

MECHANICA

Laboratorium

VRACHTWAGEN

Constructies 1 t/m 10

- 1 - Hoe werkt het differentieel
- 2 - De vrachtwagen van vroeger
- 3 - De mijnbouw vrachtwagen
- 4 - De Europese vrachtwagen
- 5 - Werktuigen: bomengrijper
- 6 - Werktuigen: kiepbak
- 7 - Werktuigen: takel
- 8 - Werktuigen: kraanarm
- 9 - Werktuigen: sneeuwruimer
- 10 - De Amerikaanse vrachtwagen



WAARSCHUWING

De elektrische motor werd tijdens de productiefase gesmeerd met een kleine hoeveelheid vet, om zijn correcte werking te garanderen. Bij hoge temperaturen kan het vet smelten en een vetlaagje achterlaten. Mocht de motor uit de kit er vuil uitzien, dan volstaat het hem schoon te maken met een doekje. Het gebruikte vet is niet toxisch of gevaarlijk.











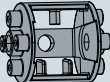



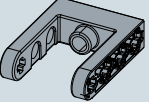






















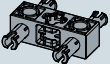



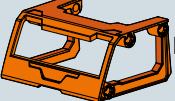


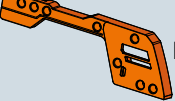
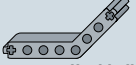

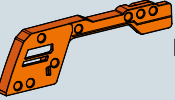
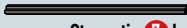
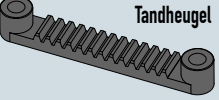
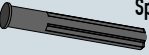
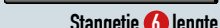

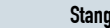



OPGELET

Enkel voor kinderen van minstens 8 jaar. De instructies voor de volwassenen worden bijgeleverd en moeten worden gerespecteerd.

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LIJST MET ONDERDELEN

	Dubbele balk 15 gaten	st. 2		Korte ring	st. 12		Tandwiel 10 tanden	st. 2
	Dubbele balk 11 gaten	st. 2		Lange ring	st. 12		Tandwiel 18 tanden	st. 5
	Dubbele balk 9 gaten	st. 2		Worm	st. 1		Tandwiel 26 tanden	st. 1
	Dubbele balk 7 gaten	st. 6		Satellietkooi	st. 1		Tandwiel 41 tanden	st. 1
	Dubbele balk 5 gaten	st. 6		Tandwiel 32 tanden	st. 1		Transmissiemodule	st. 2
	Dubbele balk 3 gaten	st. 6		Tandwiel 24 tanden	st. 1		Band	st. 4
	Enkele balk 15 gaten	st. 2		Tandwiel 12 tanden	st. 9		Velg 8 gaten	st. 2
	Enkele balk 13 gaten	st. 2		Korte dubbele spijker	st. 16		Velg 4 gaten	st. 2
	Enkele balk 9 gaten	st. 2		Korte enkele spijker	st. 8		Enkele balk 7 gaten	st. 4
	Enkele balk 7 gaten	st. 2		Lange dubbele spijker	st. 8		Enkele balk 5 gaten	st. 4
	Enkele balk 5 gaten	st. 2		Lange vrije spijker	st. 16		Enkele balk 3 gaten	st. 4
	Enkele balk 3 gaten	st. 2		Hoekmodule hoog	st. 2		Hoekmodule hoog	st. 4
	Hoekmodule laag	st. 2		Balk met pinnen	st. 6		Hoekmodule laag	st. 4
	Balk 4 gaten	st. 2		Balk met spijkers	st. 4		Kraancabine	st. 1
	T-balk	st. 2		Haak	st. 1		Rechter paneel cabine	st. 1
	Hoekbalk	st. 4		Zwengel	st. 2		Linker paneel cabine	st. 1
	Stangetje 7 lengte cm. 9.9	st. 1		Tandheugel	st. 1		Spijkerstang	st. 2
	Stangetje 6 lengte cm. 11.7	st. 1						
	Stangetje 5 lengte cm. 8.1	st. 1						
	Stangetje 4 lengte cm. 7.2	st. 1						
	Stangetje 3 lengte cm. 5.4	st. 5						
	Stangetje 2 lengte cm. 3.6	st. 2						
	Stangetje 1 lengte cm. 2.7	st. 1						

De verbrandingsmotor is een machine die in staat is om chemische energie om te zetten in mechanisch vermogen. Om mechanisch vermogen te genereren is het volgende nodig:

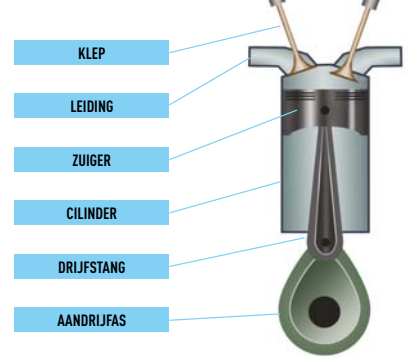
Brandstof: Gas, benzine of diesel



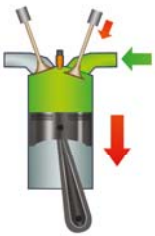
Verbrandingsmiddel: zuurstof



Verbrandingskamer: De behuizing waarin de verbrandingsreactie tussen brandstof en verbrandingsmiddel plaatsvindt.

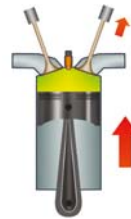


Hoe werkt het? De verbranding bestaat uit 4 fasen:



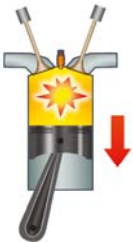
FASE 1

Inlaat:
de zuiger beweegt omlaag.
De lucht of het mengsel van
lucht en brandstof wordt de
cilinder in gezogen.



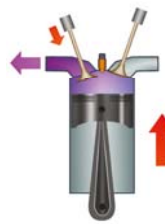
FASE 2

Compressie:
de zuiger beweegt omhoog.
Het mengsel van lucht en brandstof
wordt gecompriëerd.
De verbranding begint.



FASE 3

Ontbranding en expansie:
de zuiger beweegt omlaag.
De verbranding, die leidt tot
onmiddellijke expansie van de
gassen, vindt plaats. De zuiger
wordt omlaag geduwd.



FASE 4

Uitlaat:
de zuiger beweegt omhoog.
De verbrandingsresten worden uit
de cilinder gedreven.

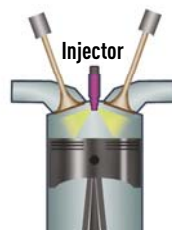
Elke cyclus (die net beschreven werd) stemt overeen met twee rotaties van de aandrijfjas, die vervolgens de beweging overbrengt op de andere mechanische organen van het voertuig.

Benzinemotor versus dieselmotor. De benzinemotor en dieselmotor verschillen onderling voor wat betreft de ontbrandingsfase:



BENZINEMOTOR

Dit is een motor met gestuurde ontsteking.
De ontsteking gebeurt door een elektrische ontlading (vonk) die het lucht-brandstofmengsel doet ontbranden.



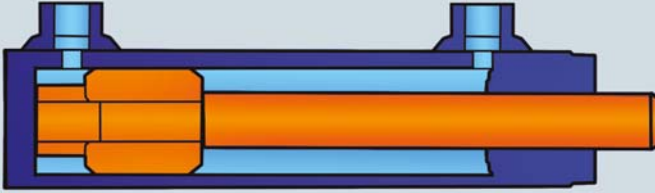
DIESELMOTOR

Dit is een motor met spontane ontsteking.
De brandstof wordt in de cilinder ingespoten na de compressiefase. De samengedrukte lucht bereikt zeer hoge temperaturen en doet de brandstof ontbranden.

Vrachtwagens kunnen worden uitgerust met werktuigen die bewegen dankzij specifieke aandrijvers, die de druk van hydraulische olie benutten om een verplaatsing uit te voeren.

De hydraulische zuiger is een aandrijver bestaande uit twee mechanische delen:

- de cilinder, bestaande uit een leeg cilindervormig lichaam
- de zuigerstang, bestaande uit een volle staaf

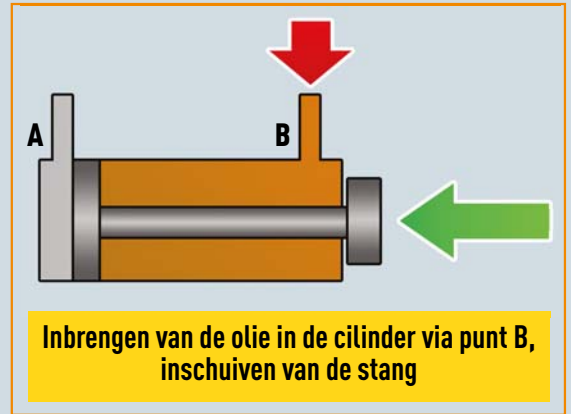
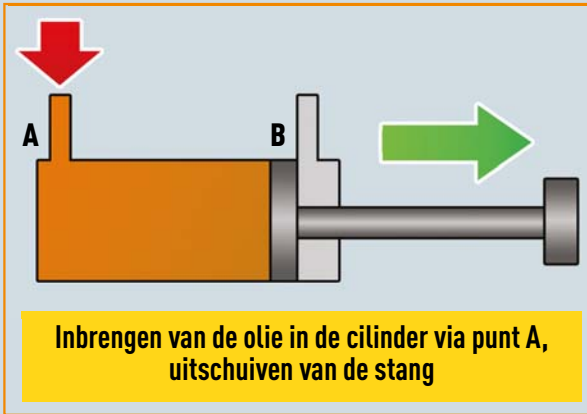


CILINDER

HOLTE VOOR DE HYDRAULISCHE OLIE

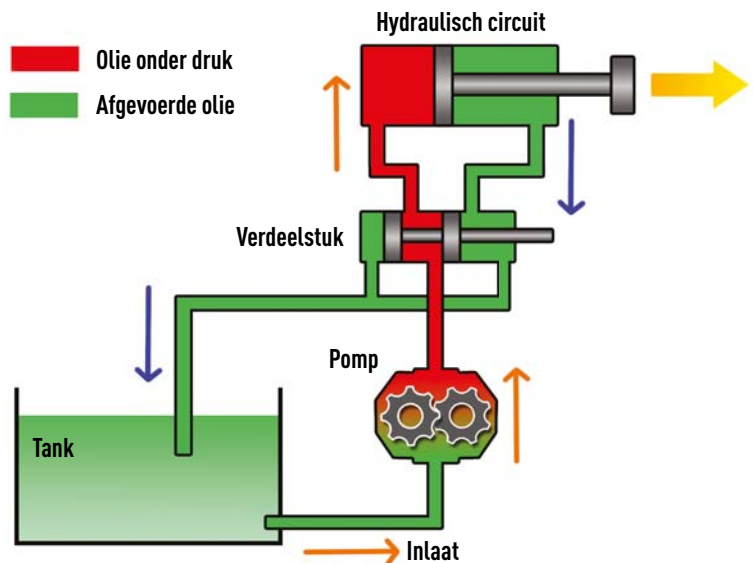
ZUIGERSTANG

Hoe werkt het? De hydraulische zuiger bestaat uit een dubbelwerkende cilinder waarin de hydraulische olie via de twee uiteinden kan worden ingebracht, onder supervisie van een bediener.



Hydraulisch circuit

De hydraulische olie verplaatst zich in een gesloten circuit. De olie wordt opgezogen uit een opslagtank door een eerste pomp en verder gestuurd naar het verdeelstuk. Het verdeelstuk opent en sluit de twee inlaten van de zuiger. Dit veroorzaakt het uitschuiven en inschuiven van de zuigerstang, wat gecontroleerd wordt door de bediener. Dit is een gesloten circuit: de olie aan één zijde van de cilinder wordt weggeduwd, wordt dankzij de verdeeler terug afgevoerd naar de tank.

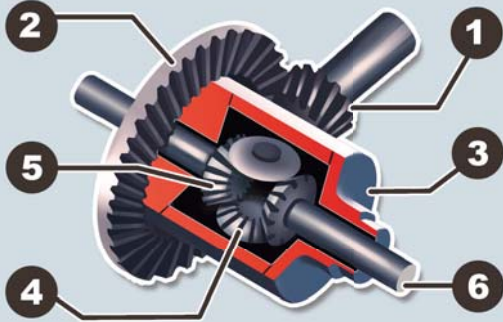


1 Hoe werkt het differentieel



Technisch-wetenschappelijke informatie

Het differentieel is een mechanisch orgaan dat in staat is het door de motor geleverde vermogen over te brengen op het stel aandrijfwielen.

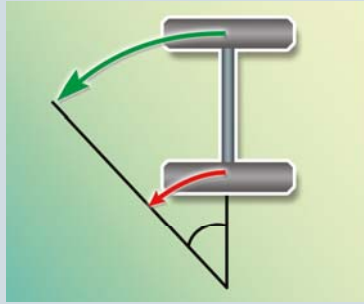


- 1 **Rondsel:** brengt het motorvermogen over op het kroonwiel en uiteindelijk op de aandrijfwielen.
- 2 **Kroonwiel:** bevestigd aan de satellietkooi, is stabiel aan het rondsel gekoppeld.
- 3 **Satellietkooi:** dit is de kast waarin de tandwielen zijn ondergebracht.
- 4 **Satellieten:** tandwielen die bevestigd zijn aan de kooi.
- 5 **Planeetwielen:** tandwielen die bevestigd zijn aan de steekassen.
- 6 **Steekas:** as die de aandrijfwielen verbindt met de planeetwielen.

Het differentieel is zo ontworpen dat de twee wielen in bochten met verschillende snelheden kunnen draaien: op niet rechte trajecten legt het wiel dat de buitenbocht maakt namelijk een grotere afstand af dan het wiel in de binnenbocht. Het wiel van de buitenbocht moet bijgevolg sneller draaien dan dat van de binnenbocht.



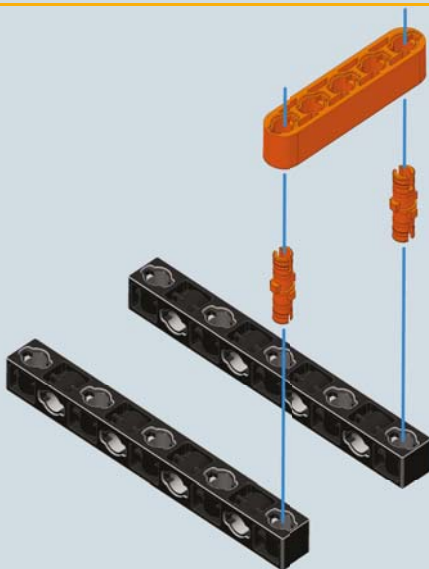
Het rondsel brengt het motorvermogen over naar het differentieel en bijgevolg naar de steekassen.



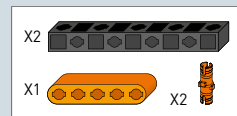
In bochten zal het wiel dat de binnenbocht maakt een kortere afstand afleggen dan dat van de buitenbocht.



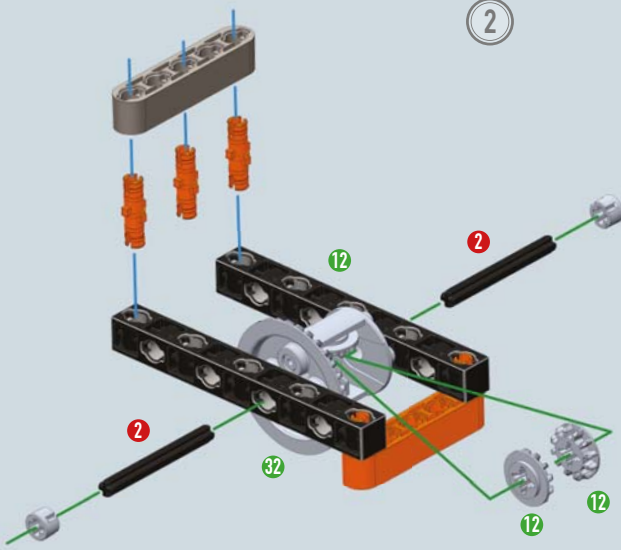
Dankzij het differentieel draaien de voertuigwielen in bochten met verschillende snelheden.



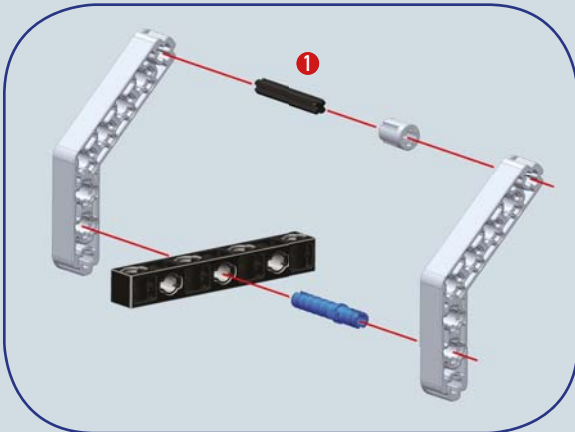
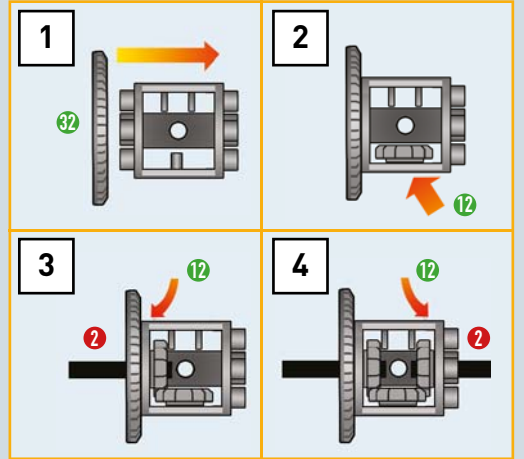
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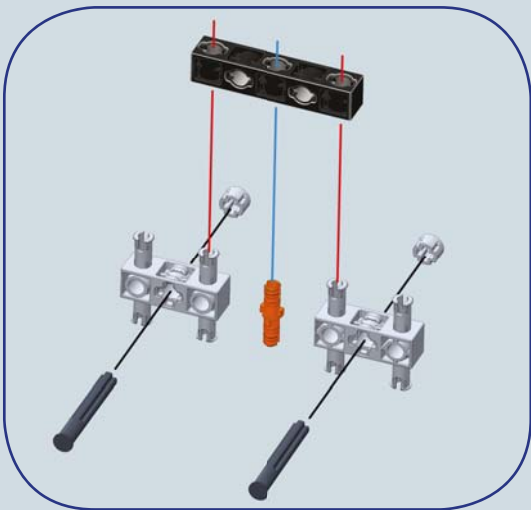
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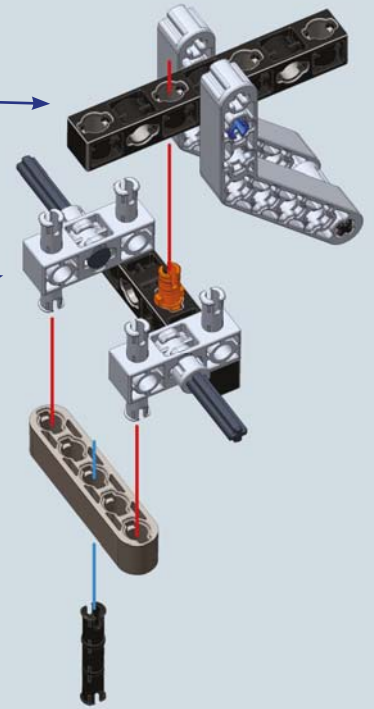
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- X3
- X3



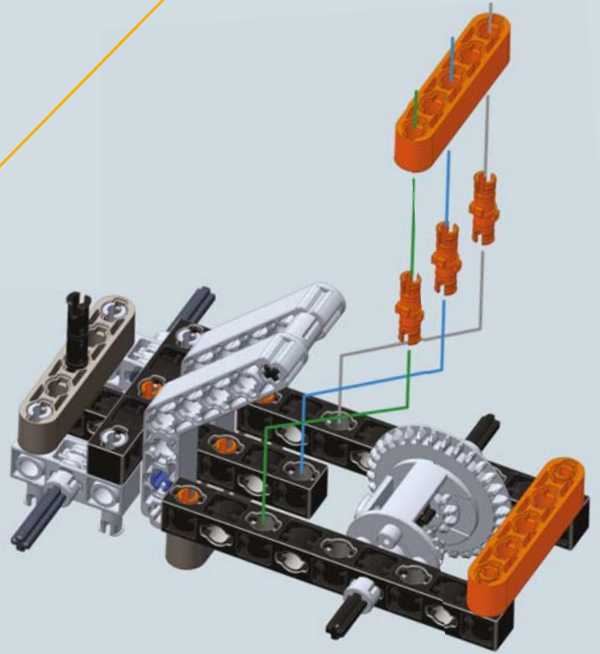
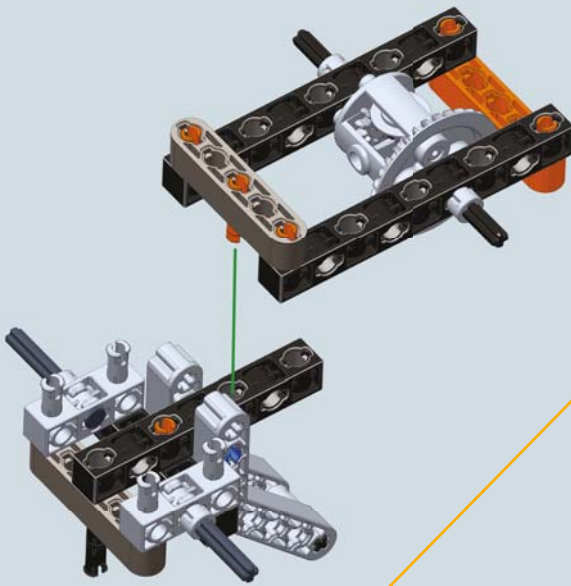
- X1
- X1
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- X2
- X2



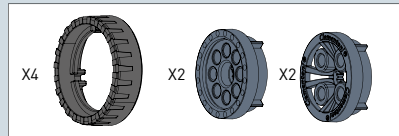
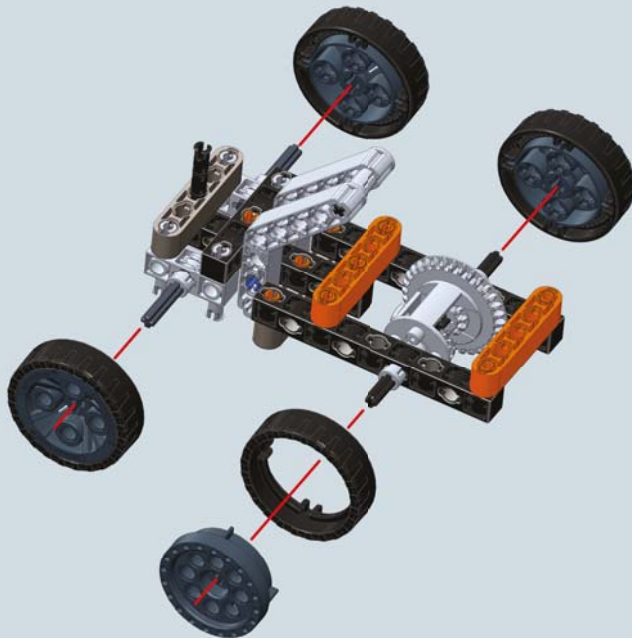
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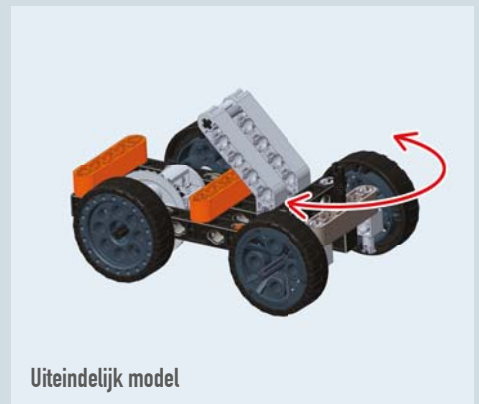
4



5



6



Uiteindelijk model

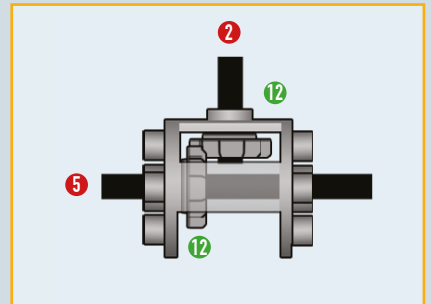
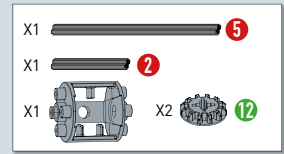
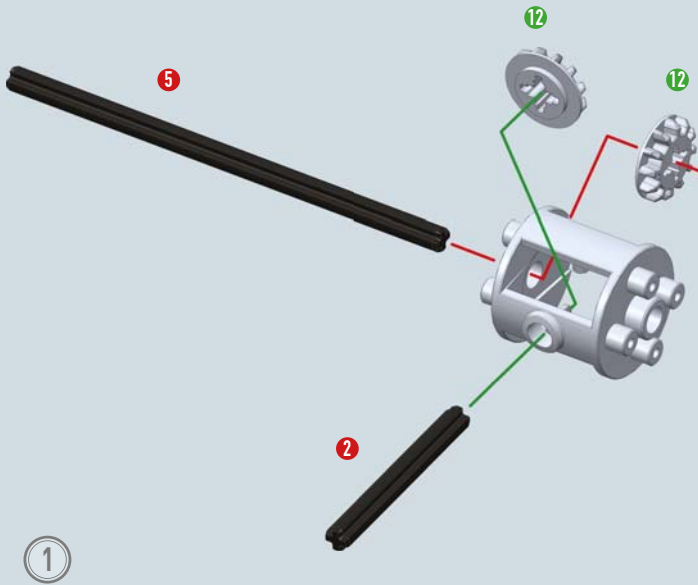
2 De vrachtwagen van vroeger

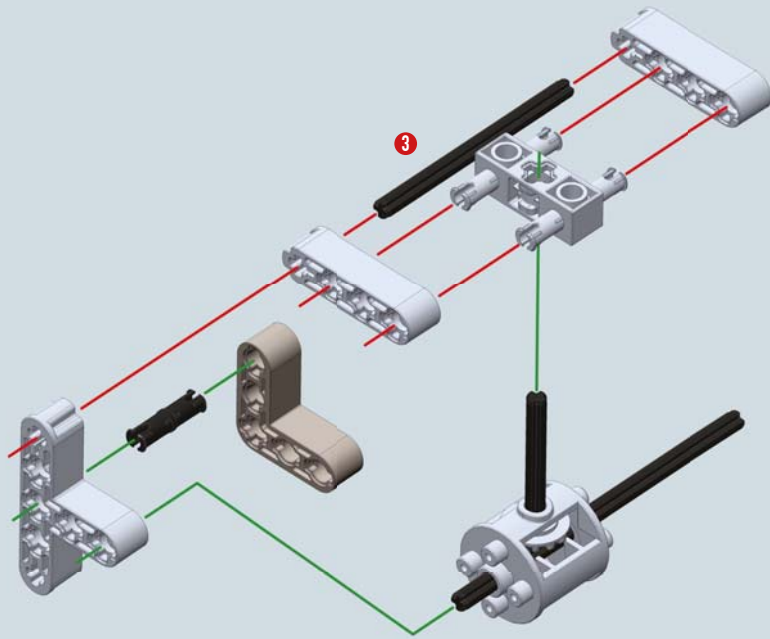


Technische informatie en wetenswaardigheden

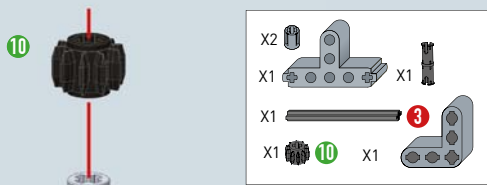
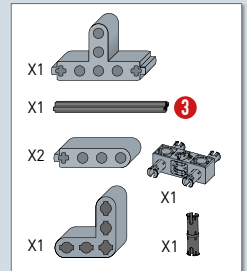
De eerste vrachtwagen uit de geschiedenis werd gebouwd in 1896.

Het beginontwerp was heel eenvoudig en baseerde zich op de wagen uit die tijd: de voorkant, die oorspronkelijk bestemd was voor het aanspannen van trekdieren, werd verwijderd en de wagen werd uitgerust met een motor in staat het voertuig te verplaatsen met een snelheid van 16 km/h. De wielen waren nog steeds in hout en de buitenvelg in metaal. Ook het remsysteem was identiek aan dat gebruikt voor koetsen.

