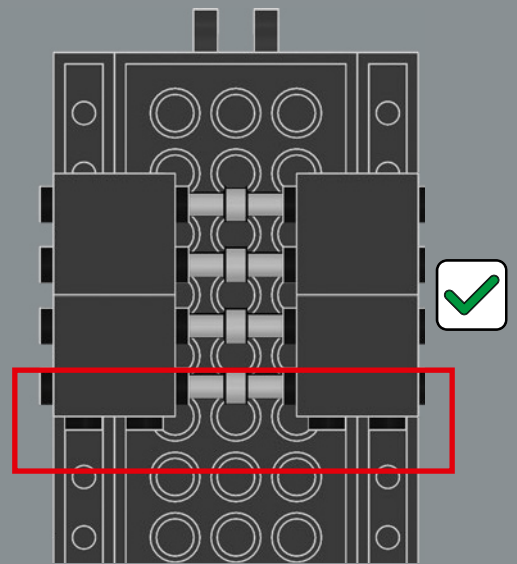
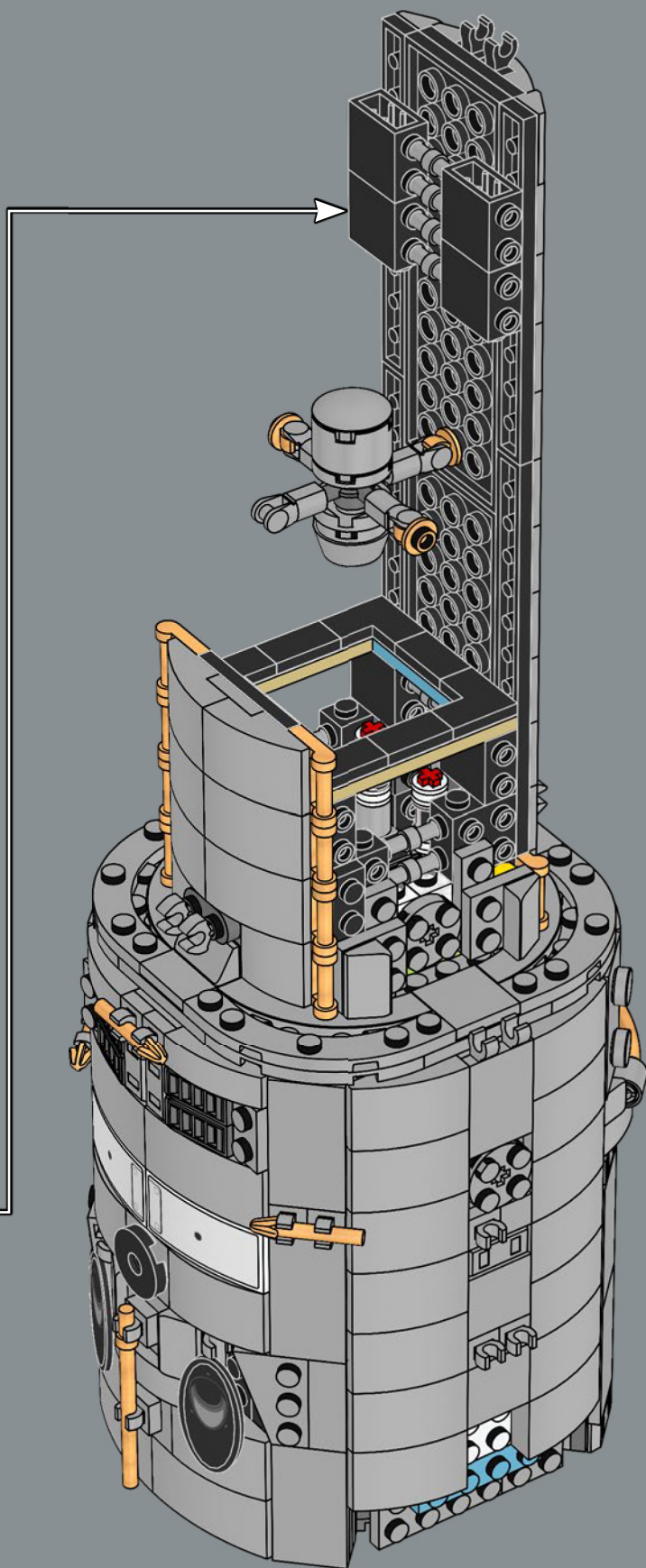
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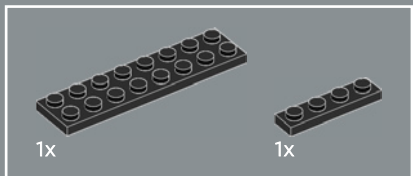
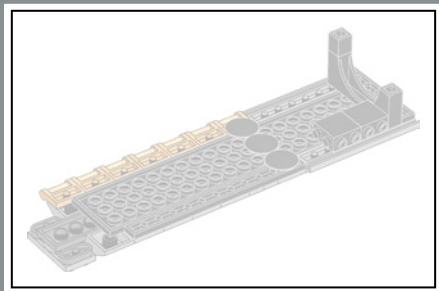




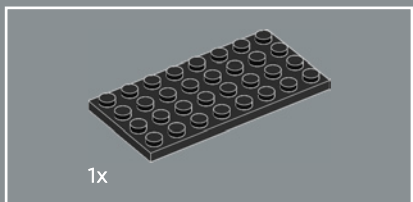
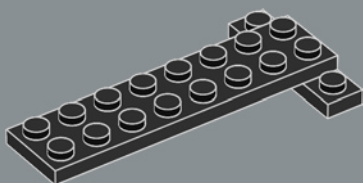
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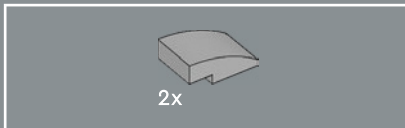
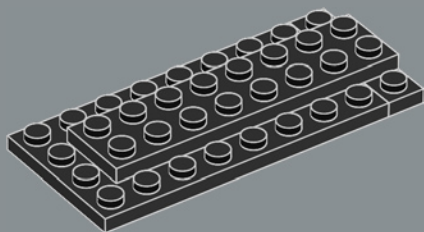




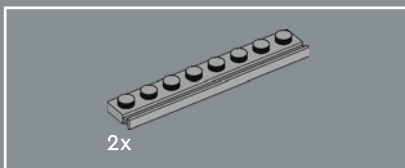
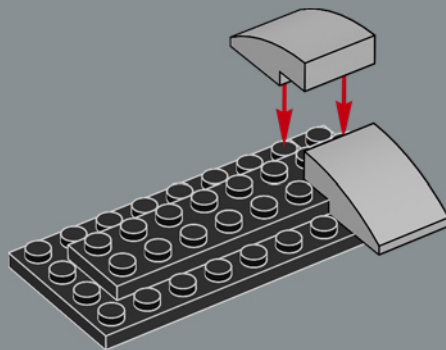
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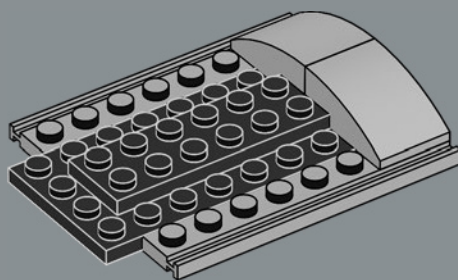
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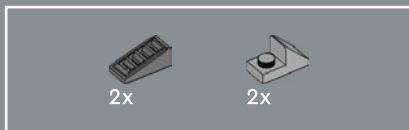


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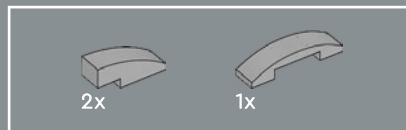
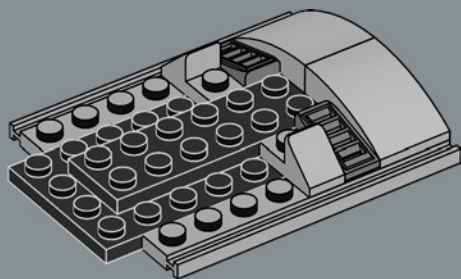


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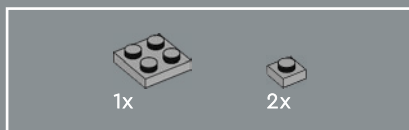
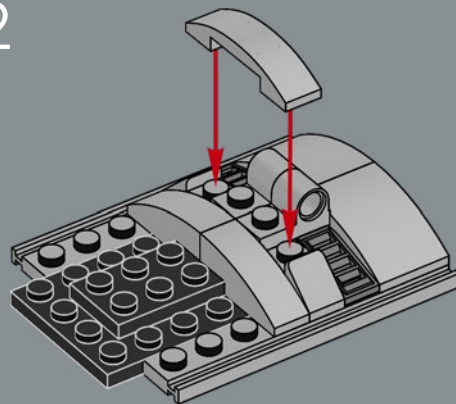




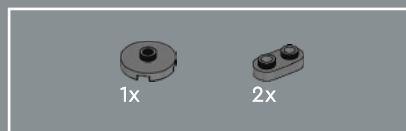
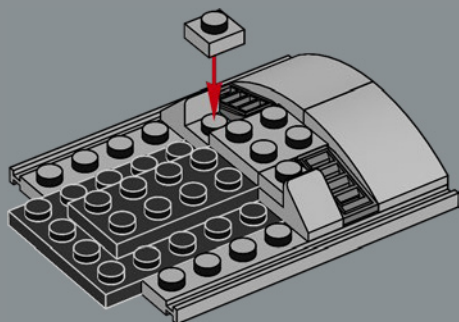
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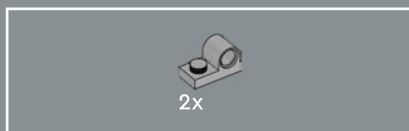
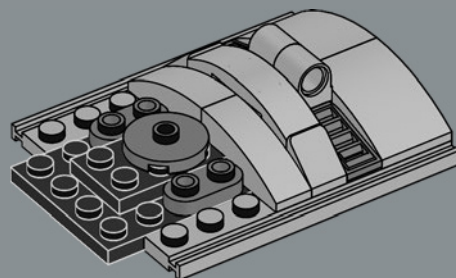
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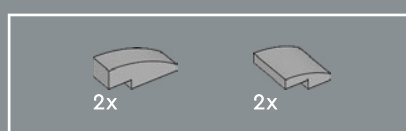
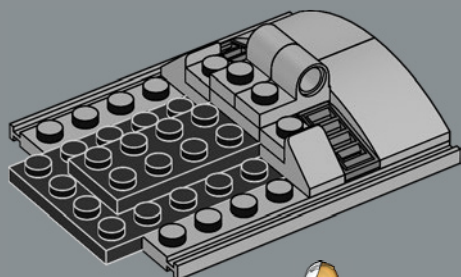
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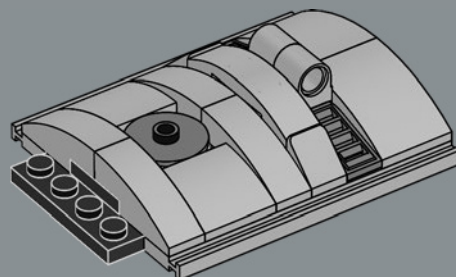
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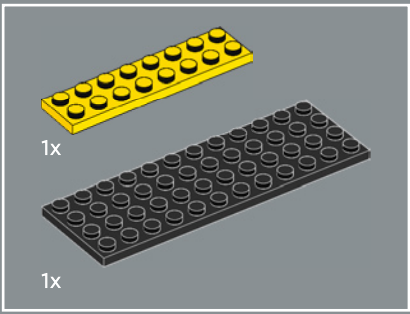


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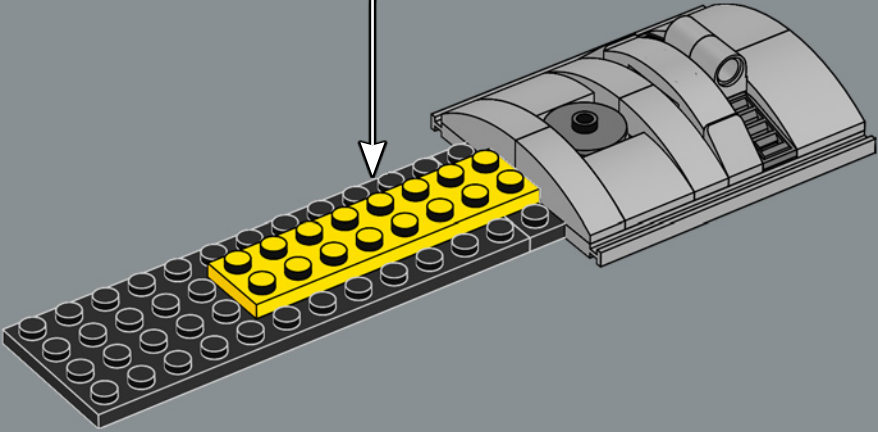
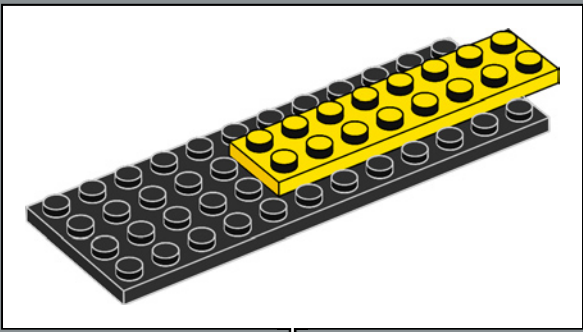


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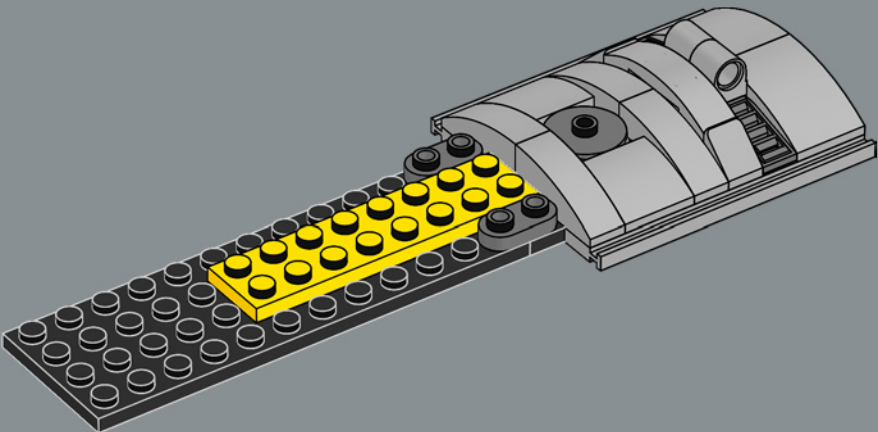


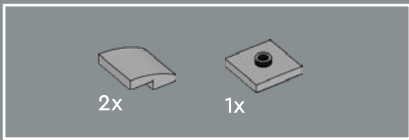


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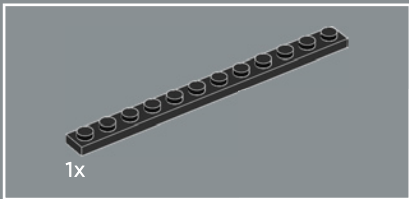
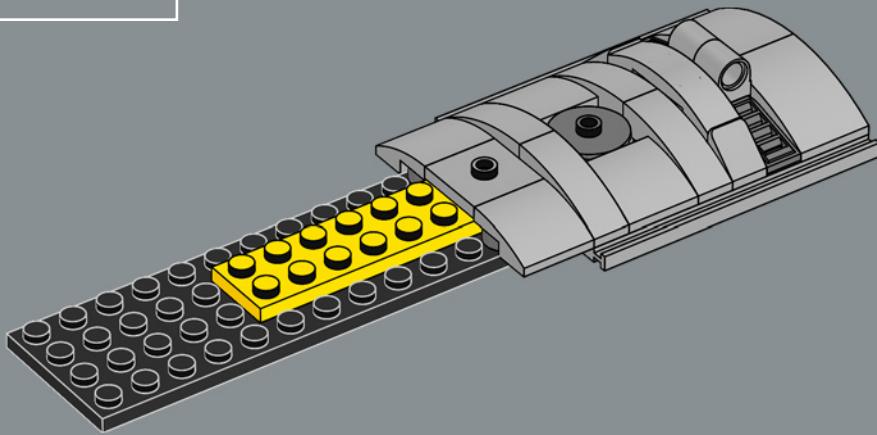


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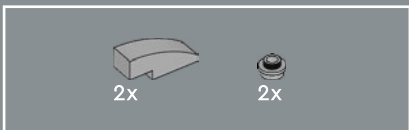
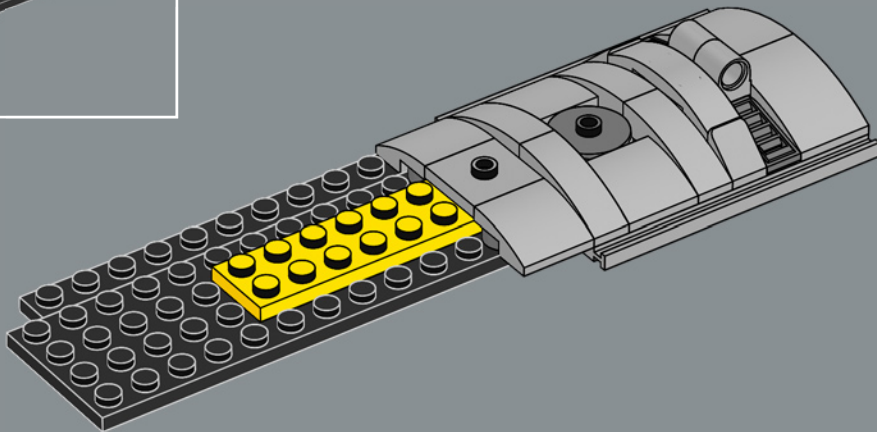




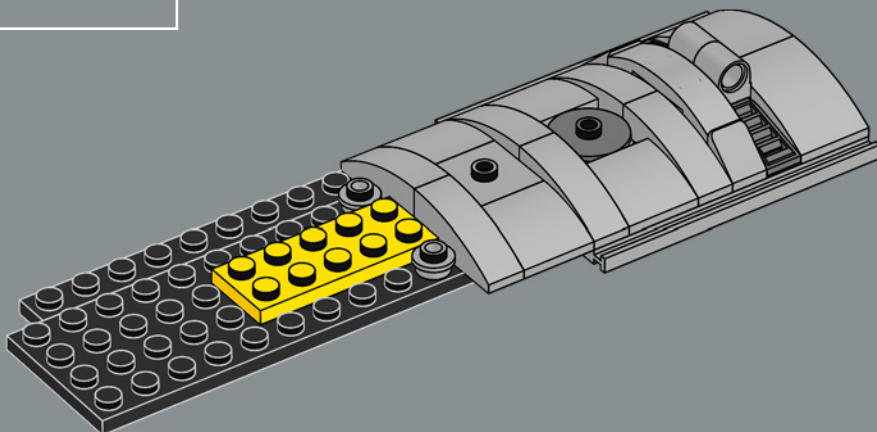
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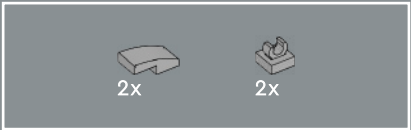


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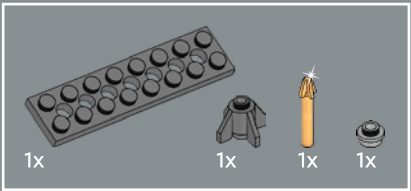
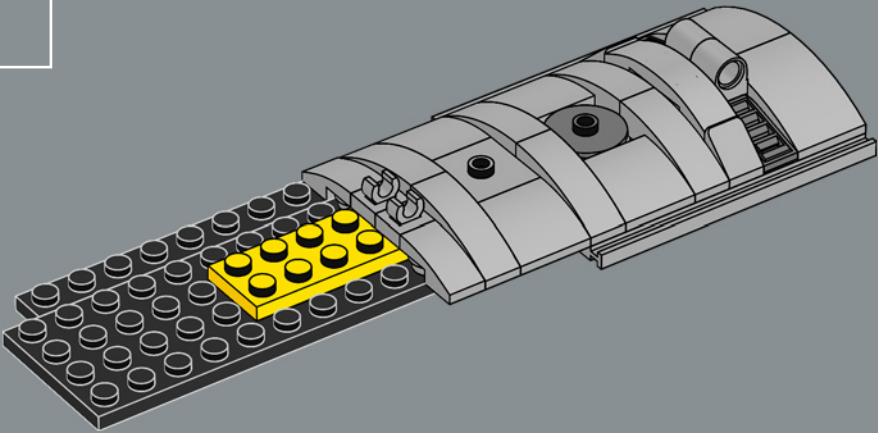


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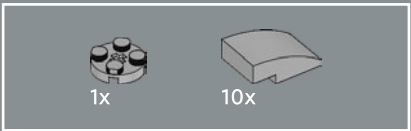
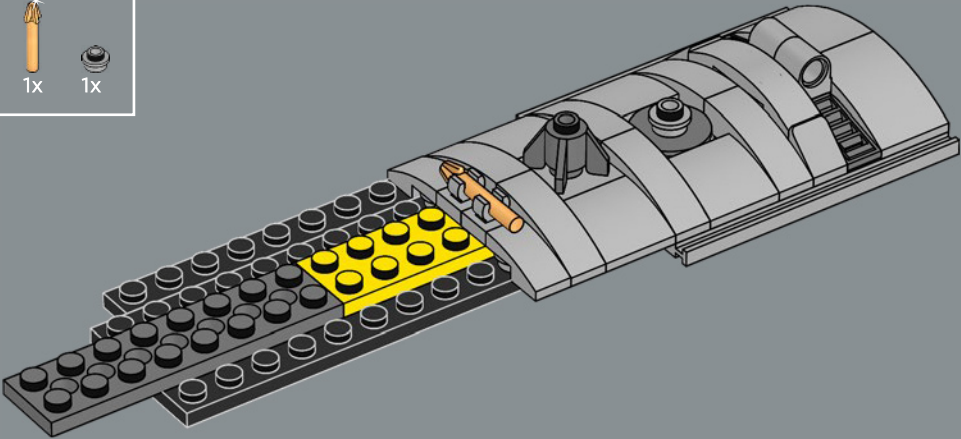




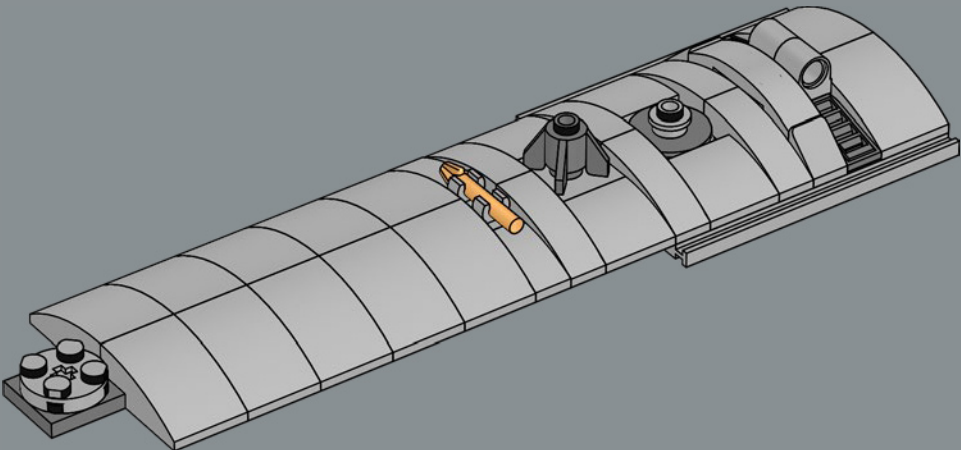
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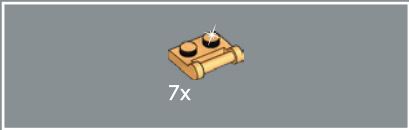


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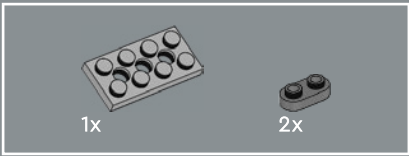
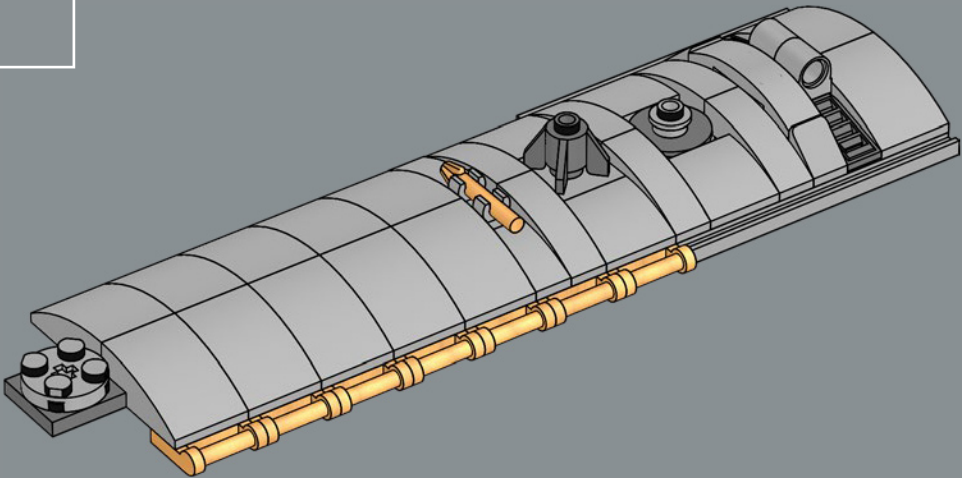


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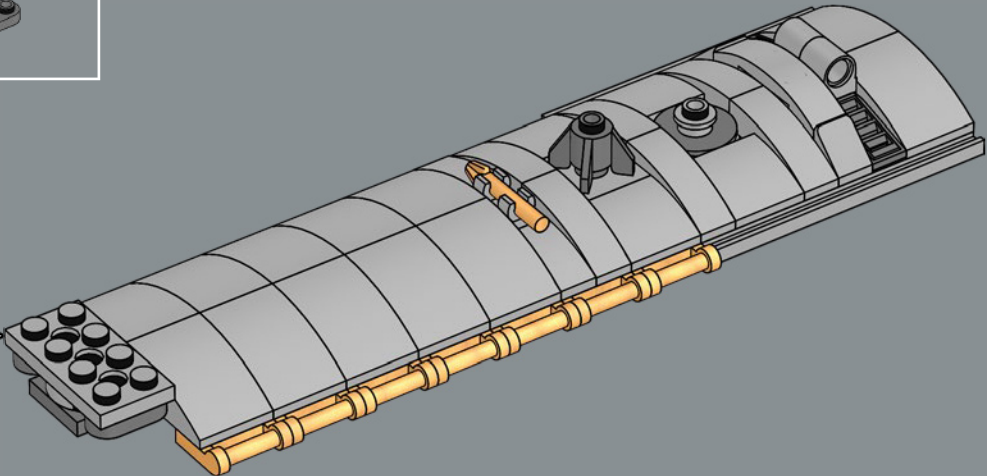
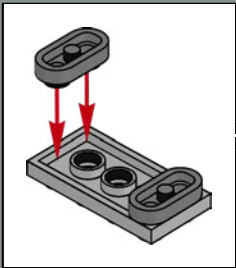