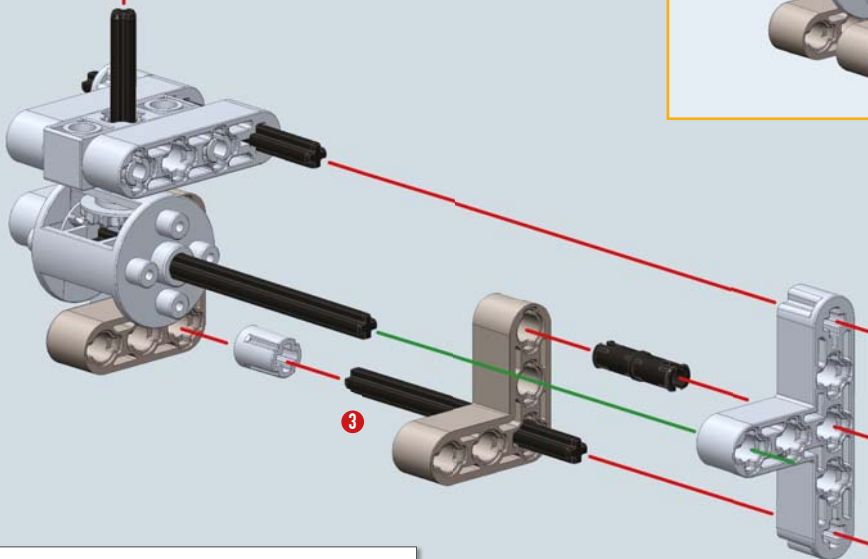
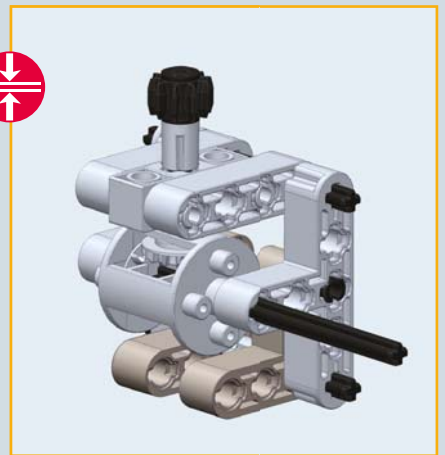
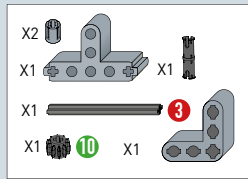




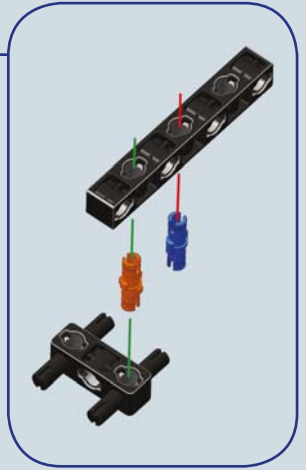
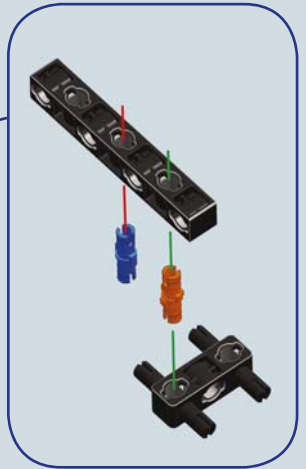
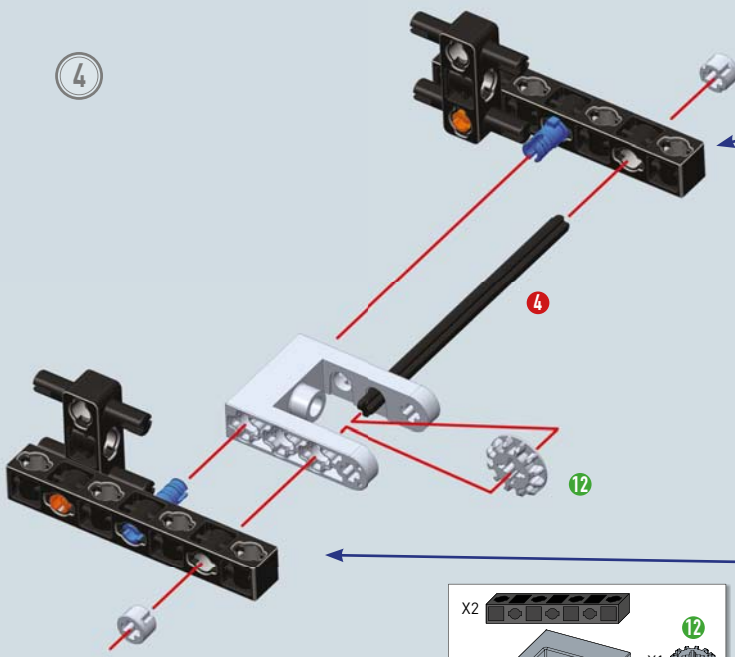
2



3



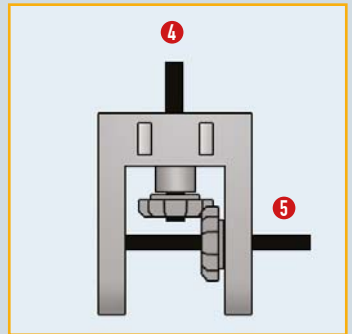
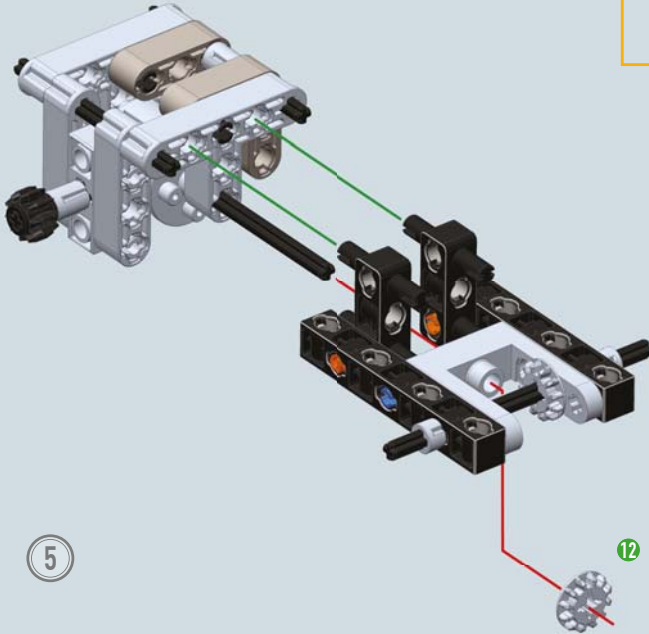
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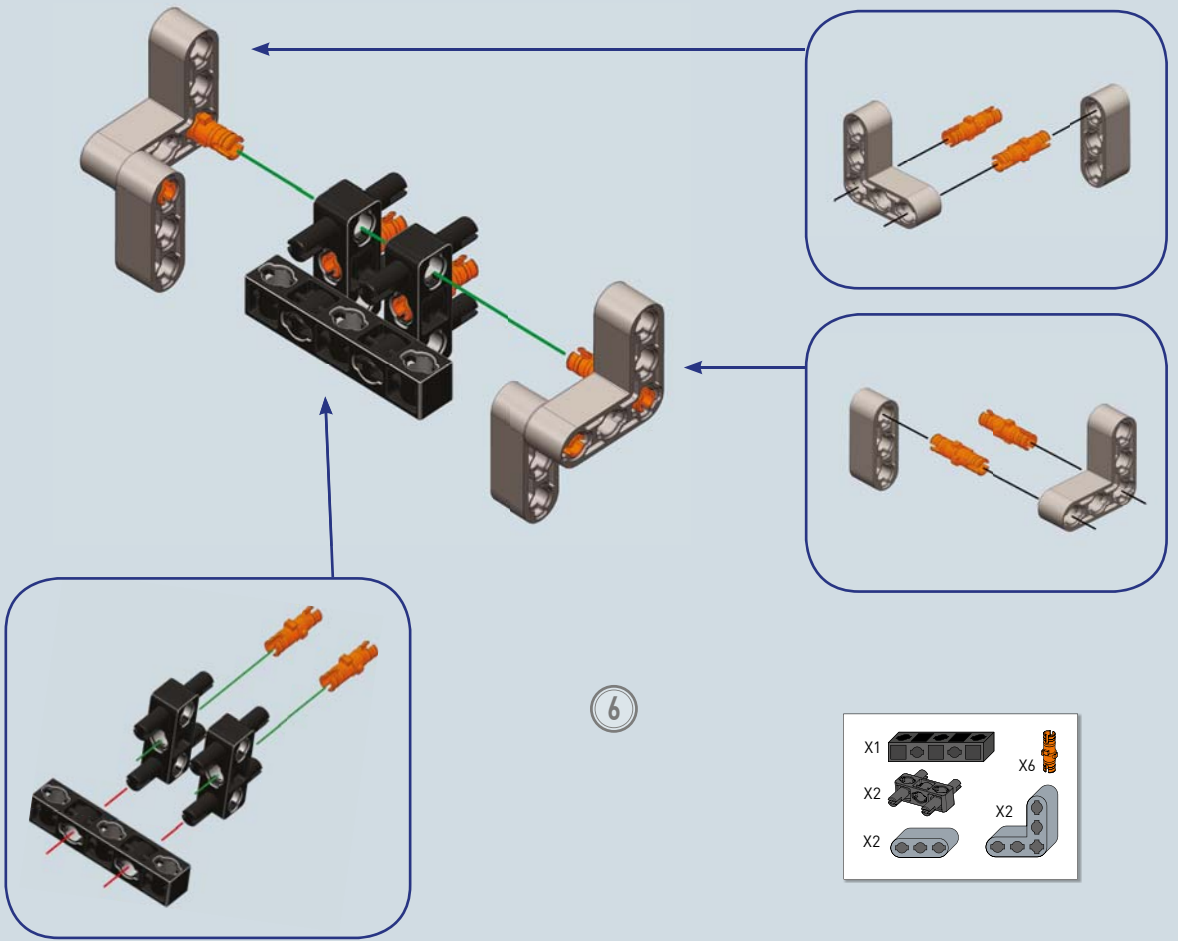
- | | | | |
|----|--|----|--|
| X2 | | X1 | |
| X1 | | X2 | |
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| X1 | | | |



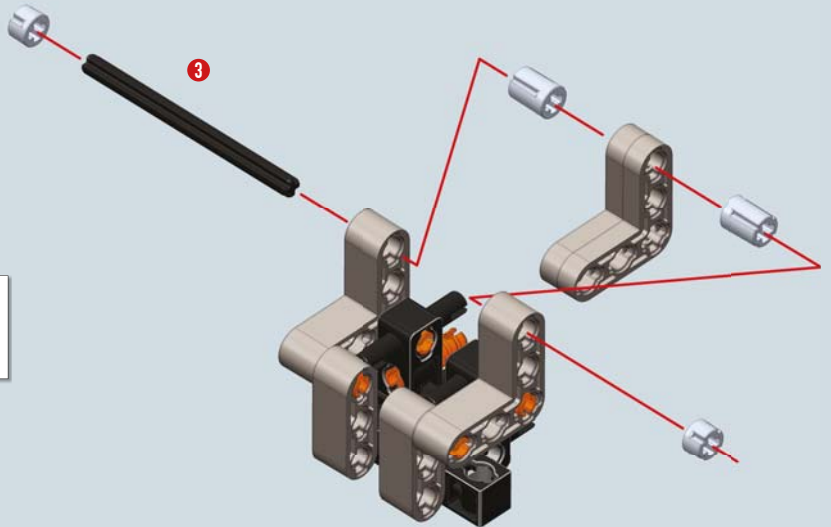
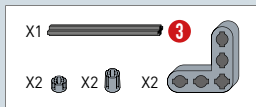
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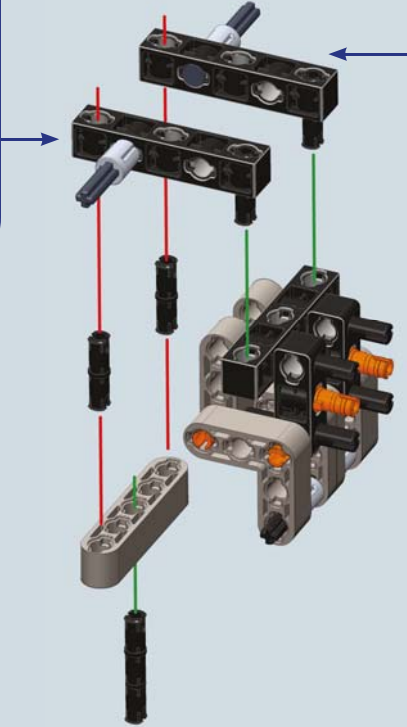
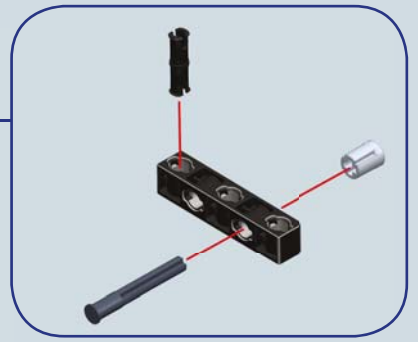
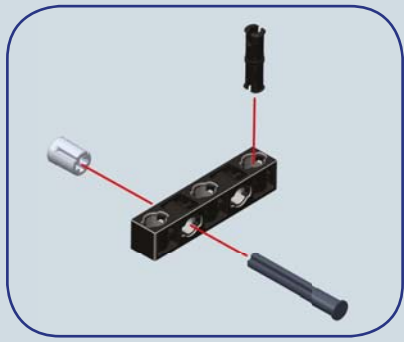


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| X1 | |
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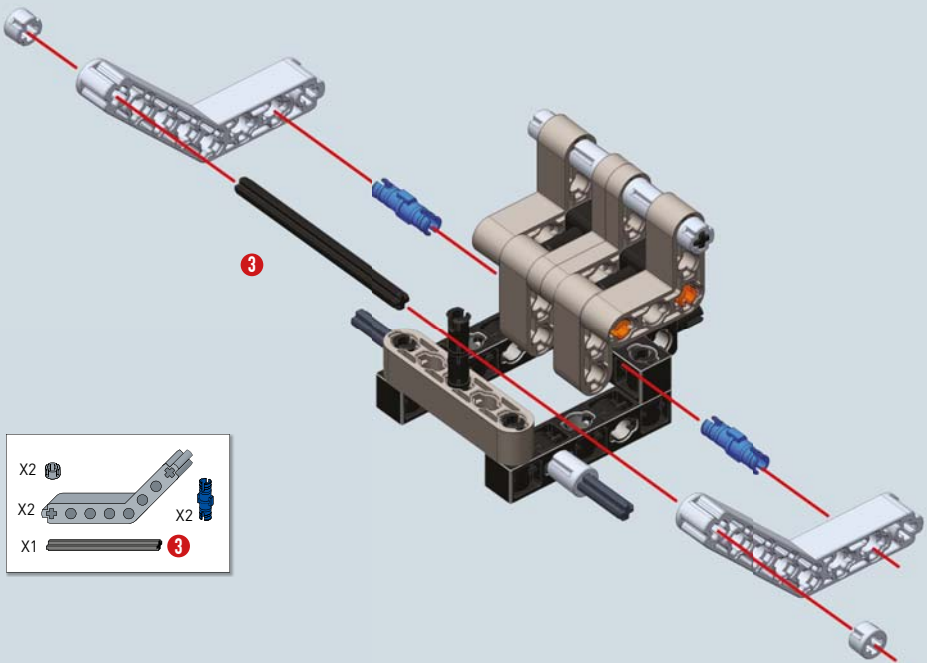




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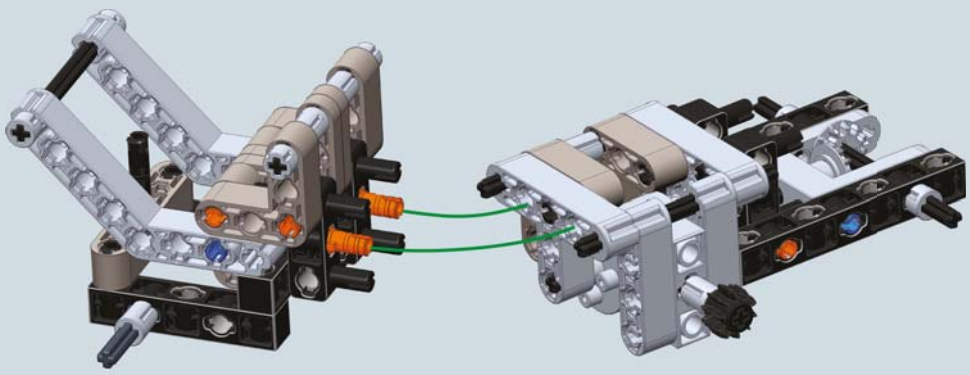
X1		X4	
X2		X2	
X2		X1	

9

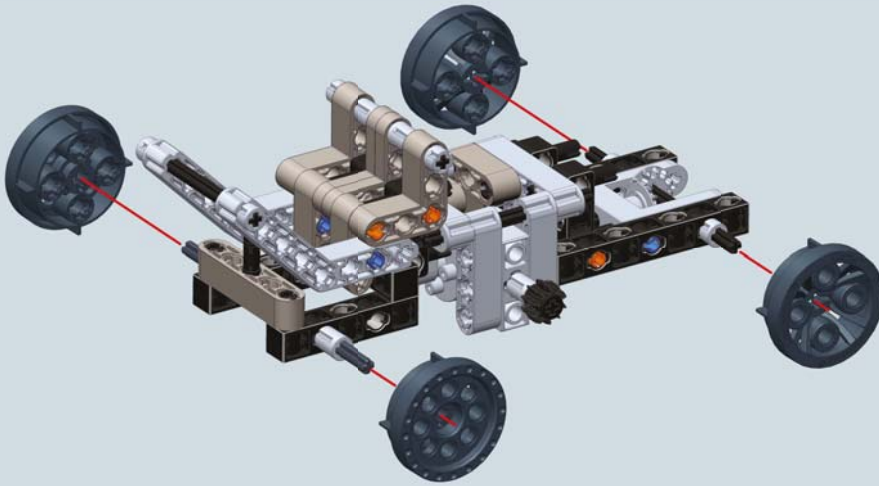


X2			
X2		X2	
X1			

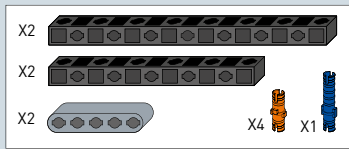
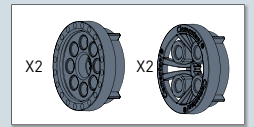




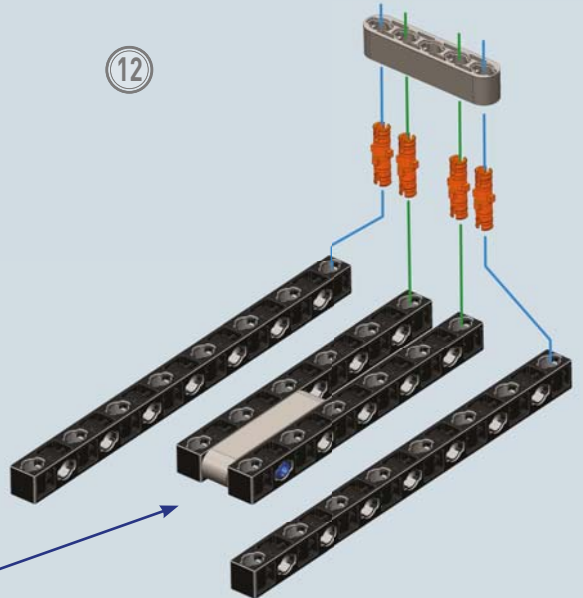
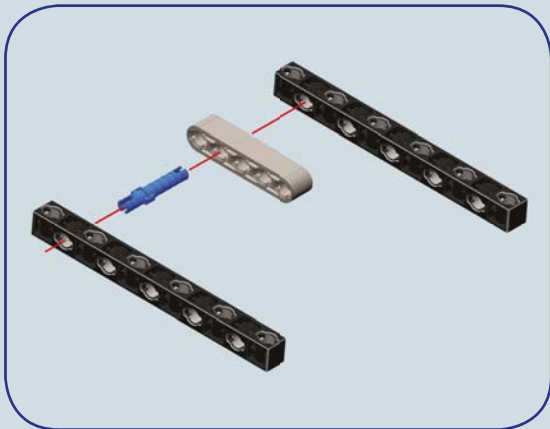
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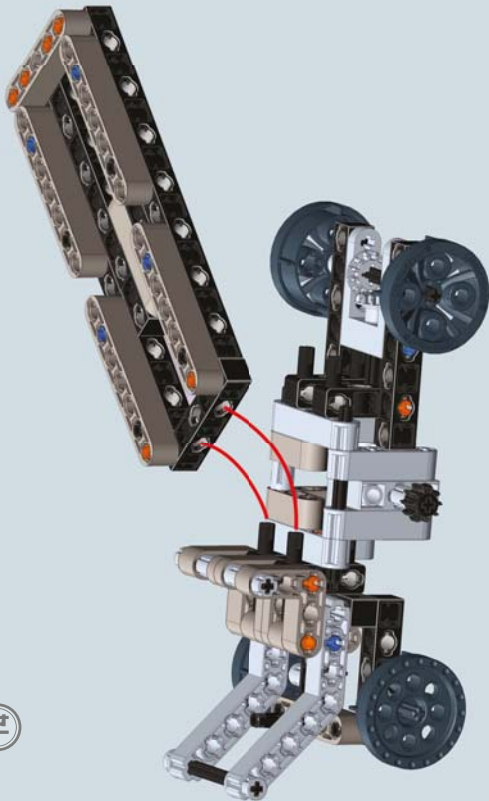
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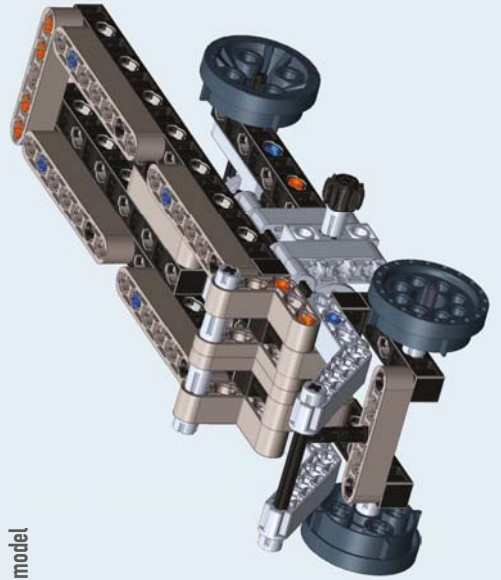
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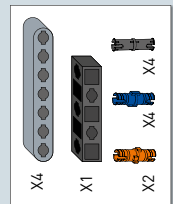
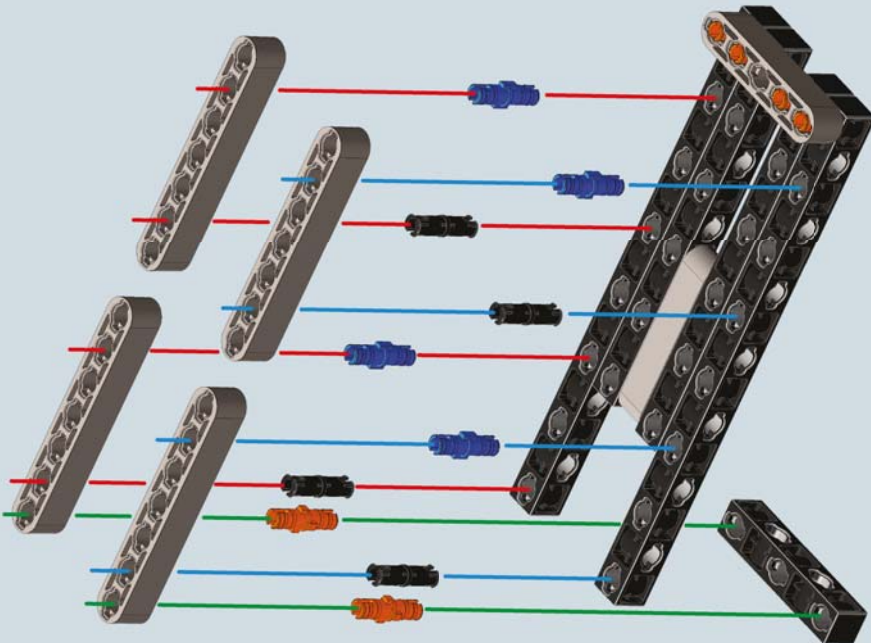
14



Uiteindelijk model



13

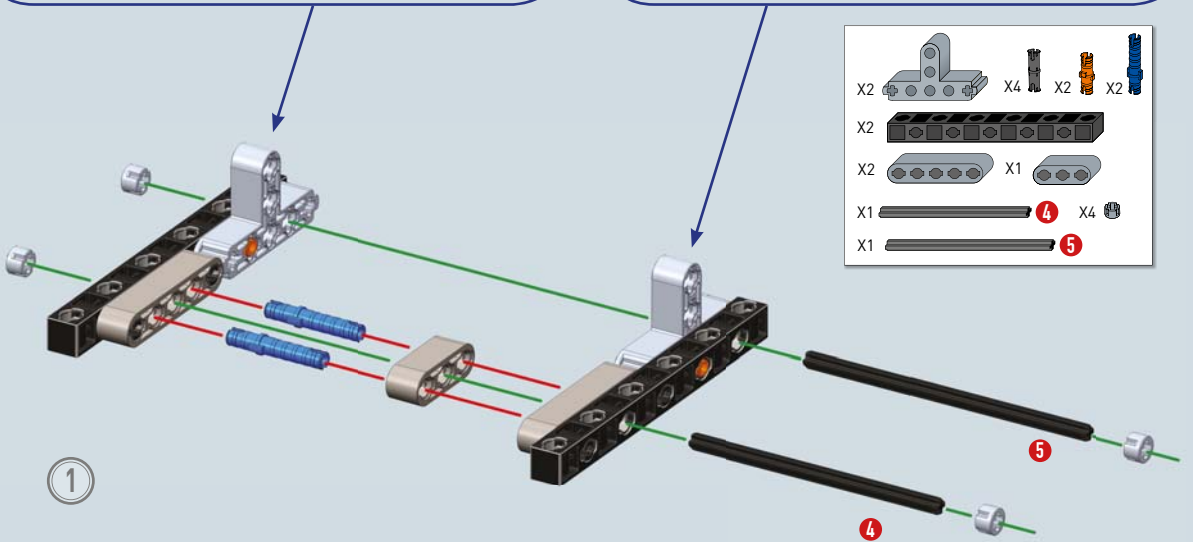
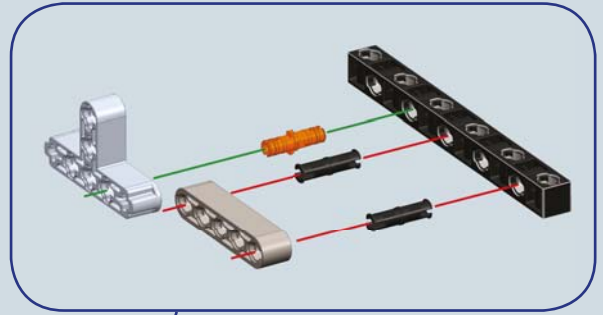
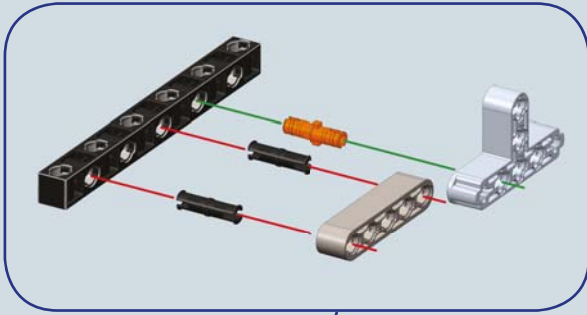


3 De mijnbouw vrachtwagen



Technische informatie en wetenswaardigheden

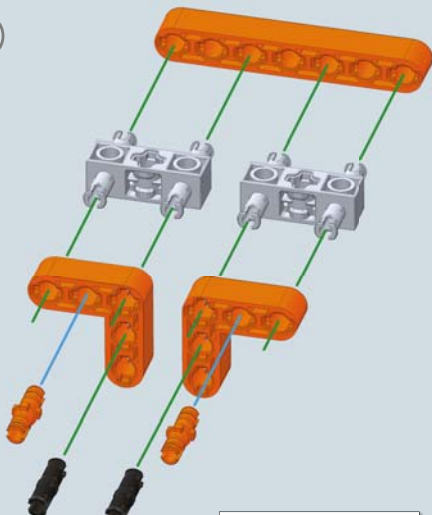
Vrachtwagens gebruikt in de mijnbouw zijn echte kolossen op wielen. De grootste modellen kunnen zelfs een hoogte van 7 meter bereiken (een flatgebouw van twee verdiepingen) en zijn uitgerust met een heel grote dieselmotor met de omvang van een bestelwagen. De laadbak is bijna 10 m lang en kan een enorme hoeveelheid materiaal uit de aarde transporteren. Een volbeladen voertuig kan tot 600 ton wegen. Meestal is hij uitgerust met 6 heel grote wielen (met een diameter van ongeveer 4 m).



1



2



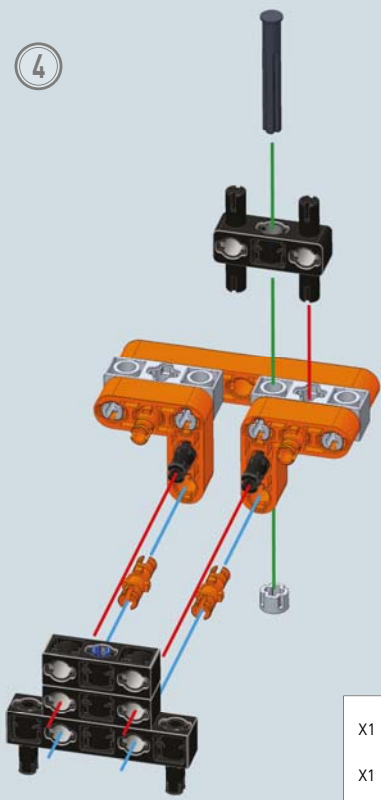
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- X2 X2
- X2 X2

3



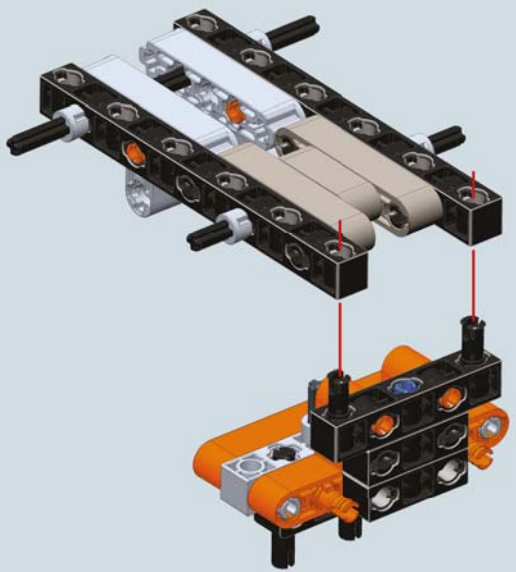
- X2
- X1
- X2 X1

4

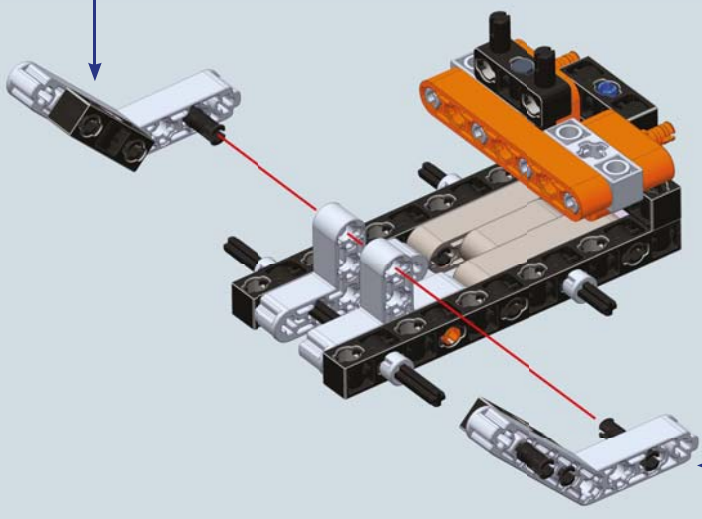
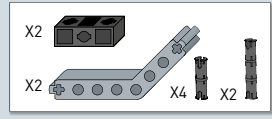
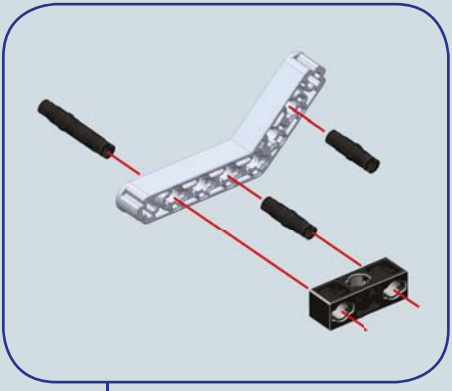


- X1 X1 X2
- X1

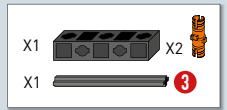
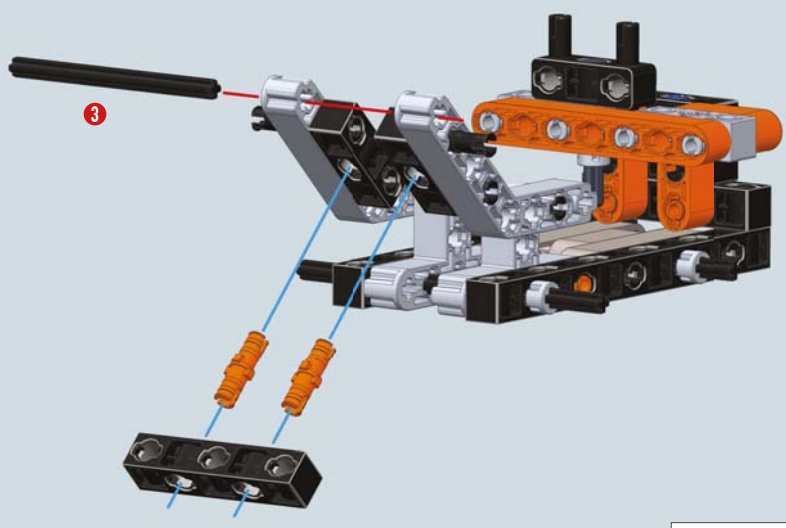
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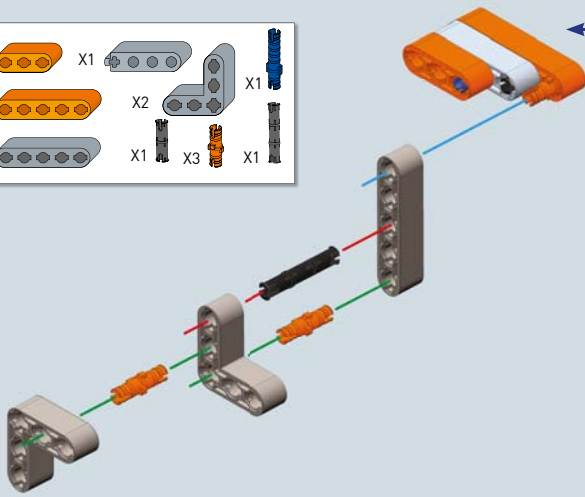
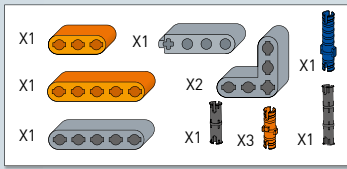


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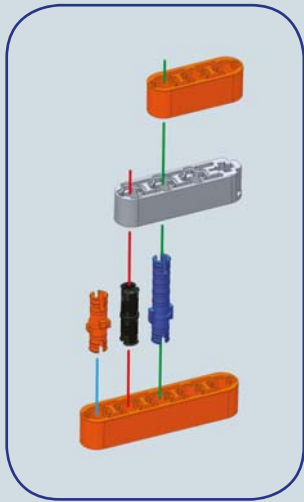
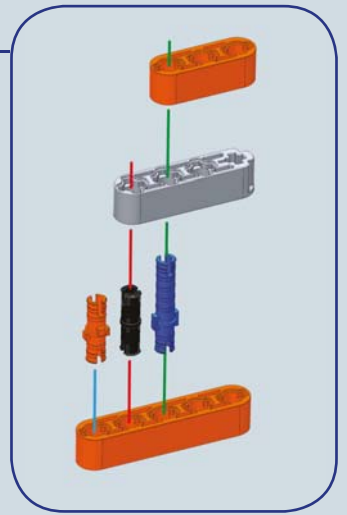


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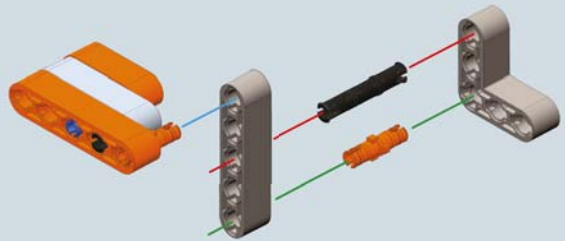
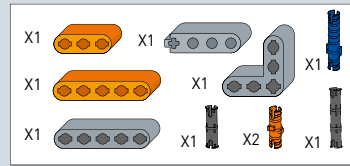




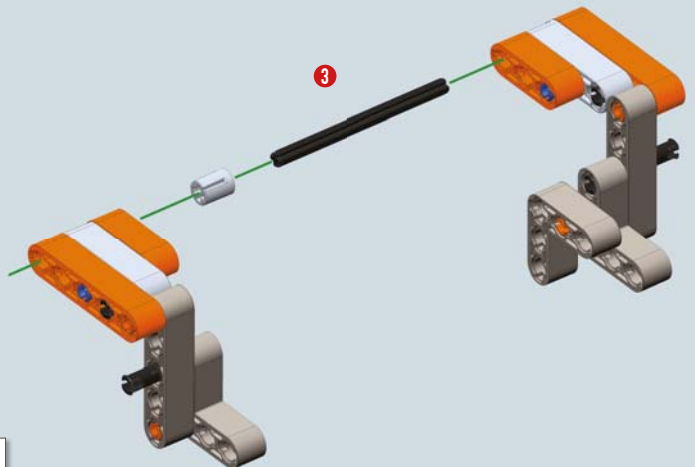
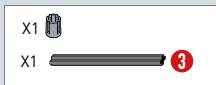
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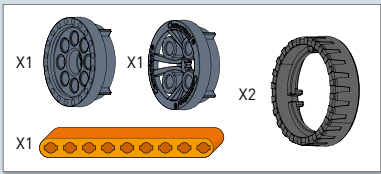
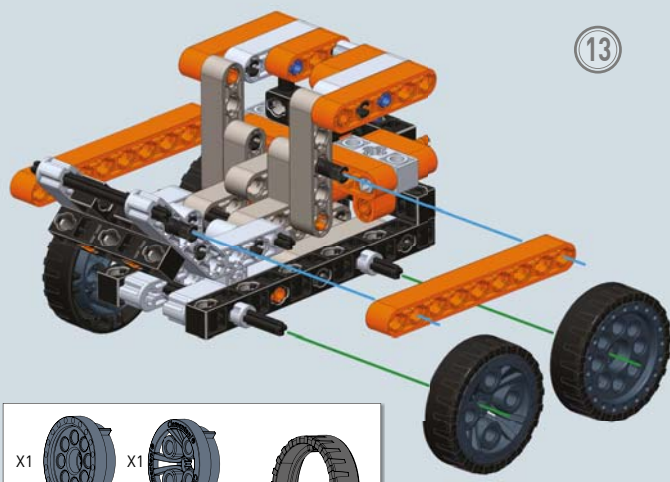
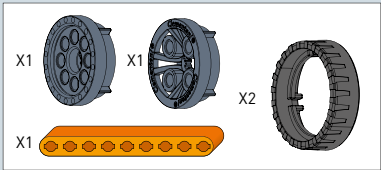
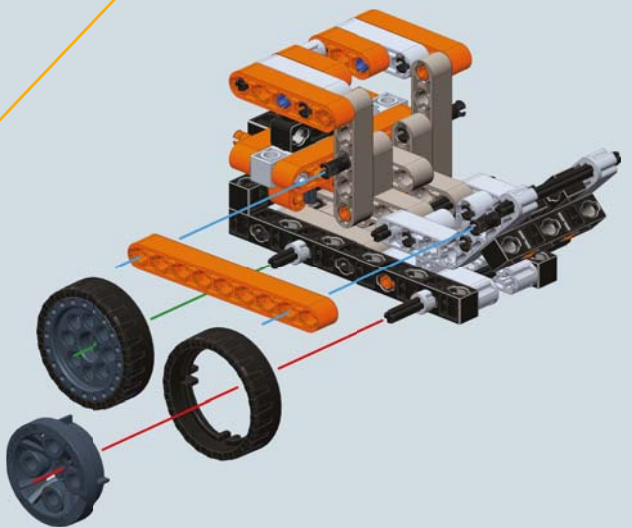
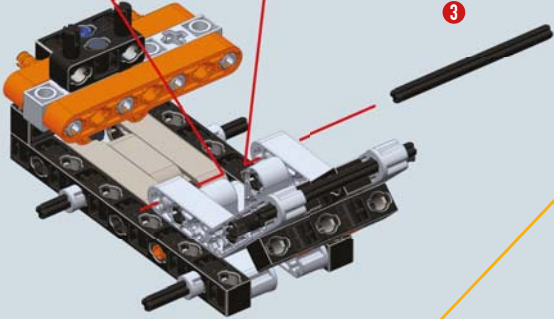
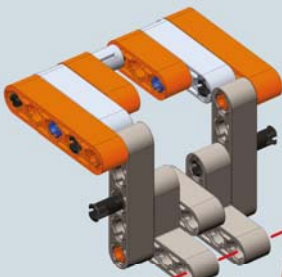


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Uiteindelijk model

4 De Europese vrachtwagen

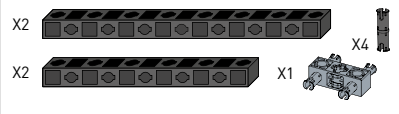
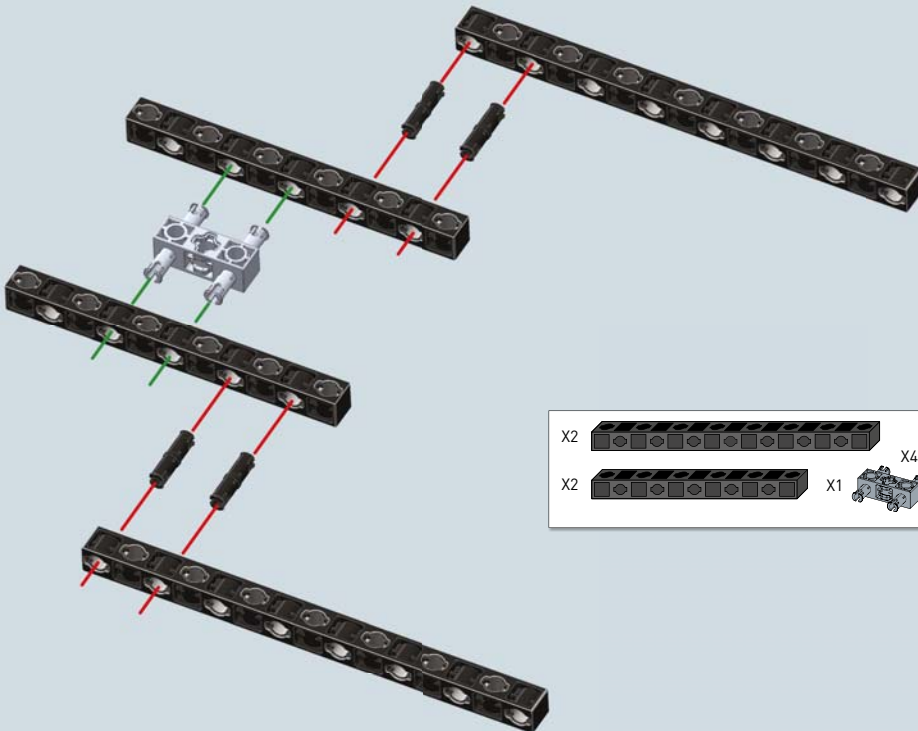


Technische informatie en wetenswaardigheden

De vrachtwagen of vrachtauto is een voertuig ontworpen voor het transport van vracht (goederen). Hij wordt aangedreven door krachtige dieselmotoren en is uitgerust met 4 tot 6 wielen. Het model dat je gaat bouwen is een wegtractor of trekker, d.w.z. een voertuig dat uitsluitend geschikt is voor het trekken van een oplegger (aanhangwagen). Na koppeling van beide ontstaan complexe vrachtwagencombinaties, die we trekker-opleggercombinaties noemen. Vrachtwagens en trekkers verschillen onderling door het feit dat de trekker op zich (zonder oplegger) geen goederen kan laden.

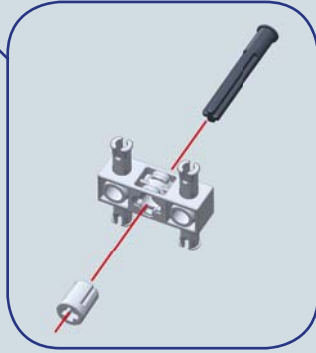
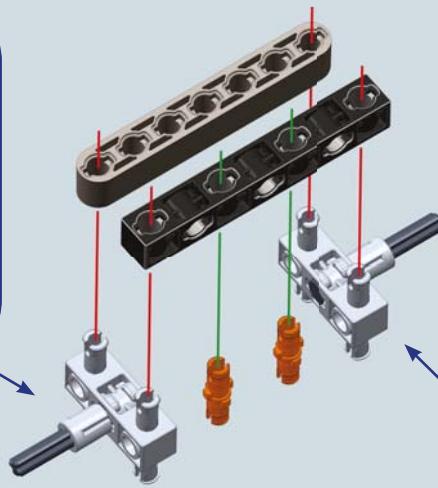
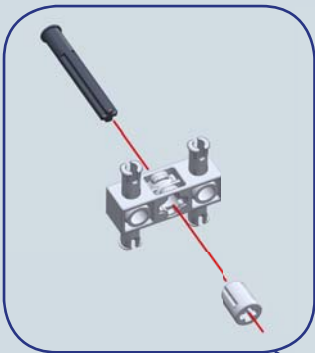
De platte "neus", typisch voor de Europese vrachtwagens, werd opgelegd door de strenge normen waaraan de voertuigafmetingen moeten voldoen, voor de veiligheid en het vlot verloop van het verkeer.

Vroeger werden ook ware landbouwtractors gebruikt als trekkers, uitgerust met een carrosserie en banden die net ietsje anders waren dan de originele modellen.



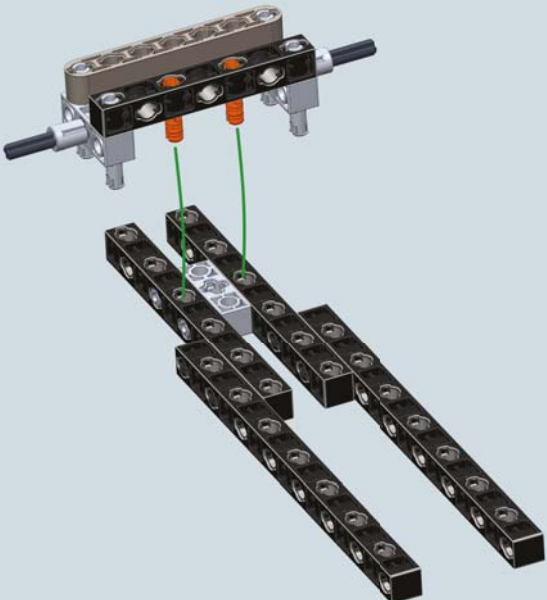
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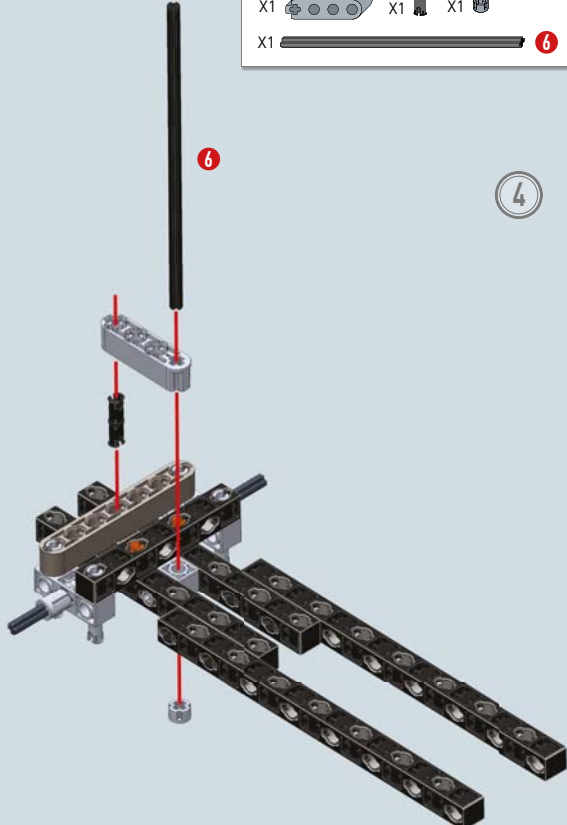
- X1
- X2
- X1
- X2
- X2
- X2

3



- X1
- X1
- X1
- X1

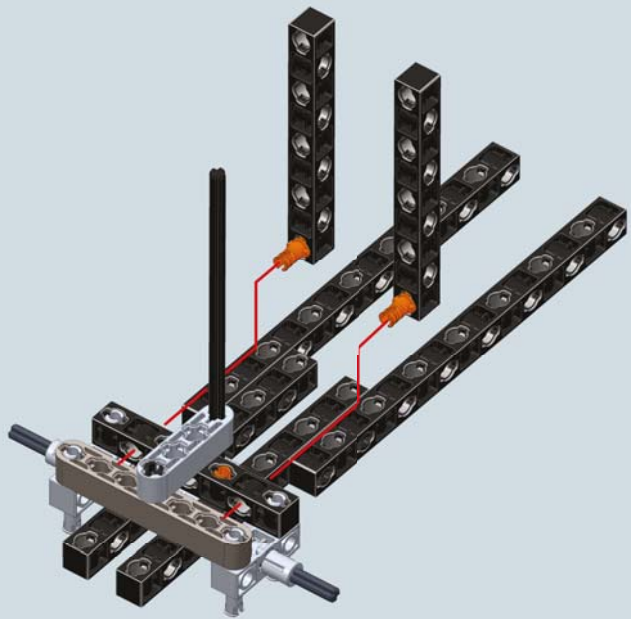
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- 1:1

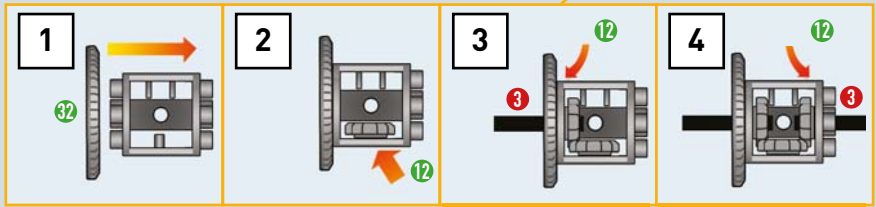
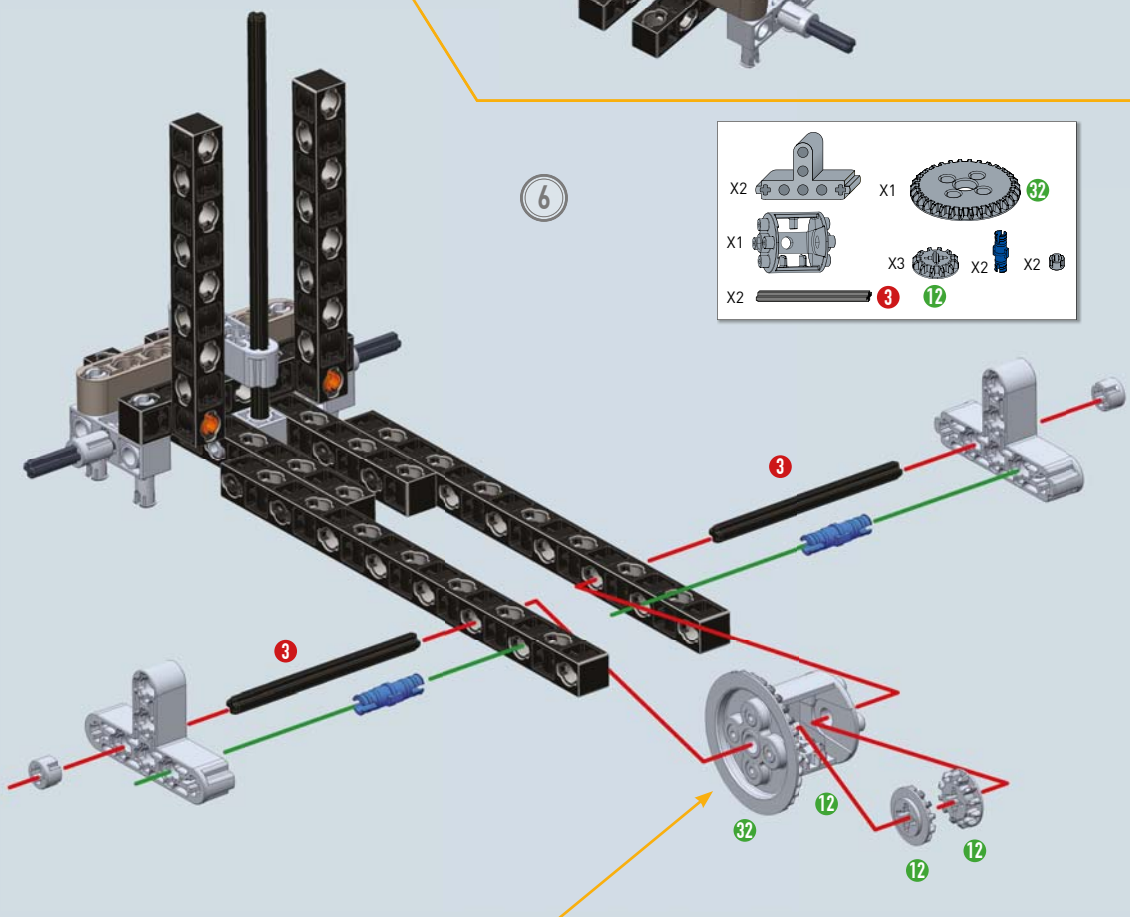
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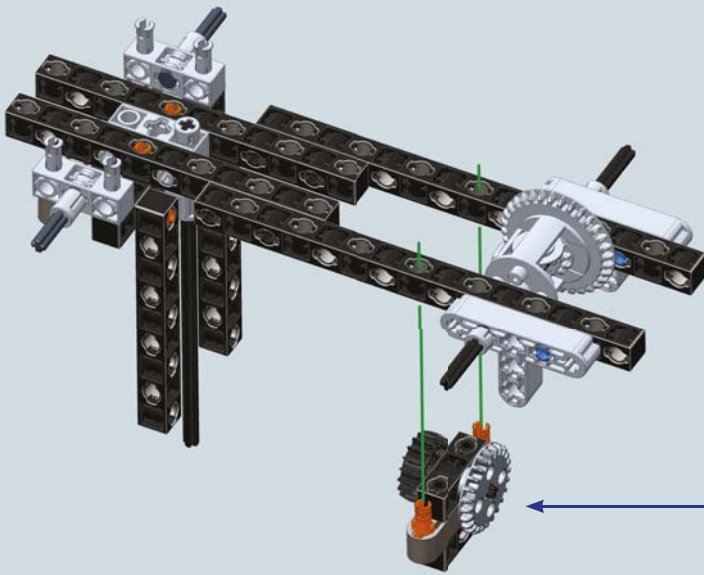
- X2
- X2



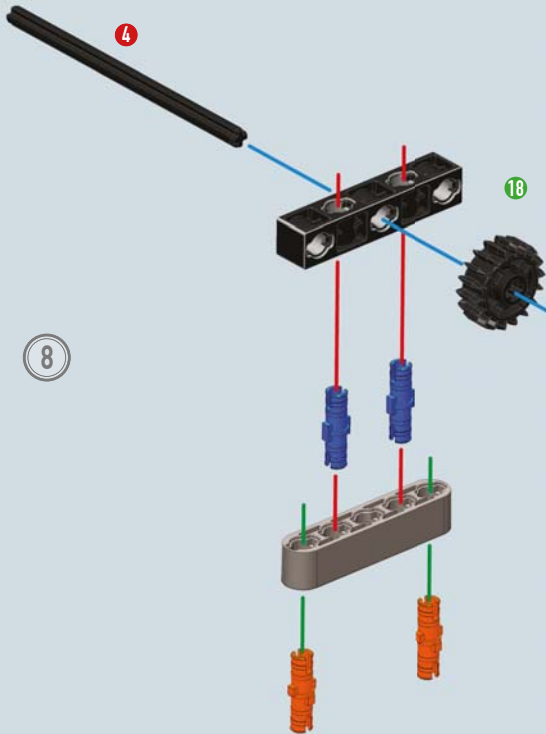
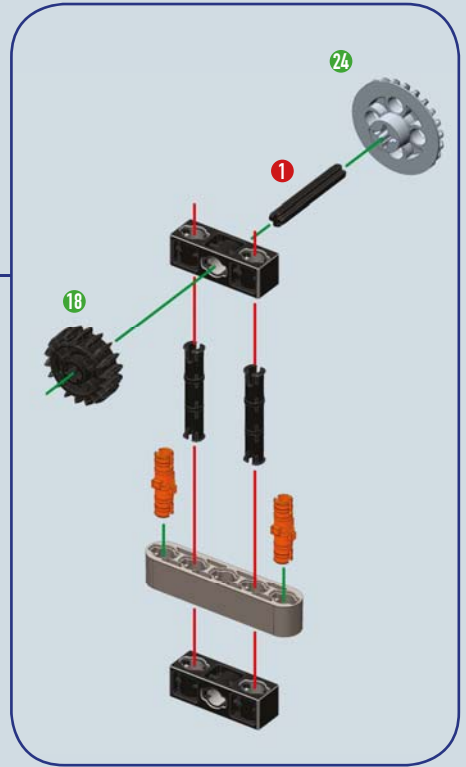
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- X2
- X1
- X3
- X2
- X2
- X2
- X2



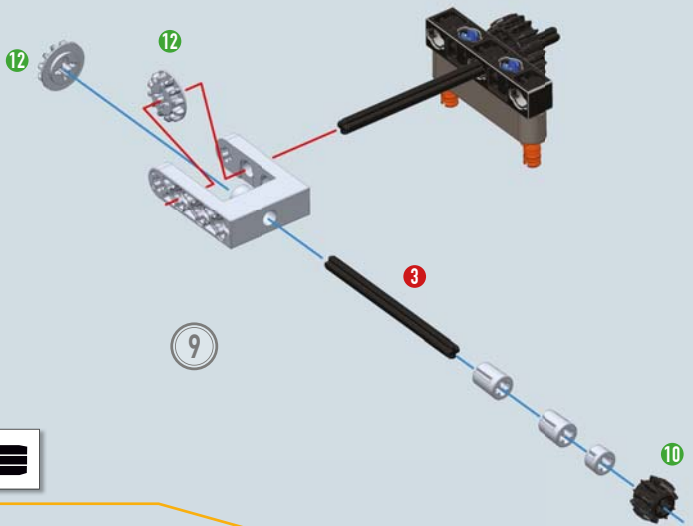
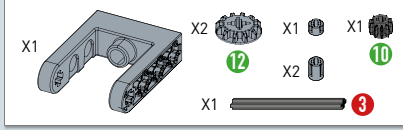
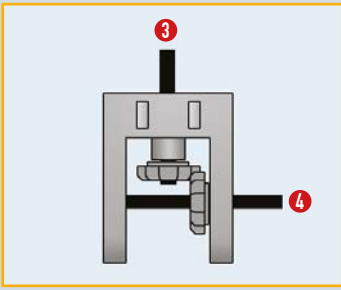