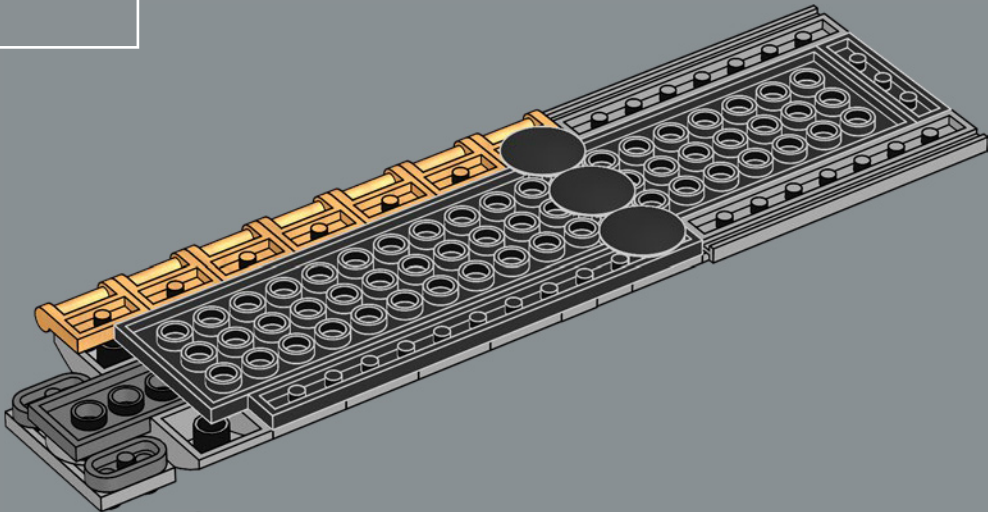
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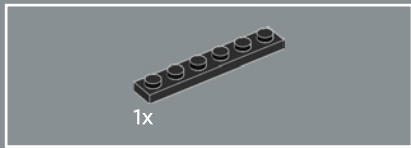


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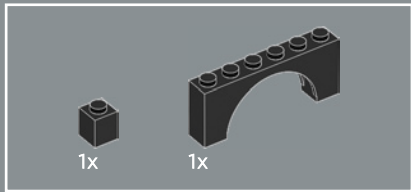
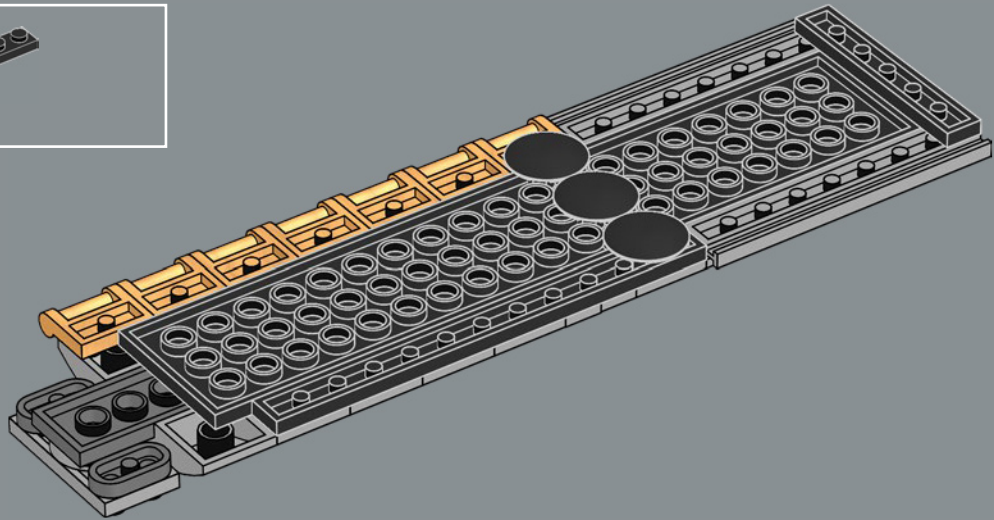


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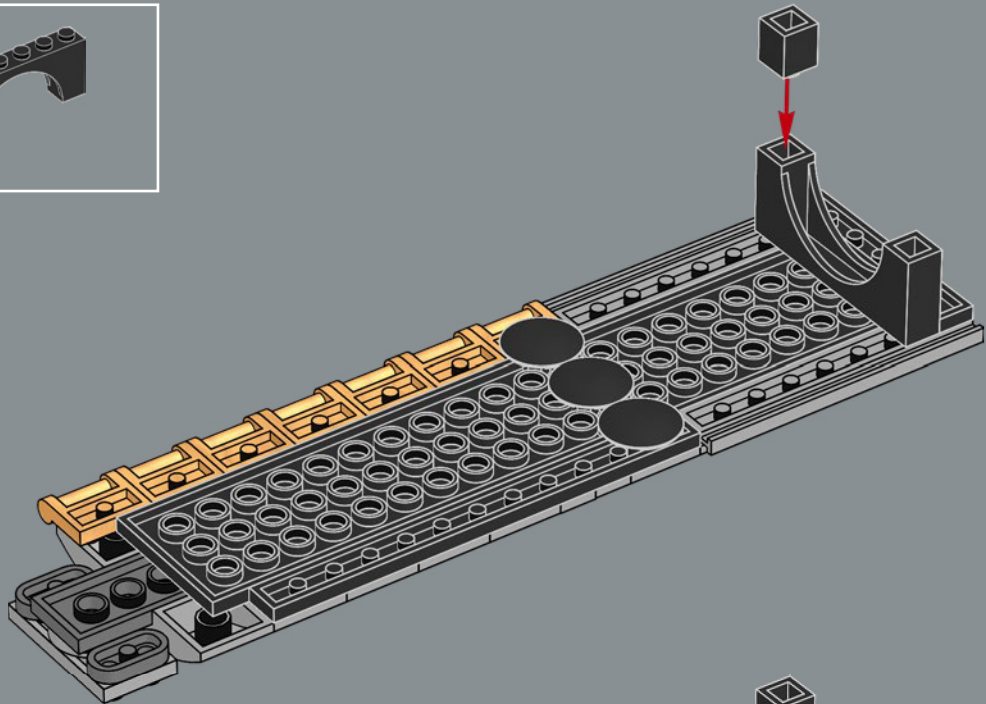




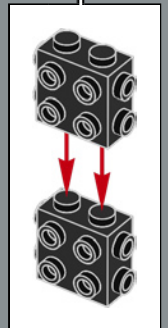
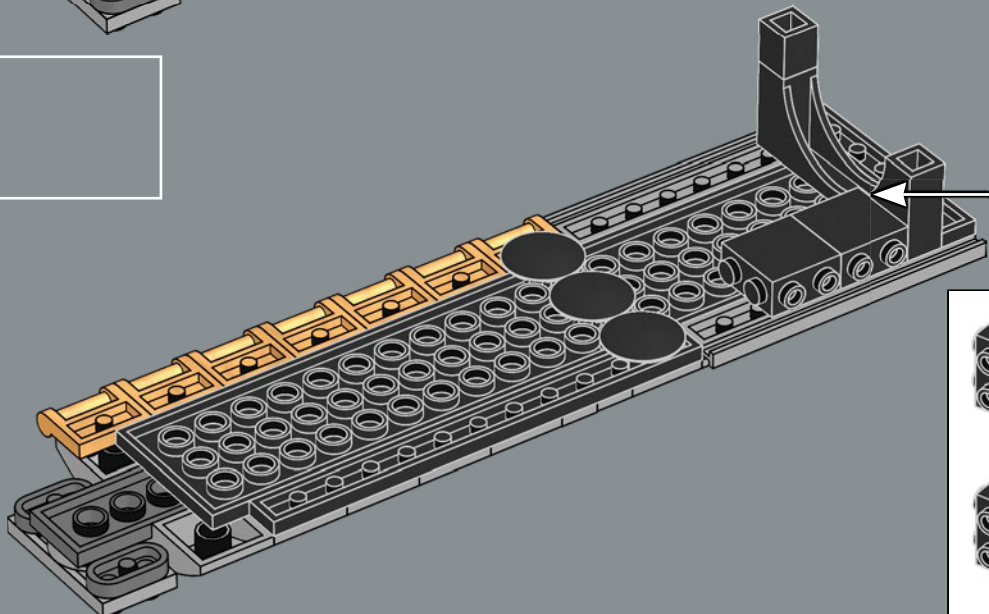
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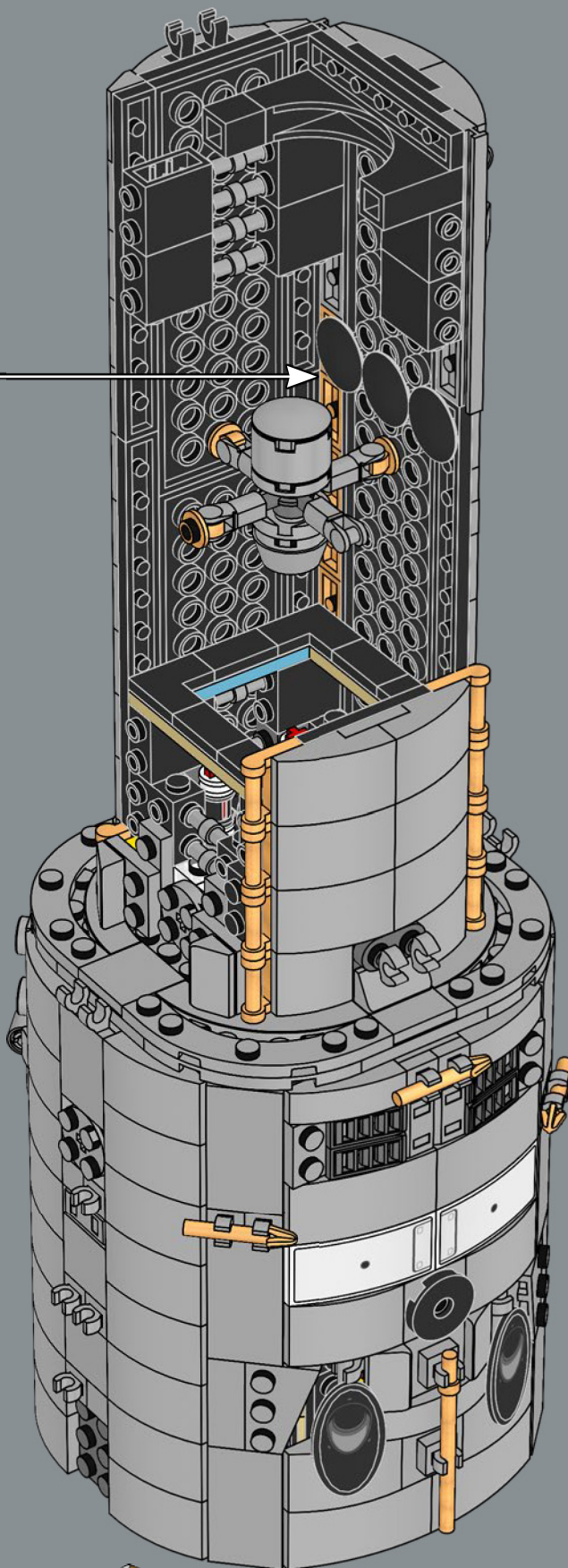
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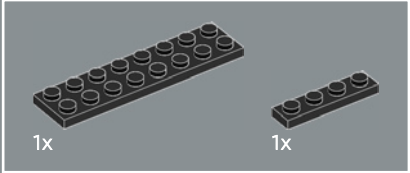
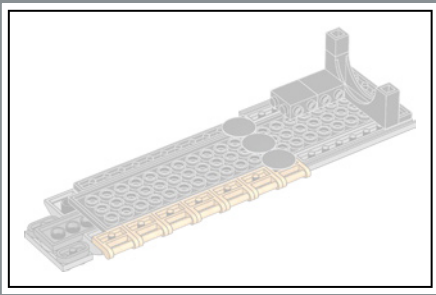


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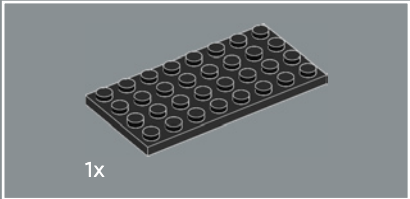
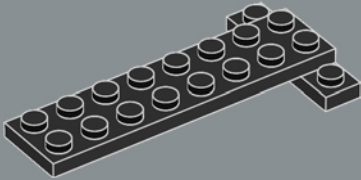


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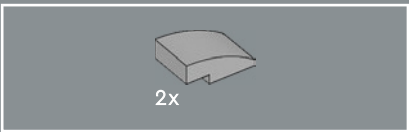
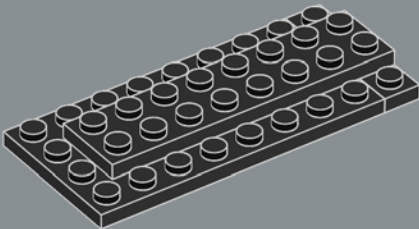




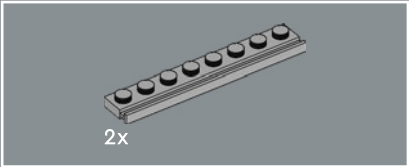
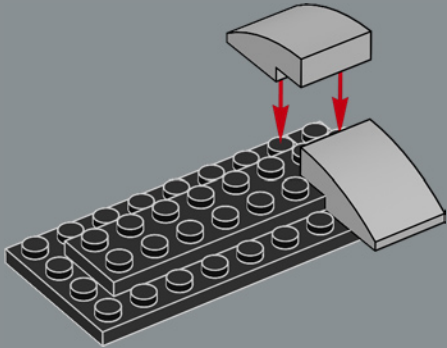
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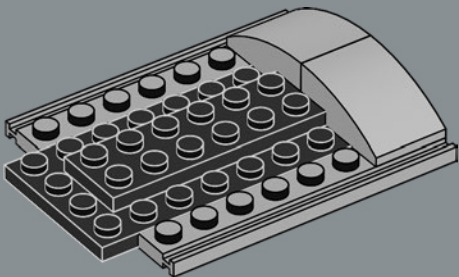
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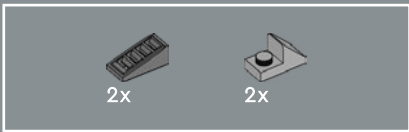


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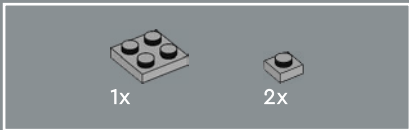
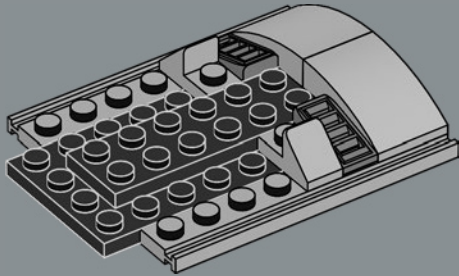


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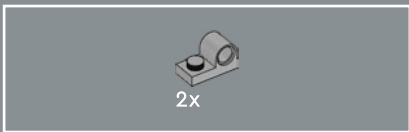
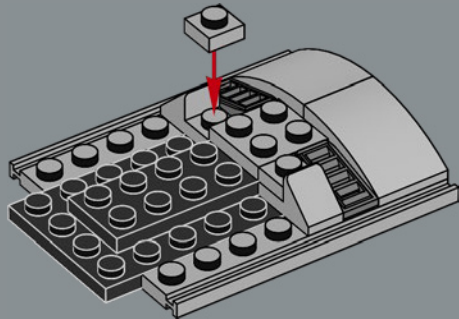




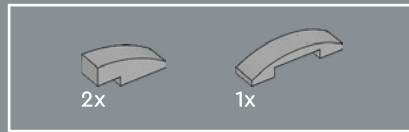
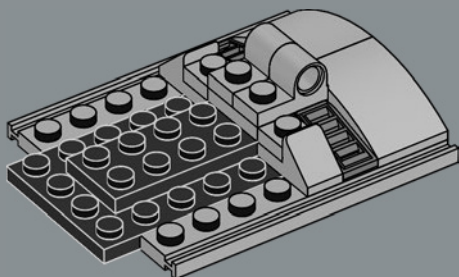
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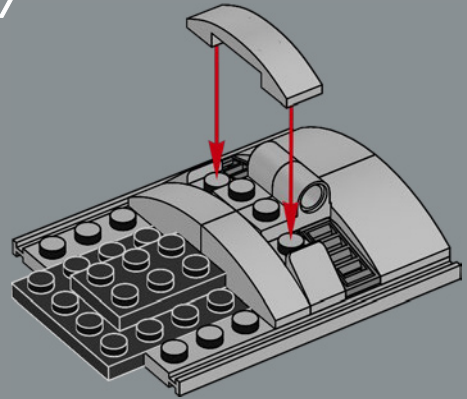
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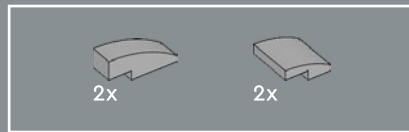
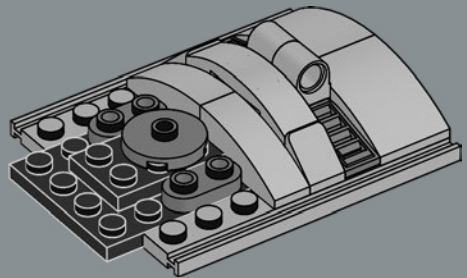
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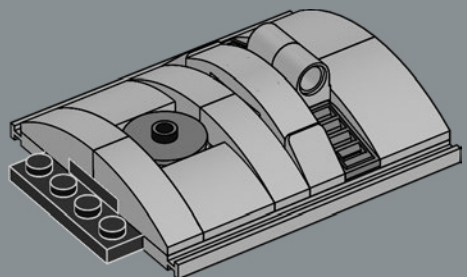
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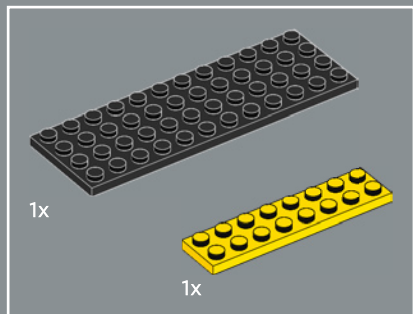


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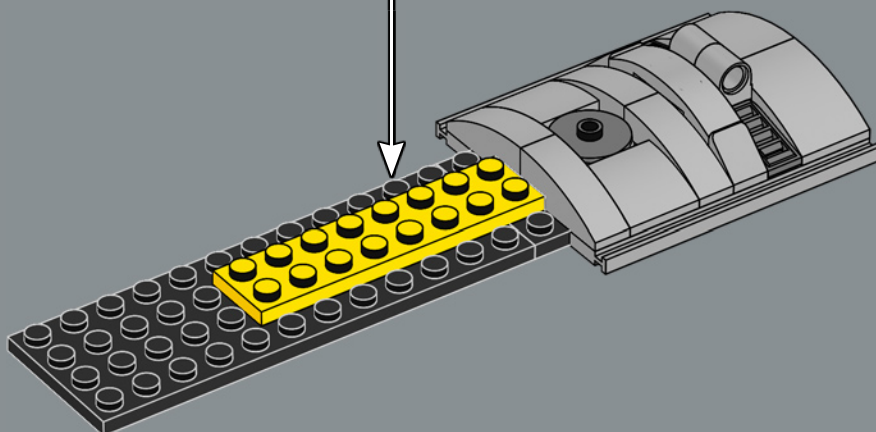
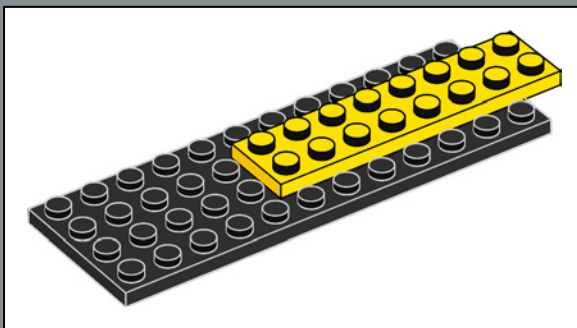


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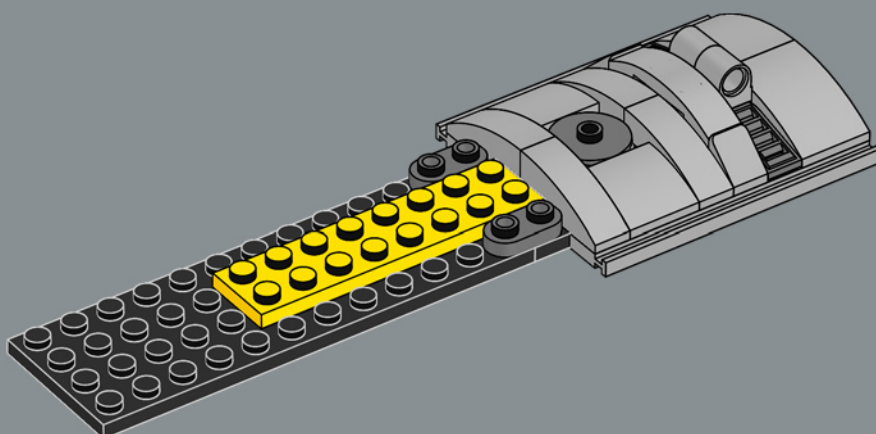


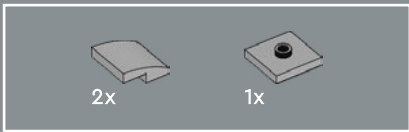


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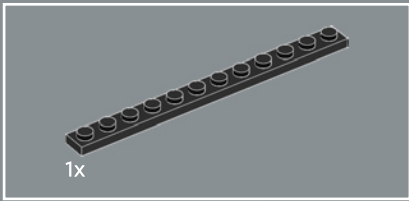
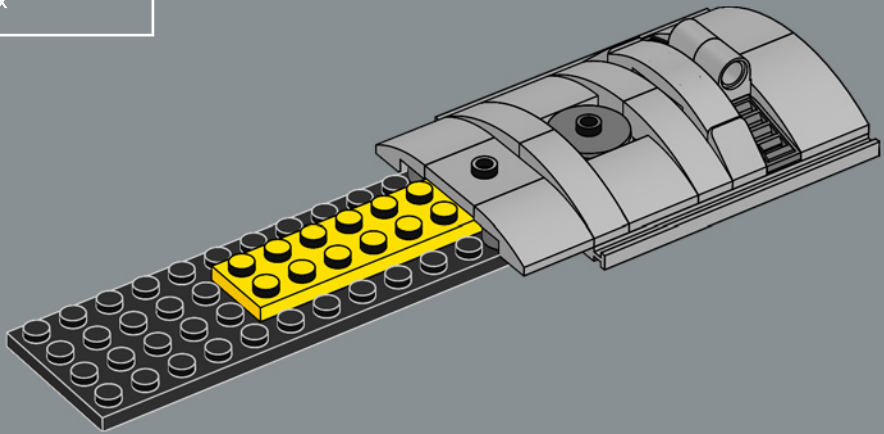


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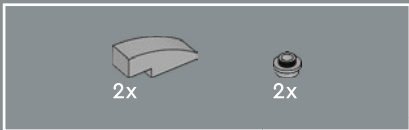
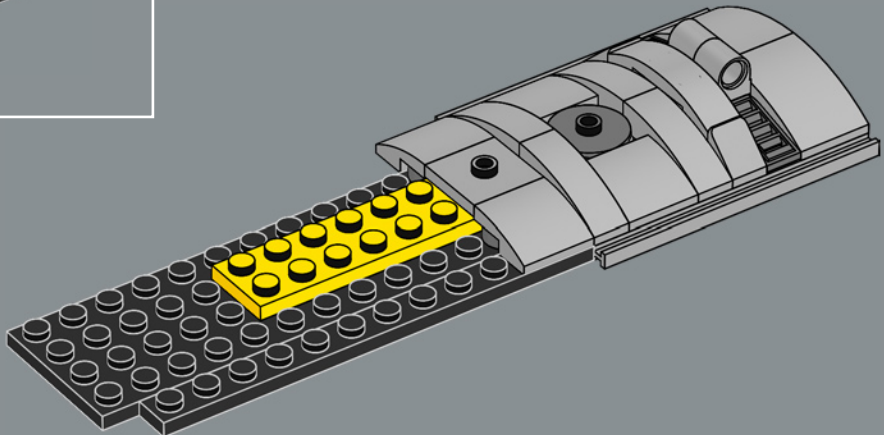




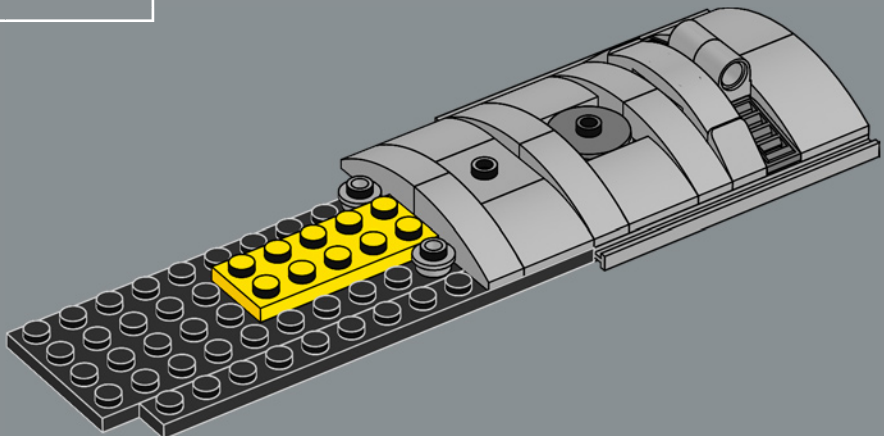
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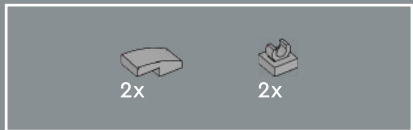