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|----|--|----|--|----|--|
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| X2 | | X2 | | X1 | |
| X1 | | X2 | | | |



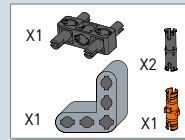
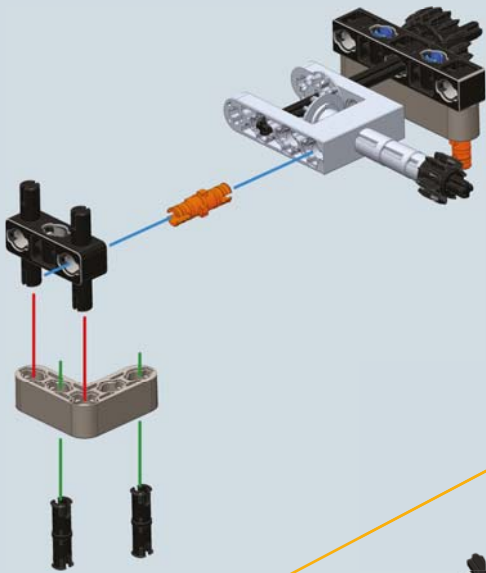
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|----|--|----|--|----|--|
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| X1 | | | | X2 | |
| X1 | | | | X2 | |



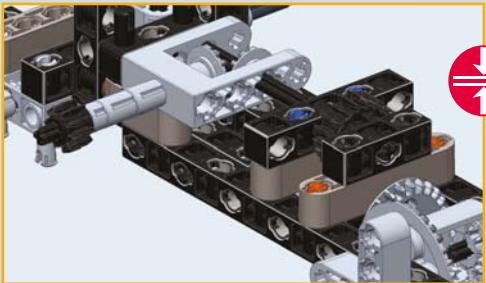
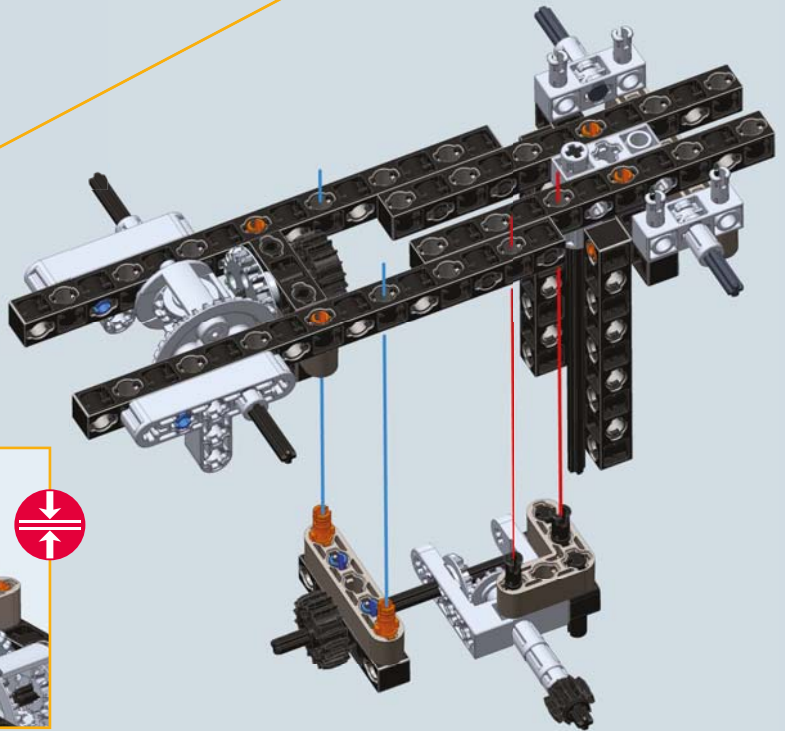


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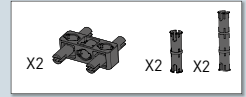
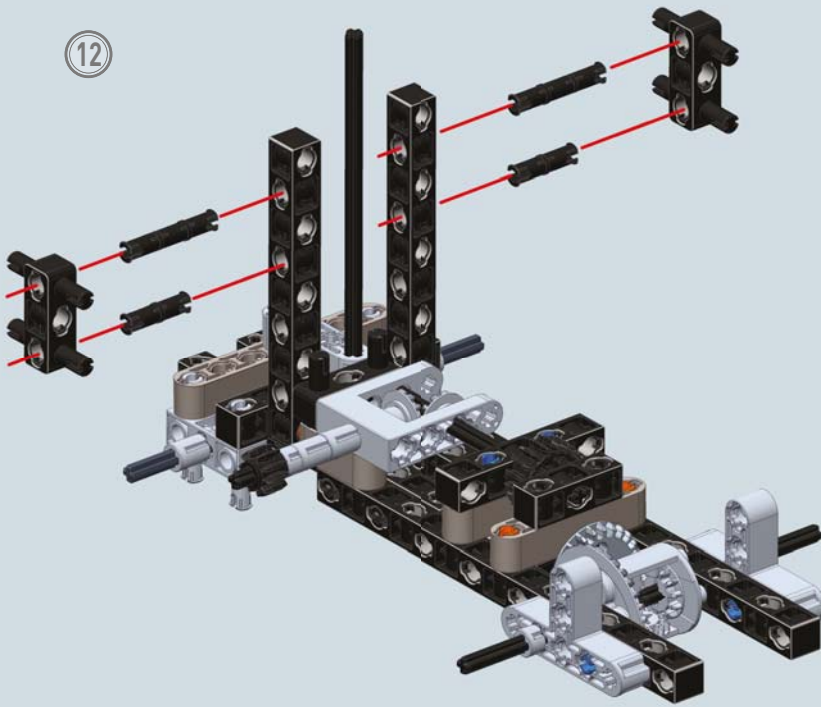
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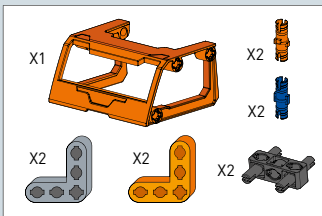
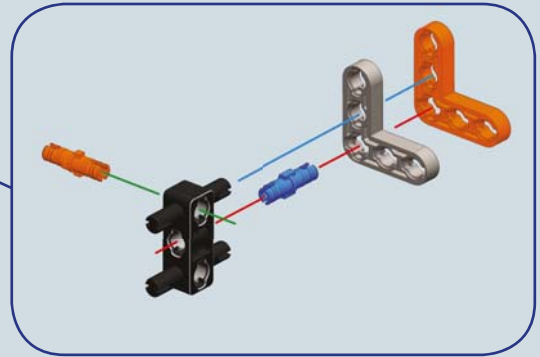
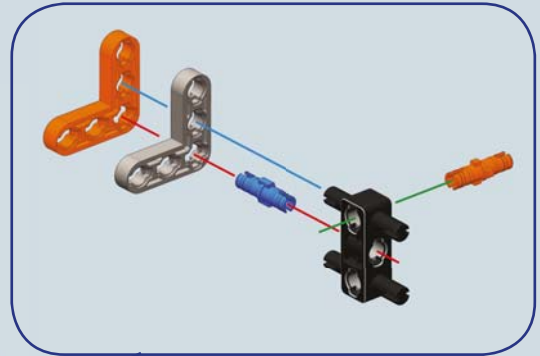
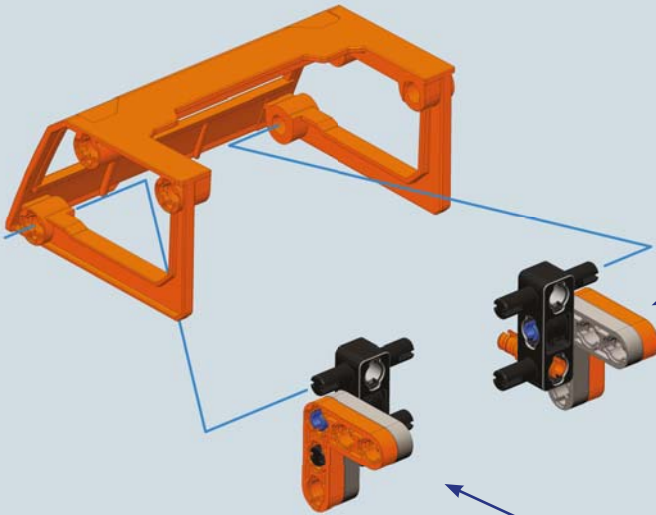
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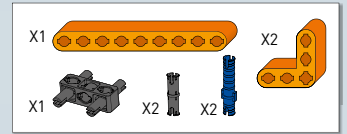
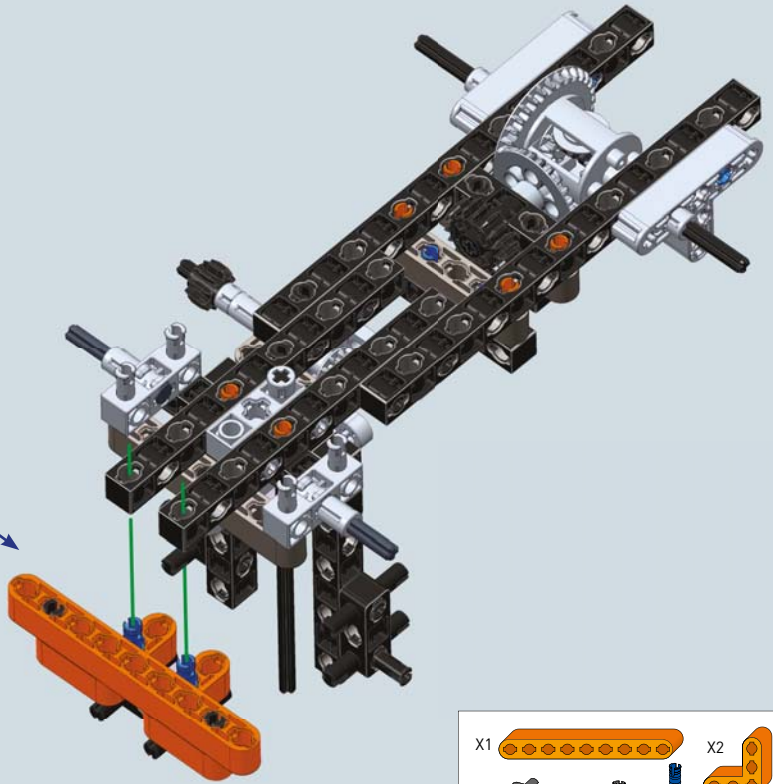
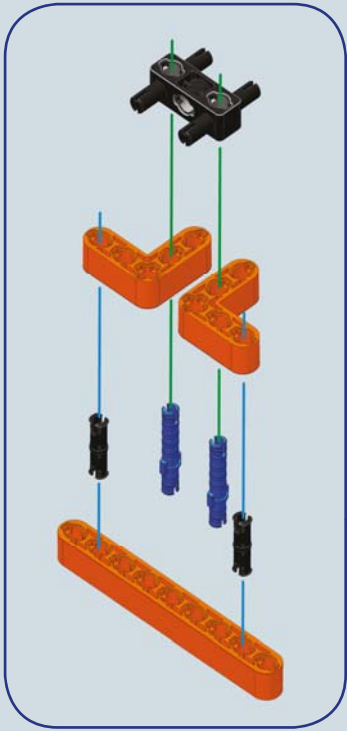
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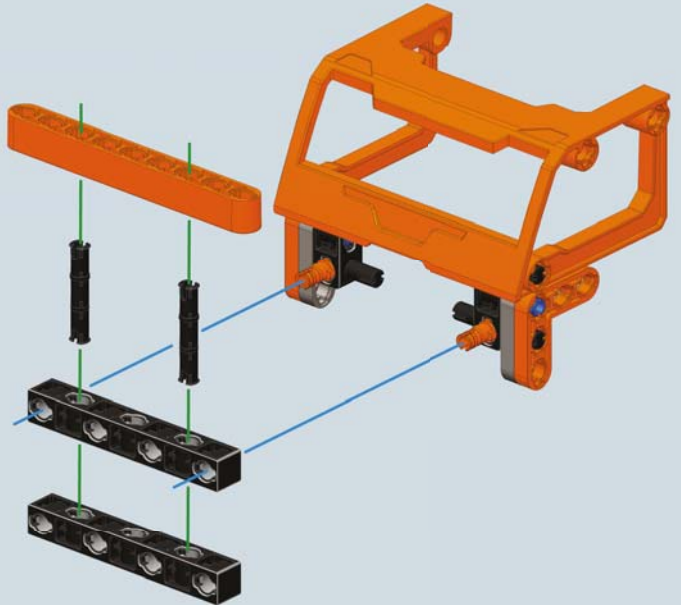
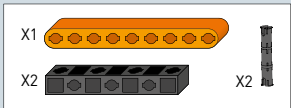
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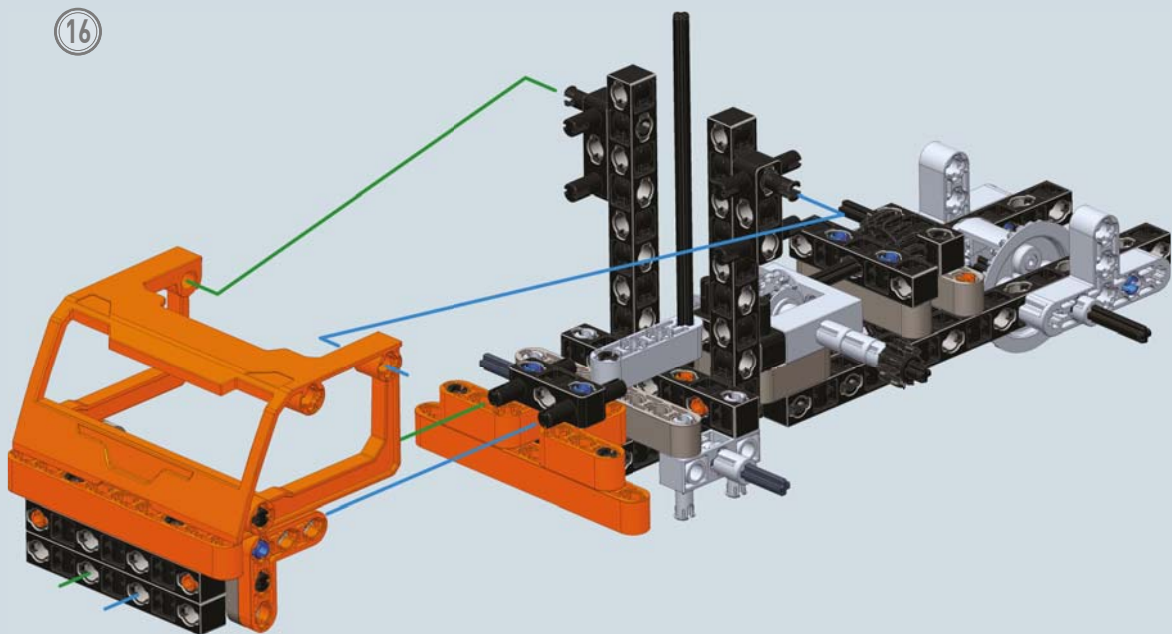
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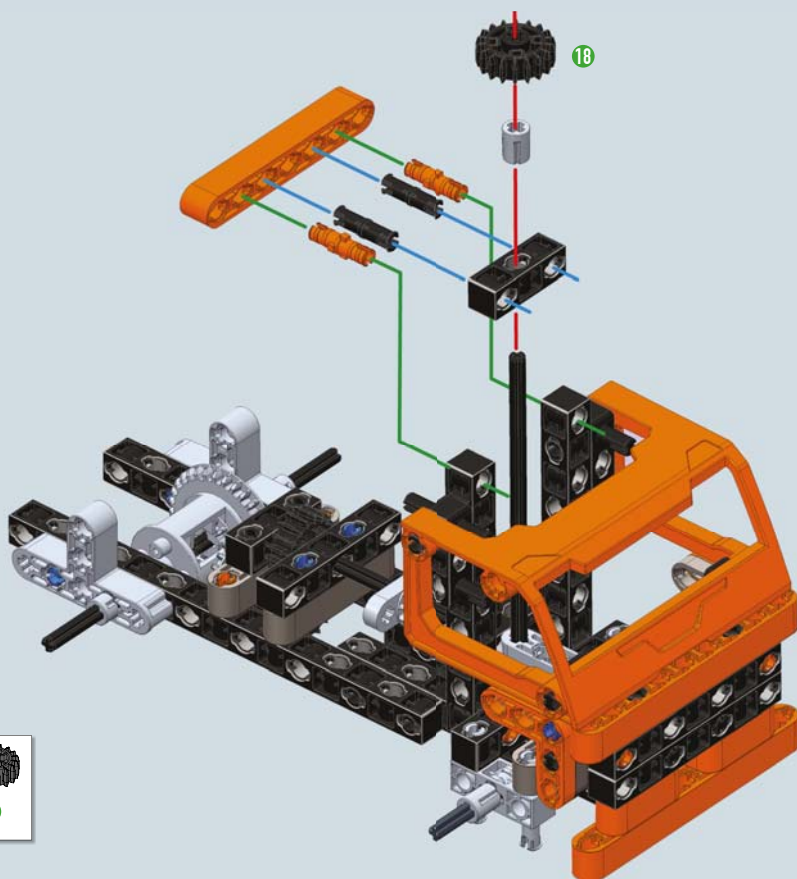
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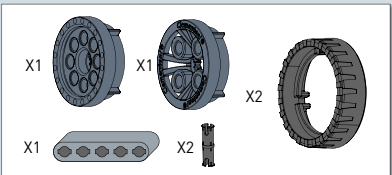
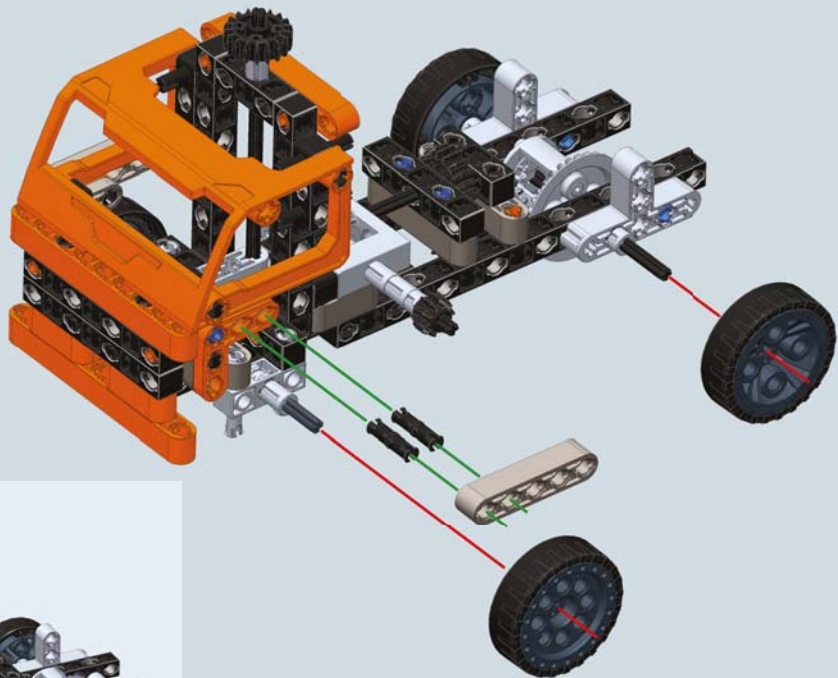
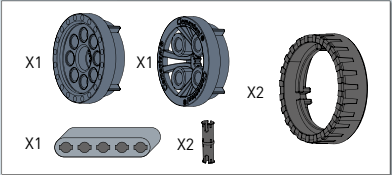
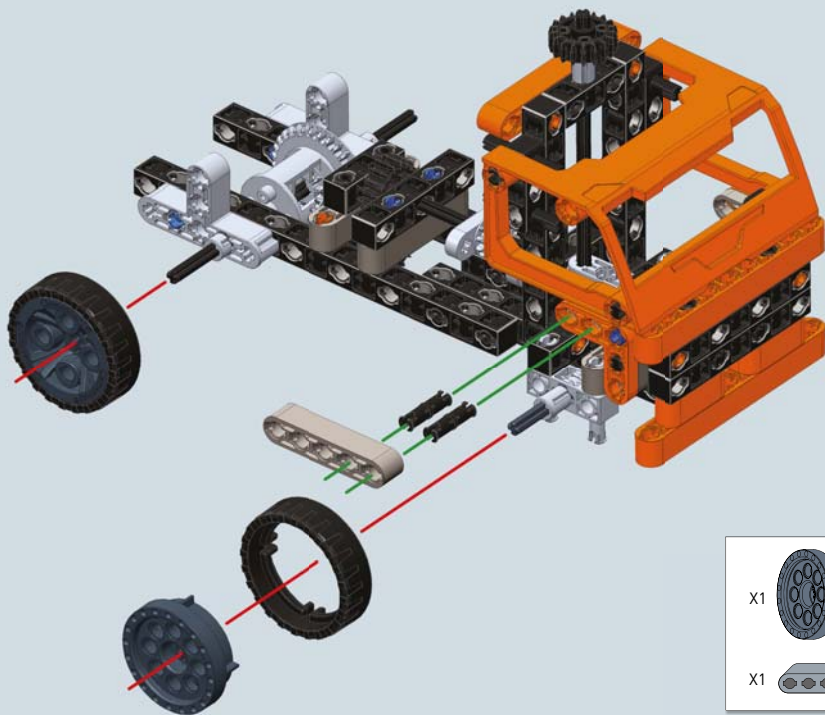
16



17



- | | | | |
|----|--|----|--|
| X1 | | X1 | |
| X1 | | X1 | |
| | | X2 | |
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Uiteindelijk model

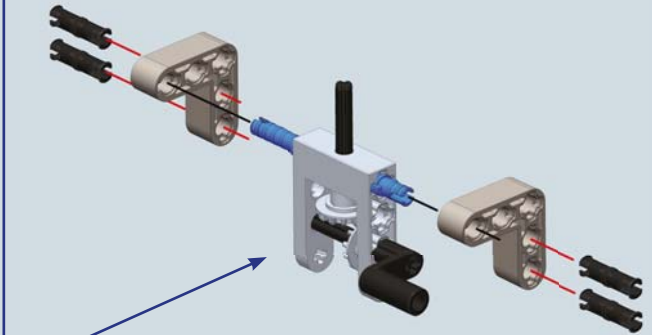
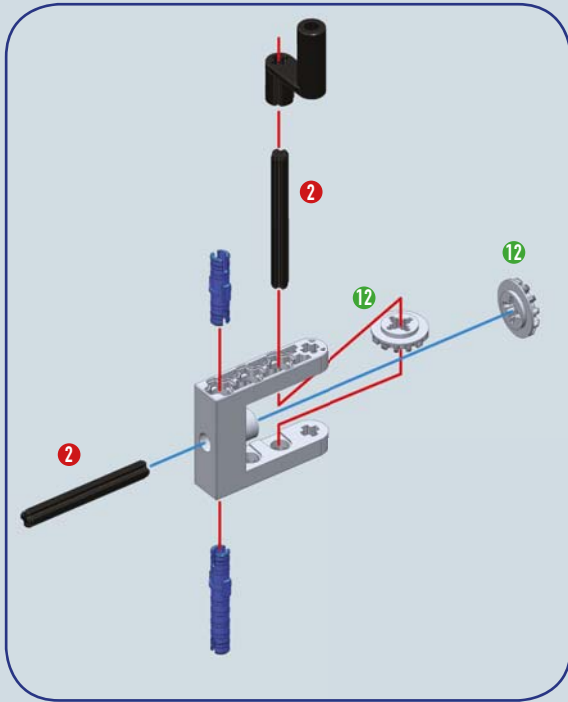
5 Werktuigen: bomengrijper



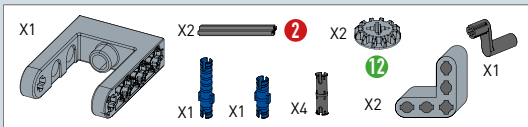
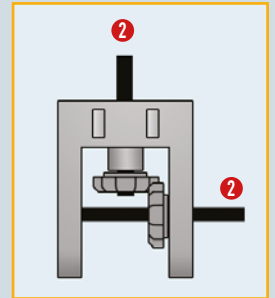
Technische informatie en wetenswaardigheden

De hydraulische grijper is een grijpwerktuig bestaande uit een klauwentang aangedreven door één of meerdere hydraulische cilinders. Ook de telescooparm die de grijper verbindt met de vrachtwagen gebruikt dezelfde hydraulische aandrijvers voor de beweging.

Dit soort werktuig wordt gebruikt in de bosbouwsector voor lading van boomstammen bestemd voor de verkoop, maar ook om zones die versperd zijn door boomstammen, takken en struiken vrij te maken.



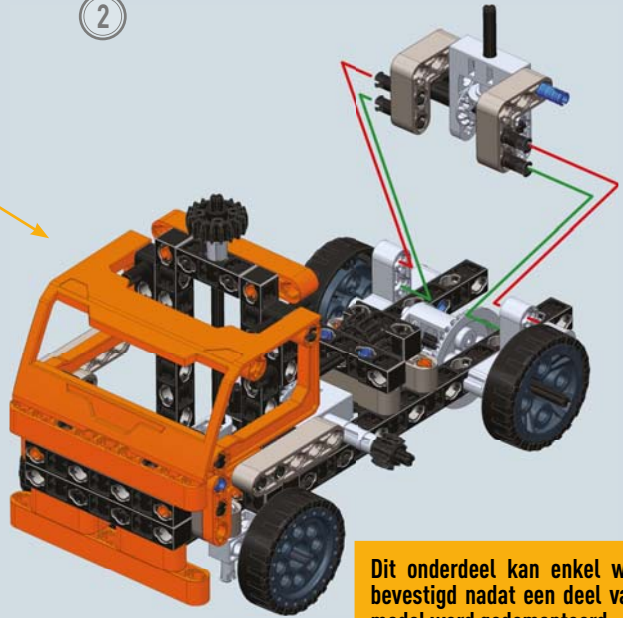
①



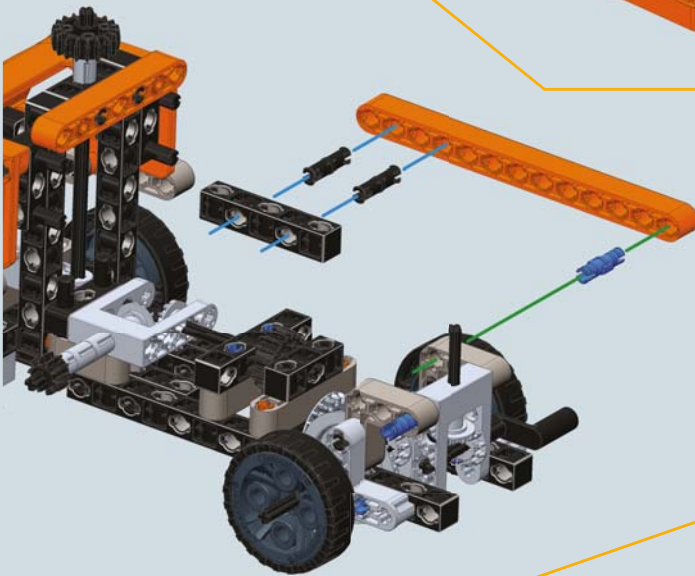


Model gebouwd in activiteit 4

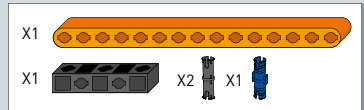
2



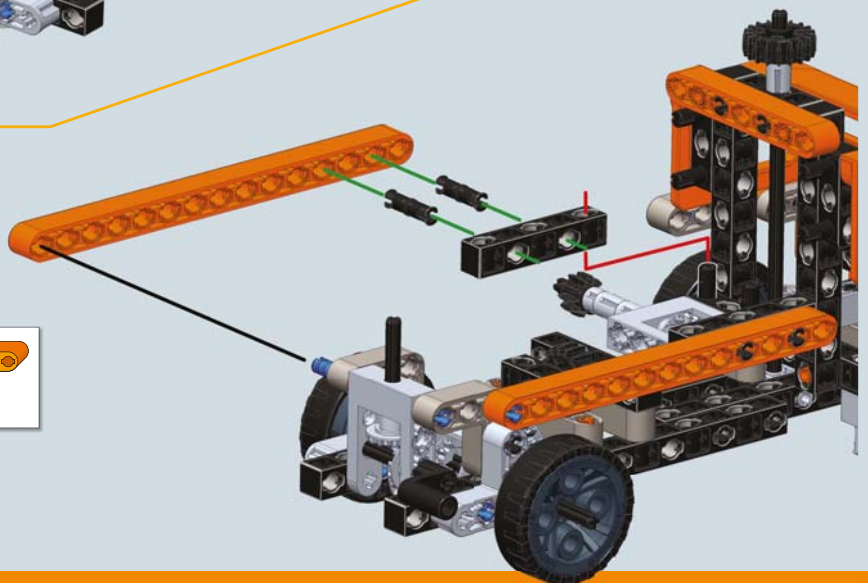
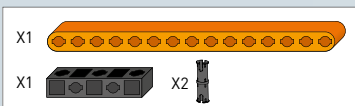
Dit onderdeel kan enkel worden bevestigd nadat een deel van het model werd gedemonteerd.



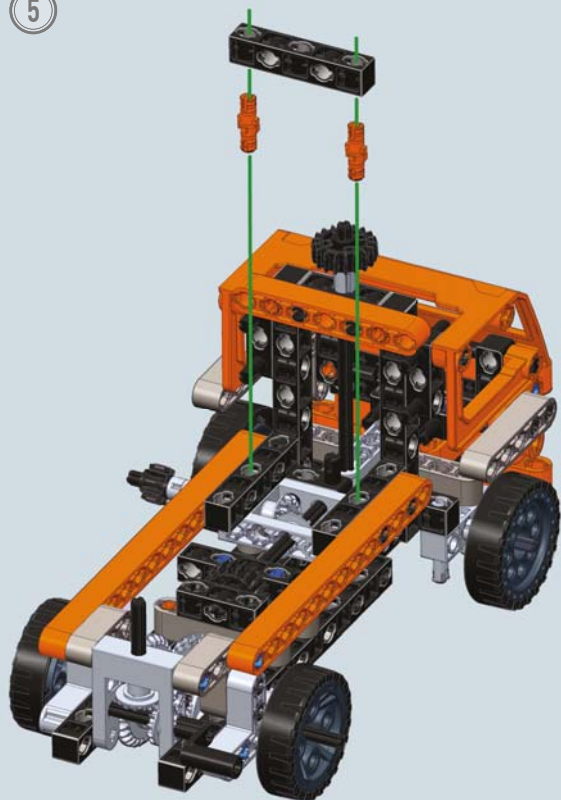
3



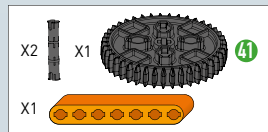
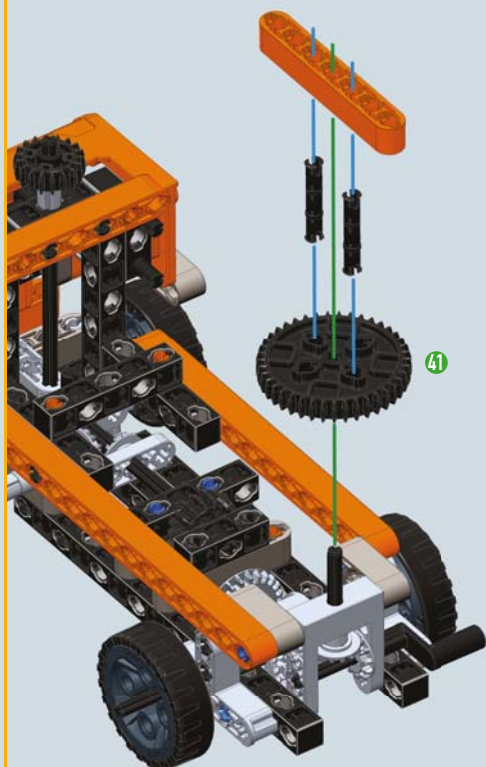
4



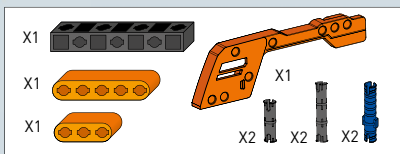
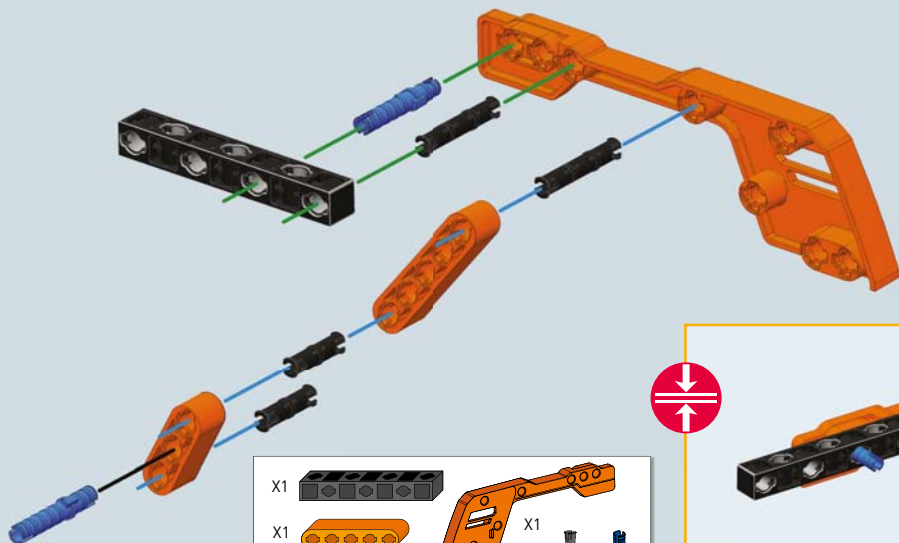
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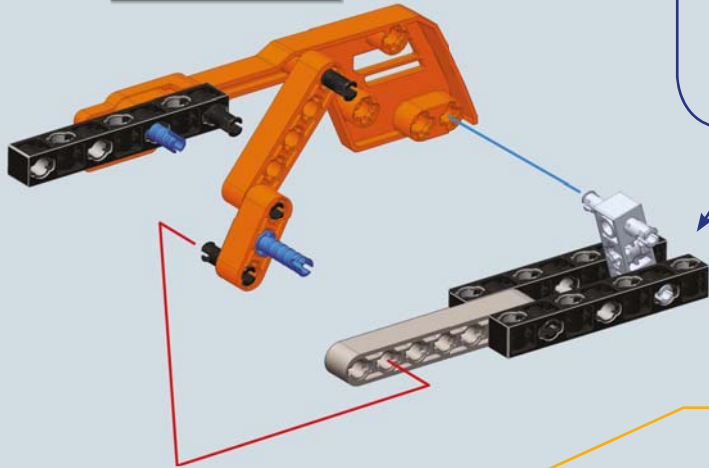
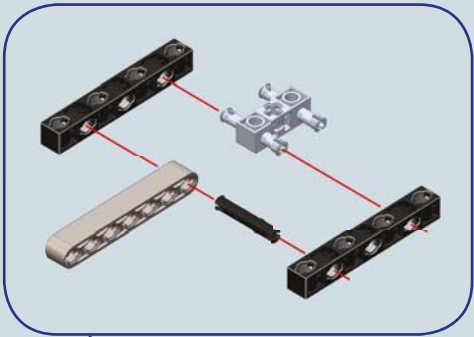
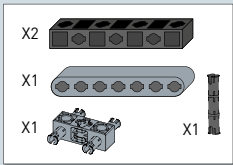
6



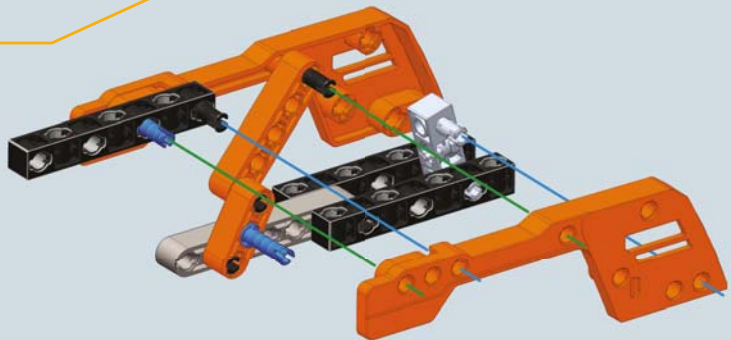
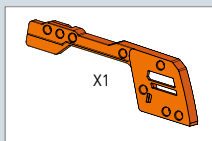
7



8

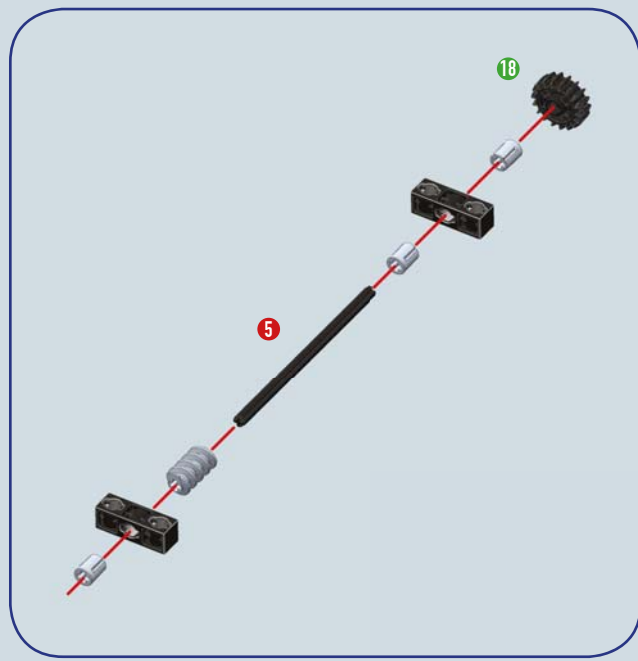


9

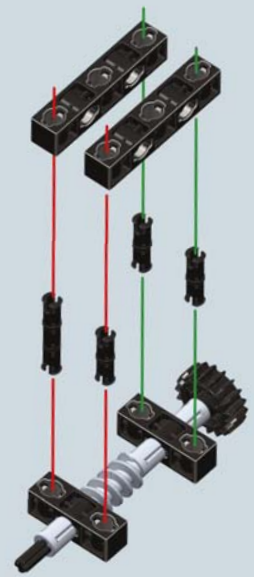


10

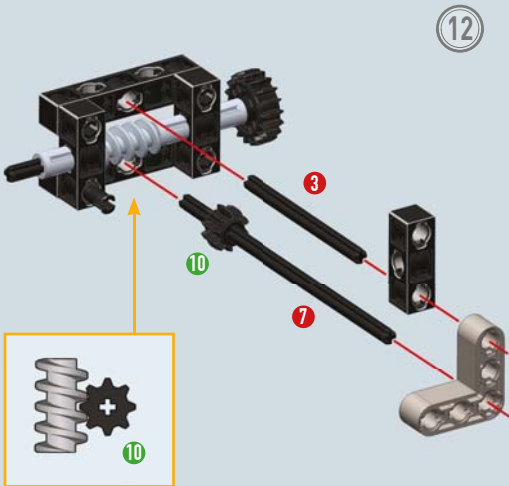




11



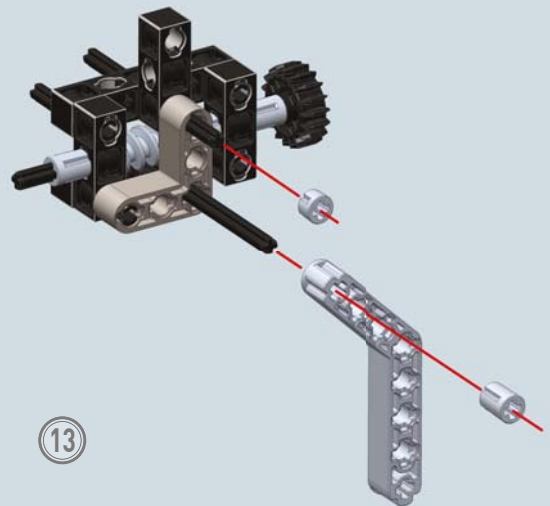
- | | | | | | |
|----|--|----|--|----------|-----------|
| X2 | | X3 | | X1 | |
| X2 | | | | | 18 |
| X1 | | | | 5 | |
| X1 | | X3 | | X1 | |



12



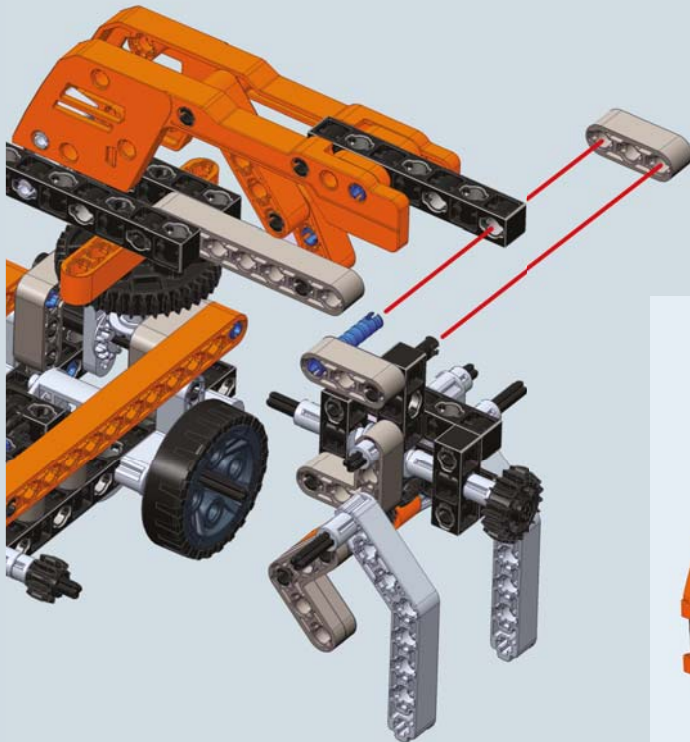
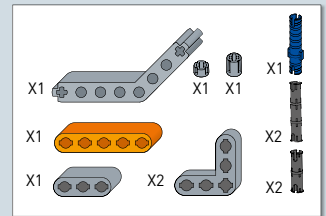
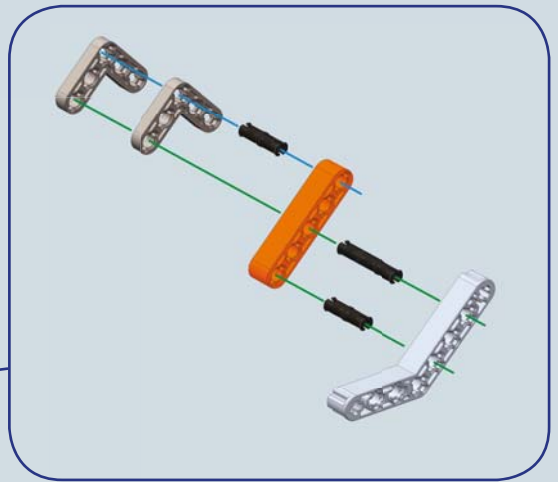
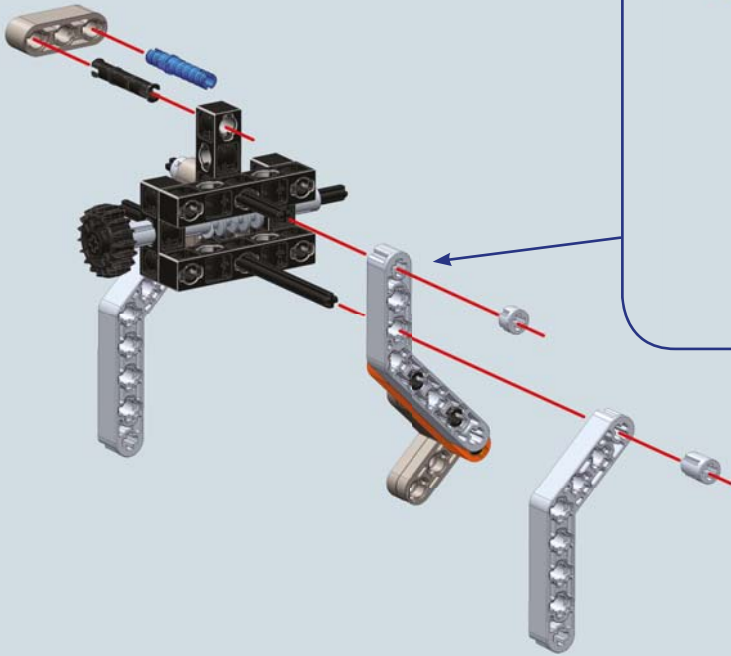
- | | | | |
|----|--|----|--|
| X1 | | X1 | |
| X1 | | X1 | |
| X1 | | | |



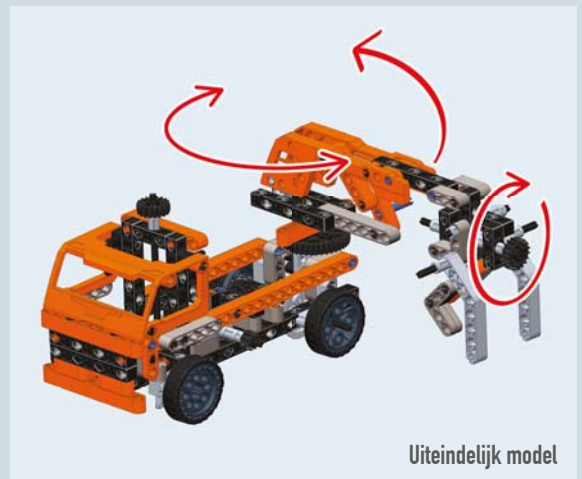
13

- | | | | |
|----|--|----|--|
| X1 | | X1 | |
| X1 | | | |

14



15



Uiteindelijk model

6 Werktuigen: kiepbak

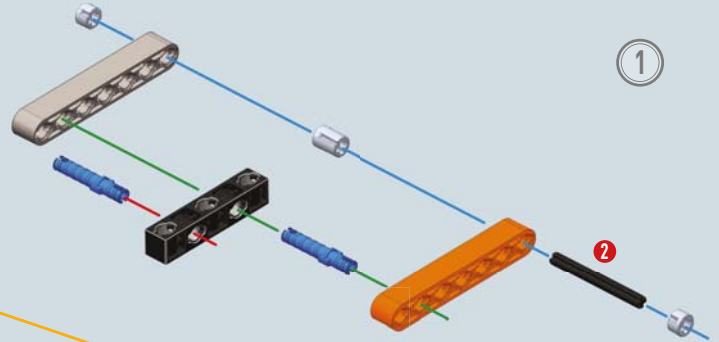


Technische informatie en wetenswaardigheden

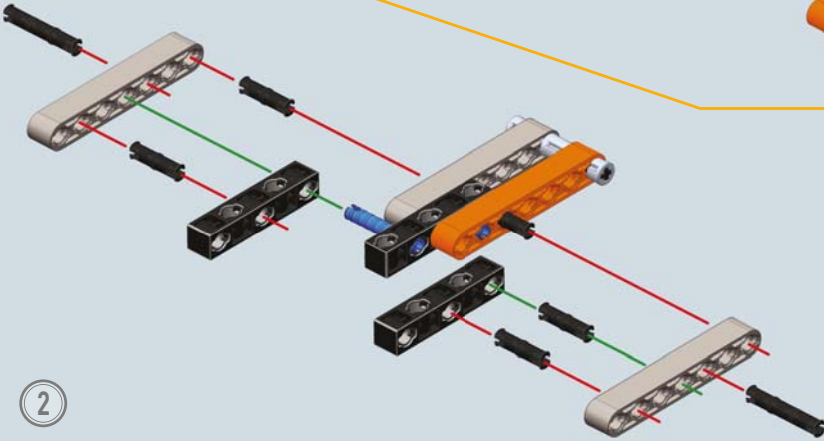
Dit voertuig met kiepbak is een echte vrachtwagen, vermits het op autonome wijze vracht kan transporteren. Meestal is het bestemd voor transport van losse goederen, zoals zand, kiezel of afval. Ook in dit geval zorgen hydraulische zuigers voor de beweging van de kiepbak.



- X1
- X1
- X1
- X1
- X1
- X1
- X2
- X2



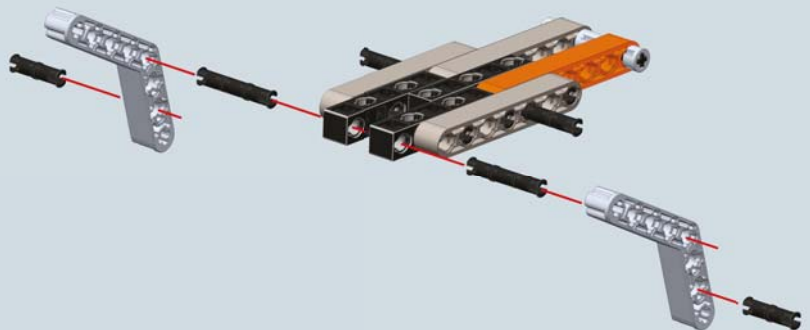
1



2

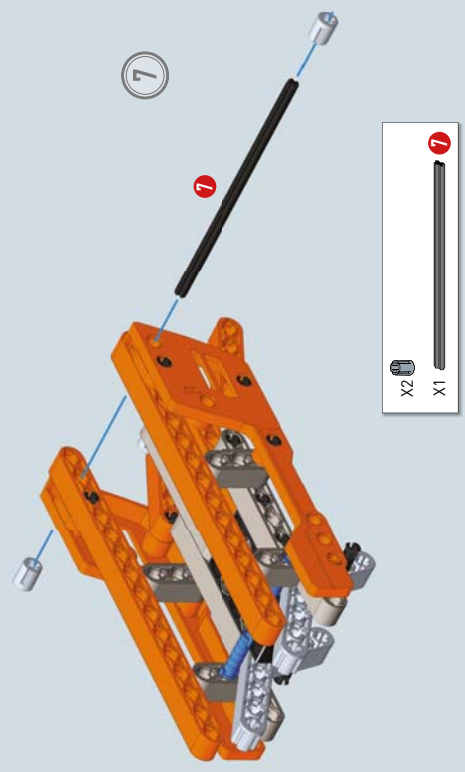
- X2
- X2
- X2
- X5

- X2
- X2
- X2

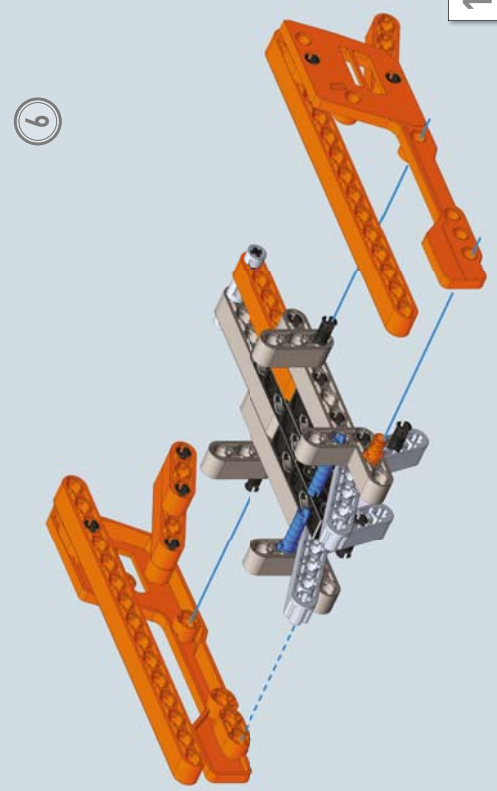
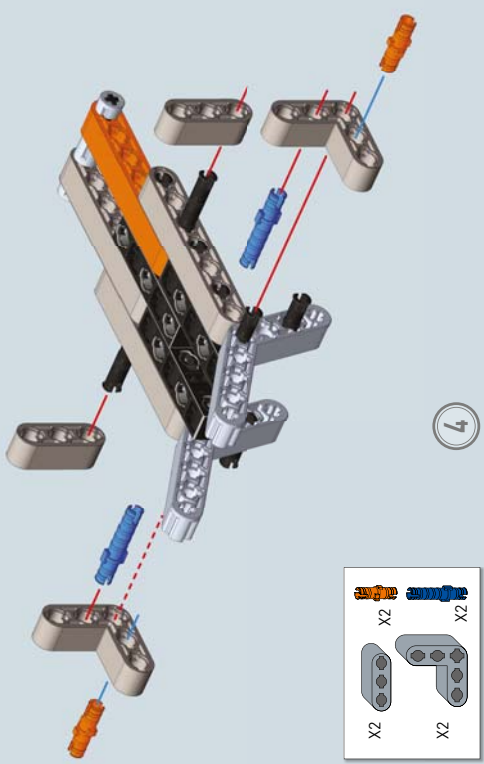


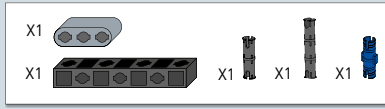
3

- 1:1

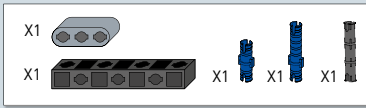
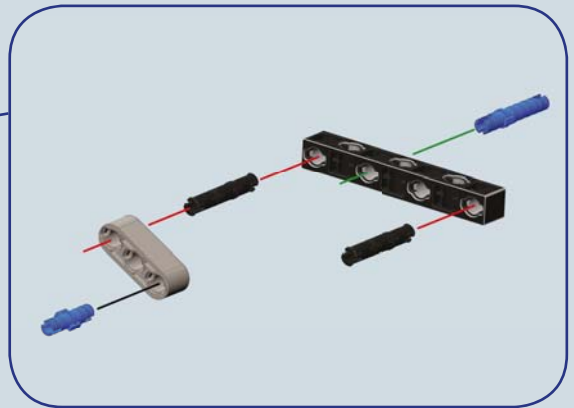
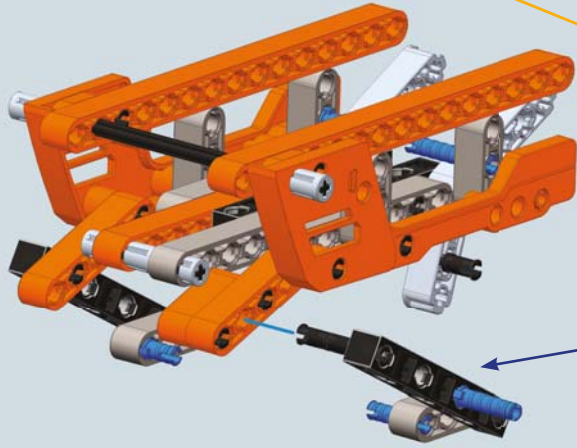
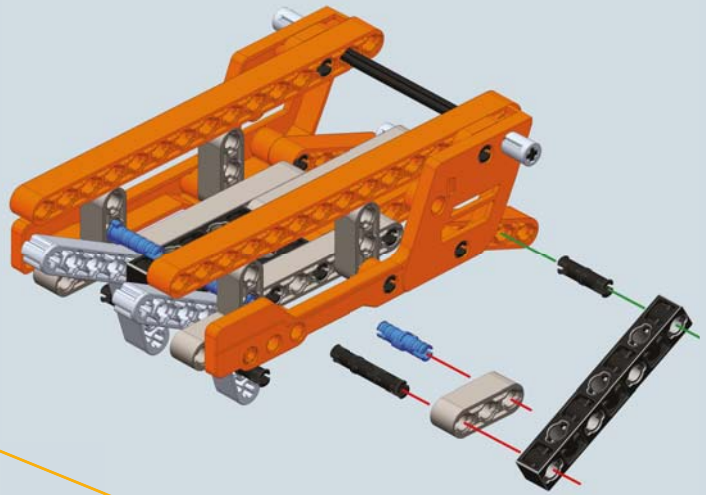


1:1

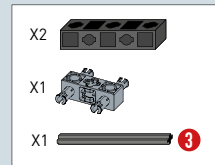
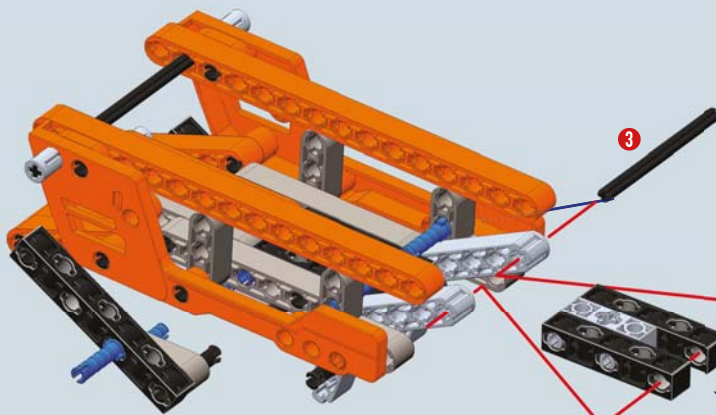




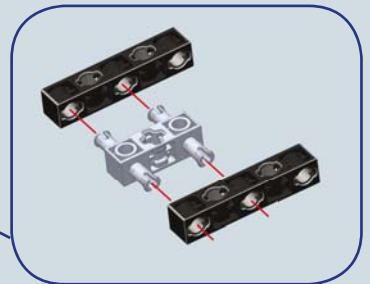
8

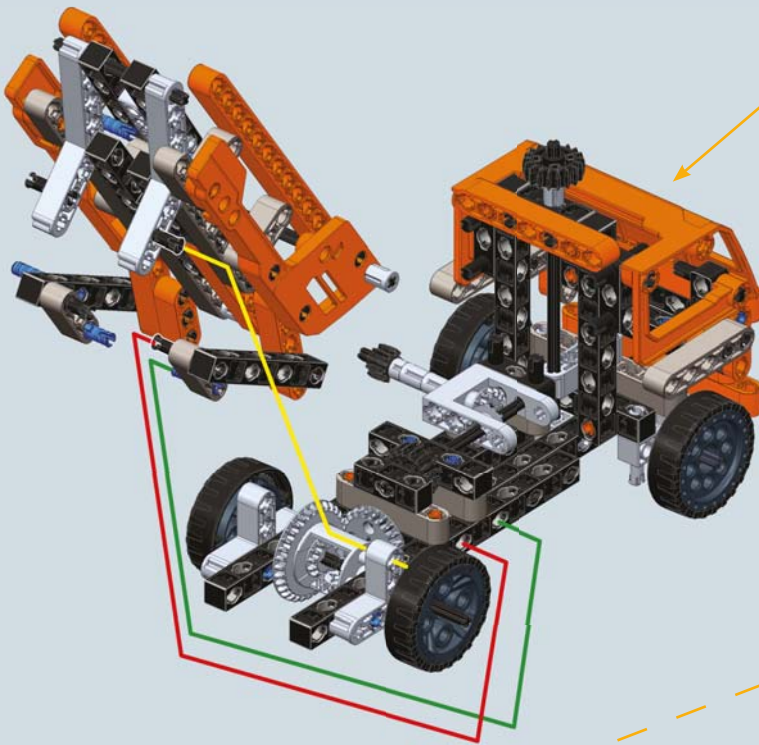


9



10

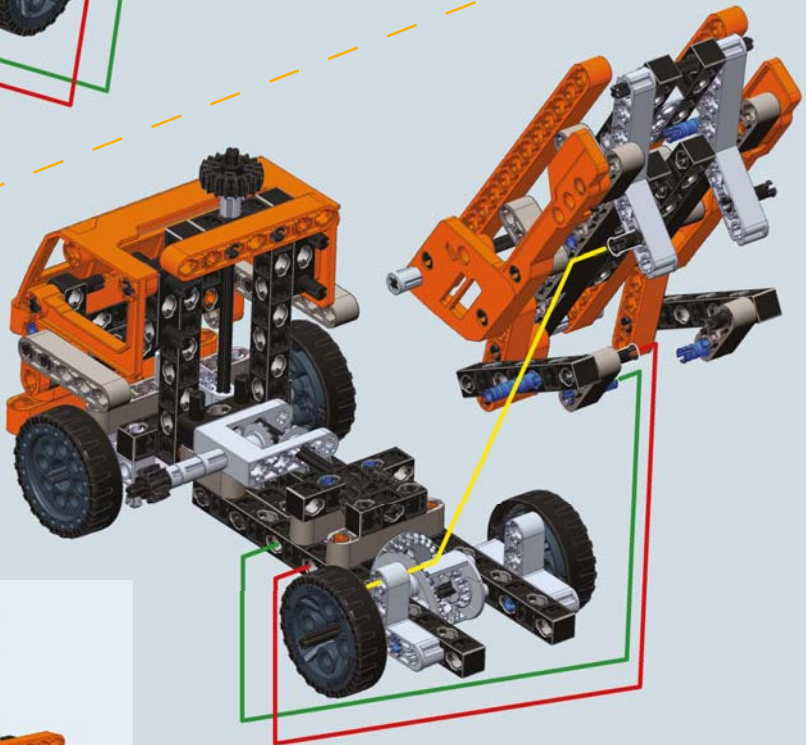




Model gebouwd in activiteit 4

11

Dit onderdeel kan enkel worden bevestigd nadat een deel van het model werd gedemonteerd.