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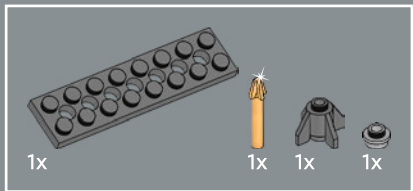
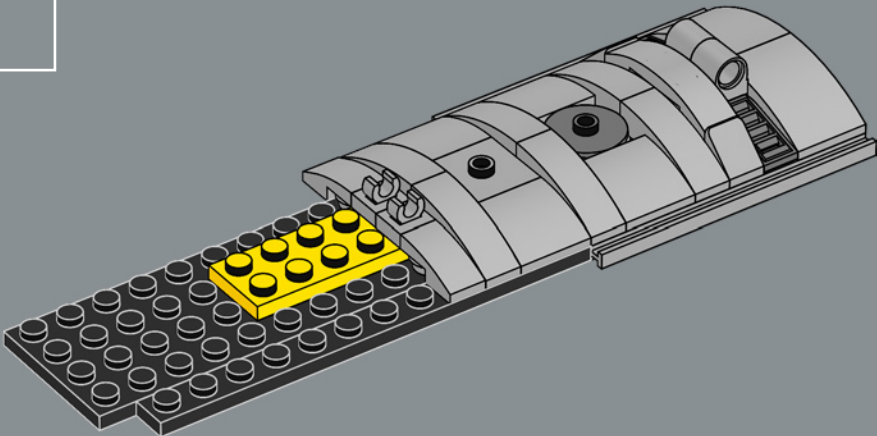


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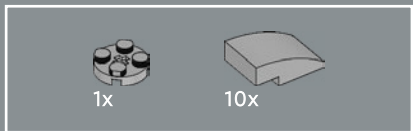
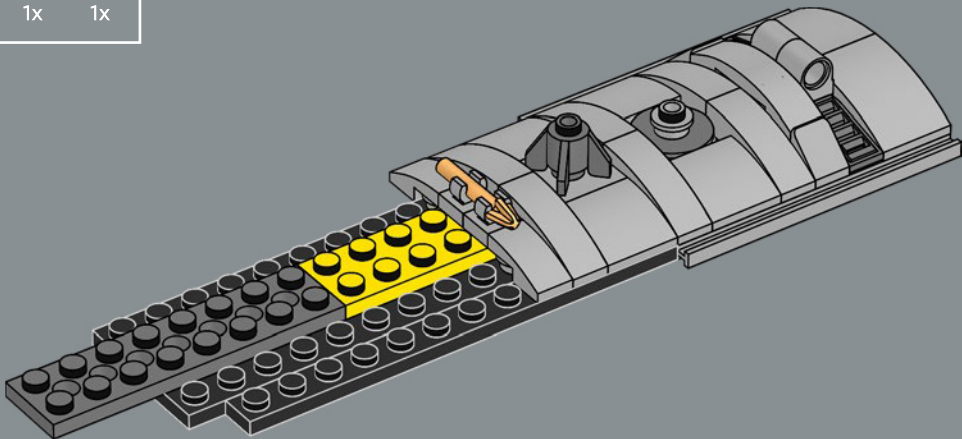




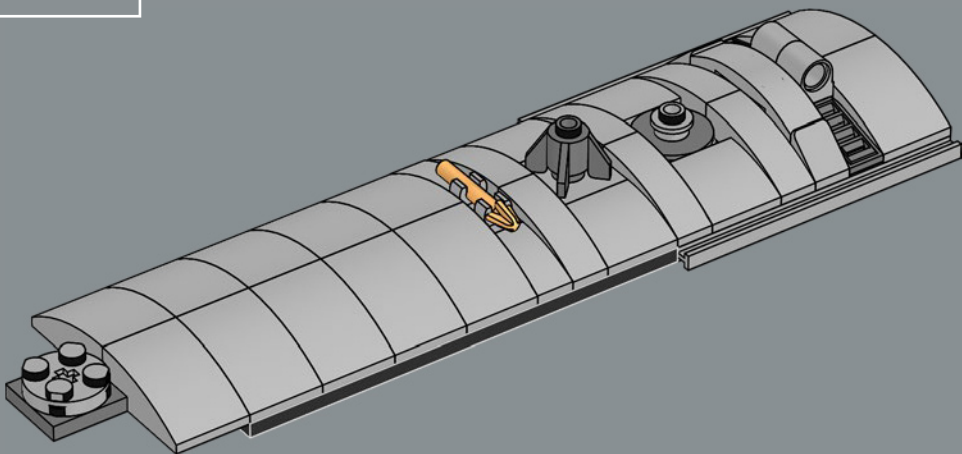
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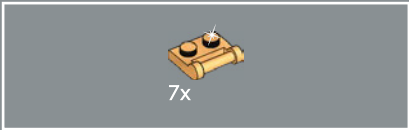


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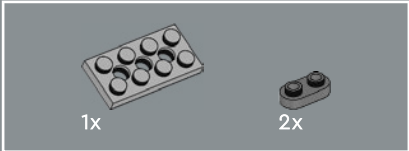
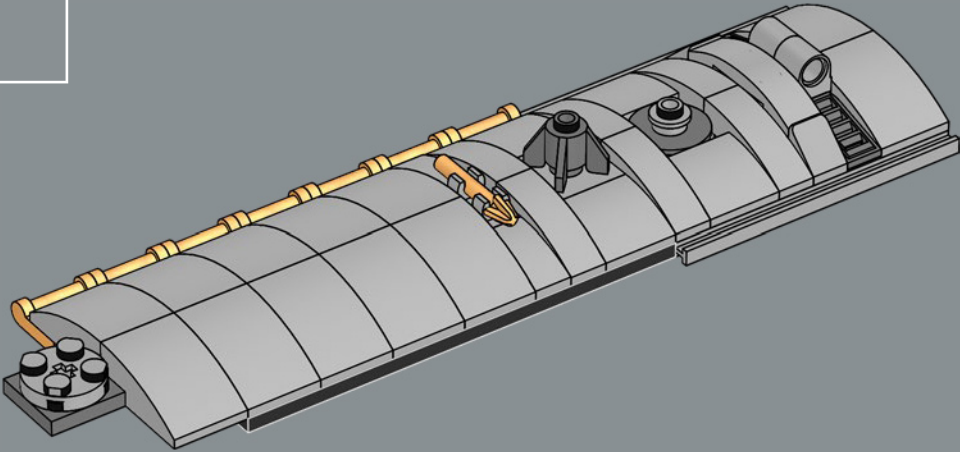


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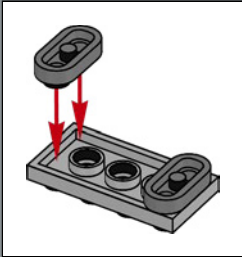
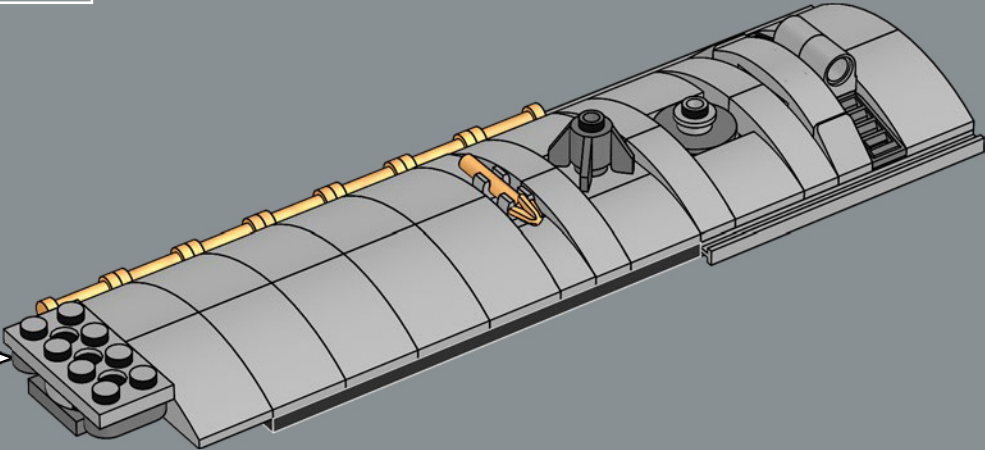




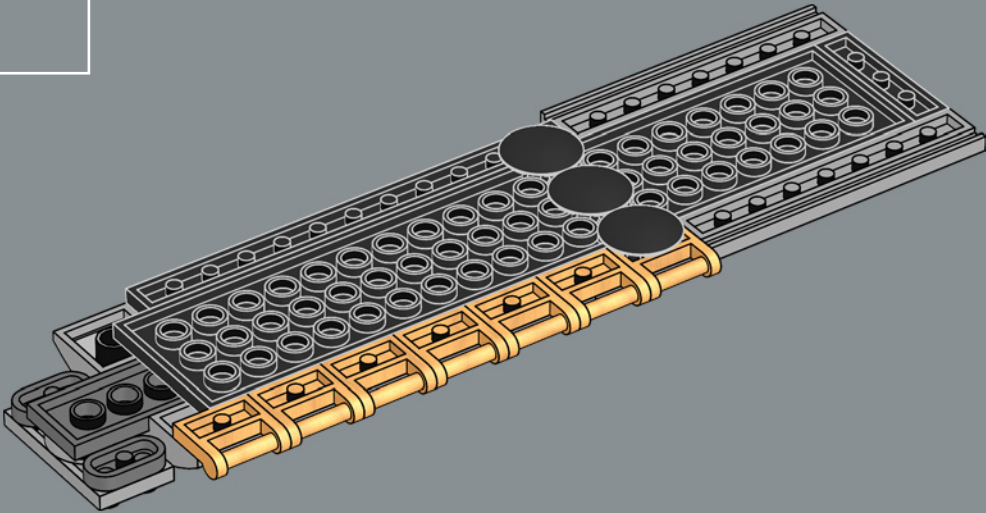
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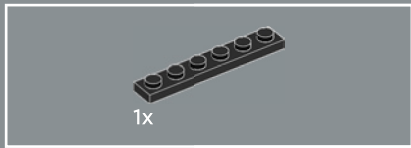


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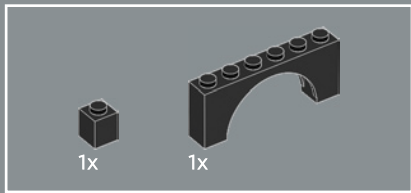
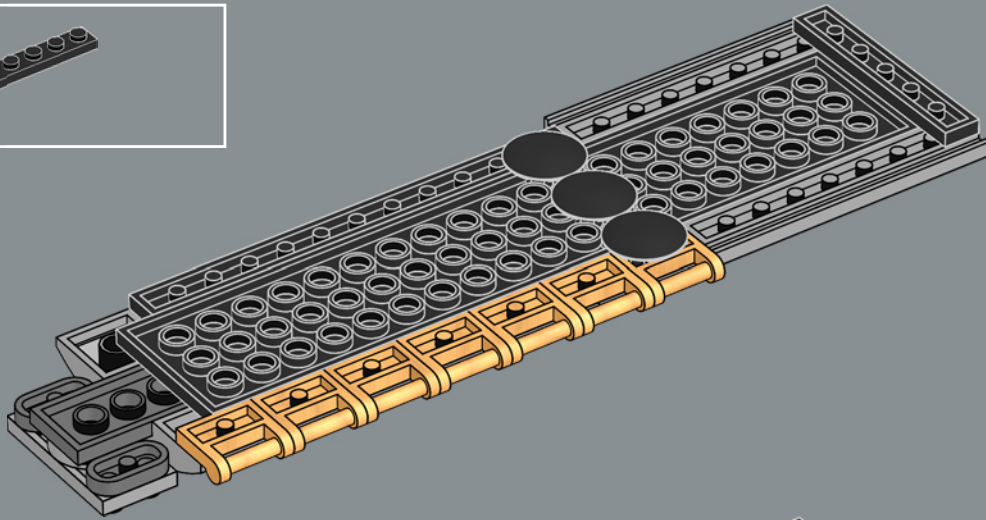


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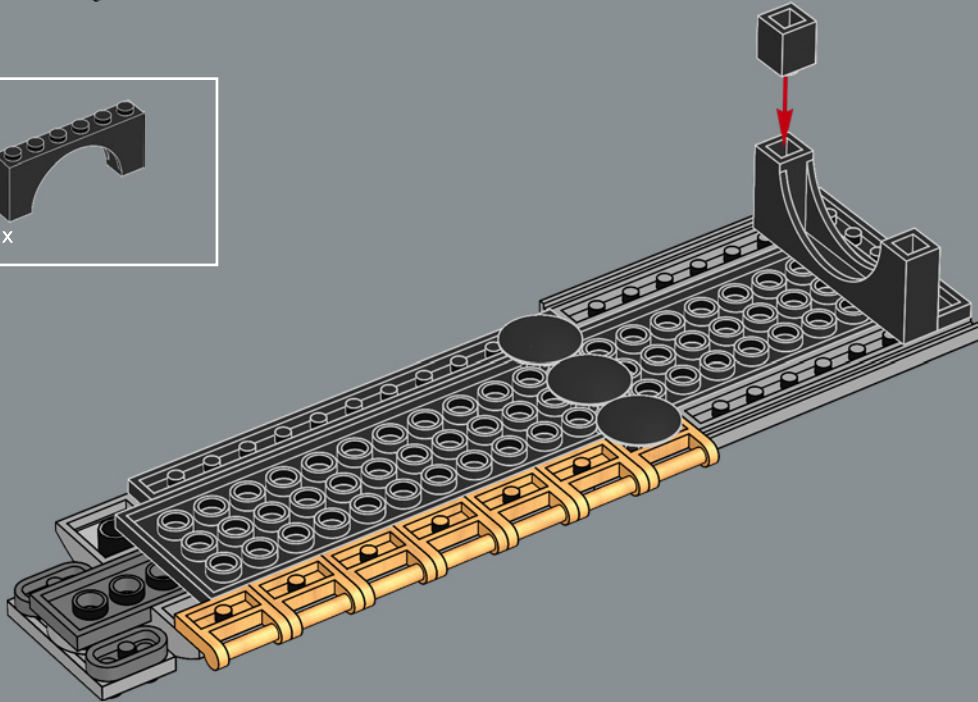




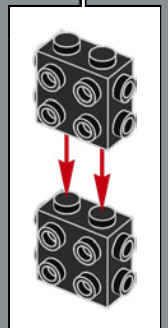
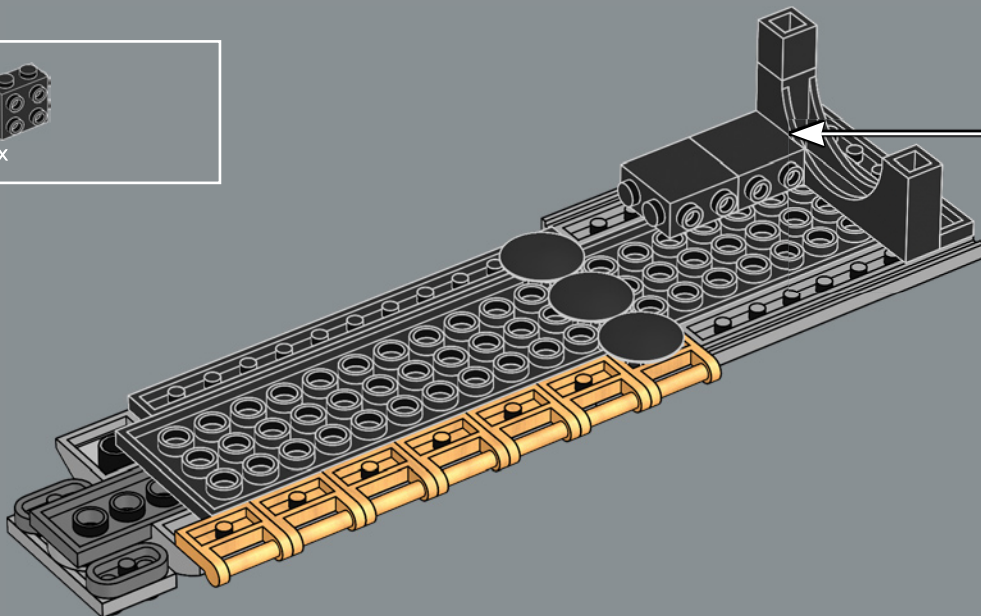
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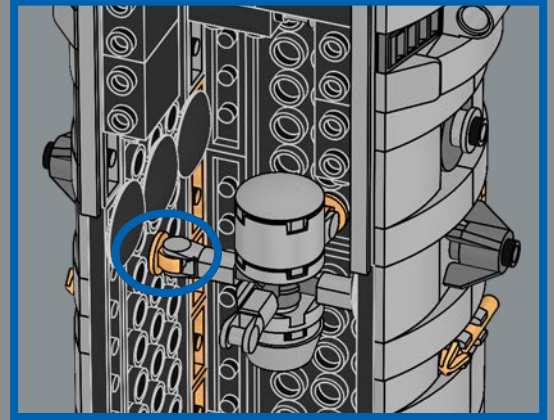
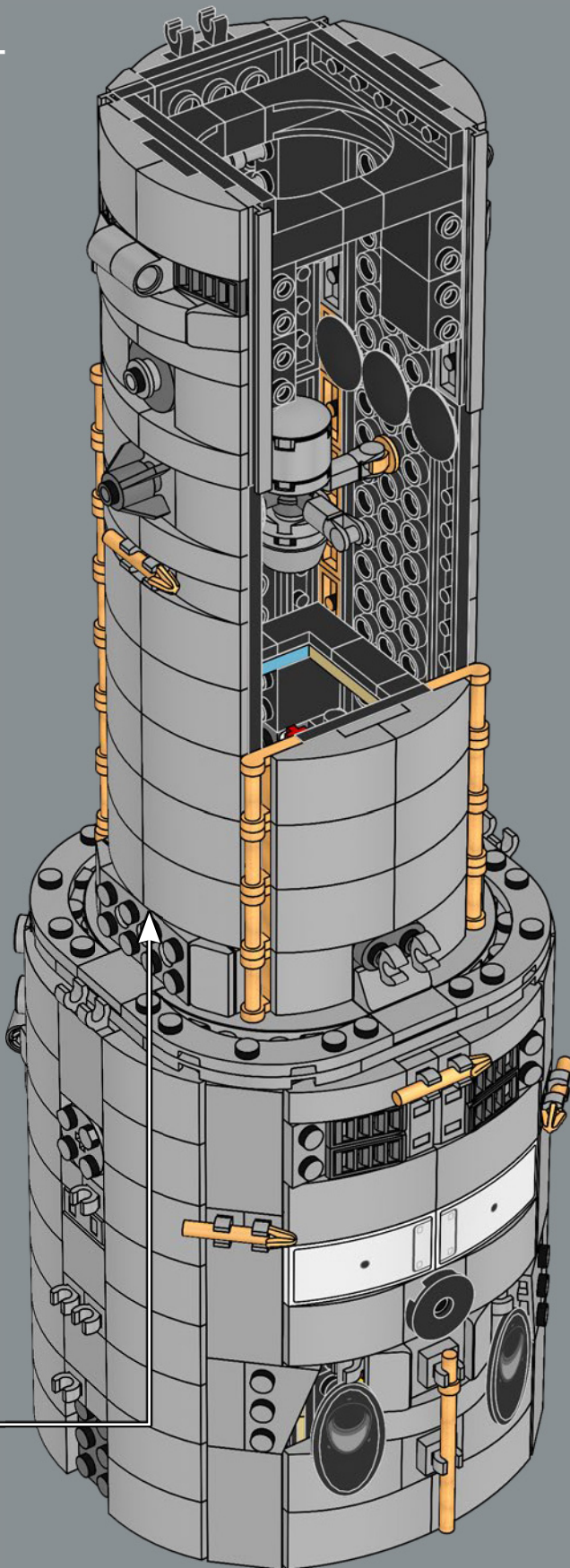


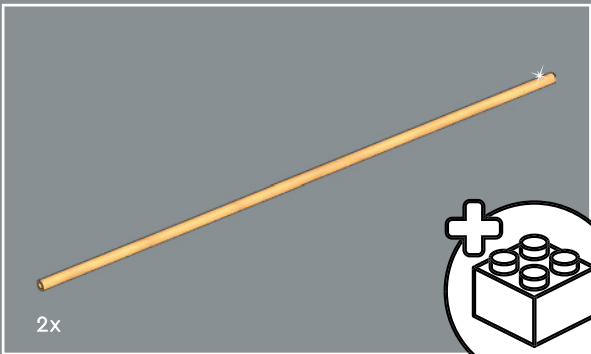
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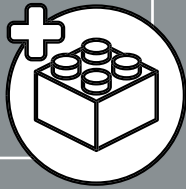
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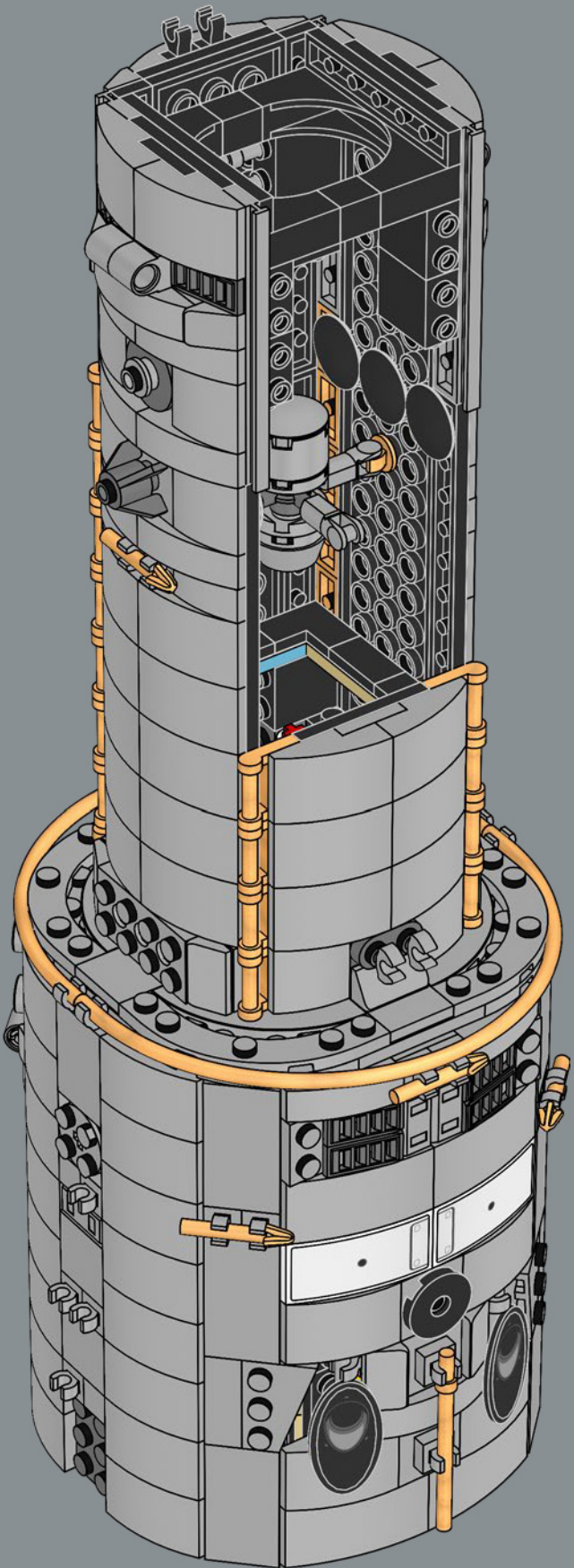


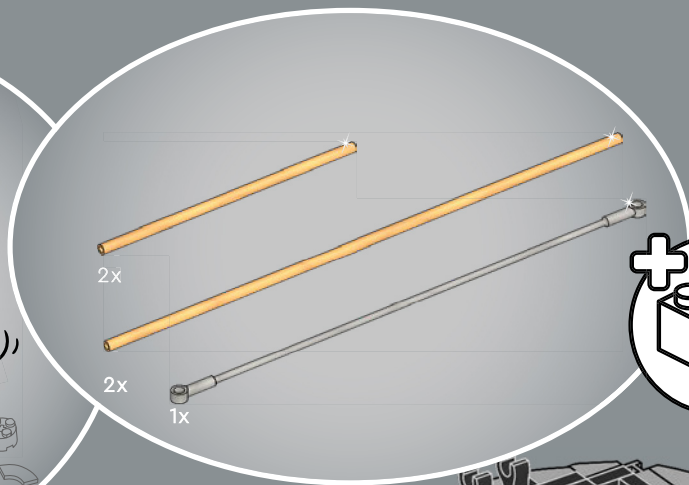


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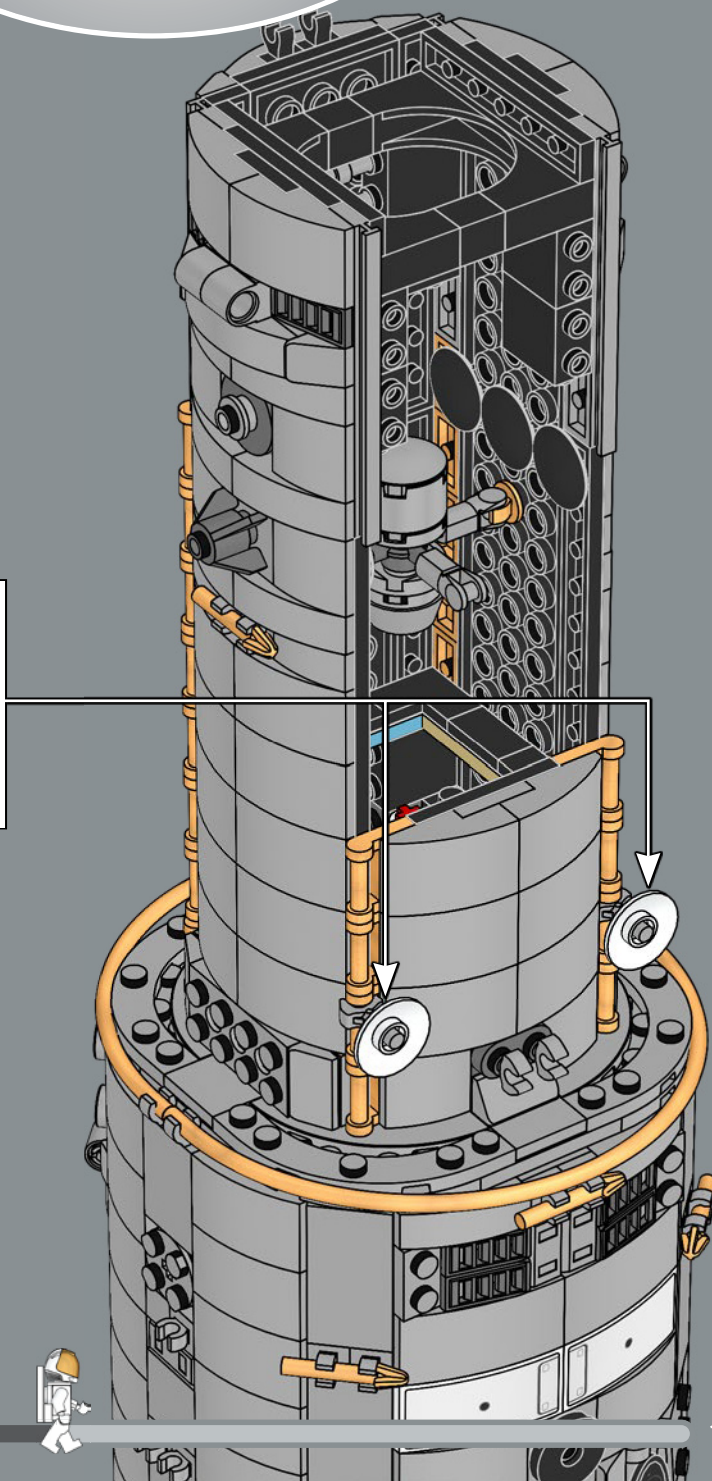
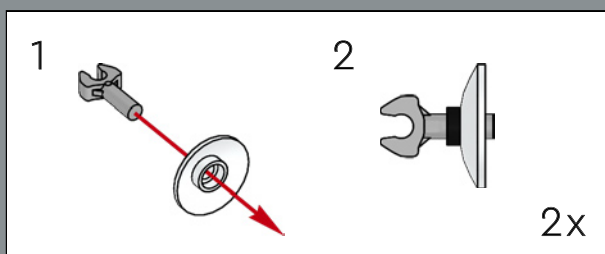