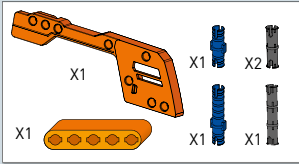
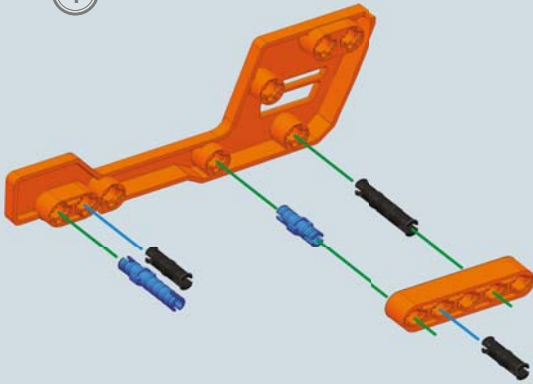


Uiteindelijk model

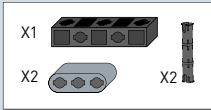
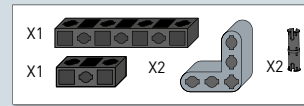
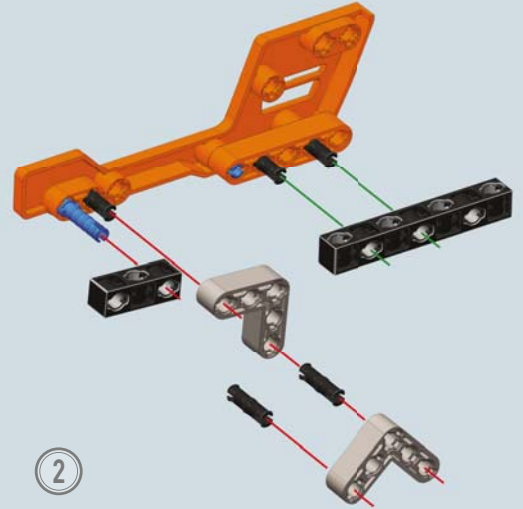
7 Werktuigen: takel



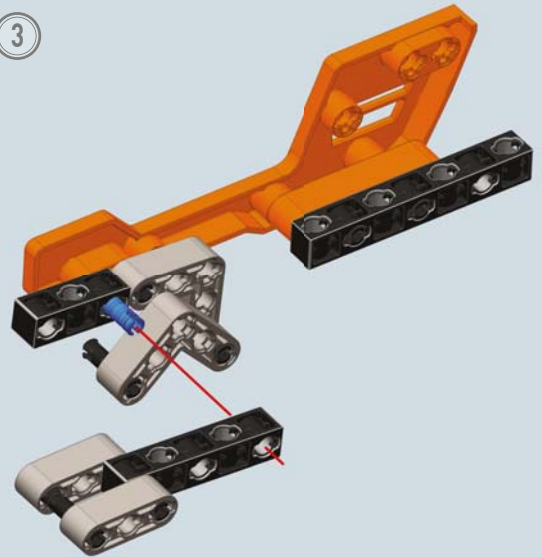
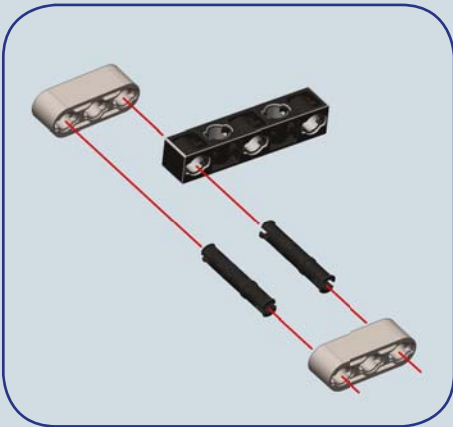
1

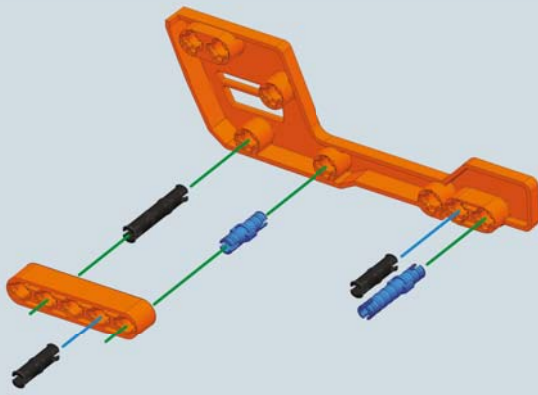


2

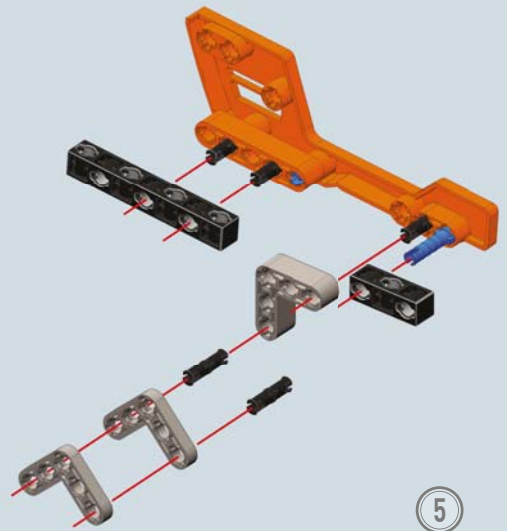
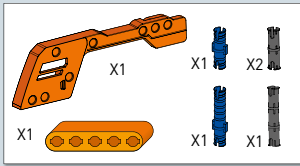


3

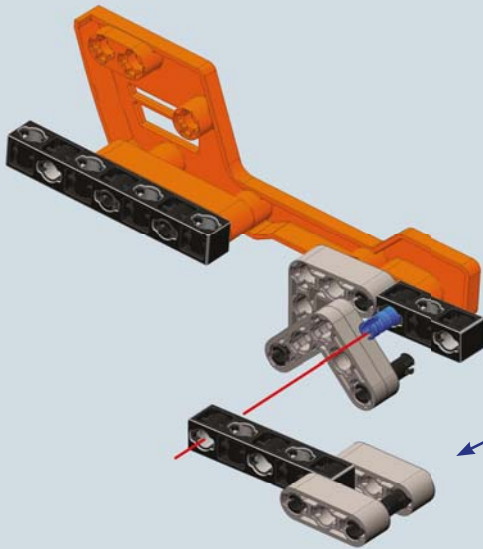
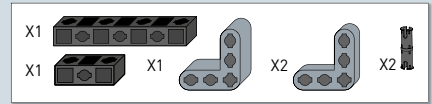




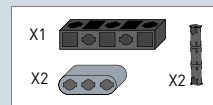
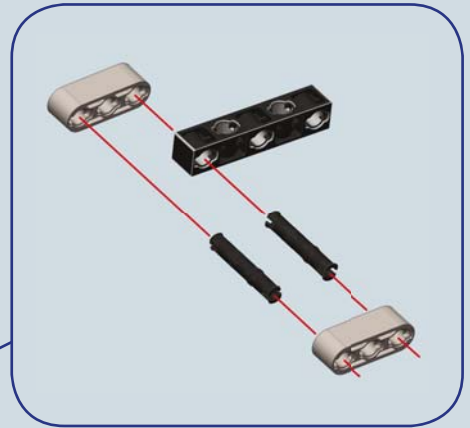
4



5



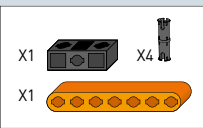
6



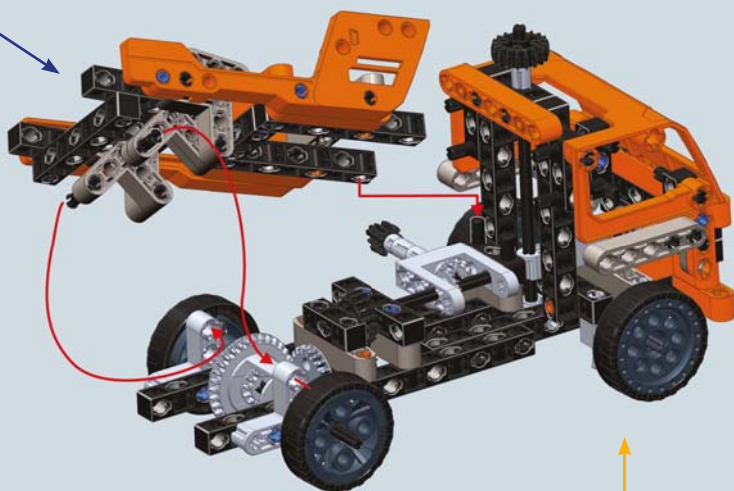
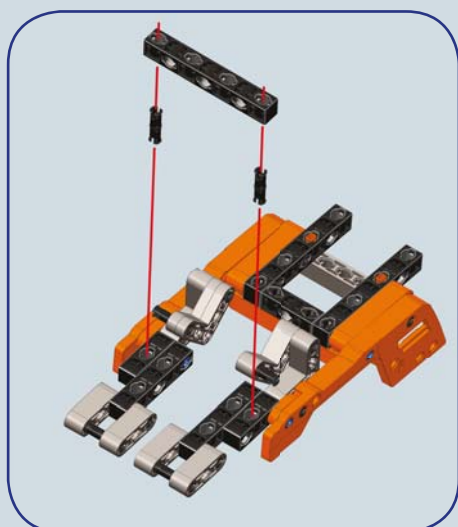
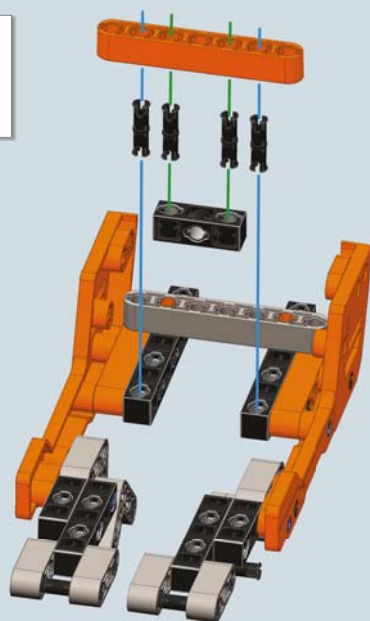
Technische informatie en wetenswaardigheden

De takelwagen is een noodhulpvoertuig ontworpen om motorvoertuigen met technische problemen weg te slepen naar een andere plaats. Meestal wordt hij gebruikt voor het wegslepen van voertuigen die door een ongeval buiten de rijbaan terecht kwamen, op moeilijk toegankelijke plaatsen.

7



8



Dit onderdeel kan enkel worden bevestigd nadat een deel van het model werd gedemonteerd.

9



Uiteindelijk model

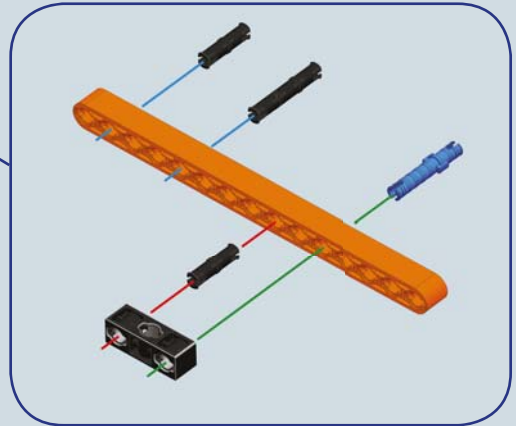
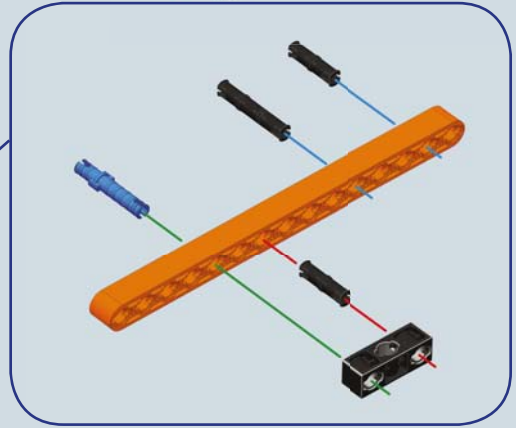
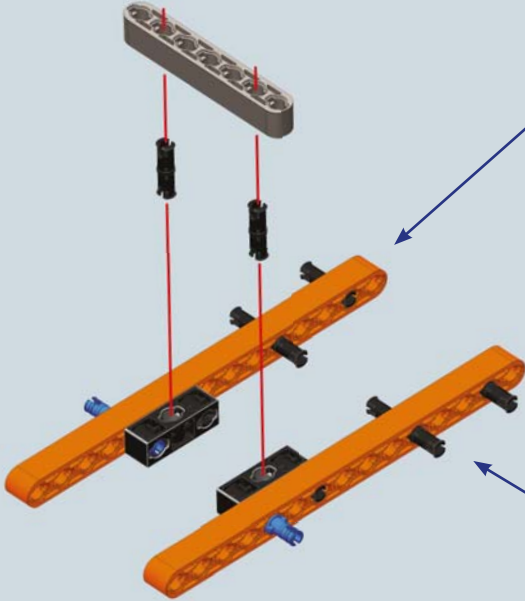








Model gebouwd in activiteit 4

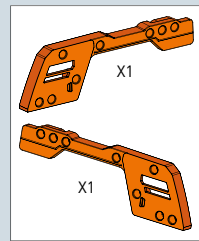
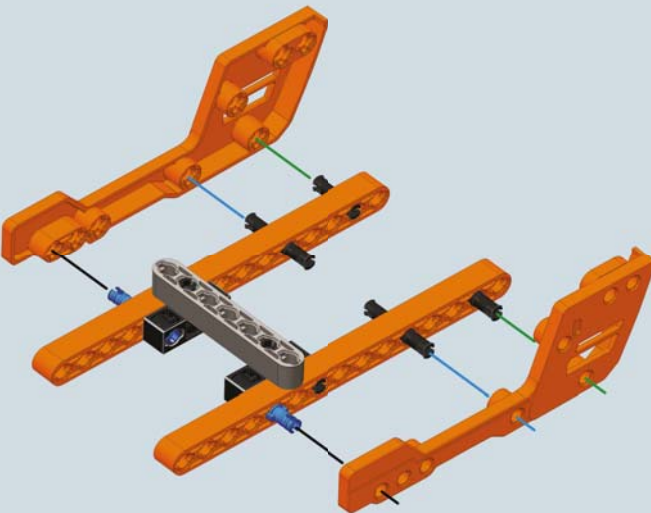
8 Werktuigen: kraanarm



1



- X2  X2  X2  X6 
- X2 
- X1 

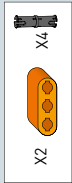
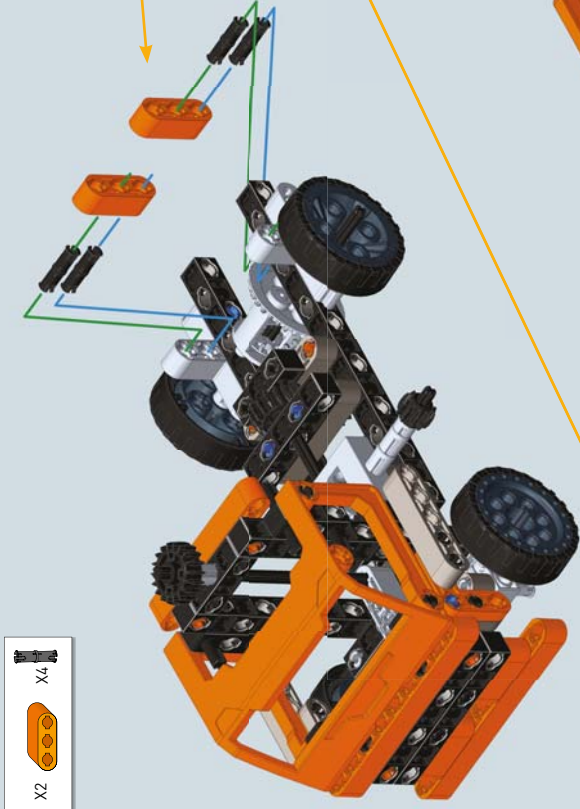


2

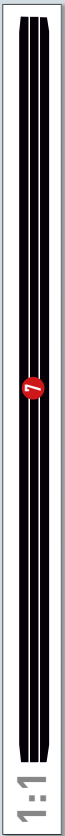
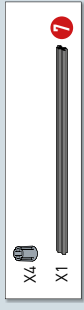
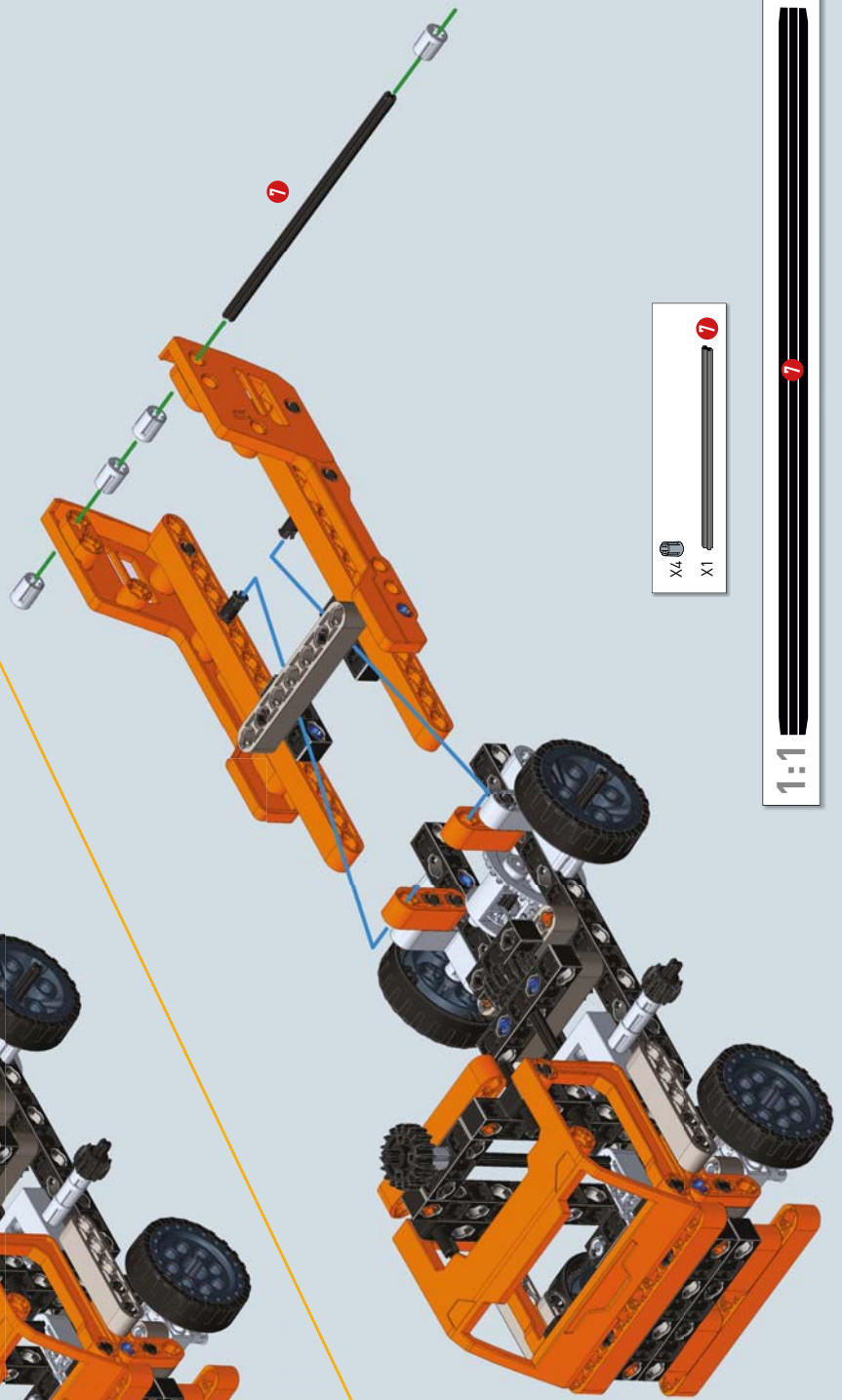
Model gebouwd in activiteit 4



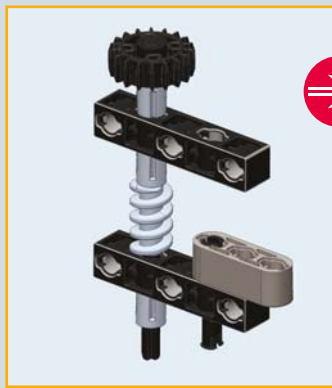
3



4

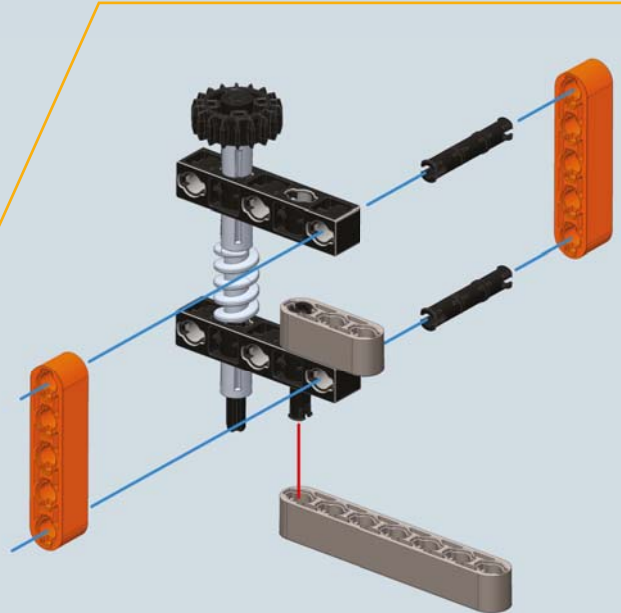


1:1



X2		X1		X3	
X1					
X1					
X1		X1			

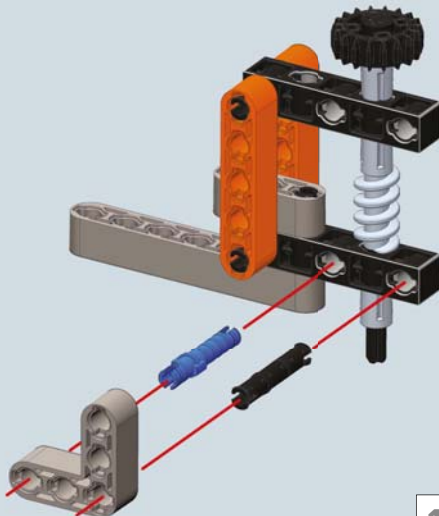
5



6

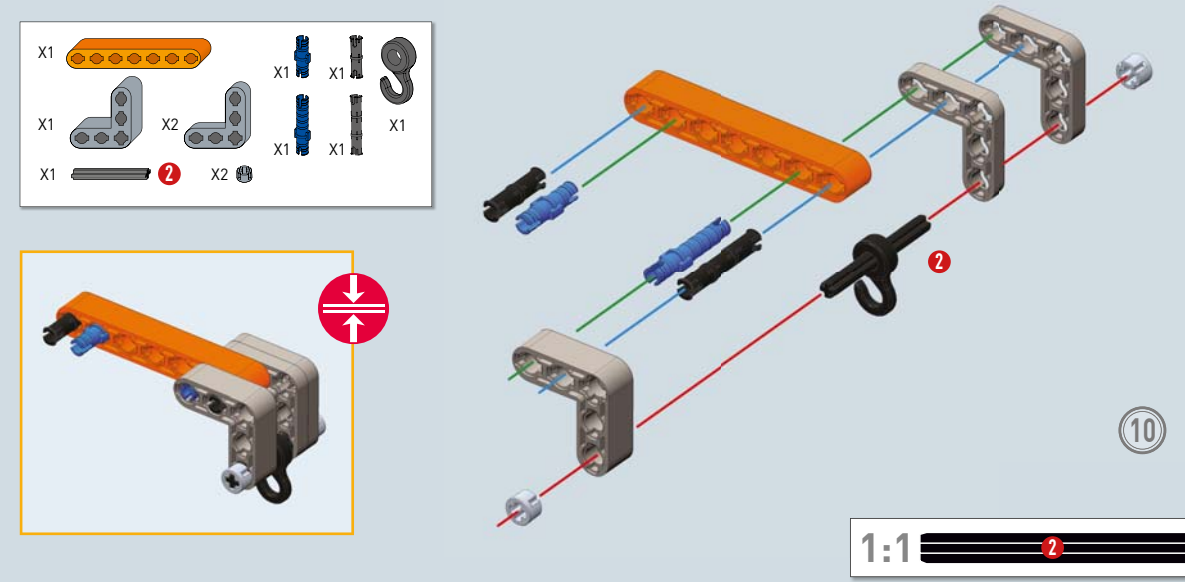
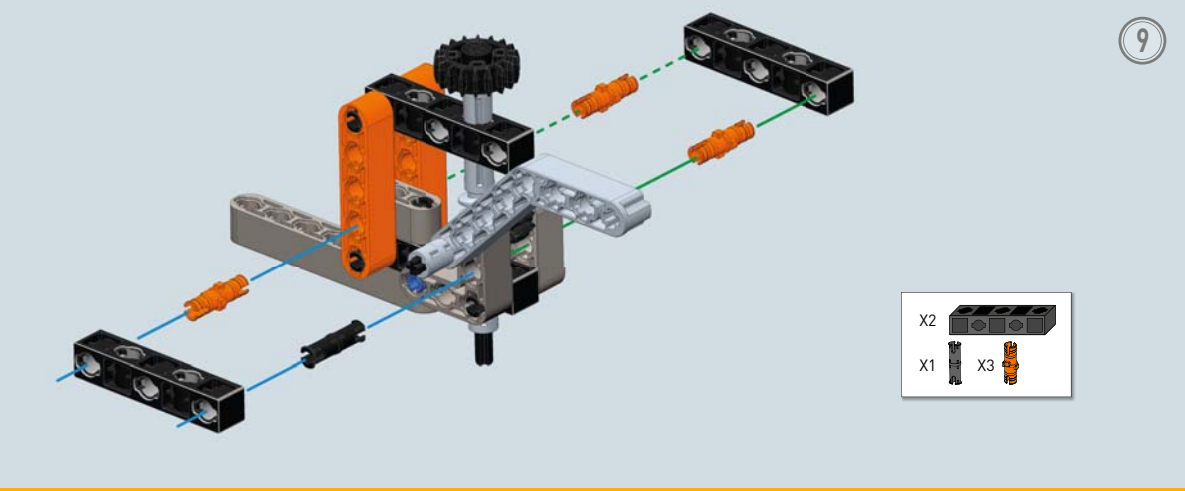
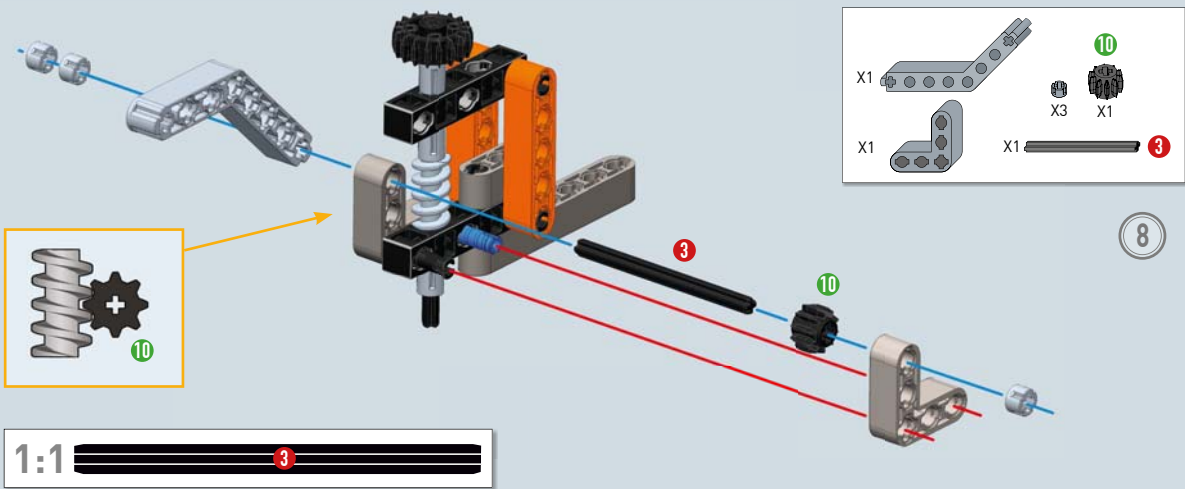
X2		X2	
X1			

7

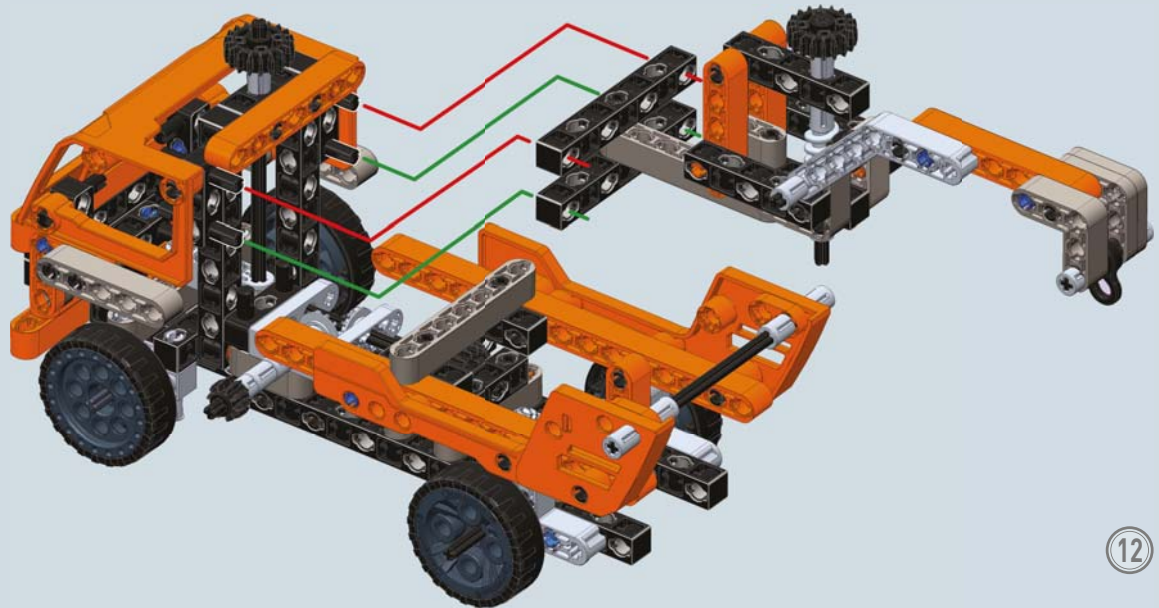
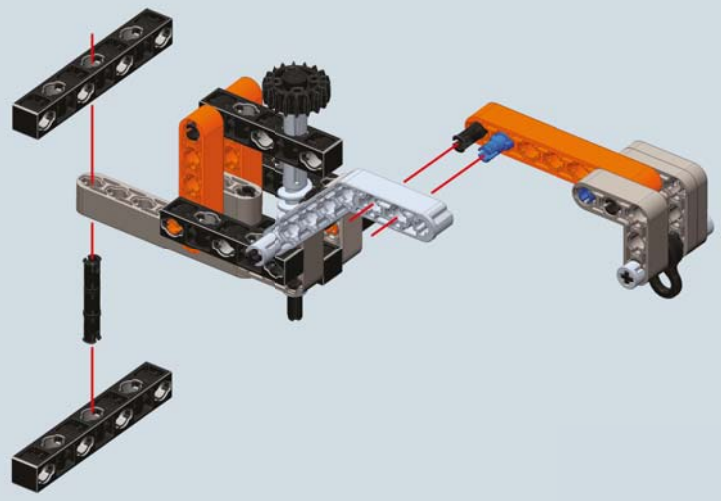


X1		X1		X1	
----	--	----	--	----	--

1:1

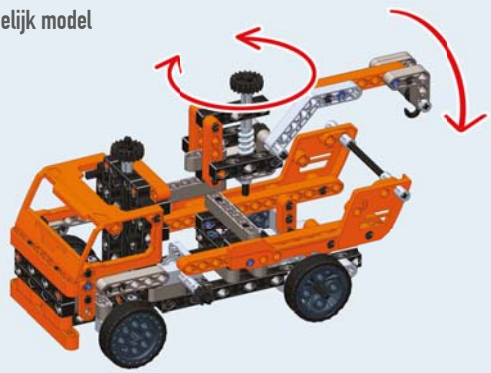
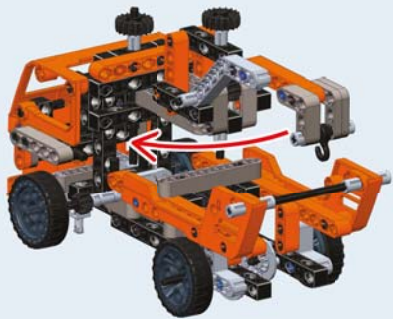


11



12

Uiteindelijk model

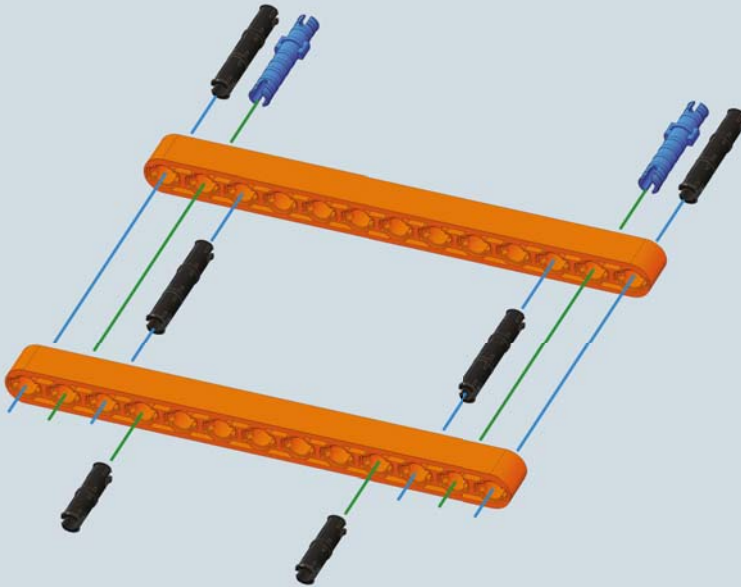




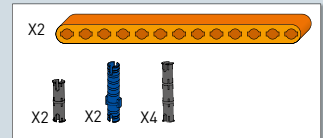
Technische informatie en wetenswaardigheden

Met de term sneeuwruimer bedoelen we niet het voertuig zelf, maar de inrichting gemonteerd op een voertuig, gebruikt om sneeuw en ijs van het wegdek te ruimen.

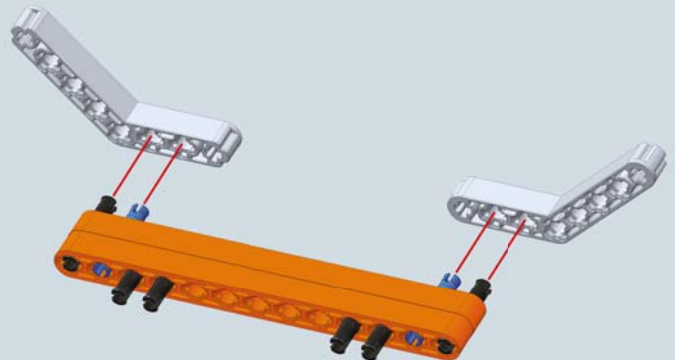
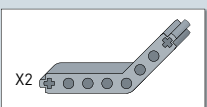
De sneeuwruimer heeft een specifiek tuig dat bestaat uit een stalen blad met een specifieke vorm. Dit tuig kan niet enkel gemonteerd worden op een vrachtwagen, maar ook op een normale terreinwagen en zelfs op een trein, om de sporen te ruimen.

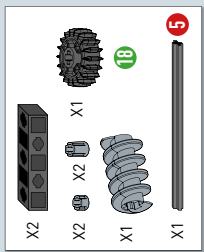


1

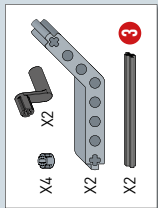
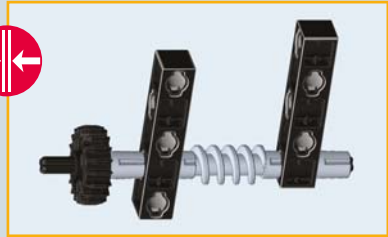
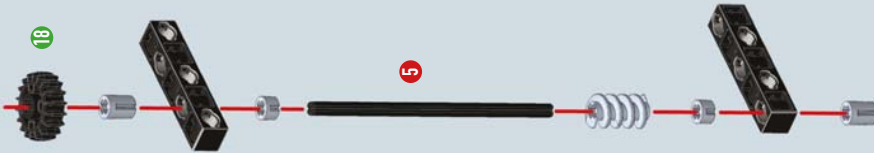


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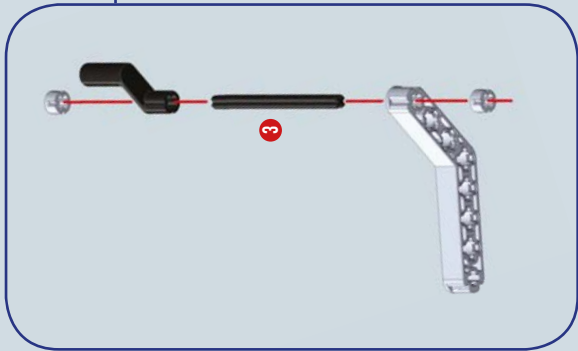
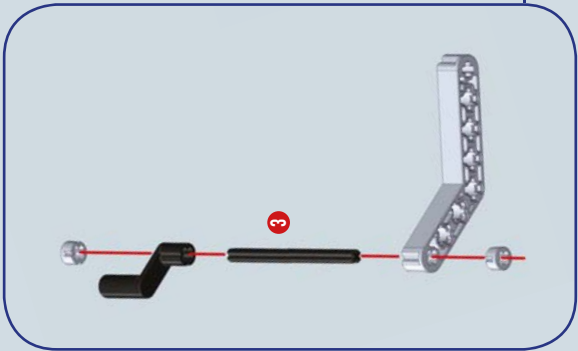
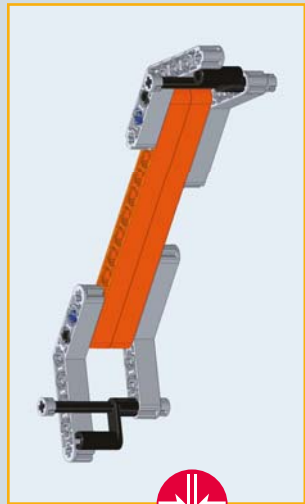
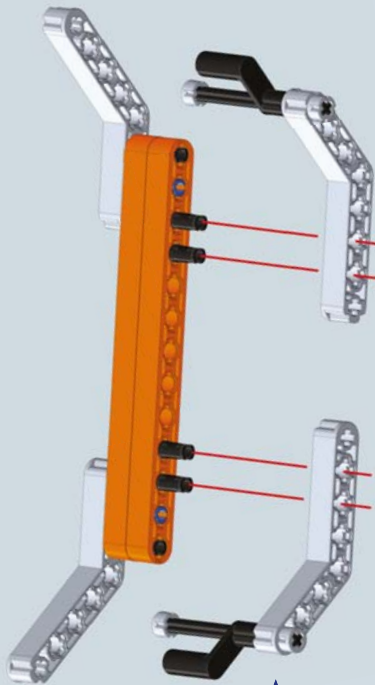




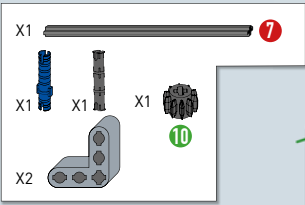
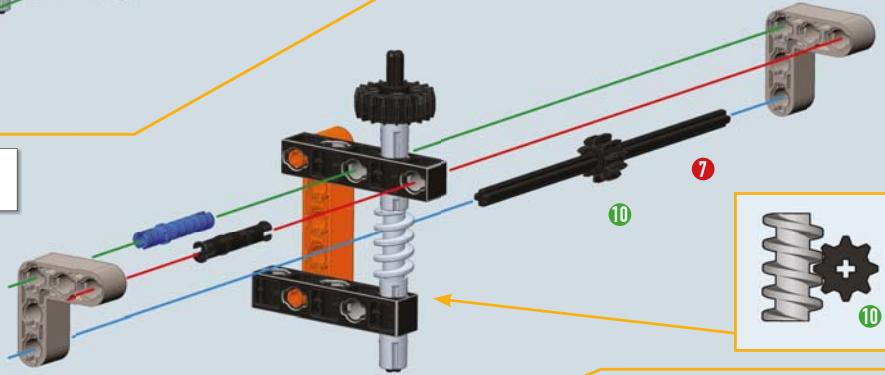
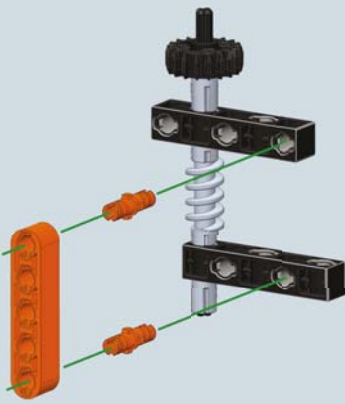
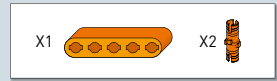
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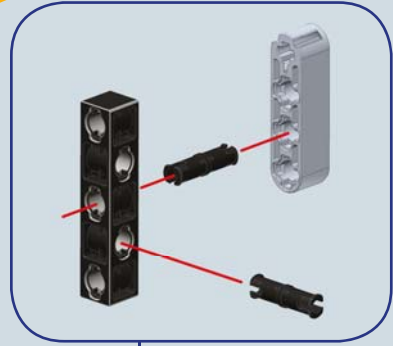
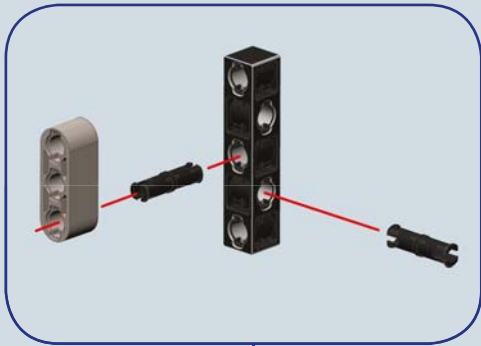
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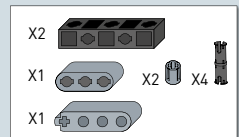
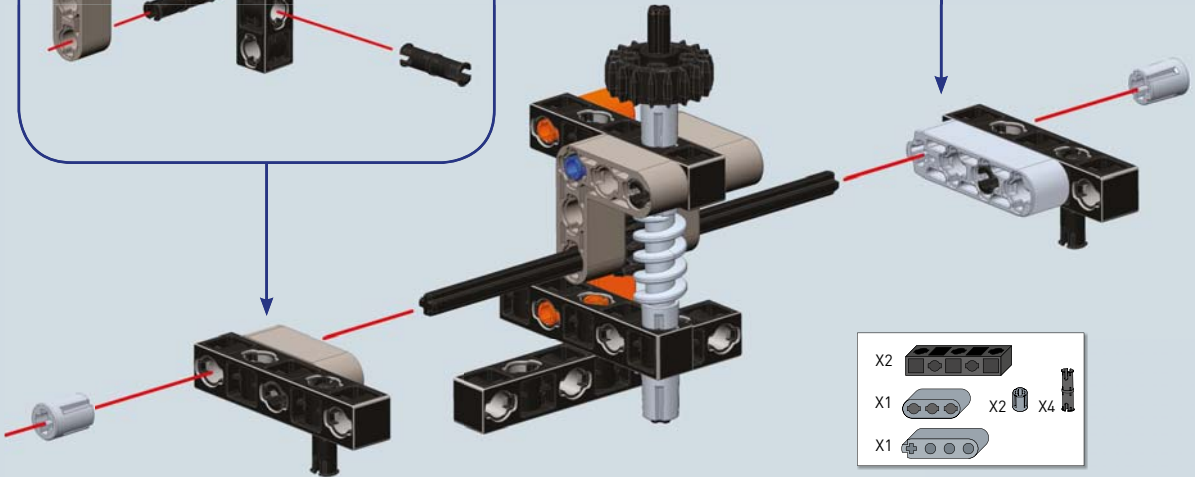
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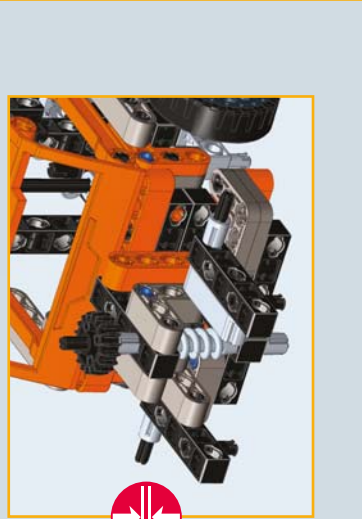
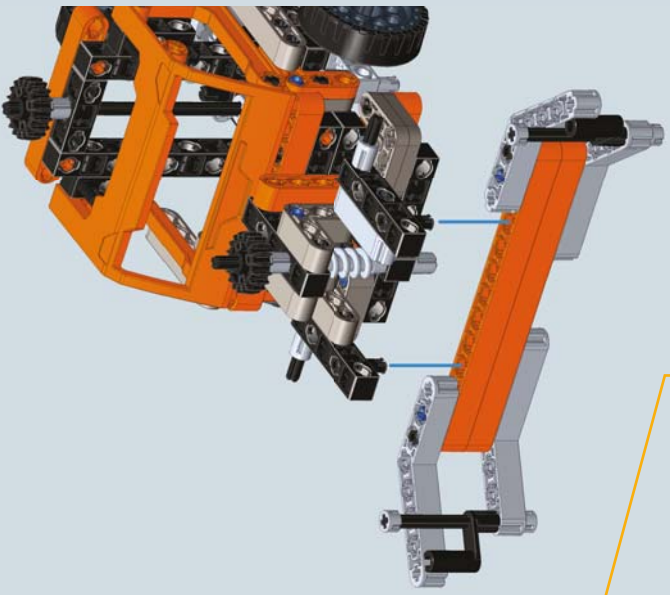
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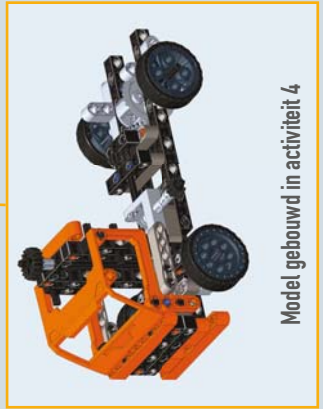
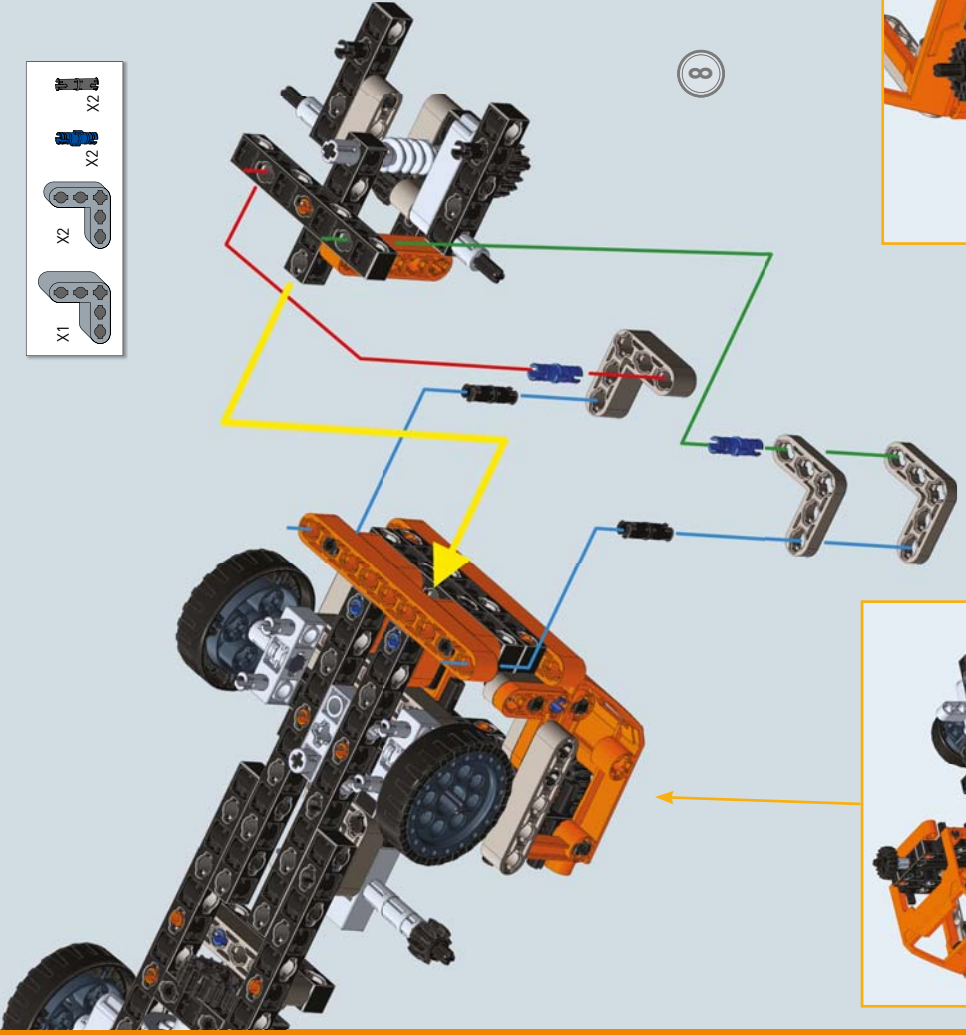
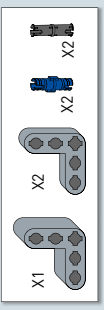
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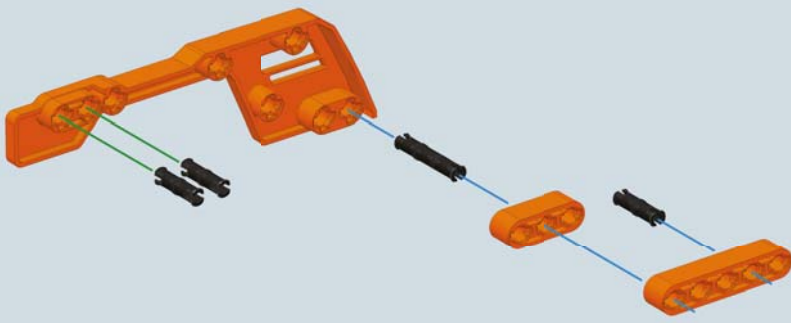
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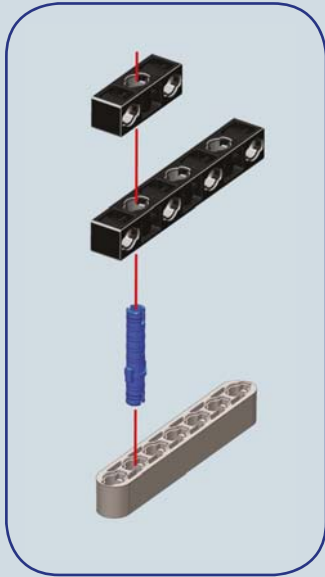
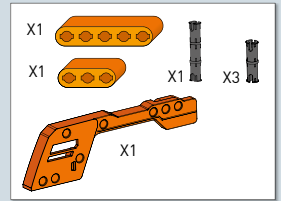
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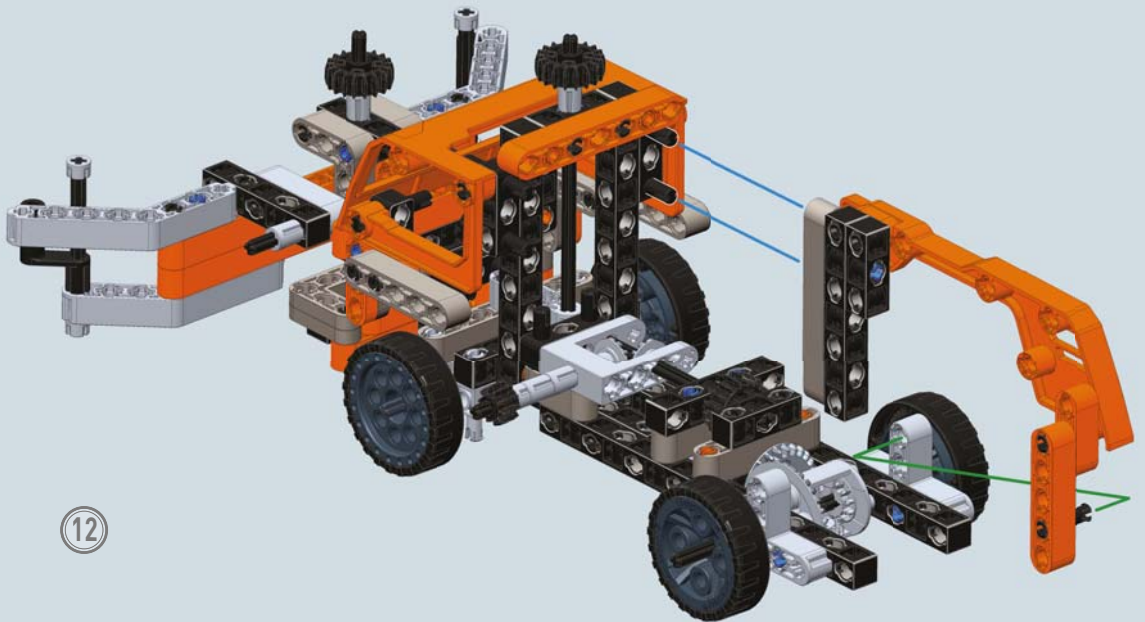
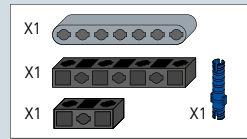
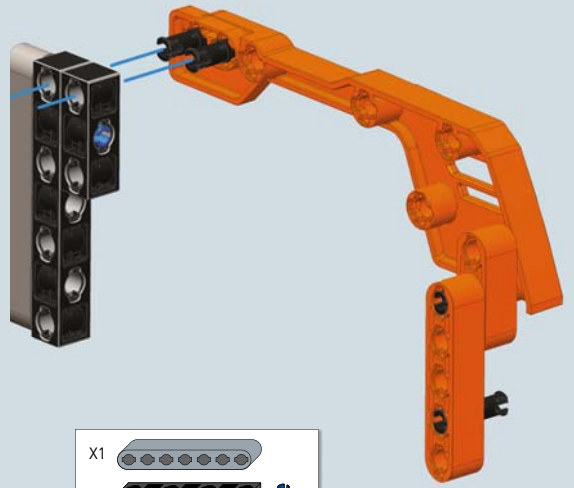
Model gebouwd in activiteit 4



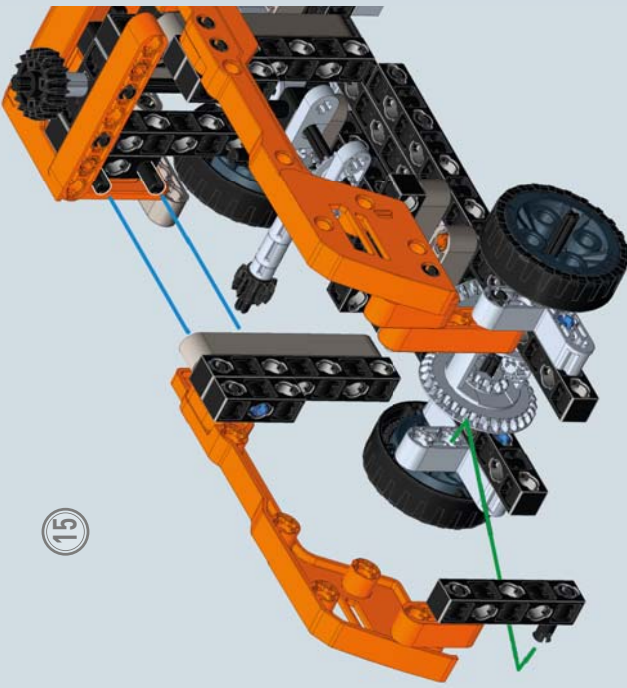
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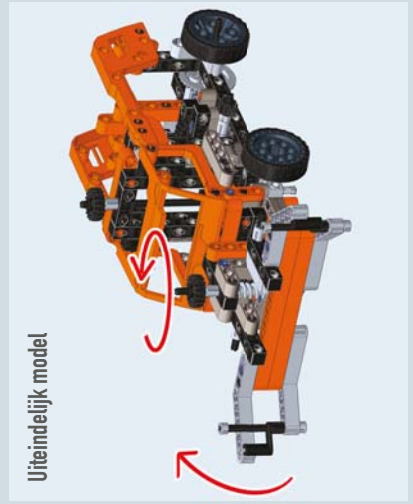
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12