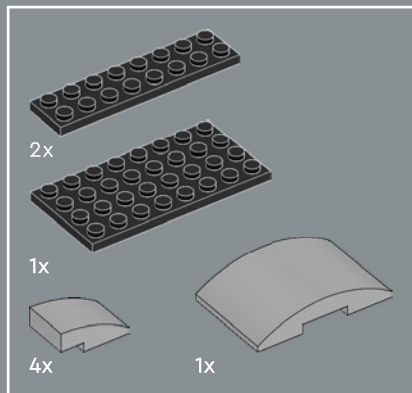
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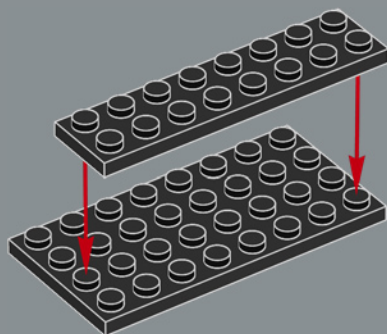
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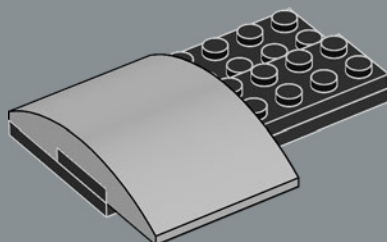


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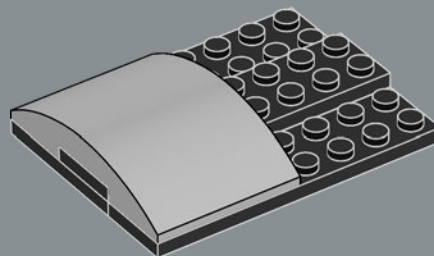
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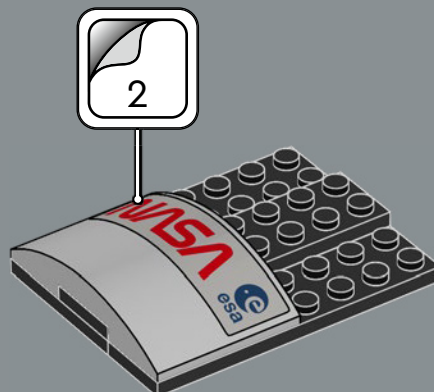
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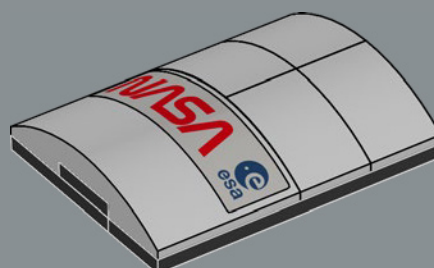
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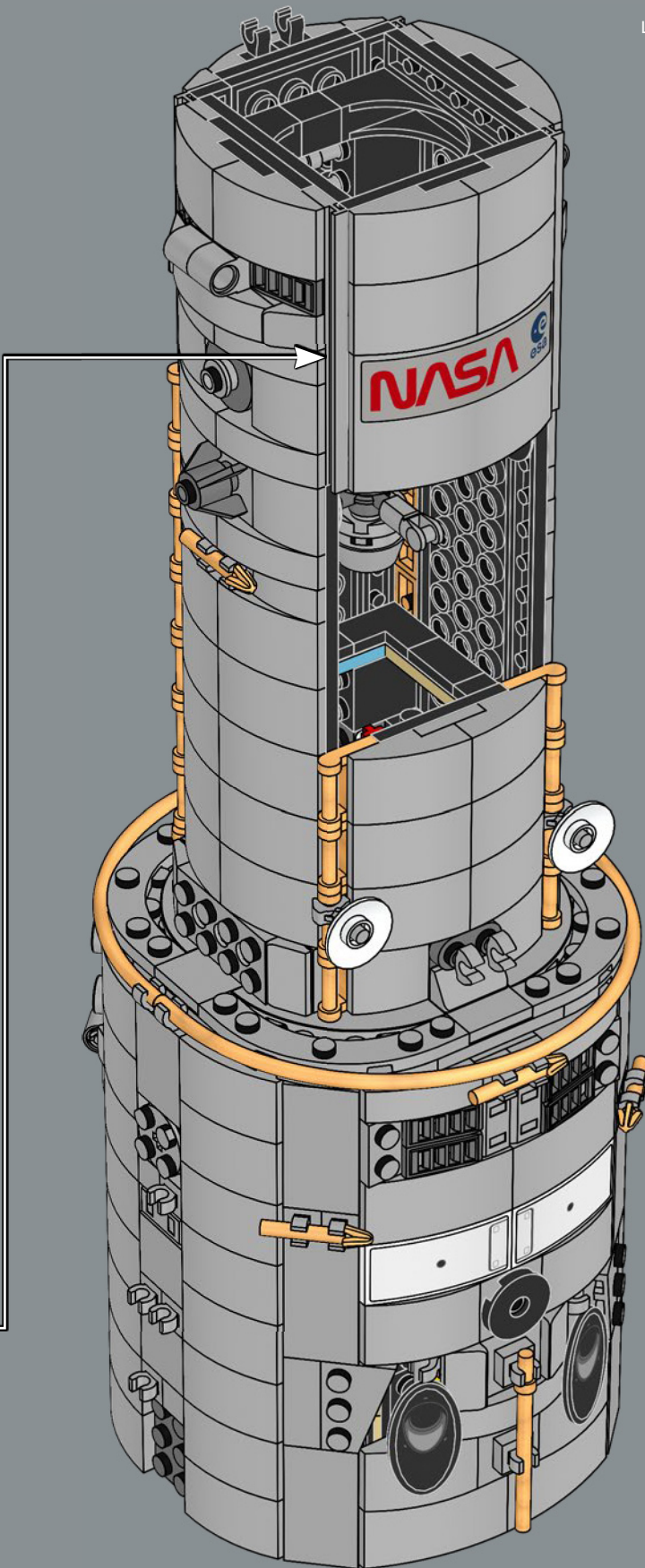
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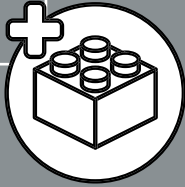
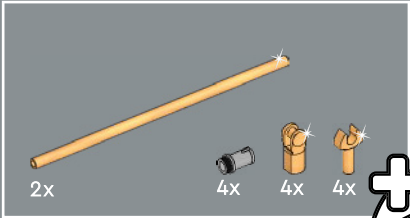
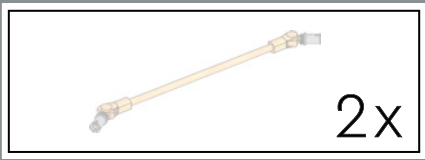


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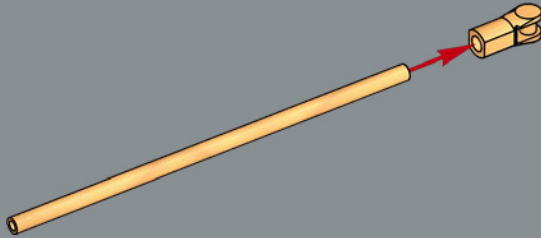
Le télescope a affiné les estimations de la constante de Hubble, déterminant que l'univers est âgé d'environ 13,8 milliards d'années.



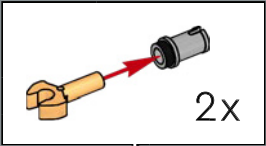
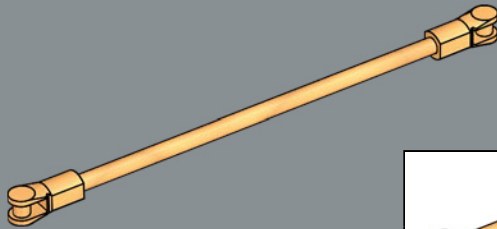


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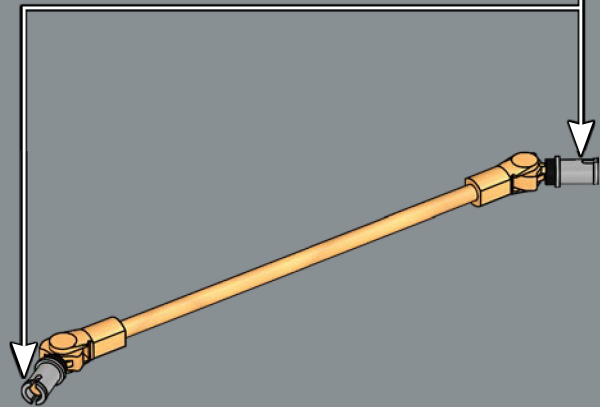
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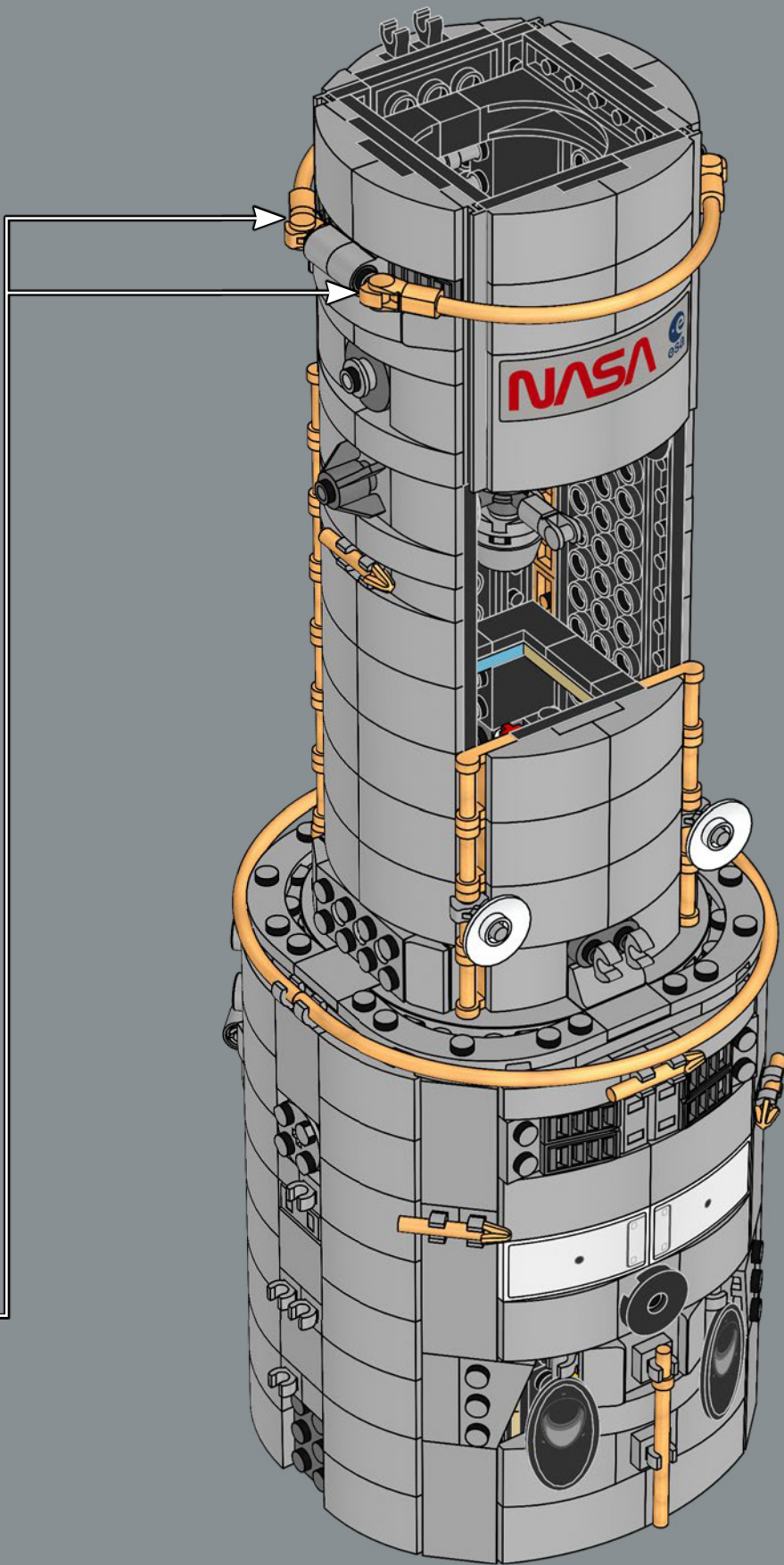
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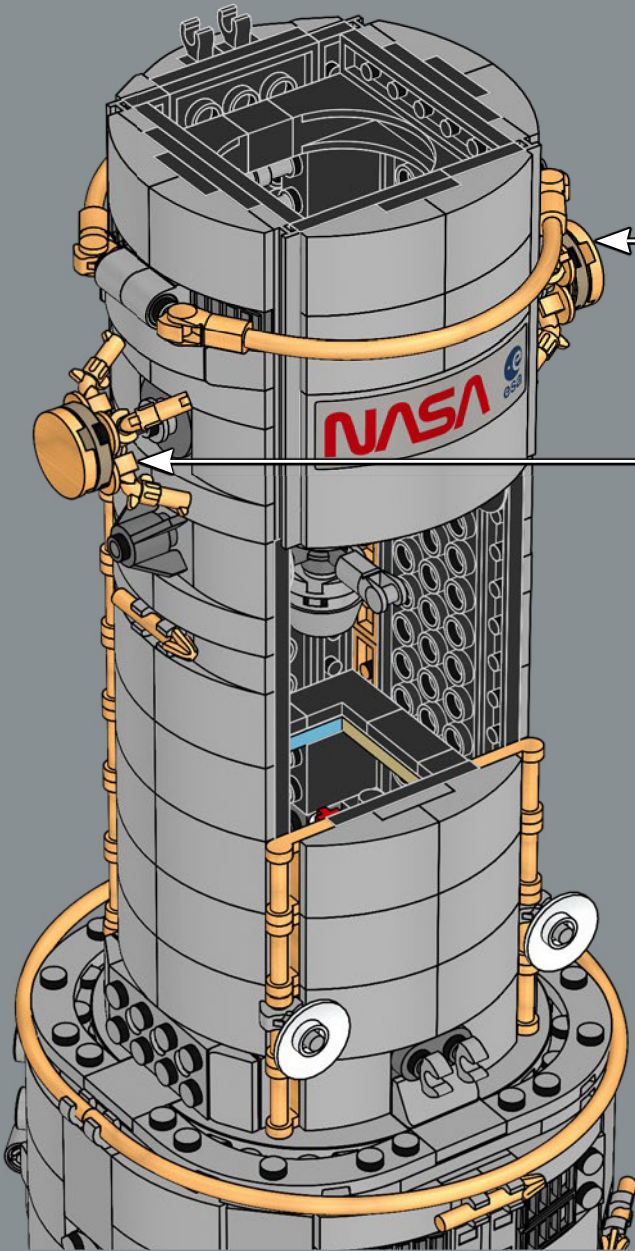
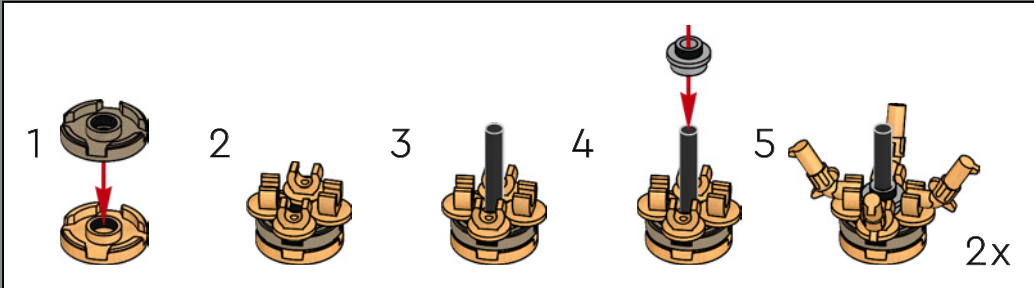


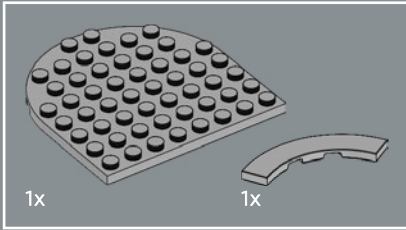
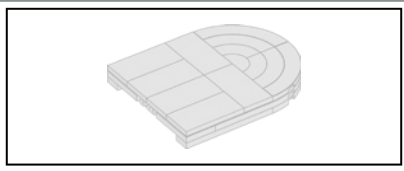
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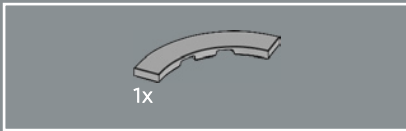
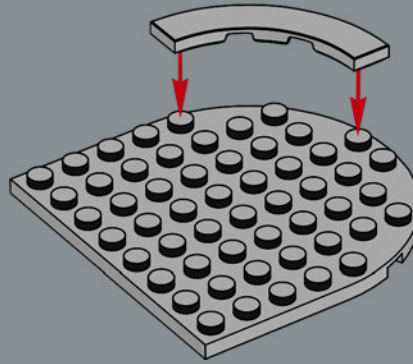


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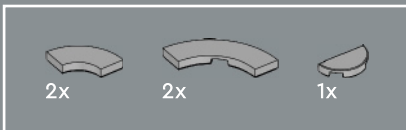
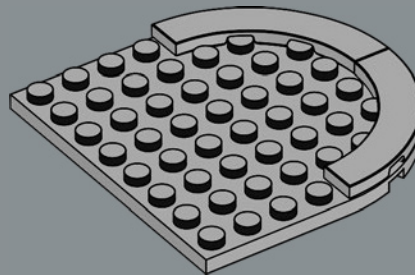




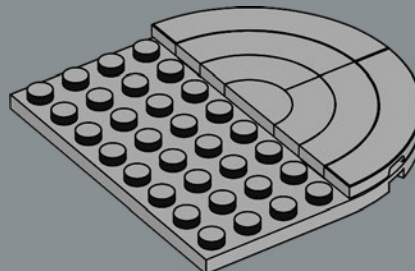
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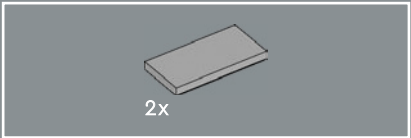


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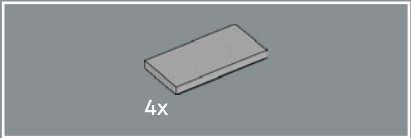
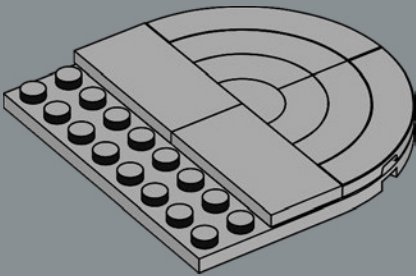


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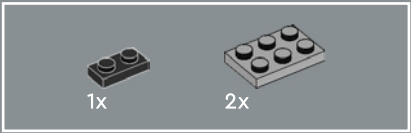
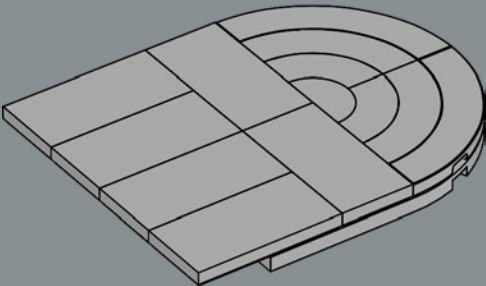




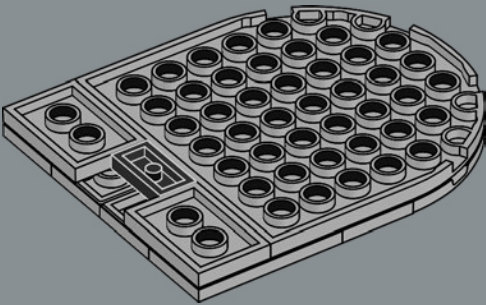
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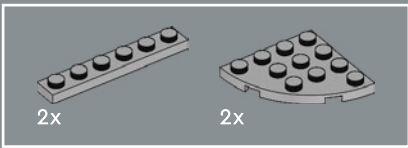


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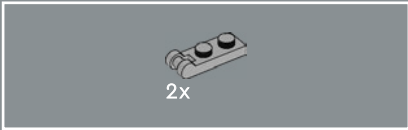
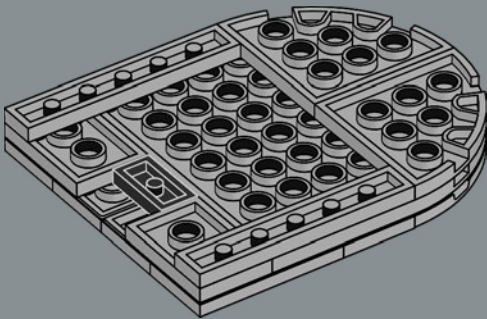


295

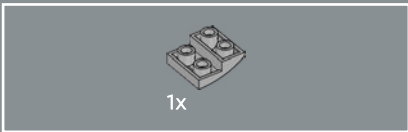
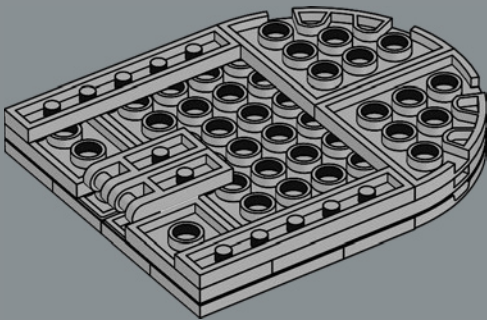




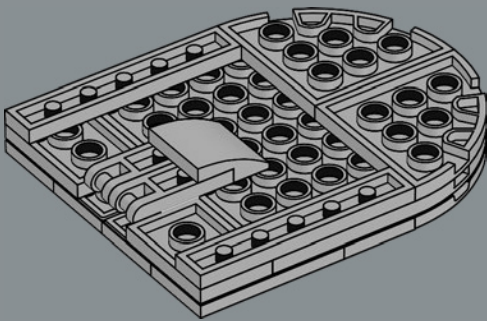
296

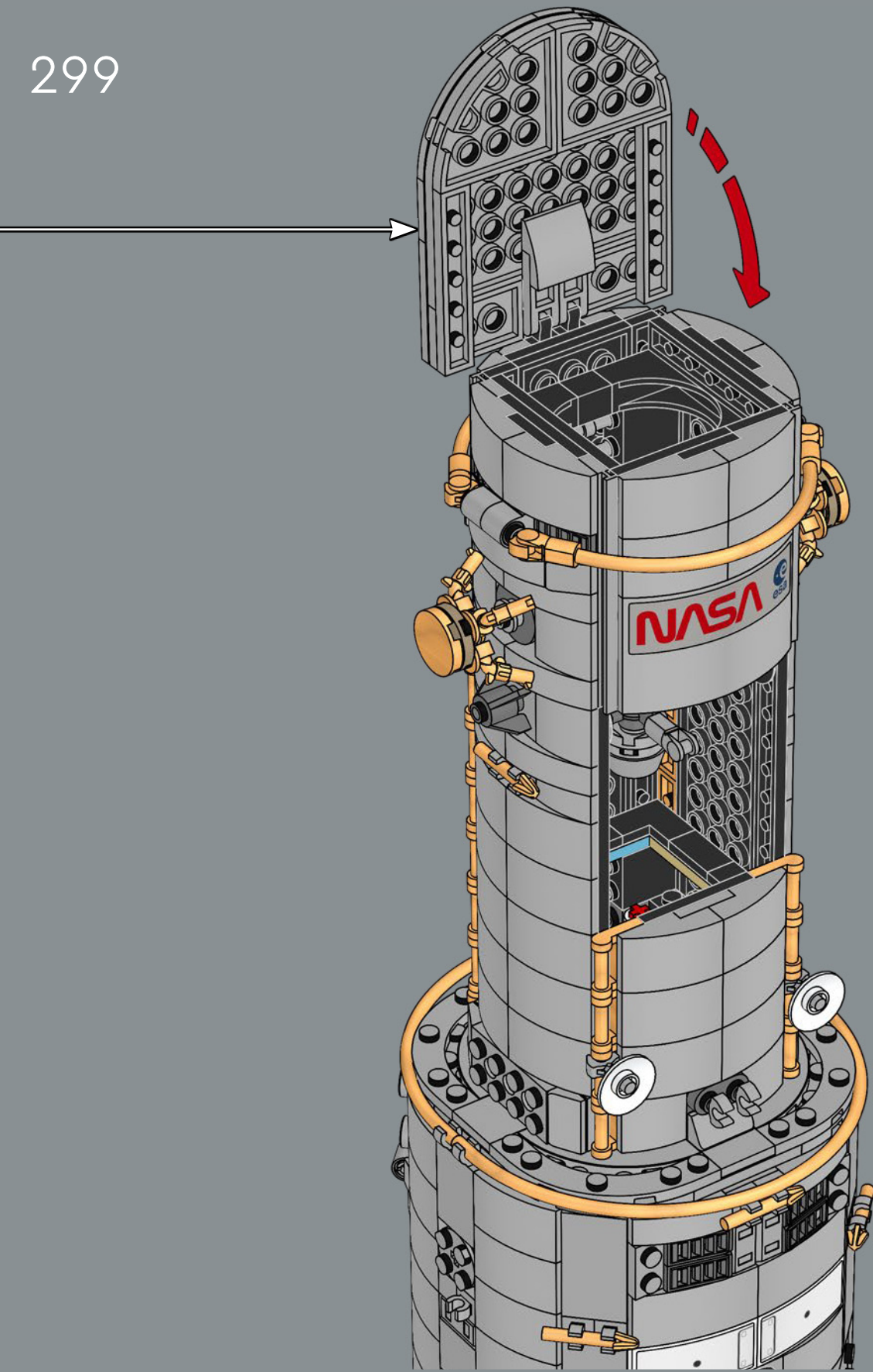


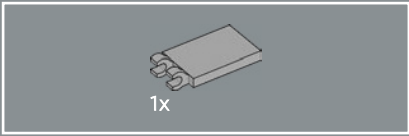
297



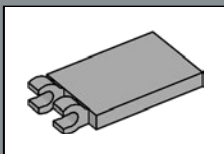
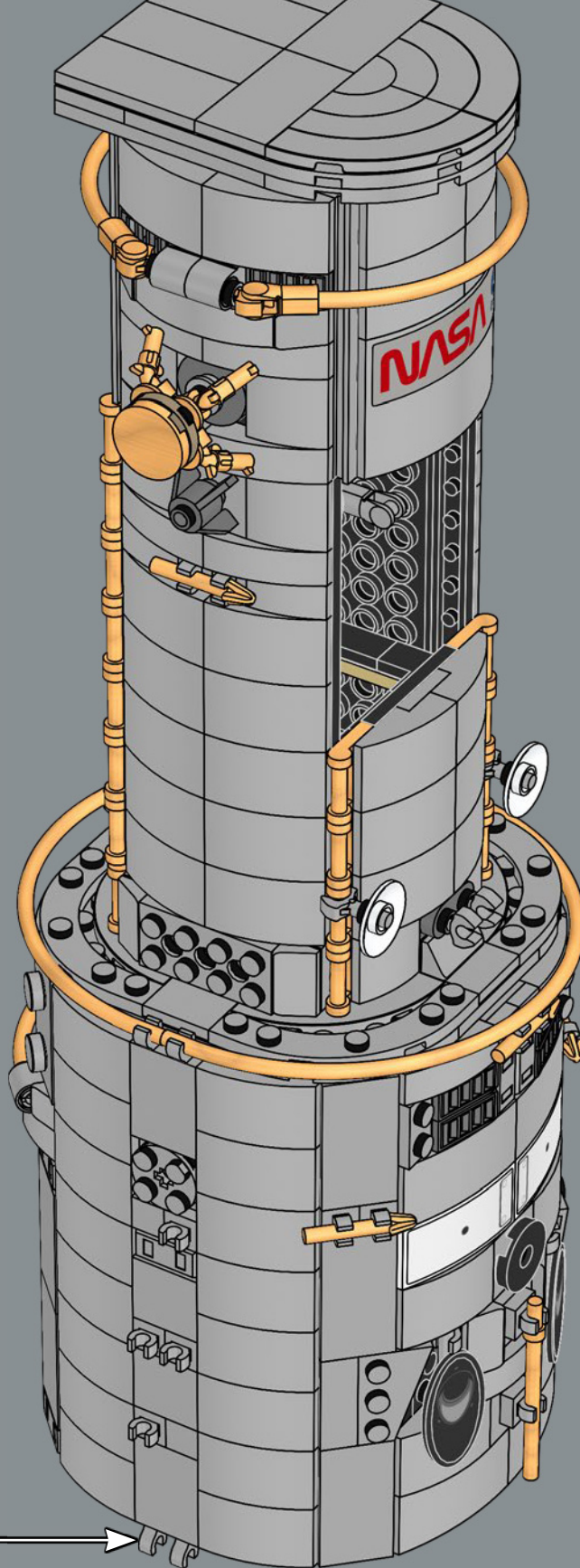
298





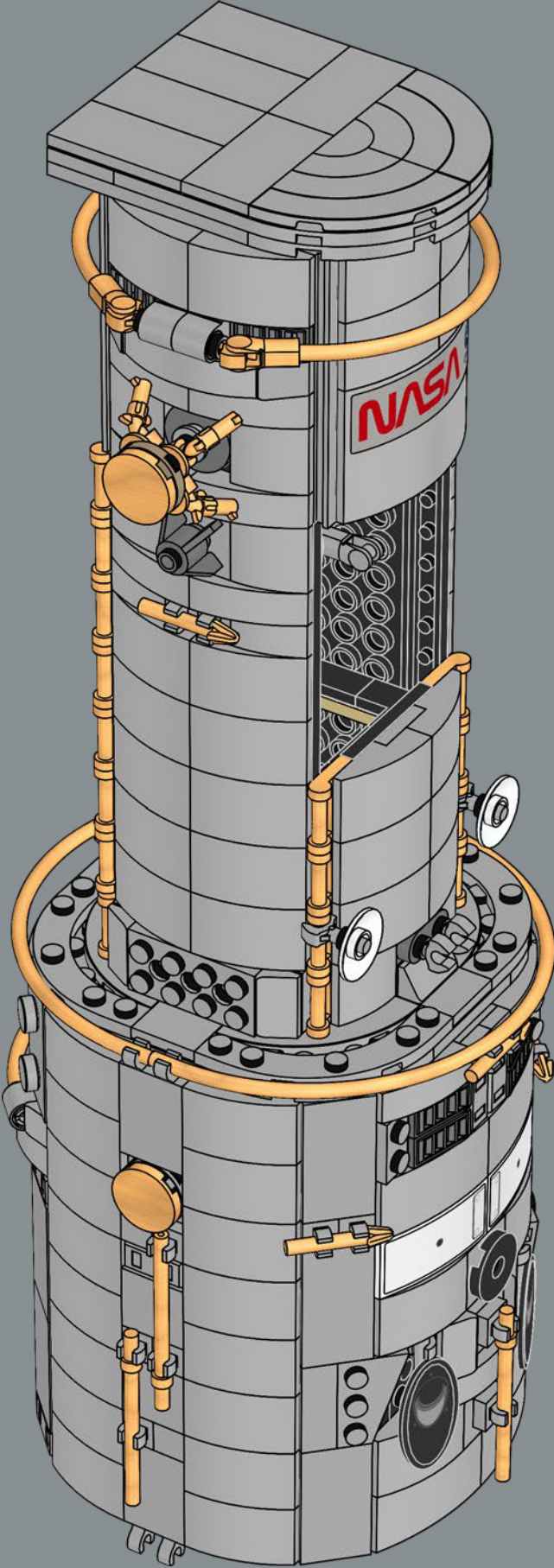


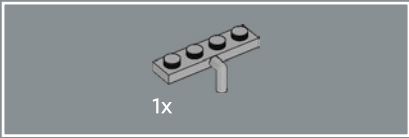
300



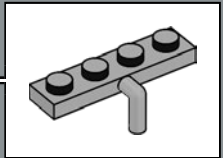
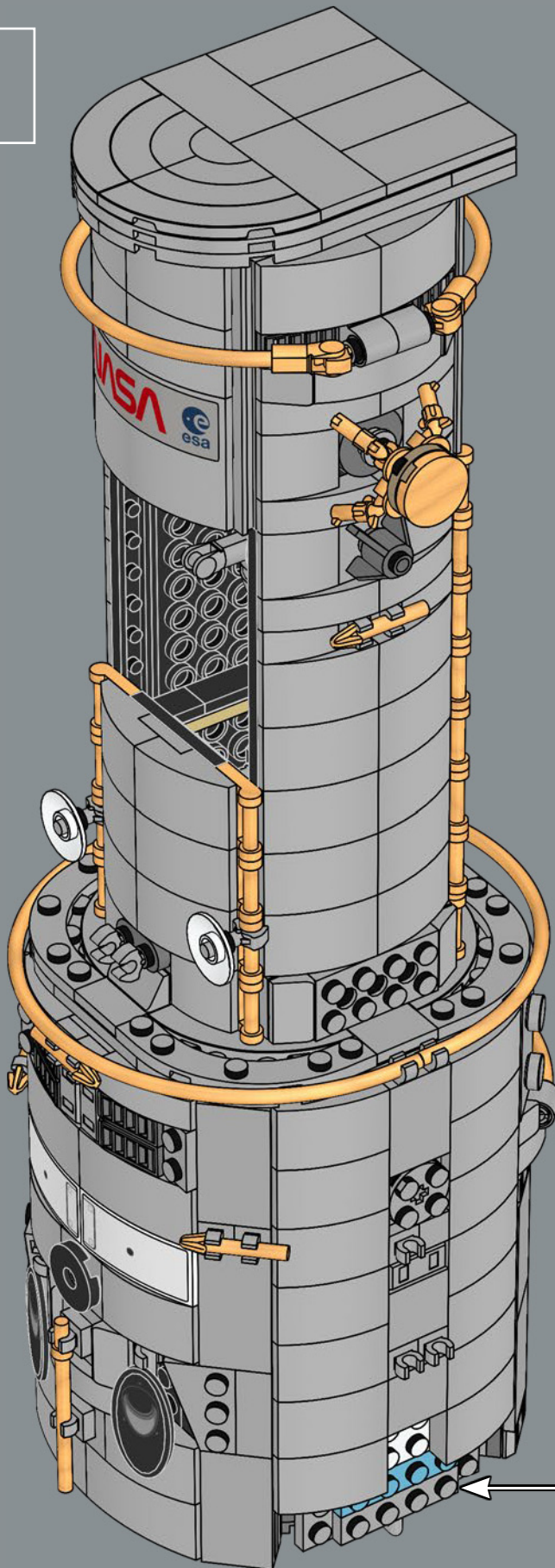


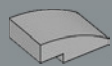
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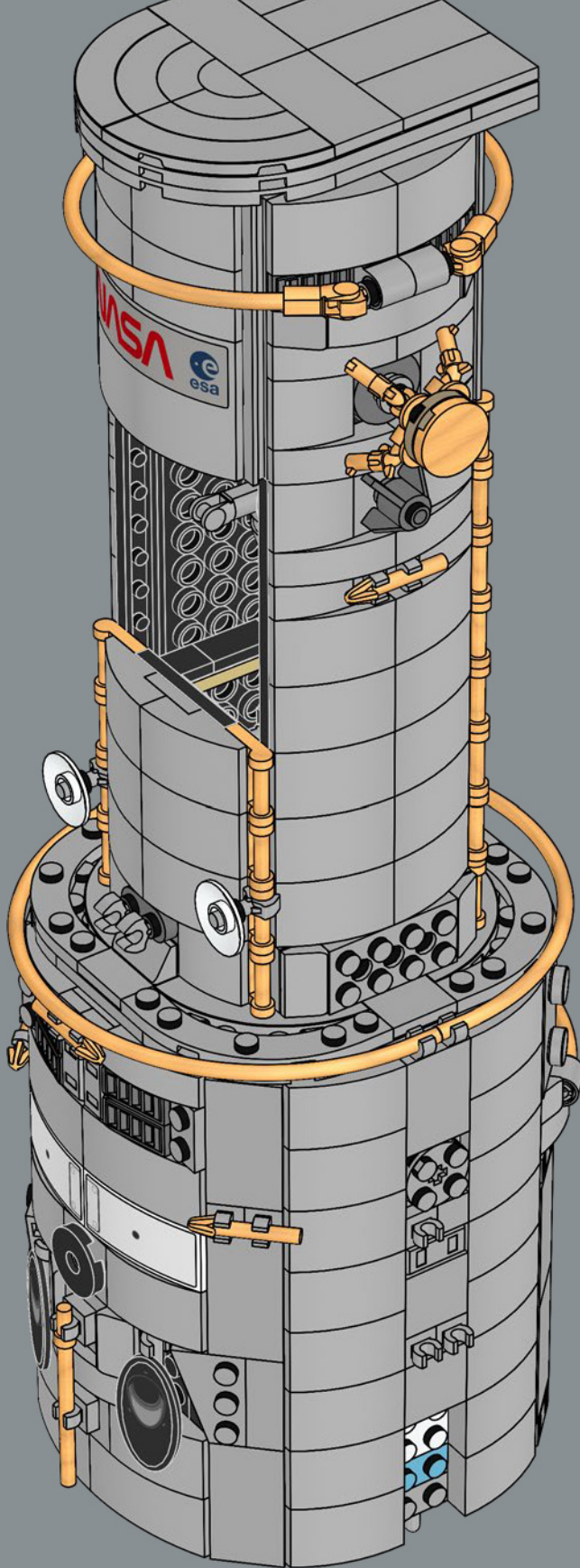
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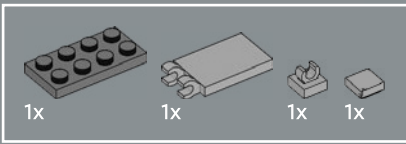




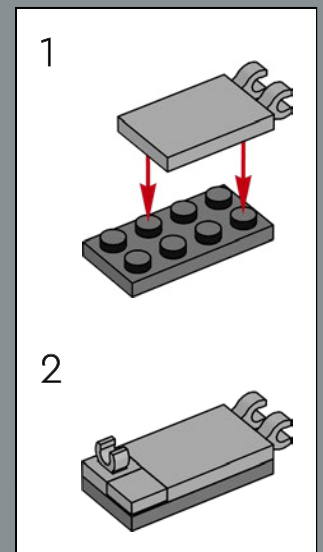
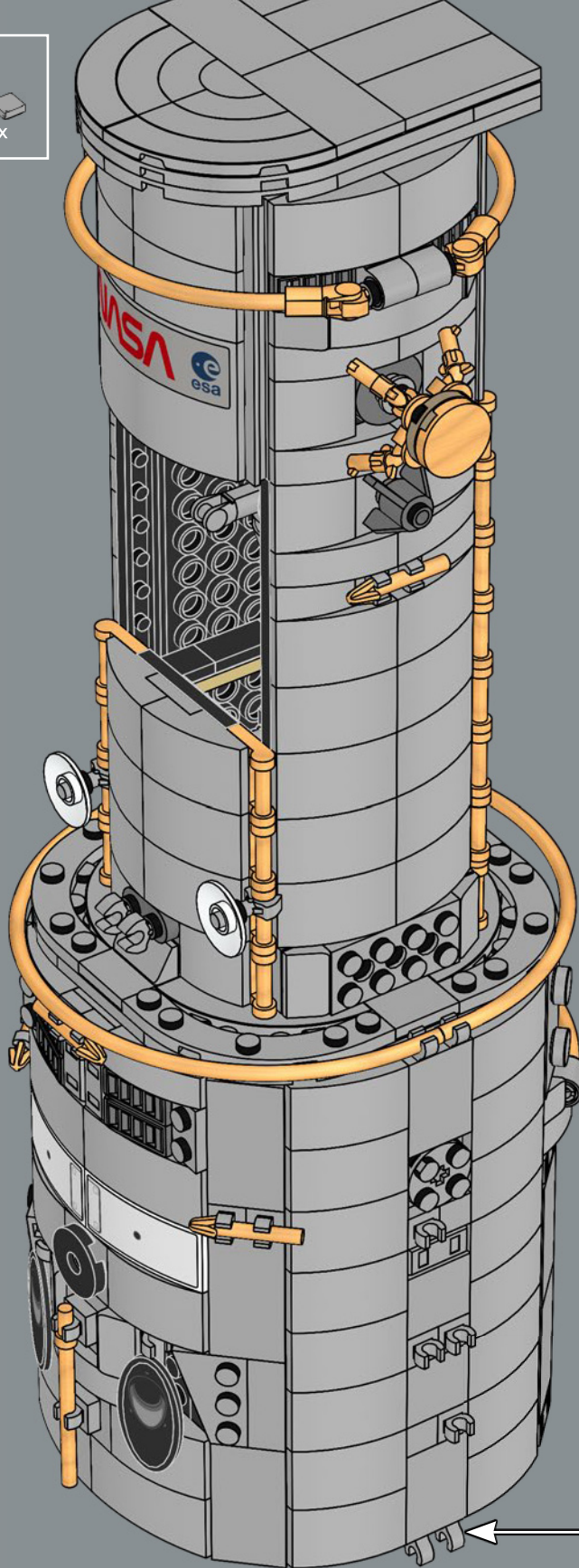
2x

303



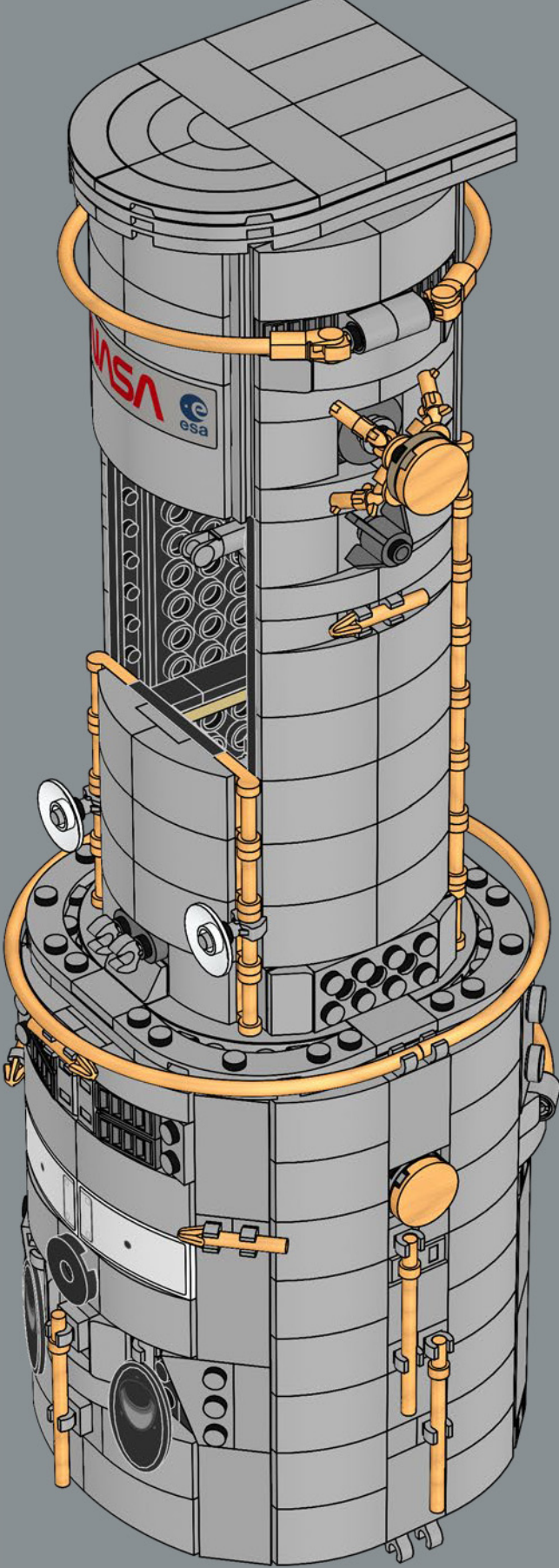


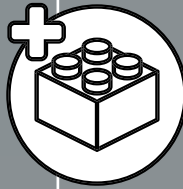
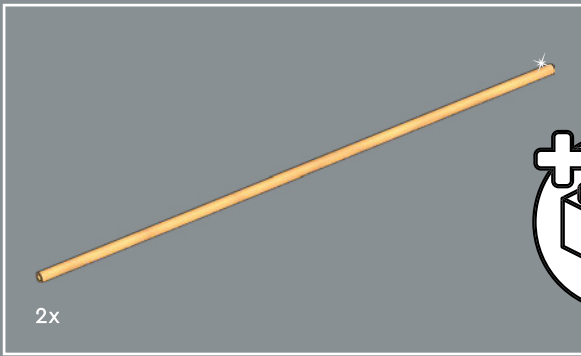
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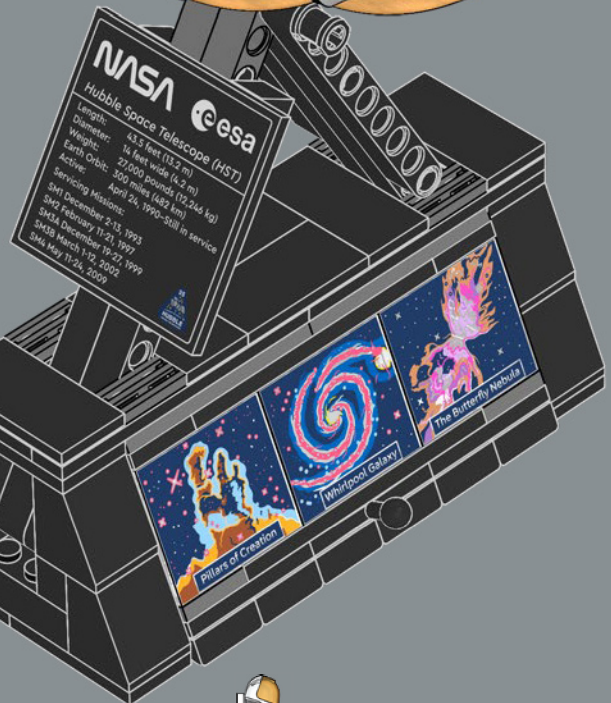
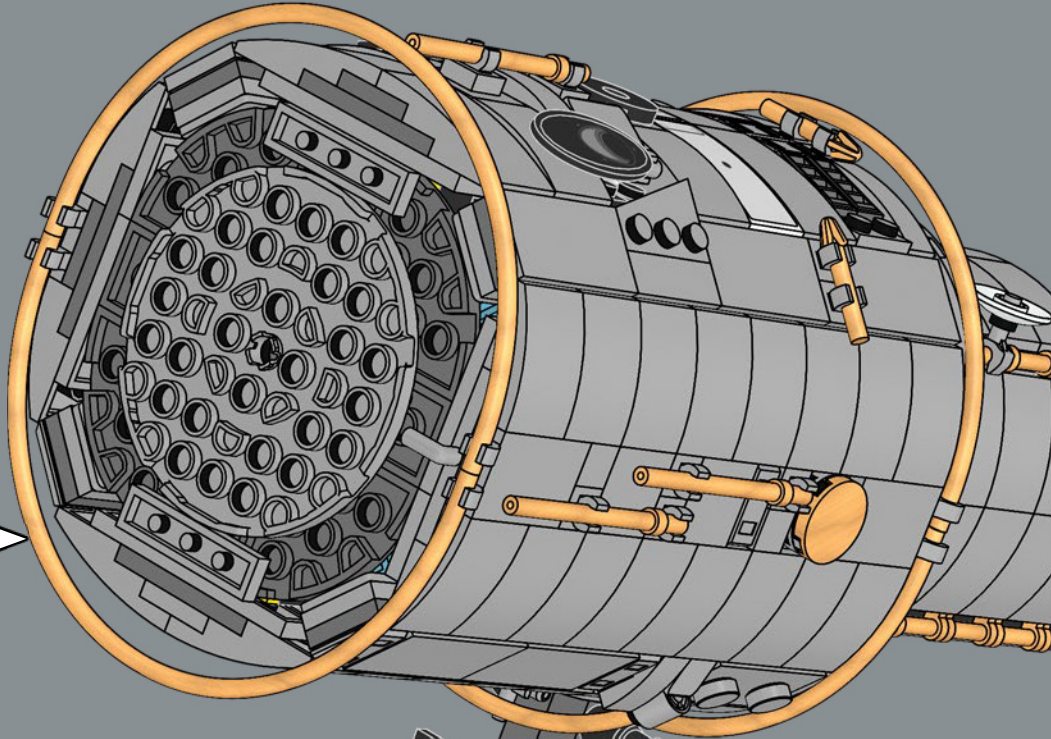


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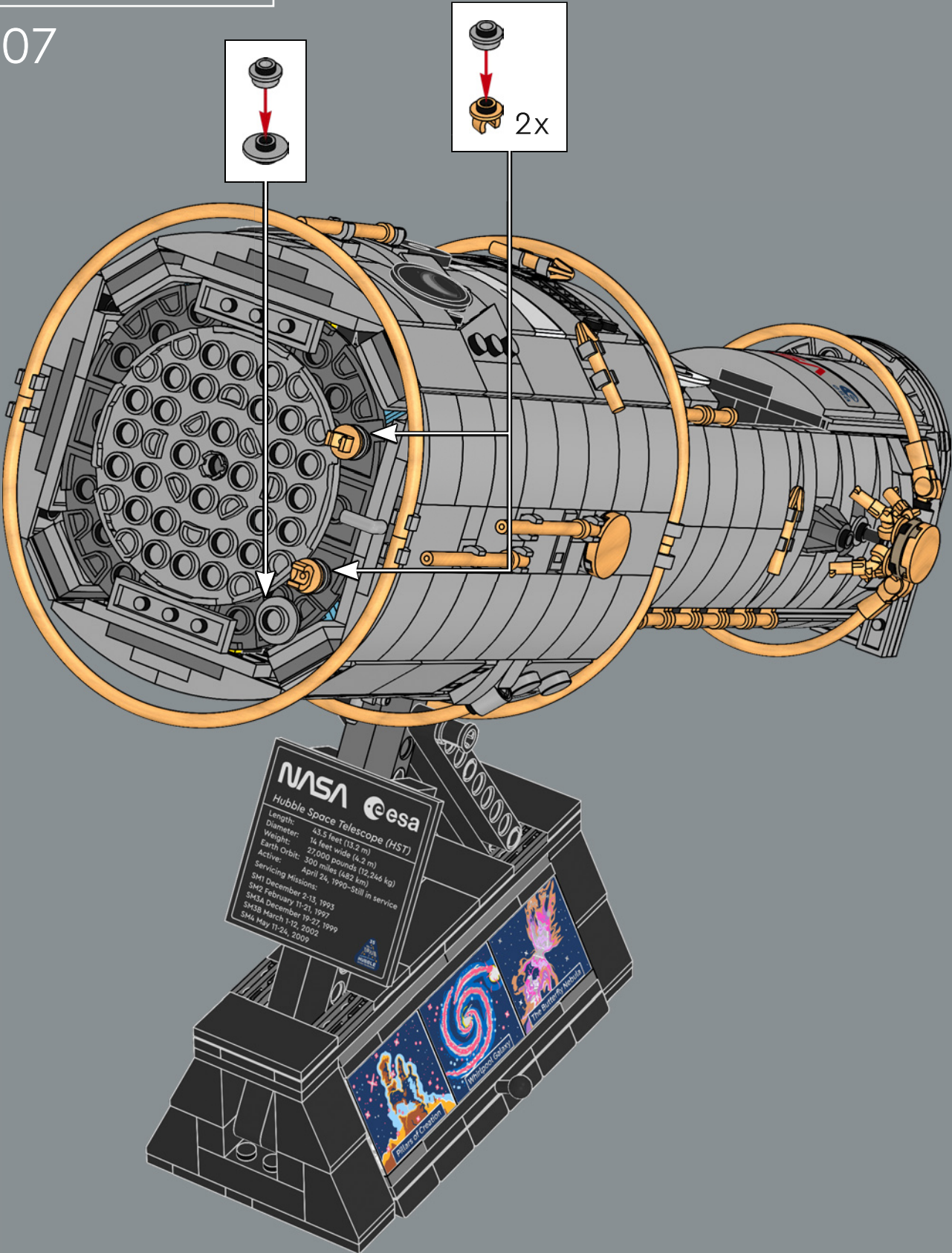


306



- 3x
- 2x
- 1x

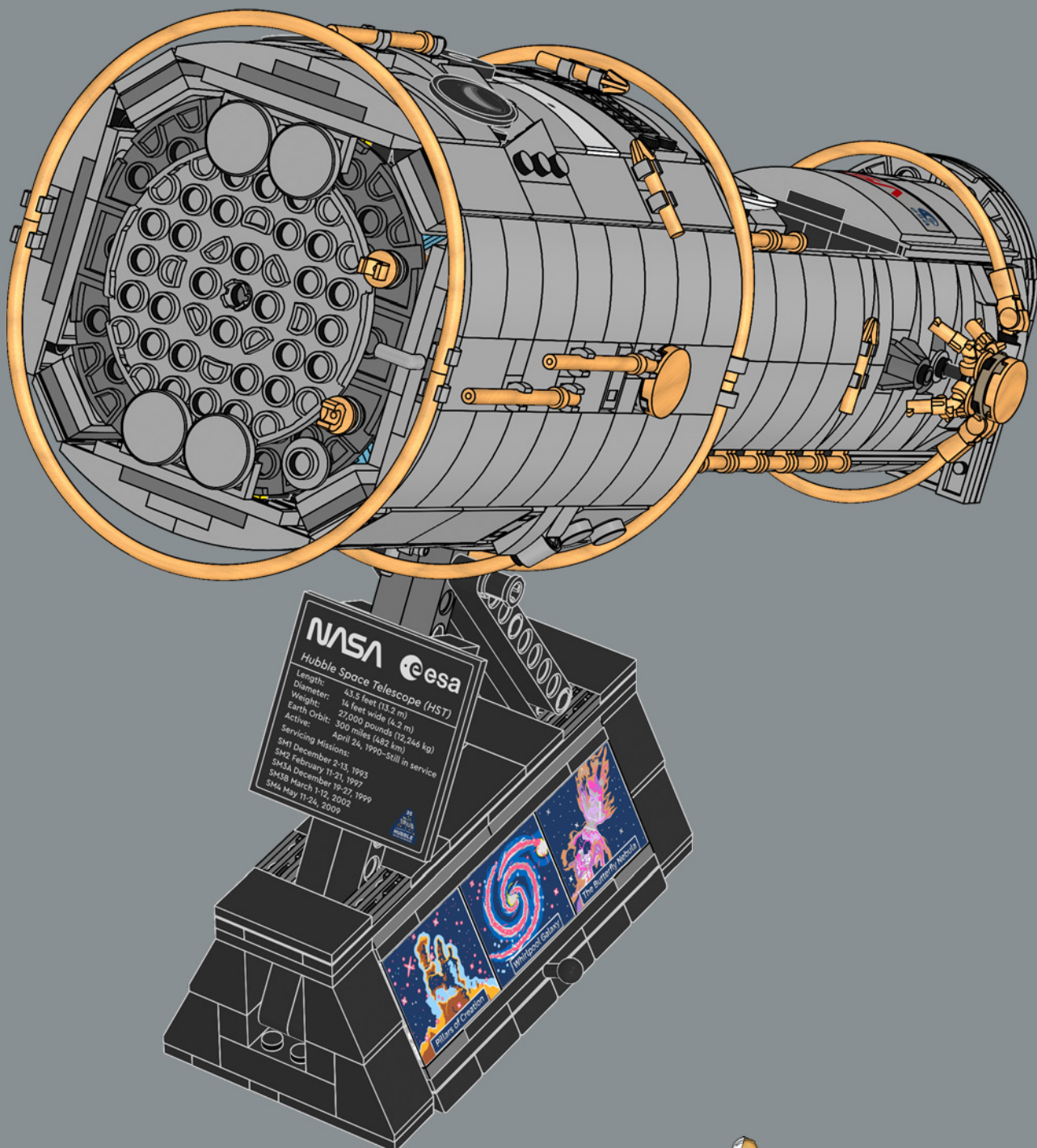
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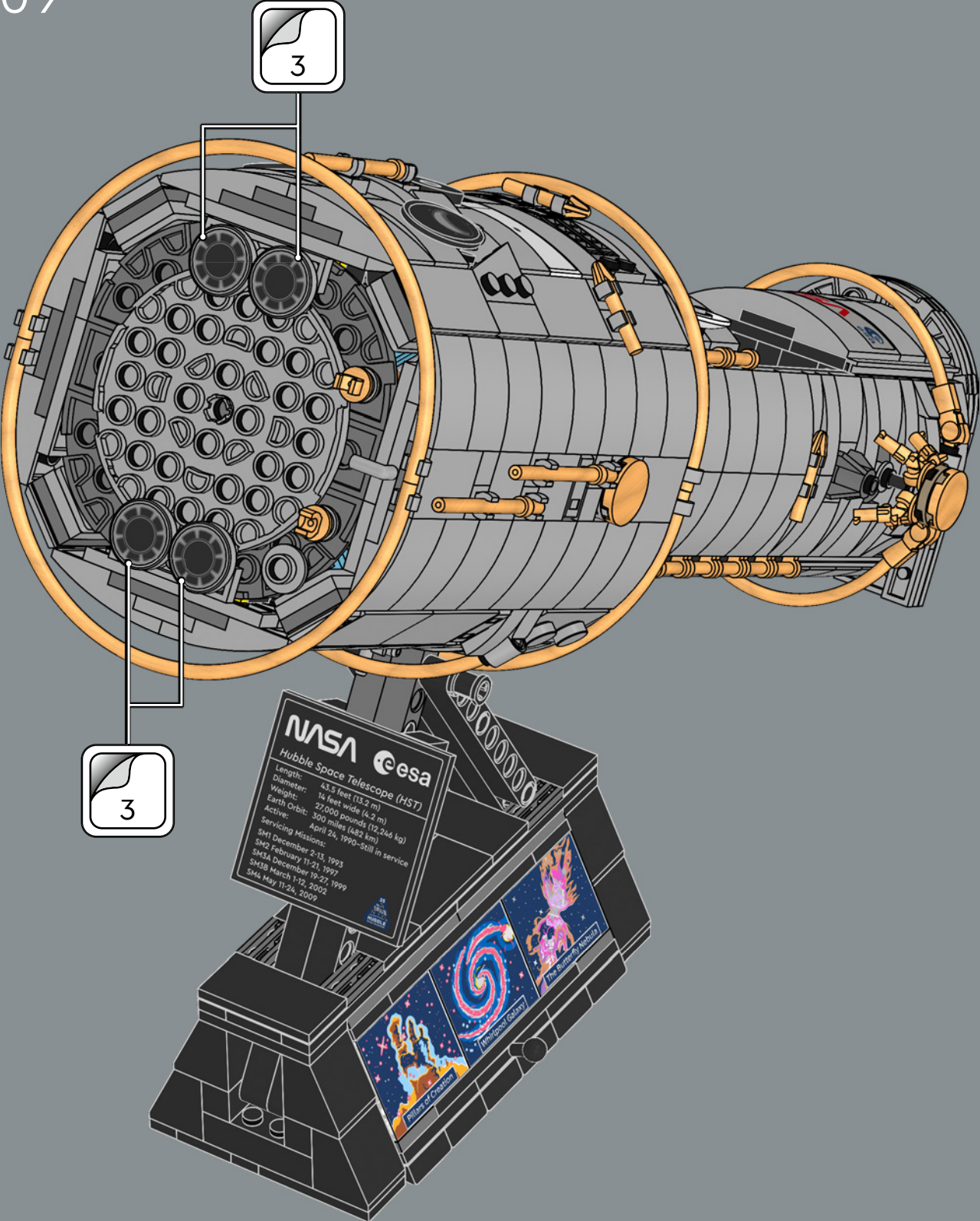


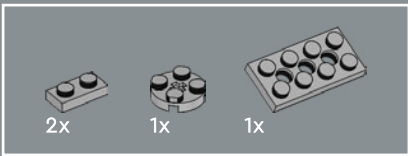


4x

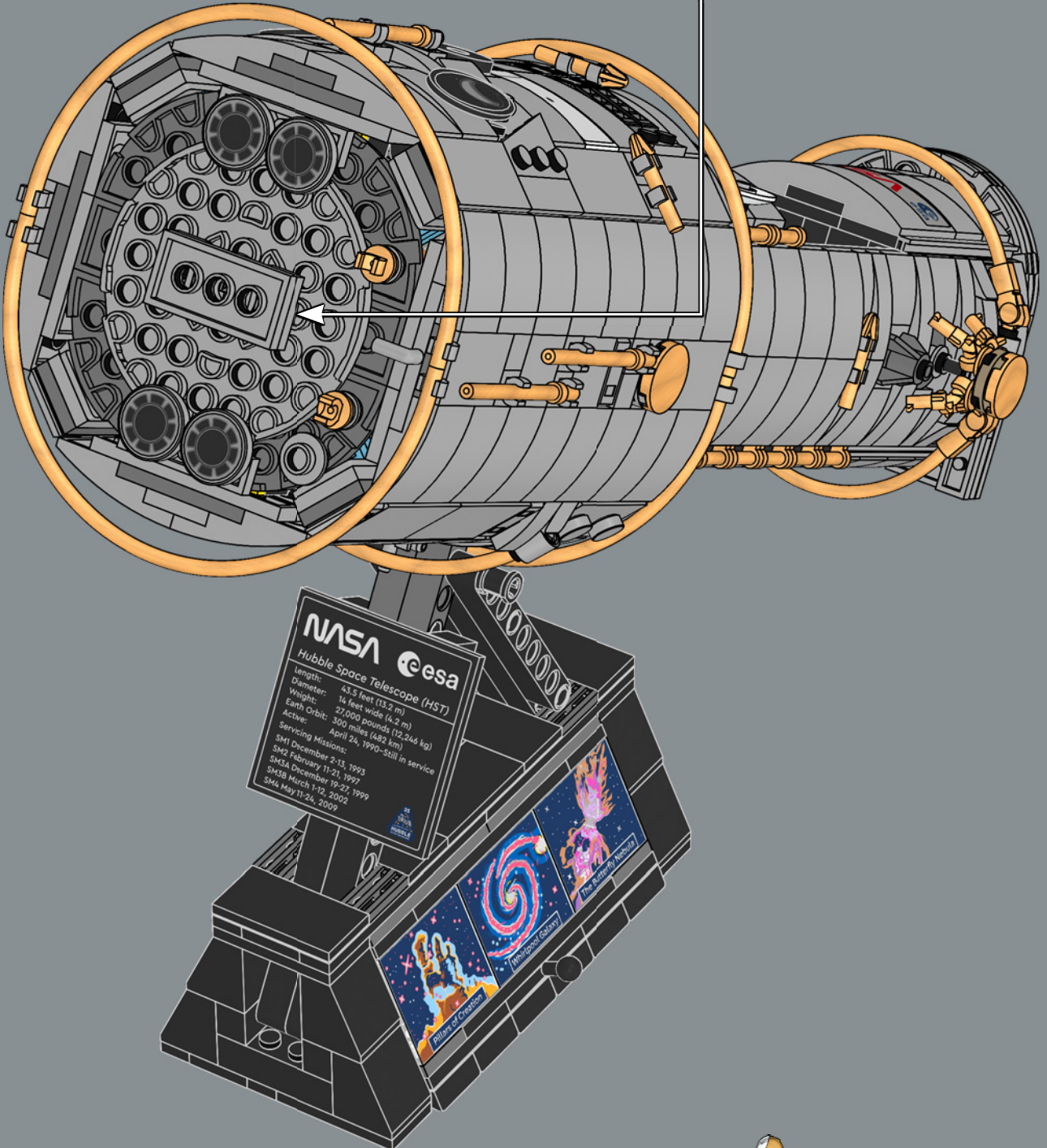
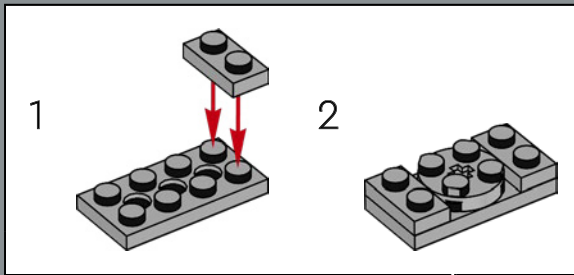
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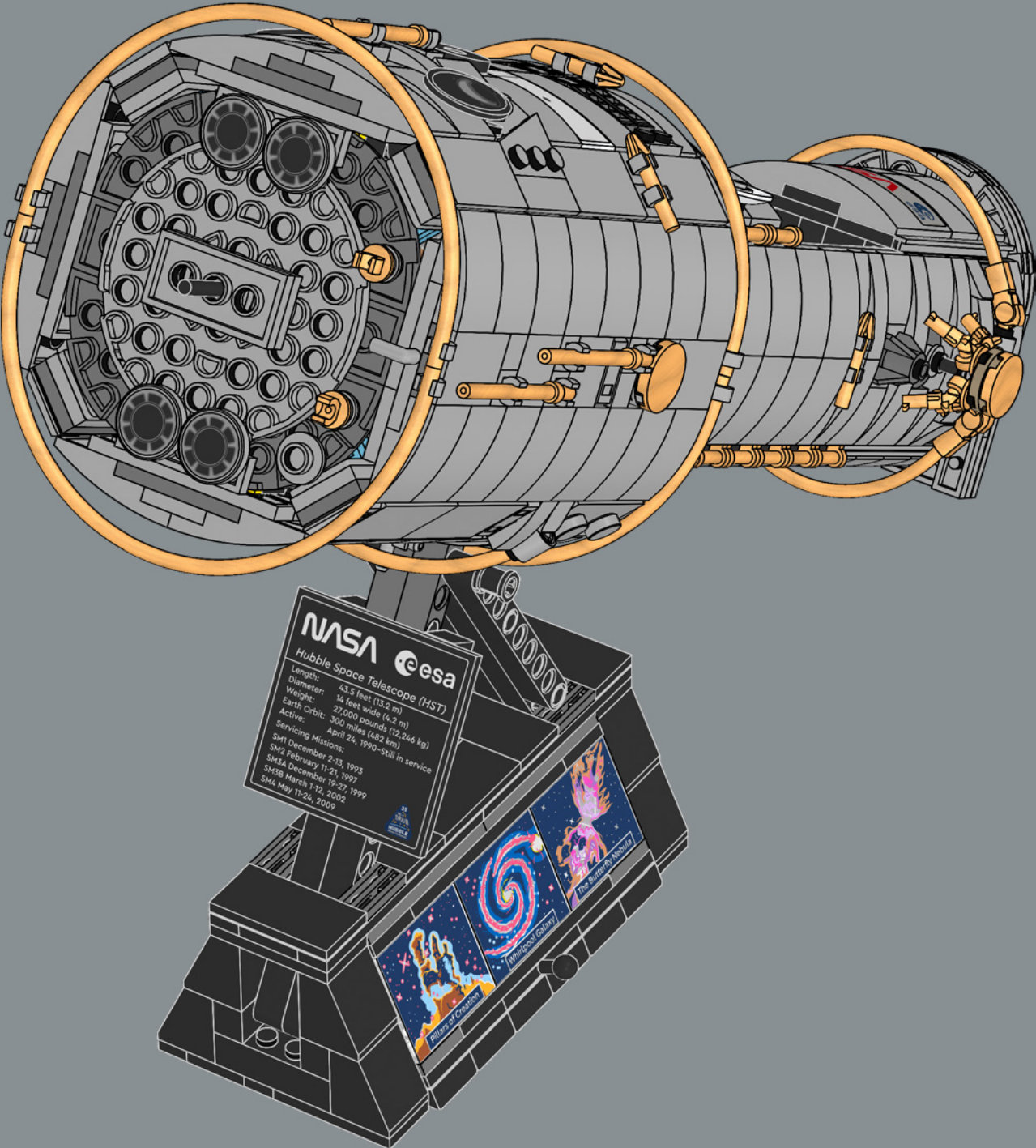


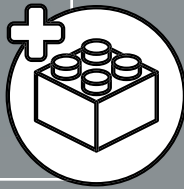
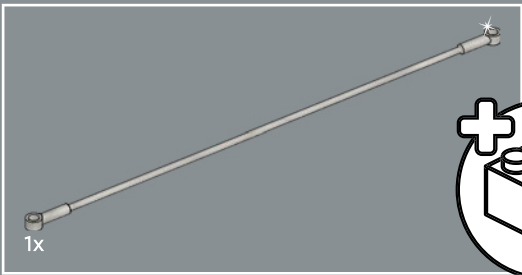
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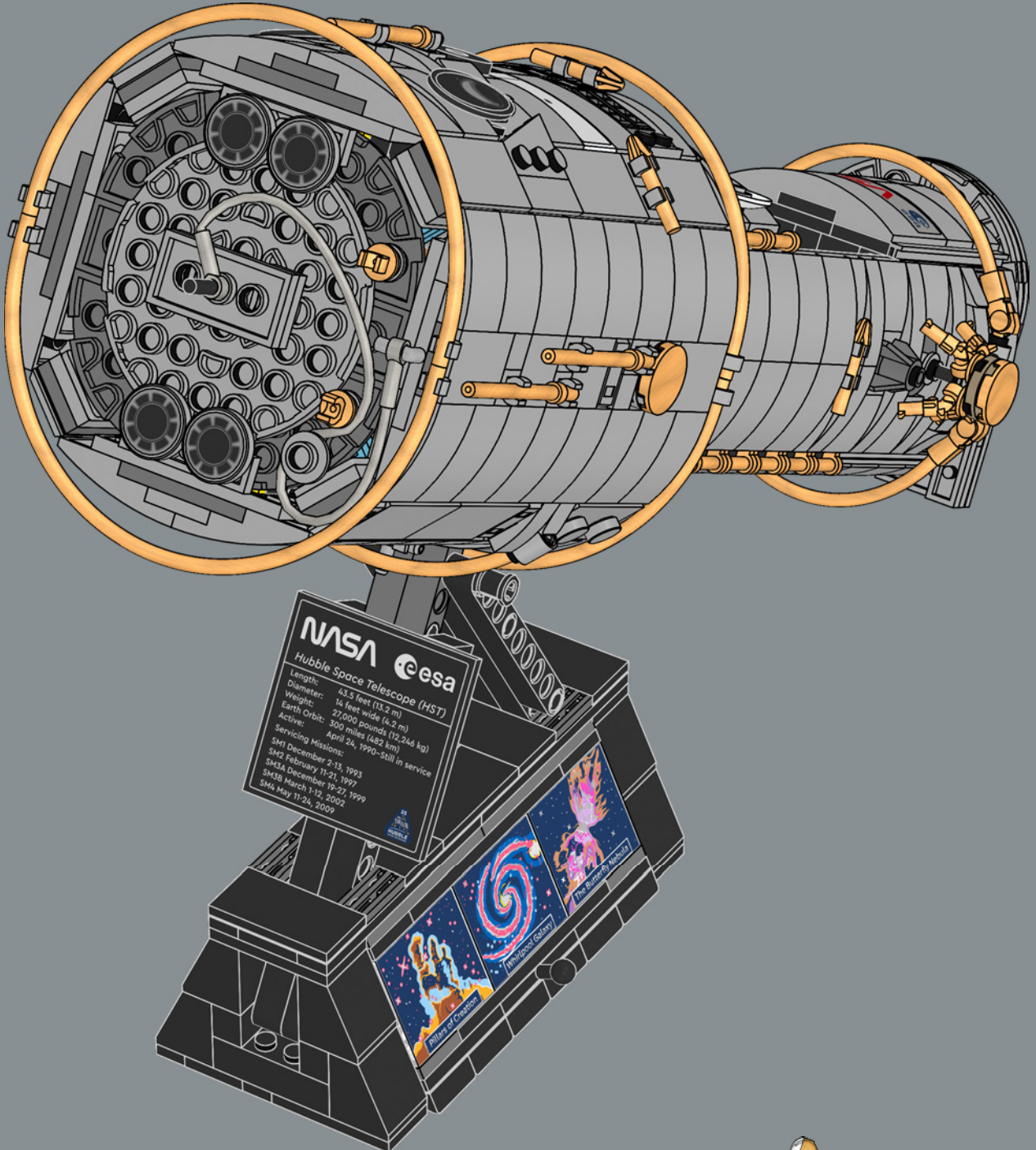


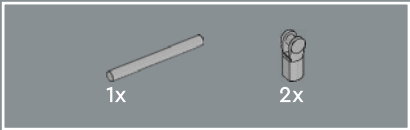
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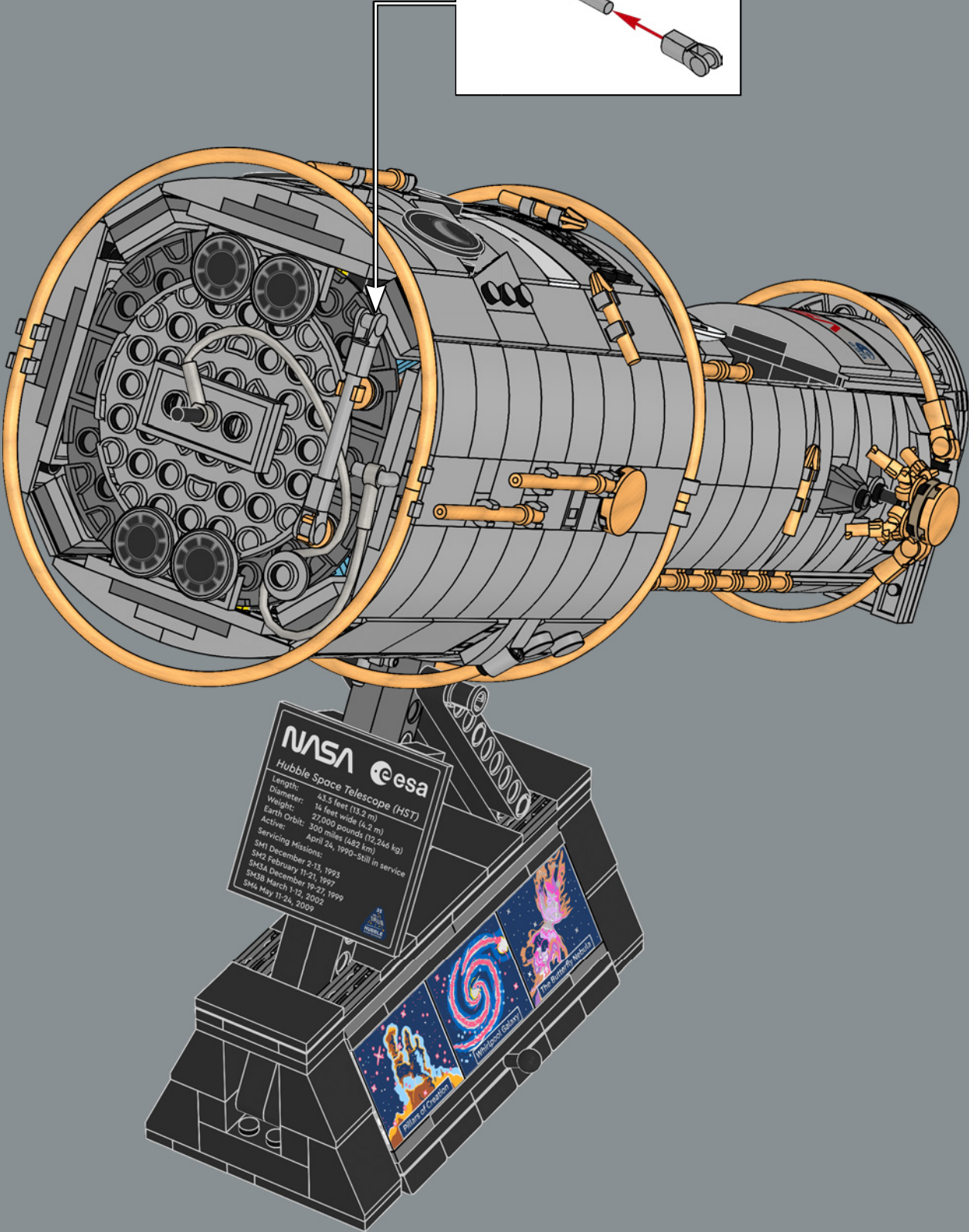
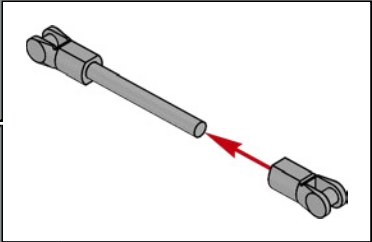


312





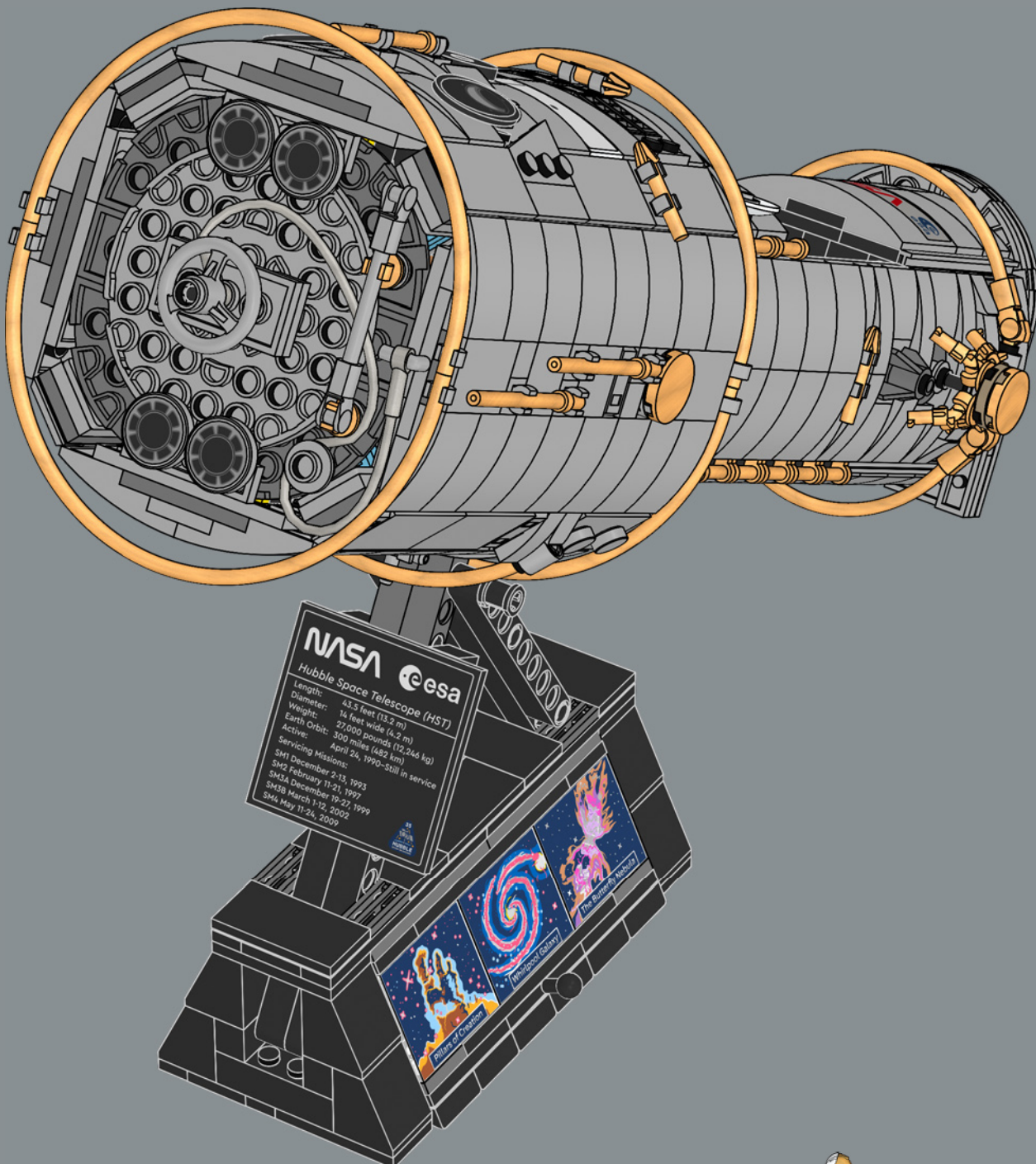
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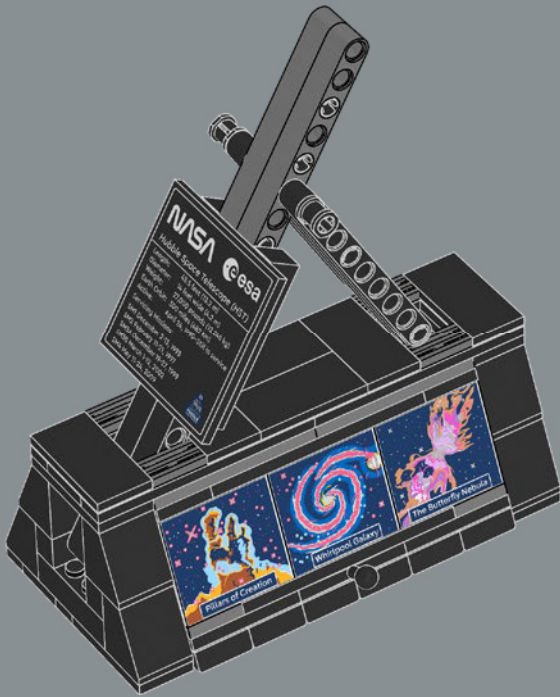
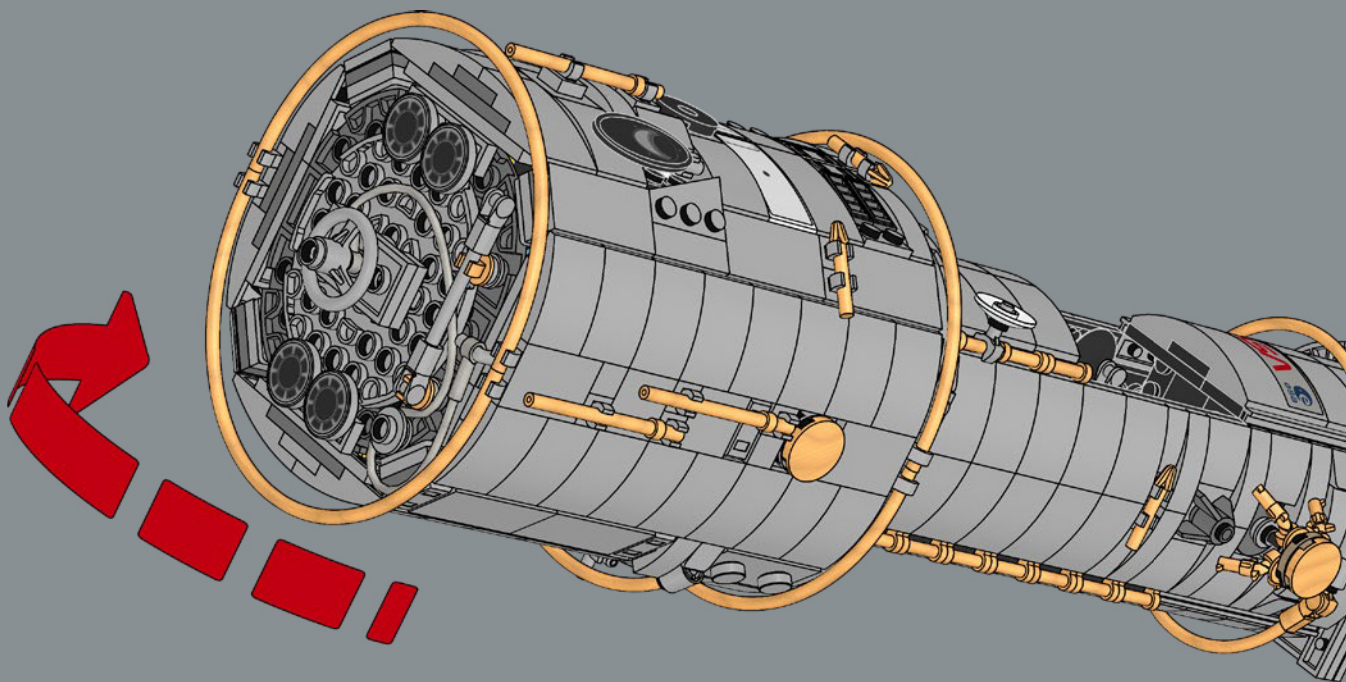


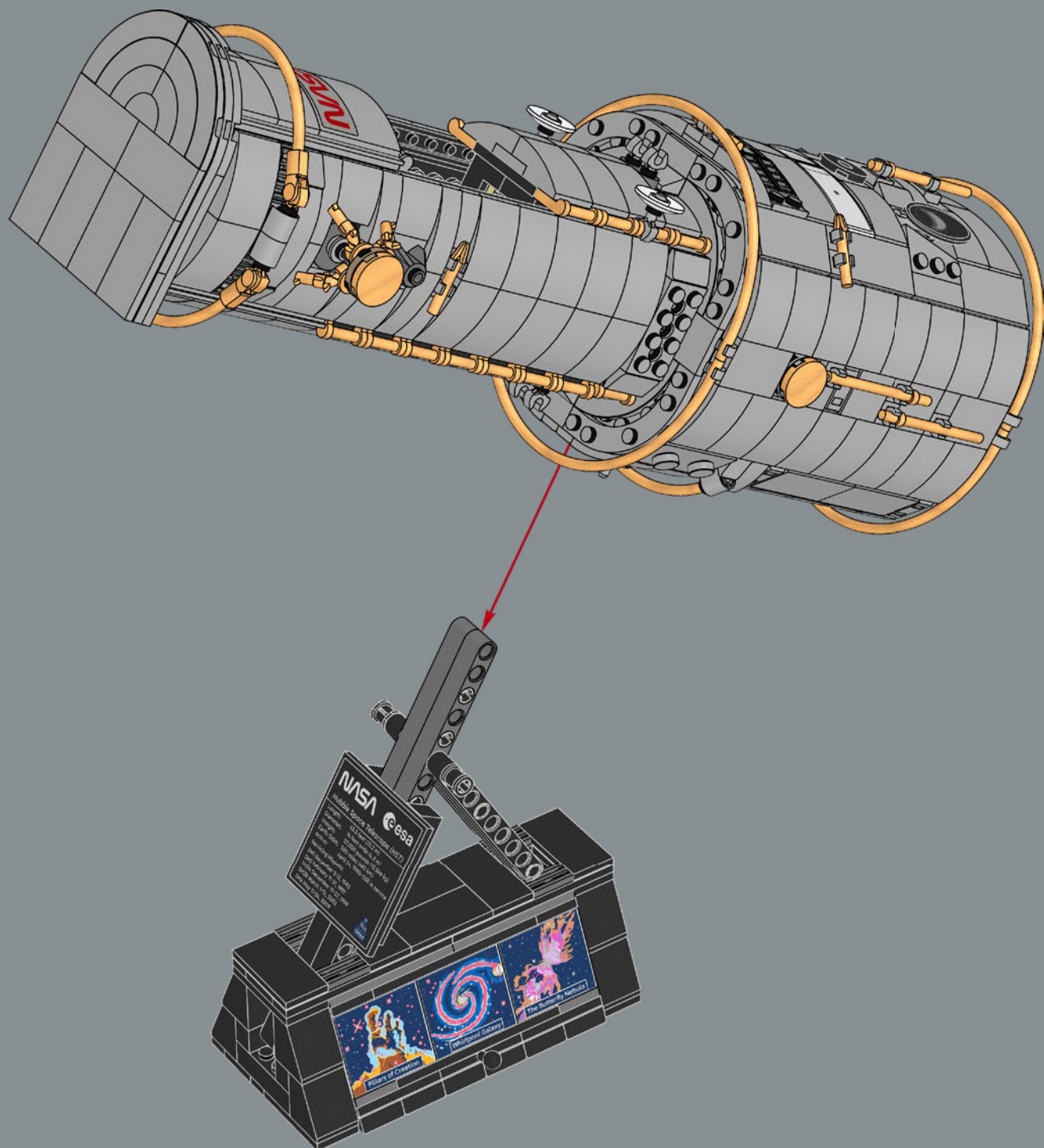


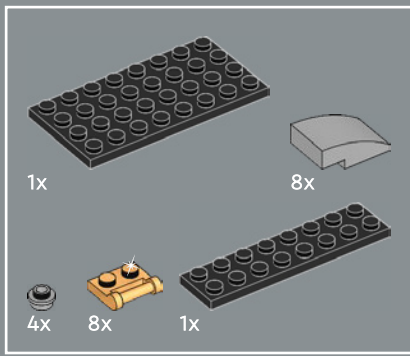
1x

314



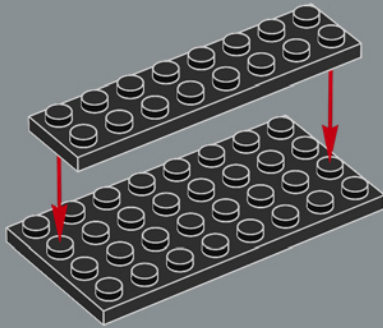




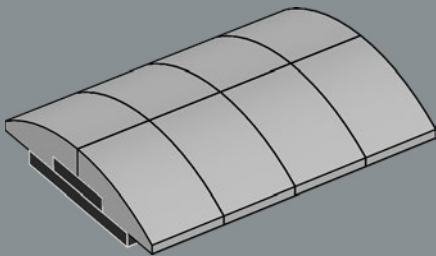


317

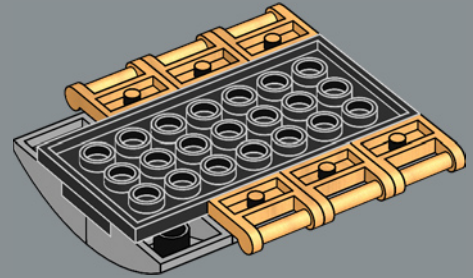
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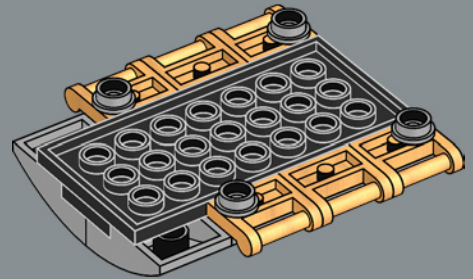
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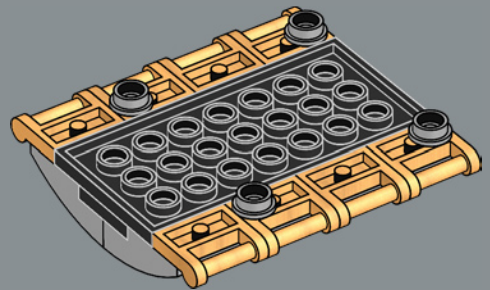
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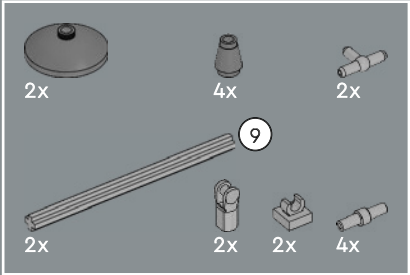
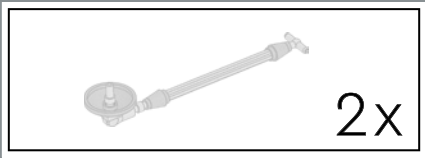


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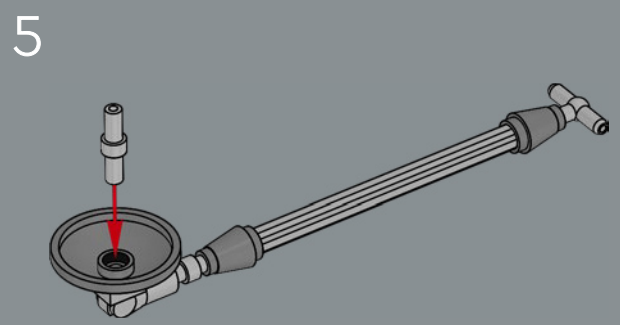
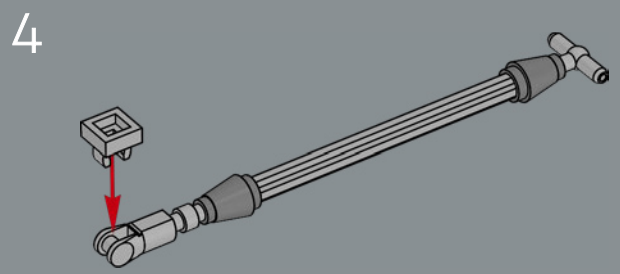
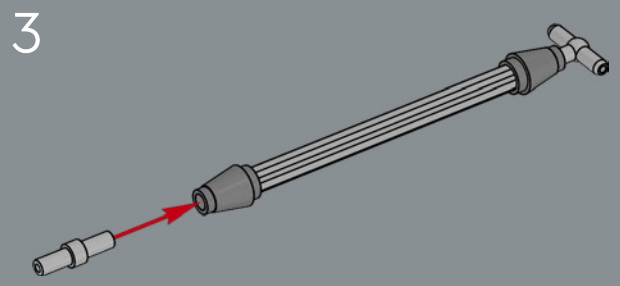
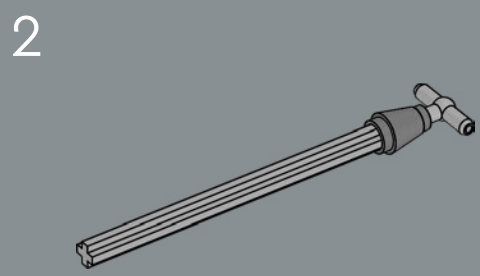
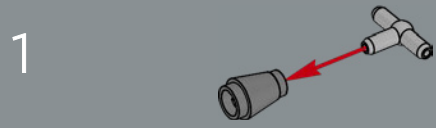


5



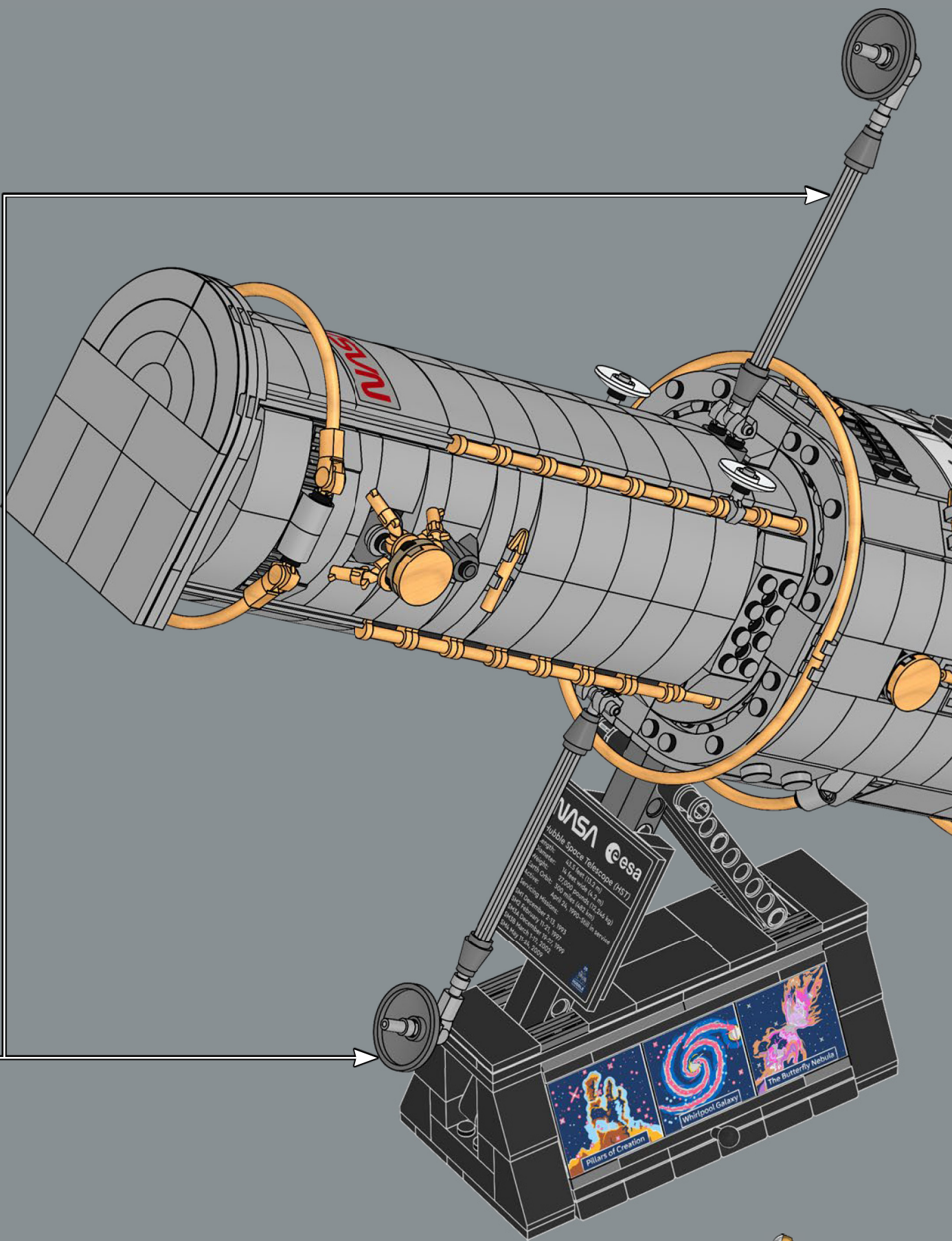


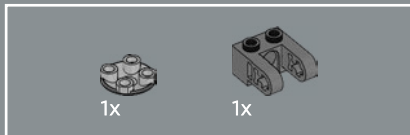
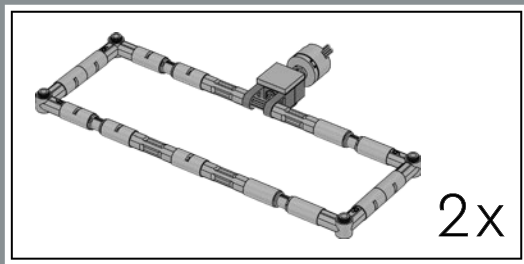
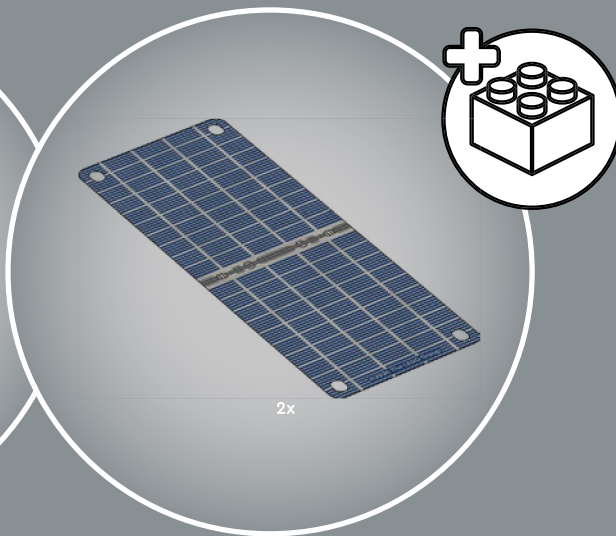
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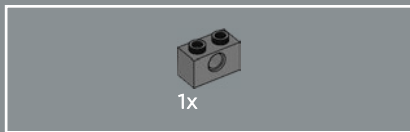
2x



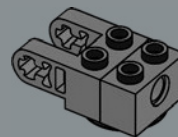
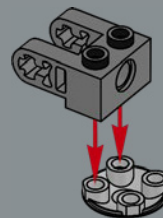


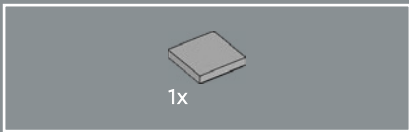


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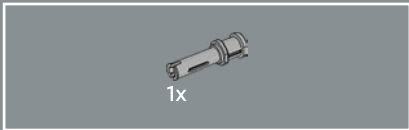
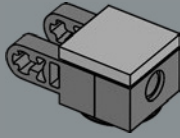


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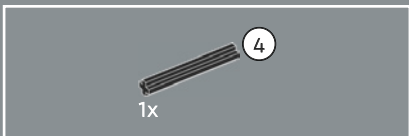
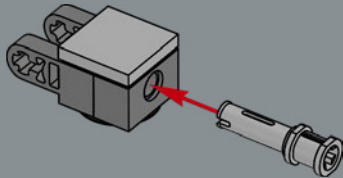




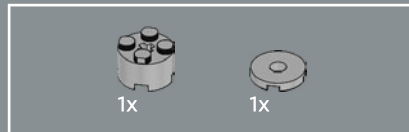
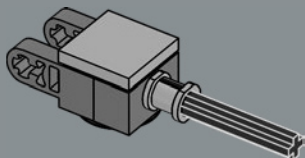
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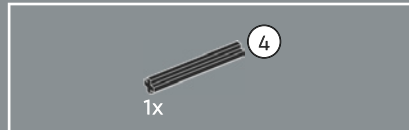
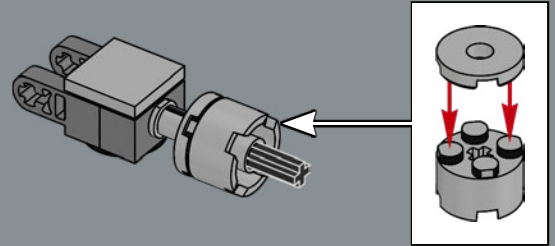
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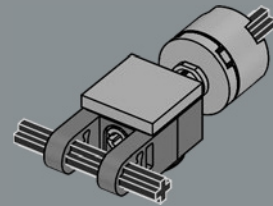
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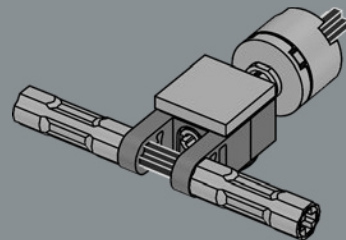
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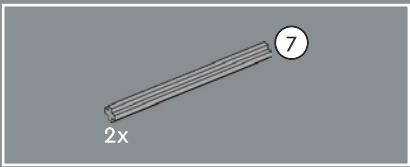


325

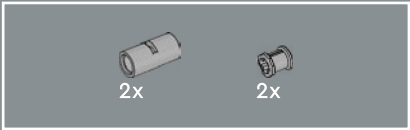
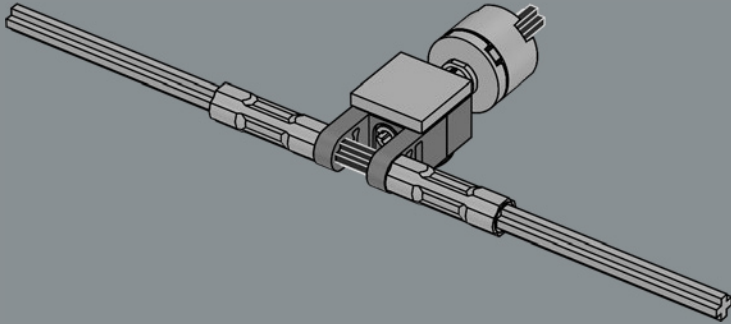


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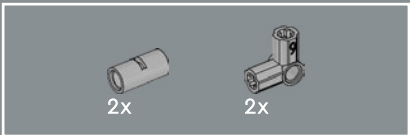
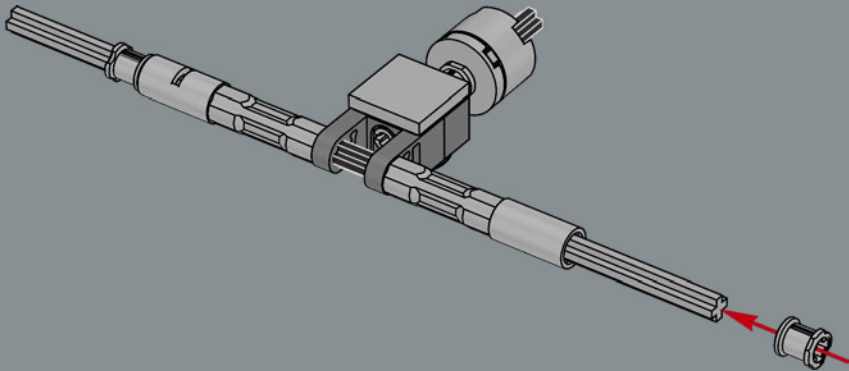




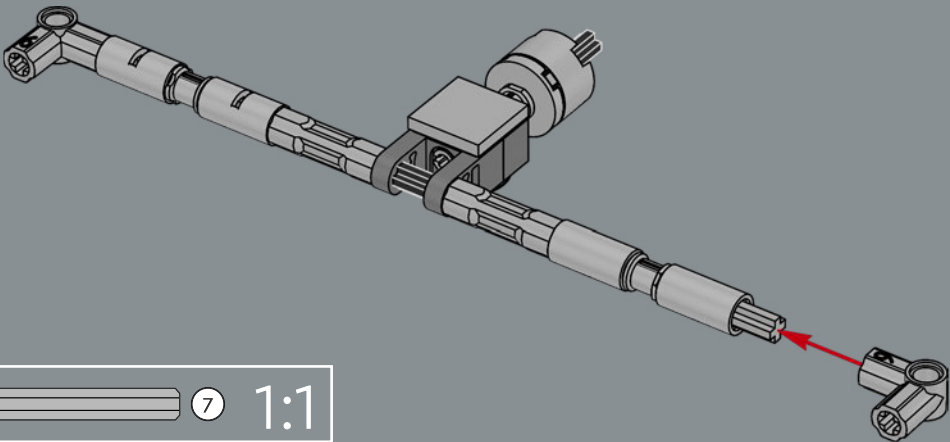
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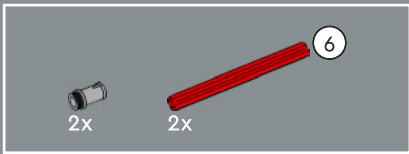


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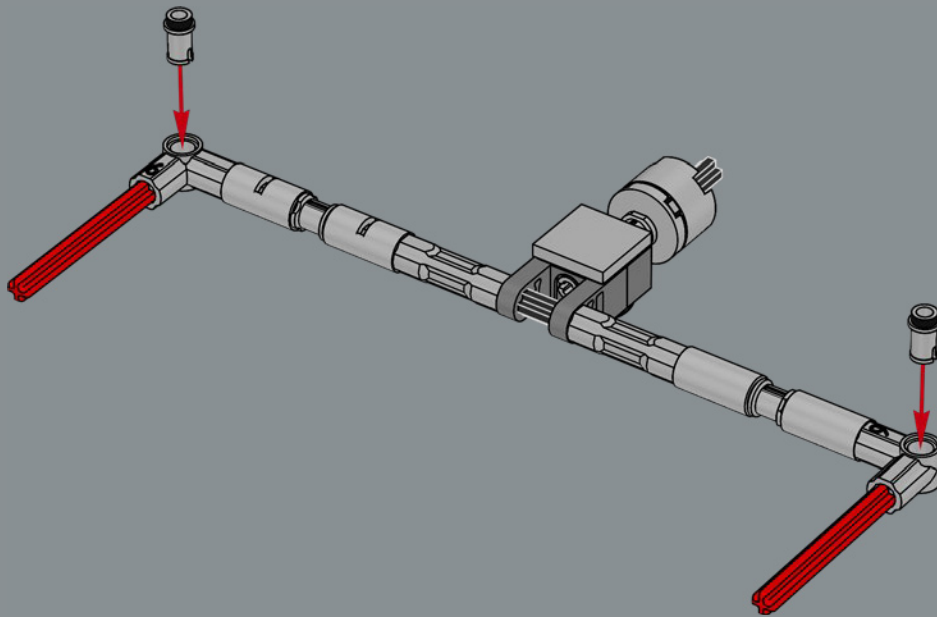


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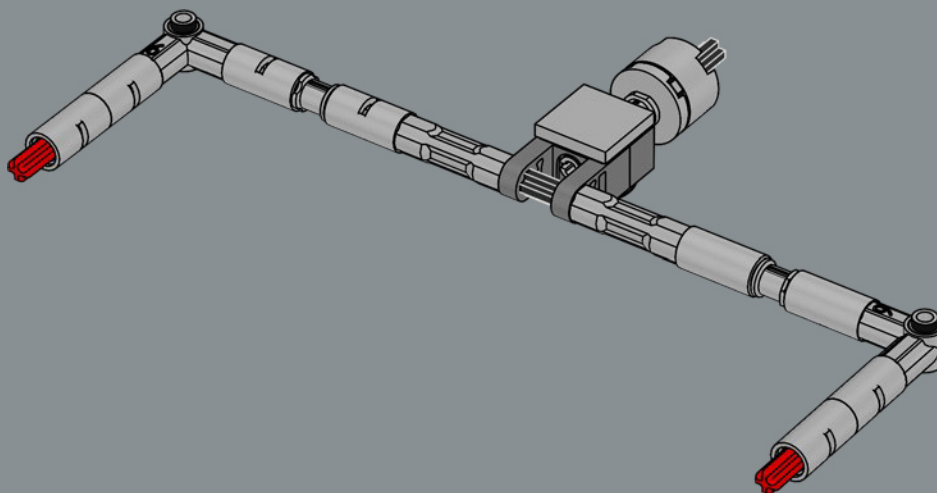


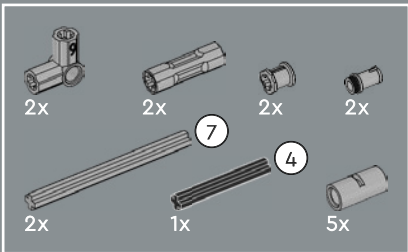
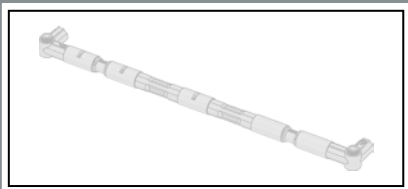


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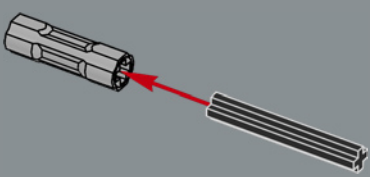
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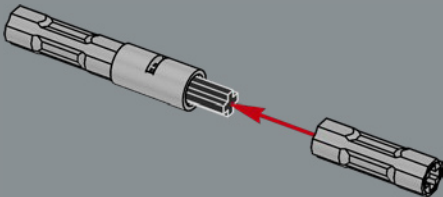


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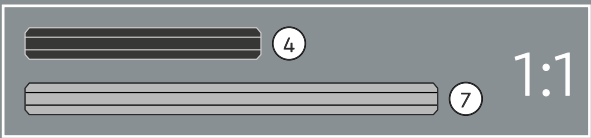
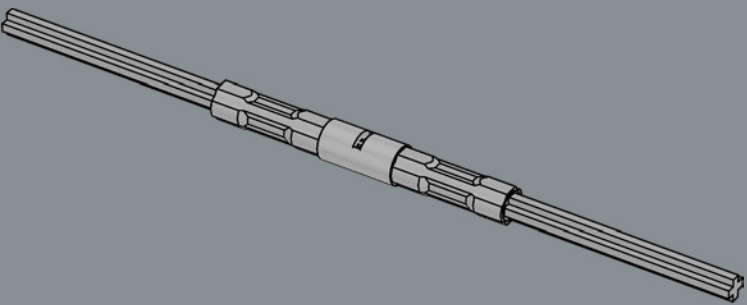
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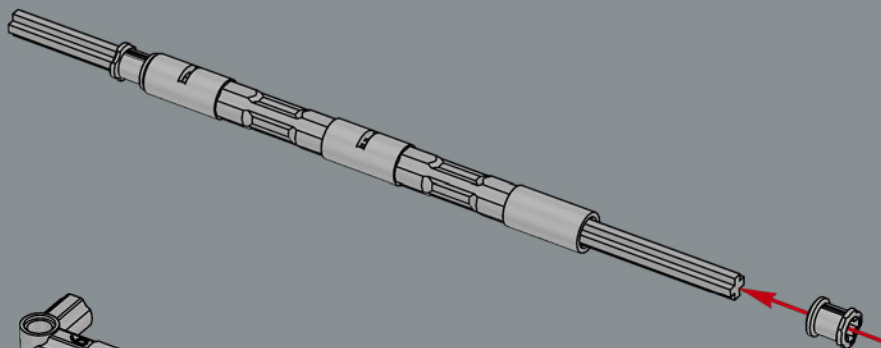
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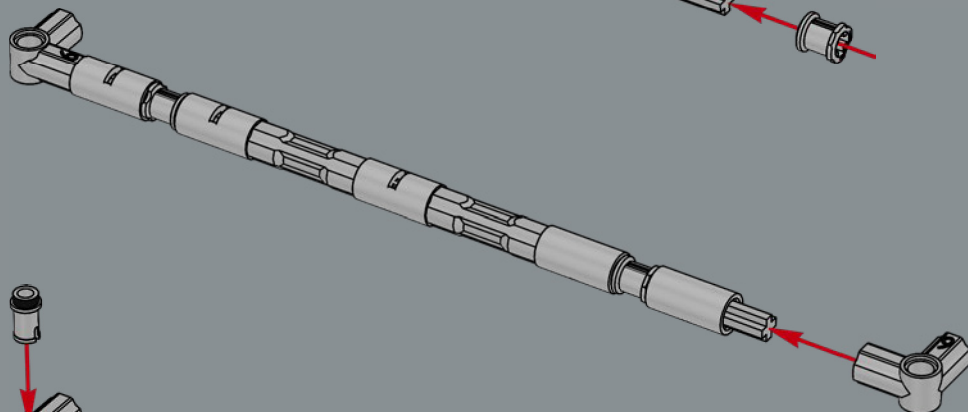
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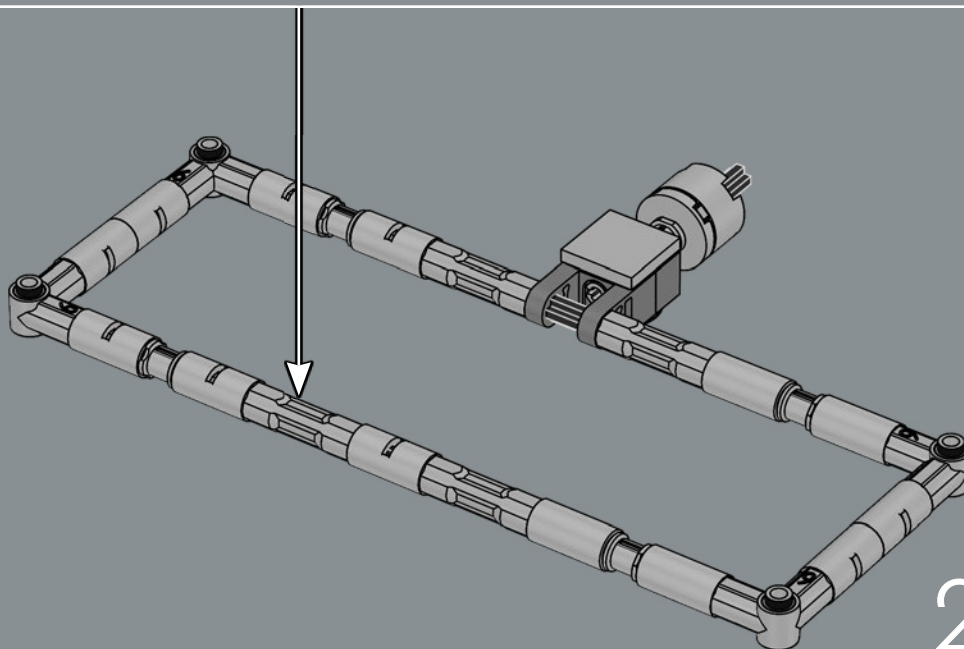
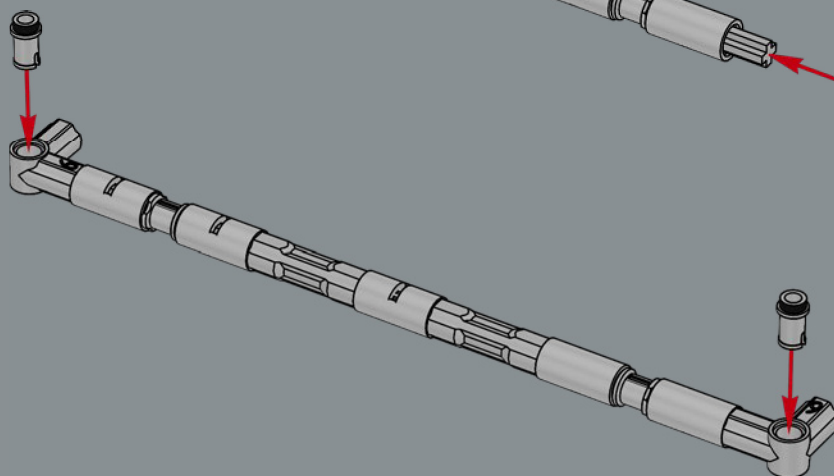
4



5

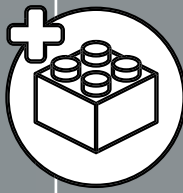
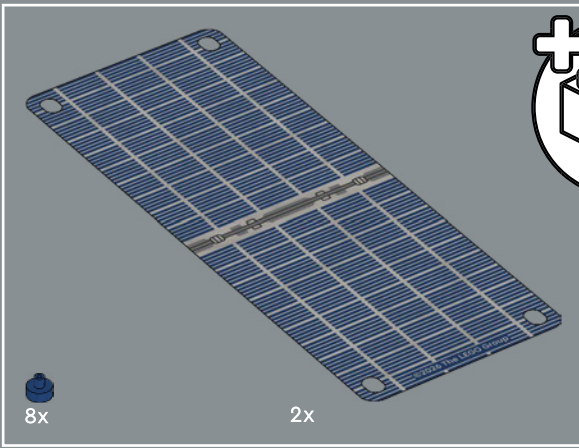


6



2x

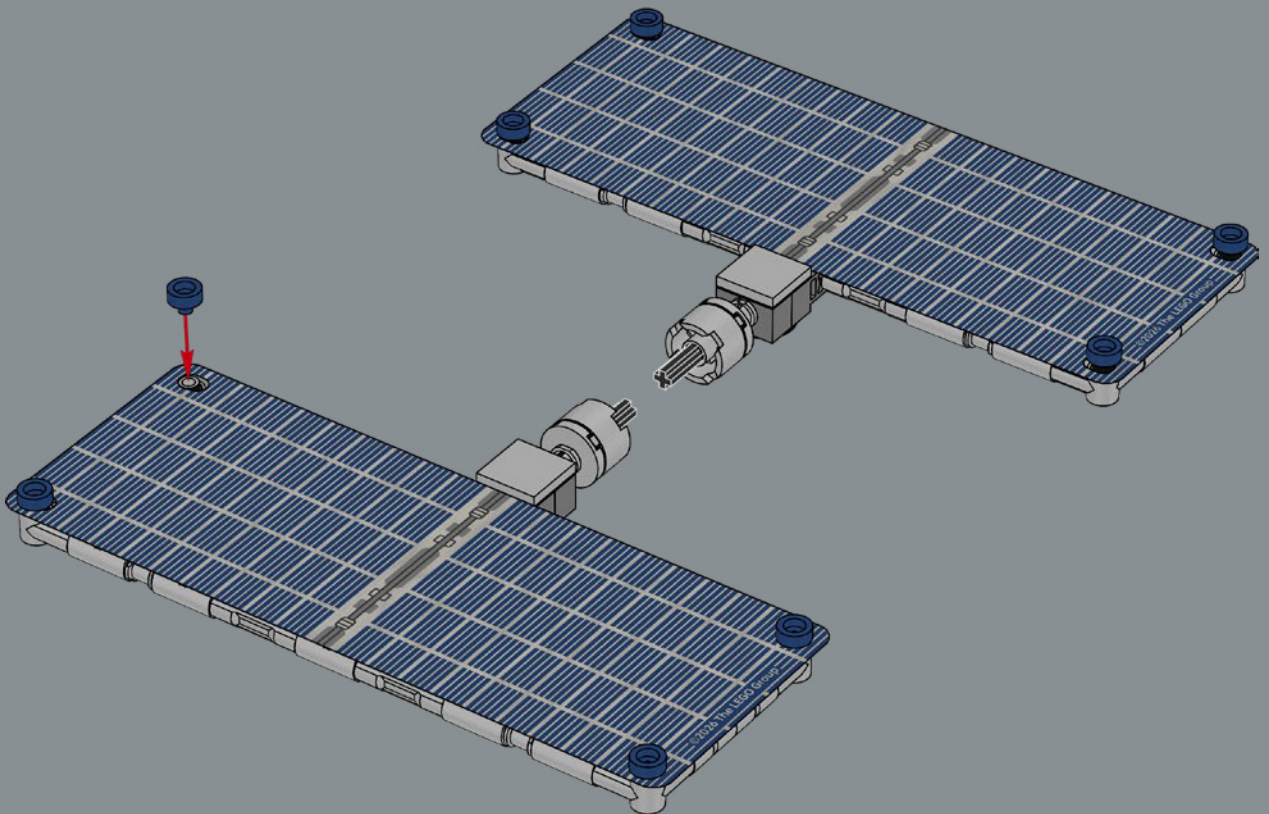


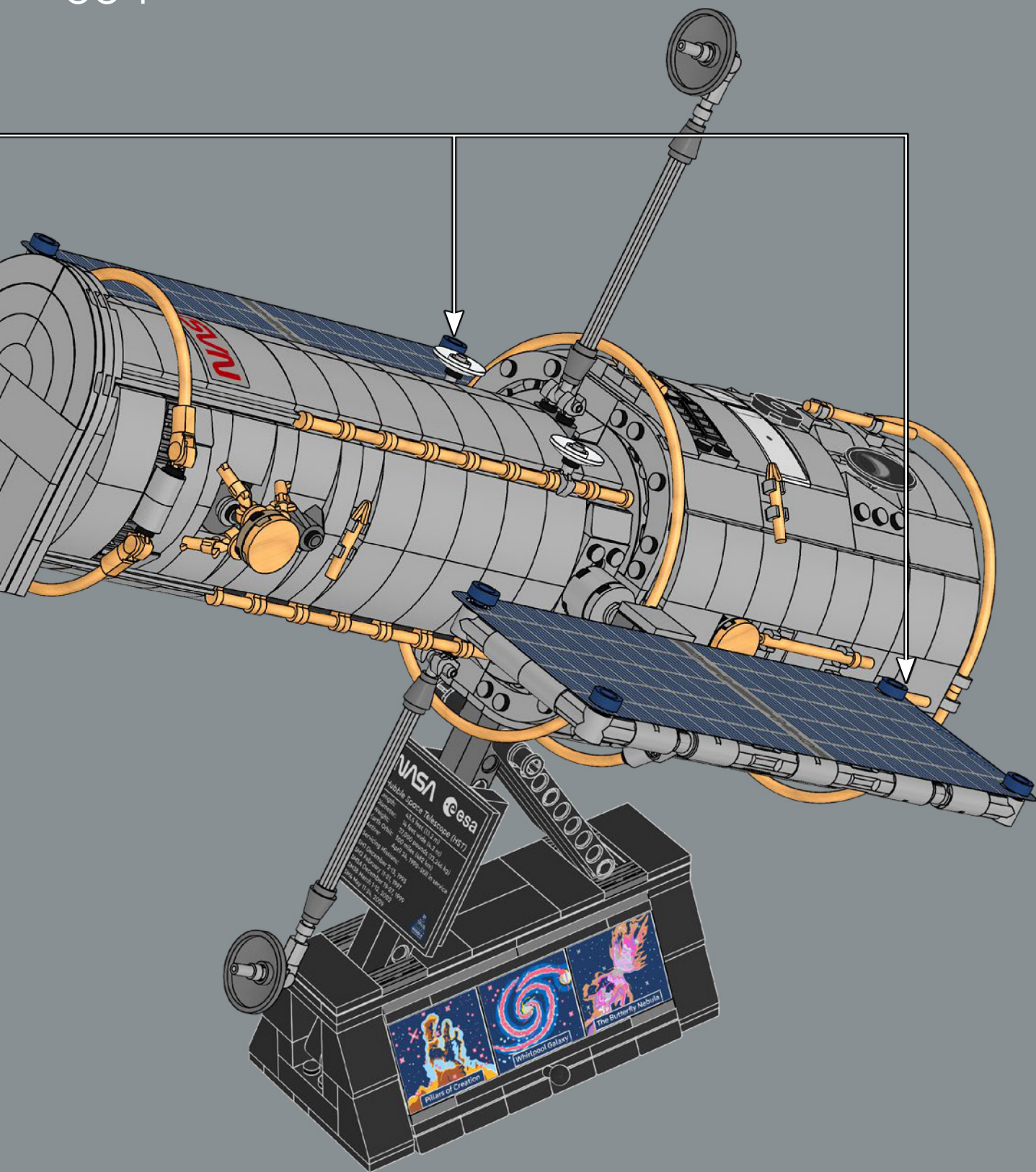


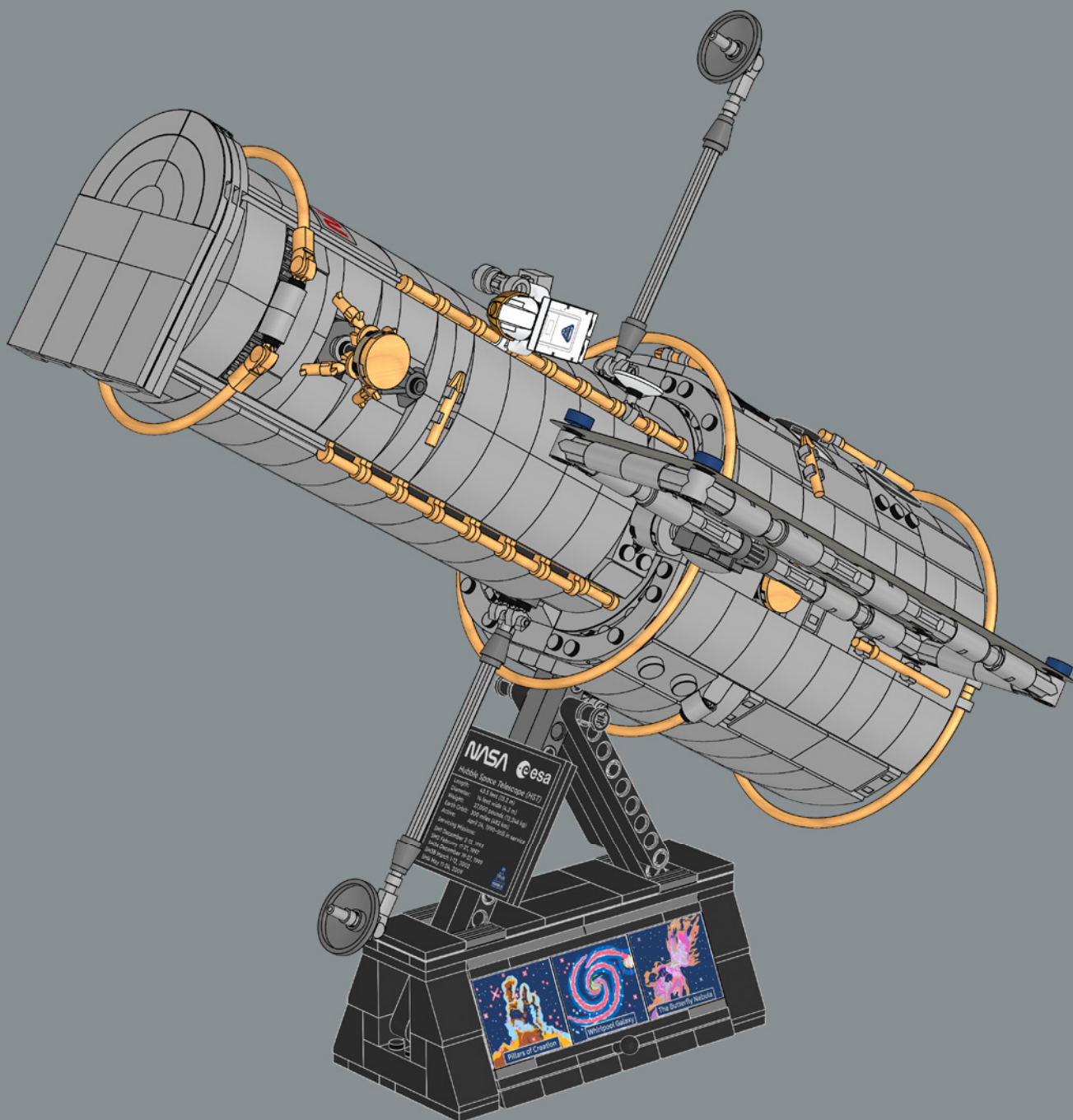
Les panneaux solaires de Hubble ont été remplacés deux fois. Pour ce modèle, nous avons choisi la version la plus récente, installée lors de la mission SM3B en 2002.



333







8x 6341465
16x 6360263
4x 6055541
4x 300501
4x 307001
4x 6224811
3x 6627203
1x 6594307
1x 6610802
2x 474001
1x 302301
2x 6313115
4x 6051511
4x 6058177
4x 6431329
1x 6618623
1x 6594611
1x 6594613
1x 6594614
2x 302101
2x 371001

3x 6023806
1x 370901
2x 6031947
15x 302001
3x 303401
4x 4218749
8x 6173057
2x 4113916
8x 4124067
1x 6525731
2x 6102138
8x 6092565
12x 6469446
4x 6130002
4x 6130004
12x 6248971
8x 306924
2x 371024
2x 302024
3x 303424

8x 6186675
4x 6332148
4x 300526
16x 407026
2x 6594309
6x 4548180
25x 6279875
14x 4278359
1x 403226
1x 6143850
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4x 6178922
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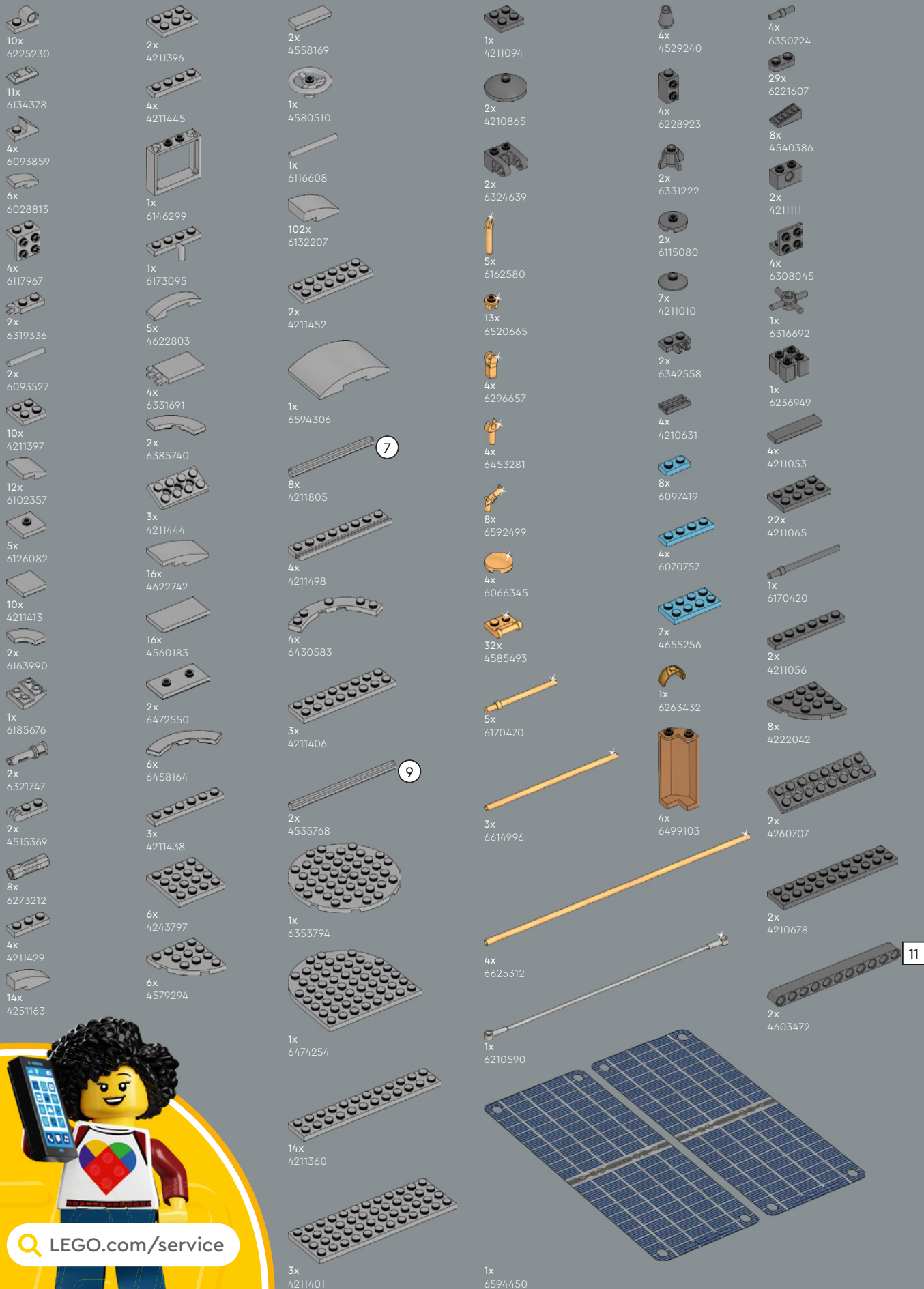
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