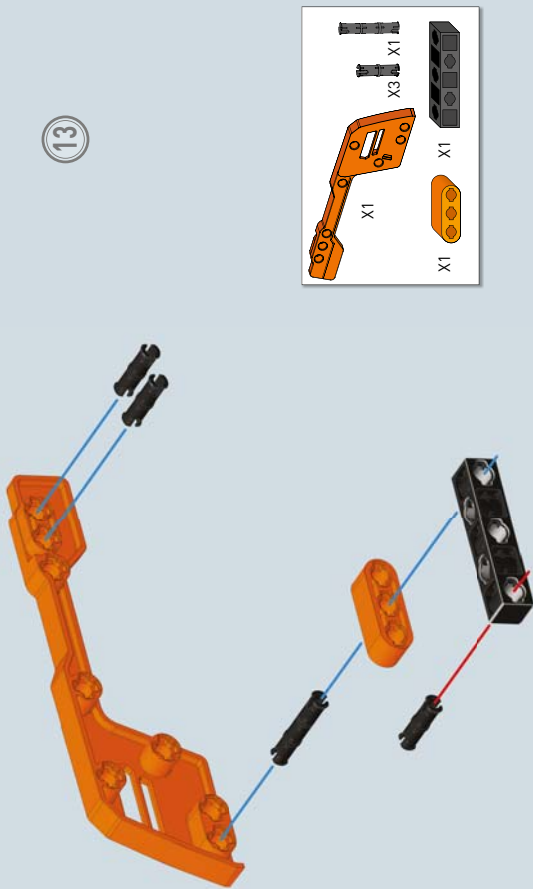


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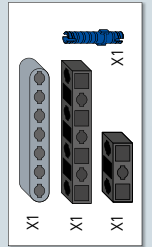
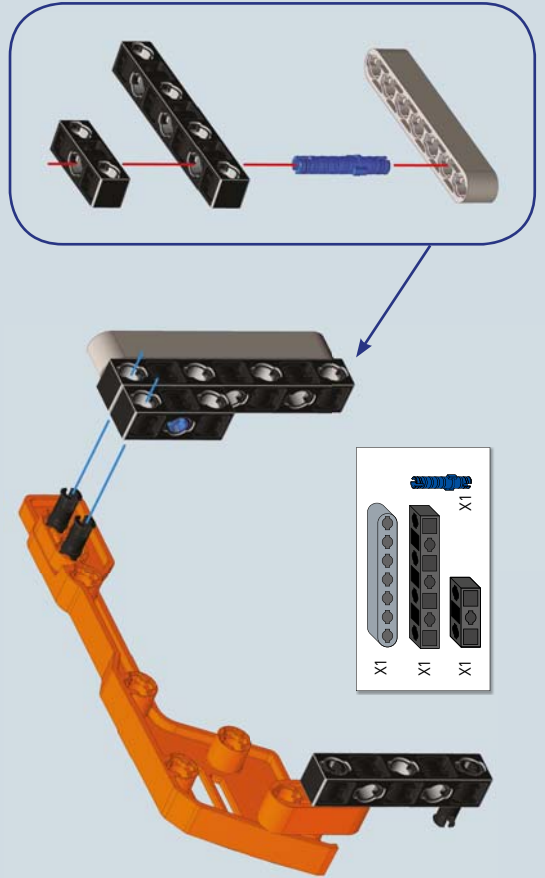
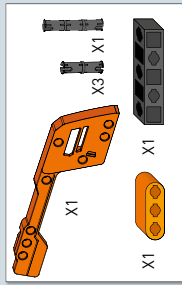


Uiteindelijk model

14



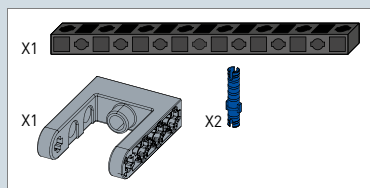
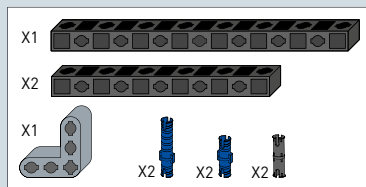
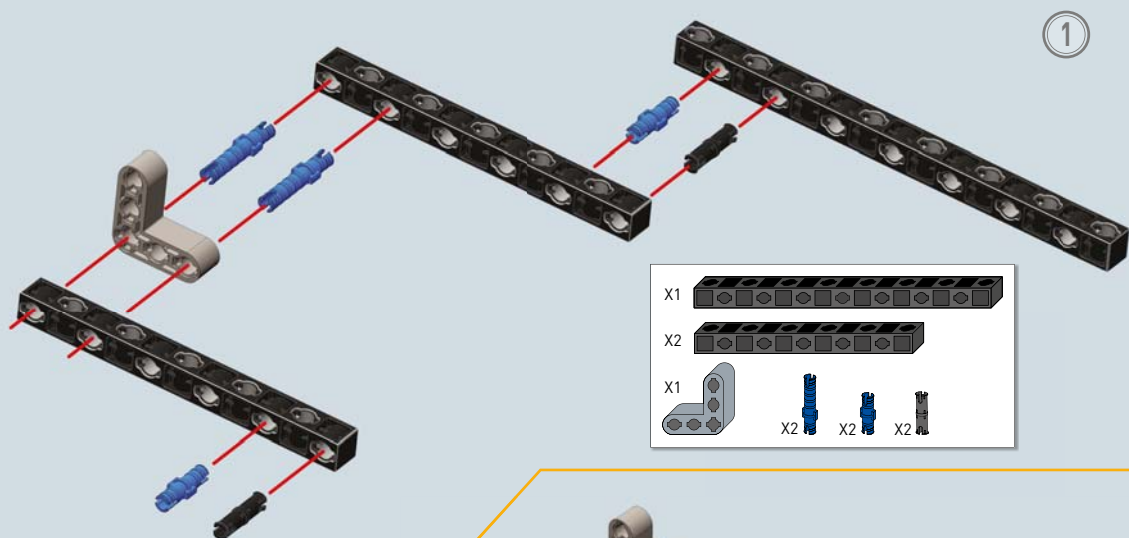
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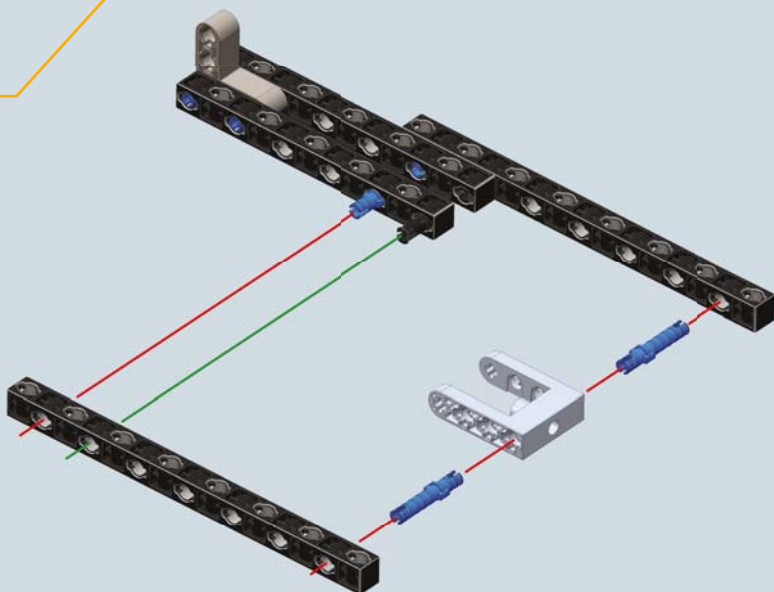


Technische informatie en wetenswaardigheden

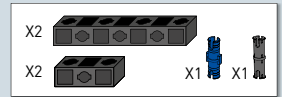
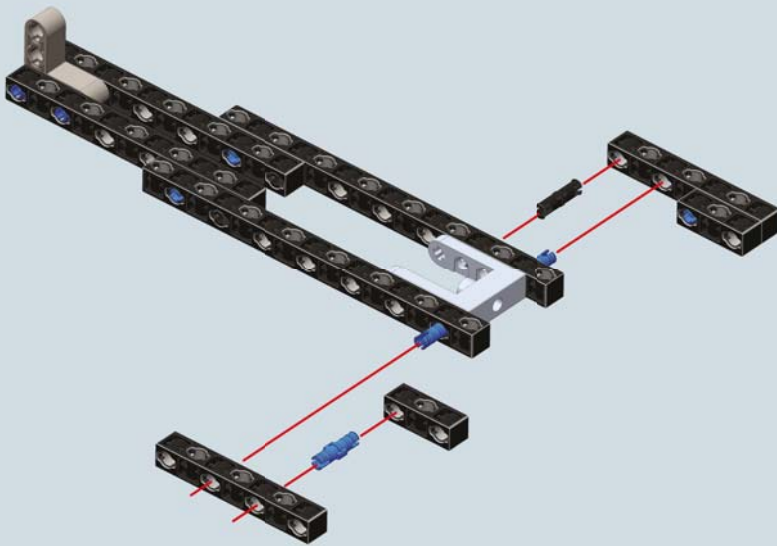
De Amerikaanse vrachtwagen is onmiddellijk herkenbaar door zijn lange "neus". Deze trucks, die niet onderworpen zijn aan de beperkingen van de Europese verkeerswetgeving en vaak zeer lange trajecten moeten afleggen, zijn net echte "huizen op wielen".



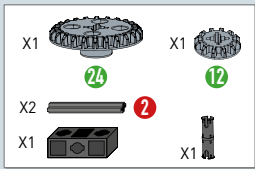
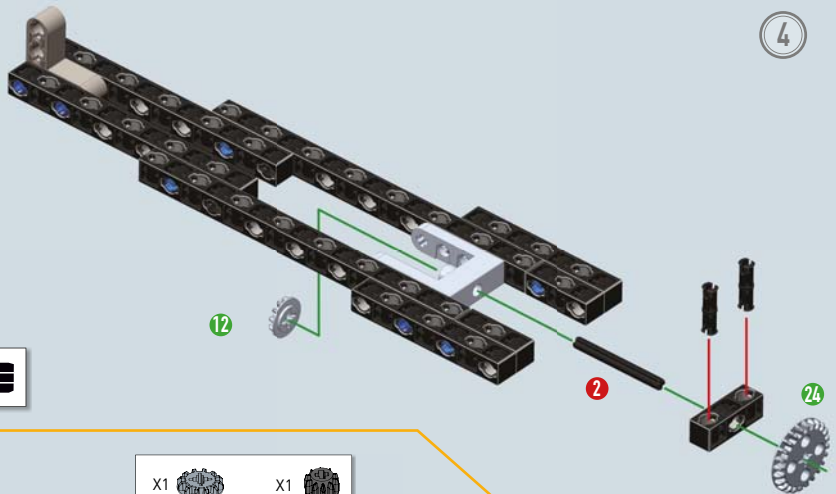
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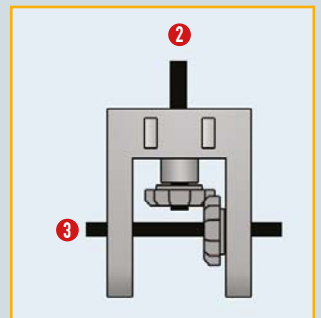
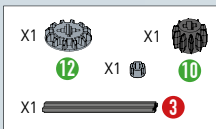
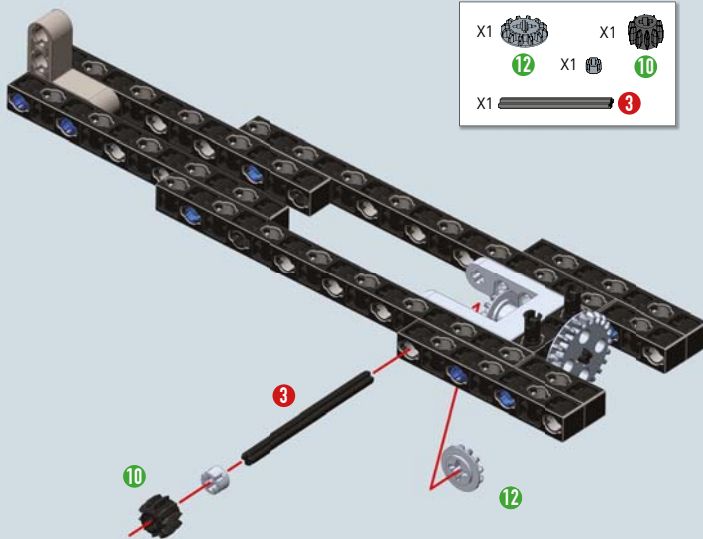
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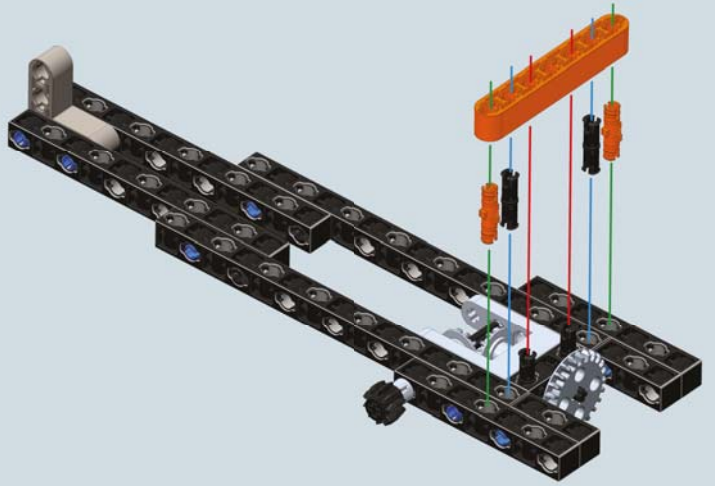
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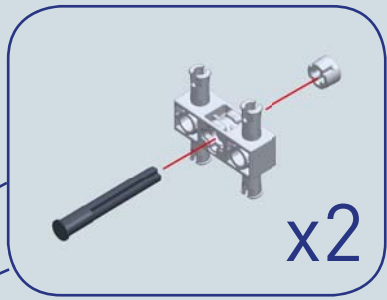
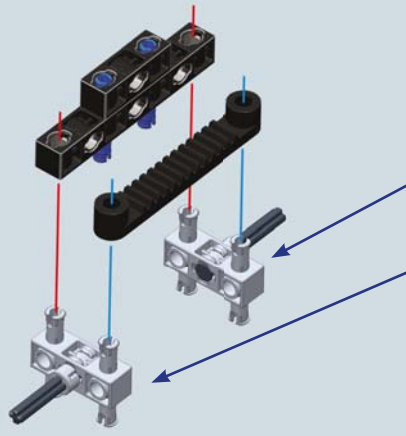
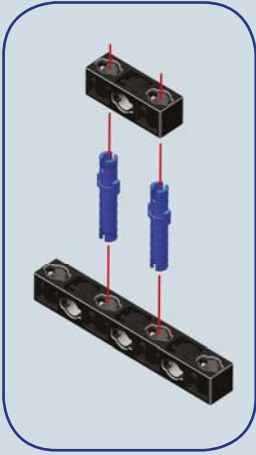
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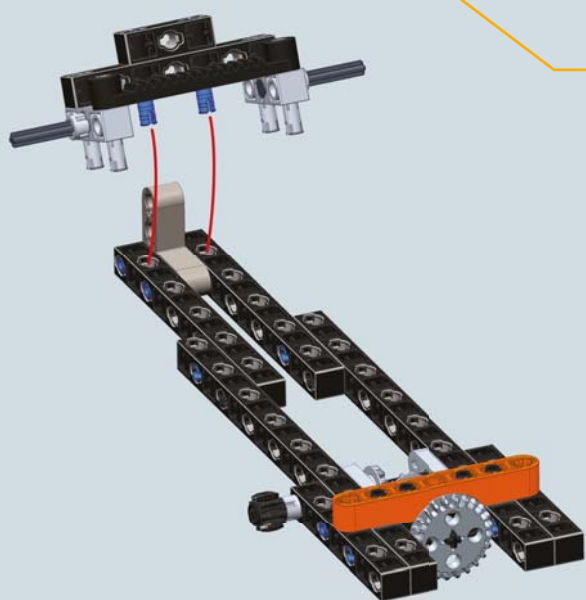


- X1
- X2
- X2



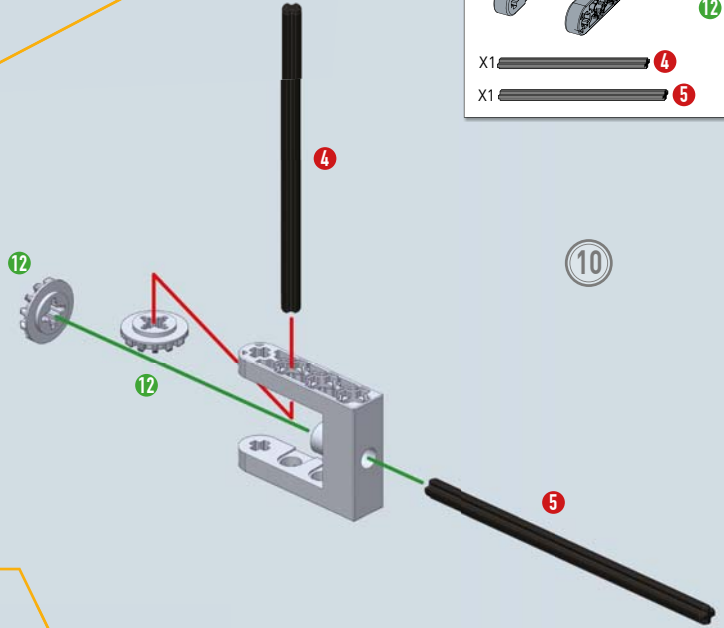
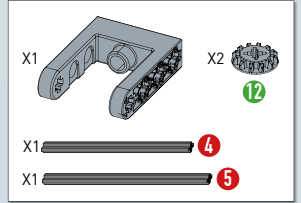
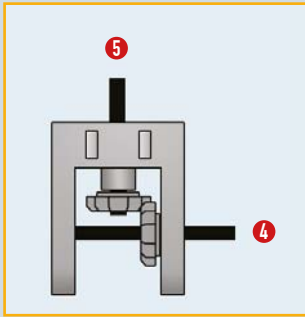
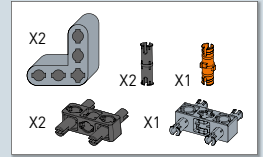
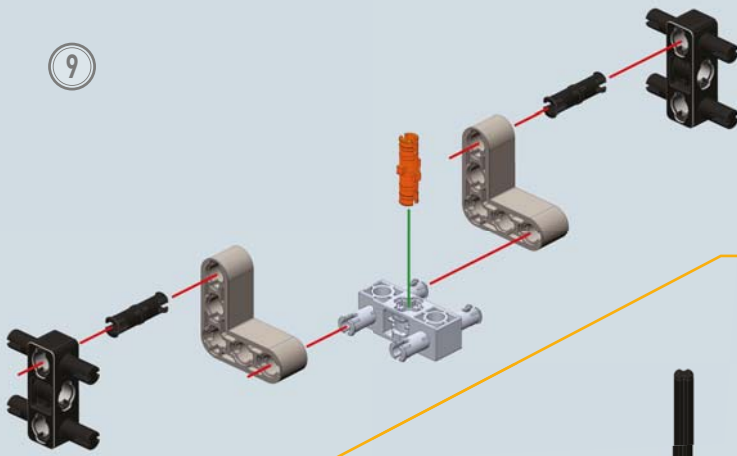
7

- X2
- X1
- X1
- X1
- X2
- X2
- X2
- X2

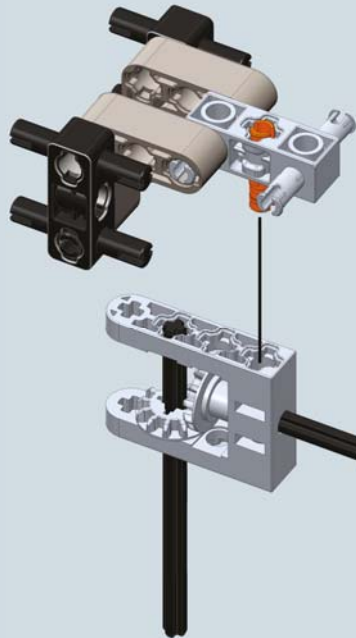


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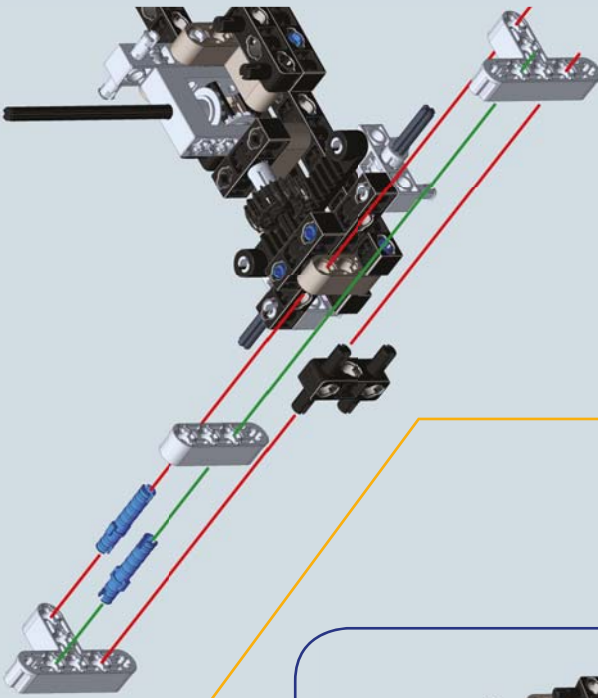
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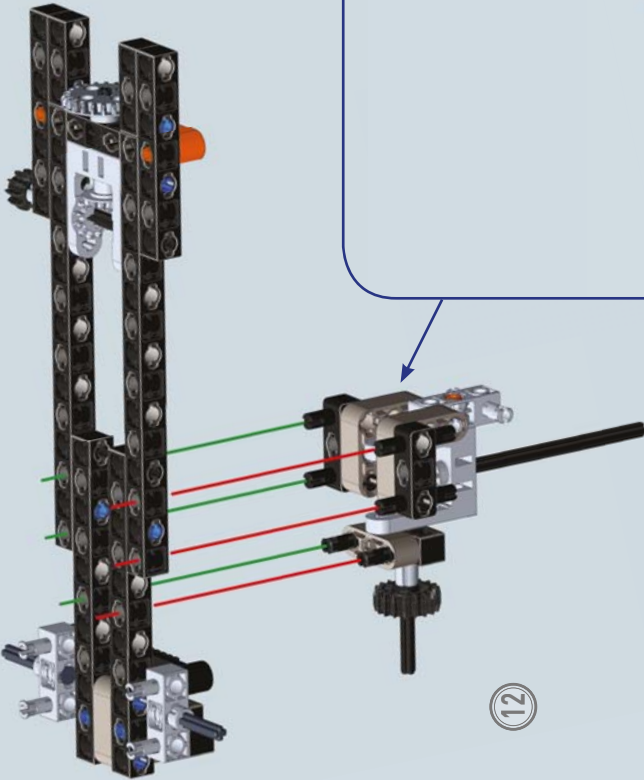
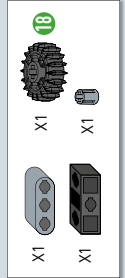
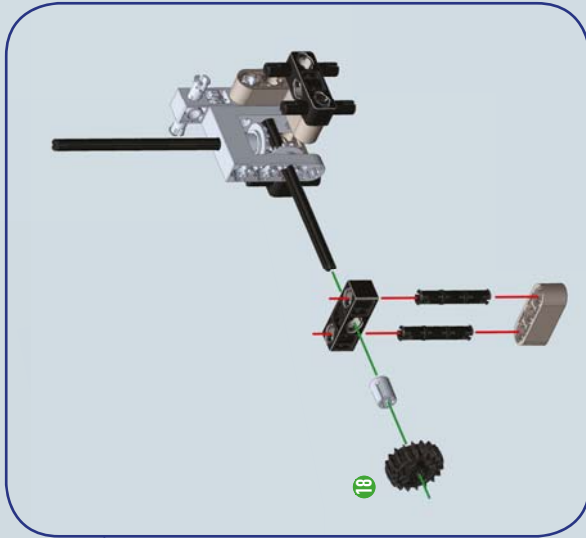
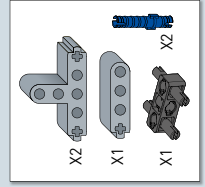
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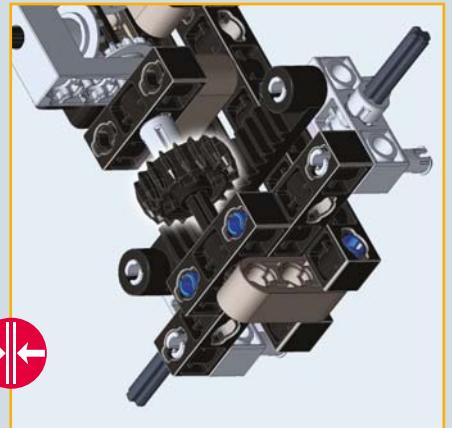
11



13

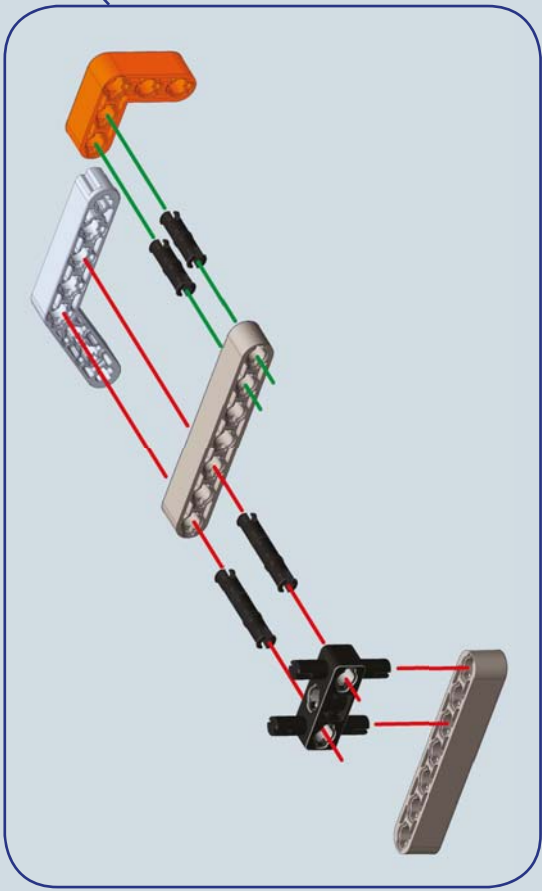
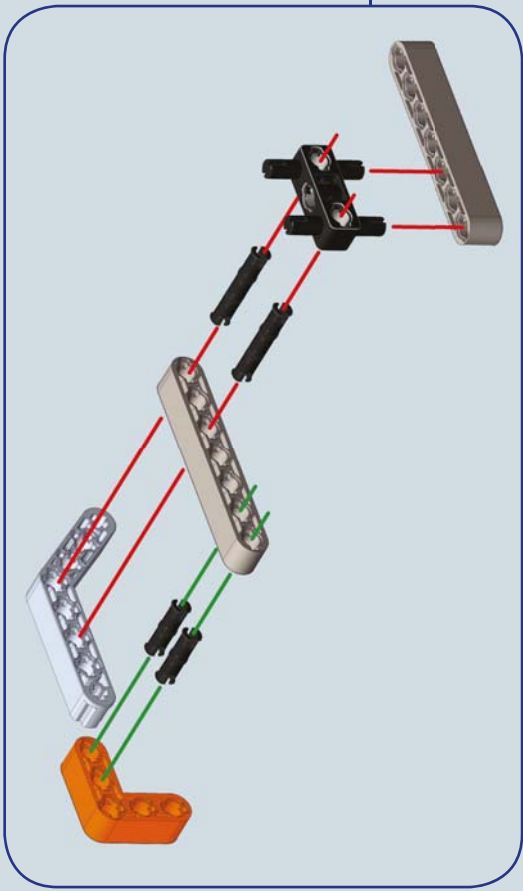
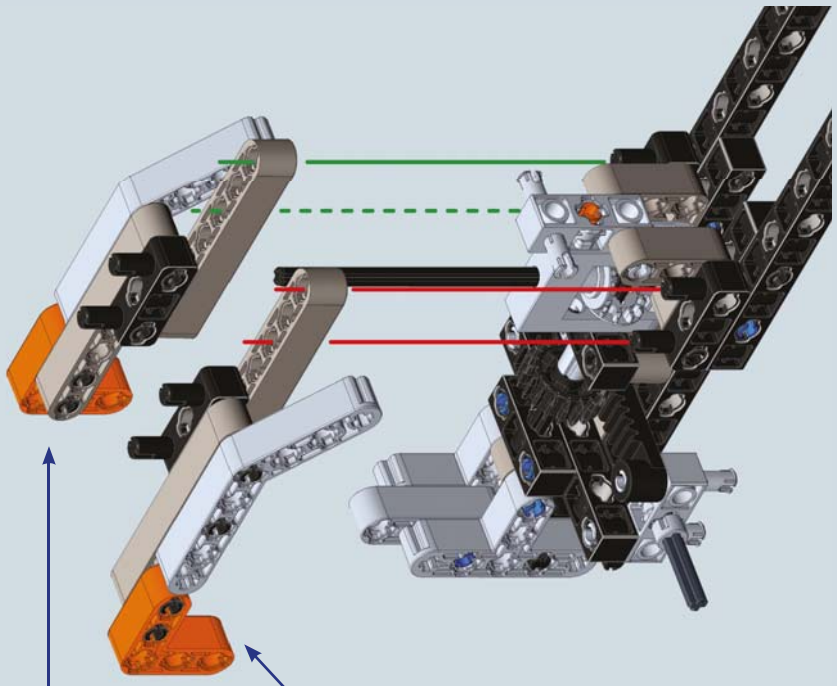


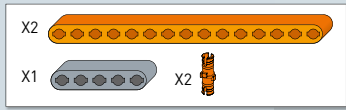
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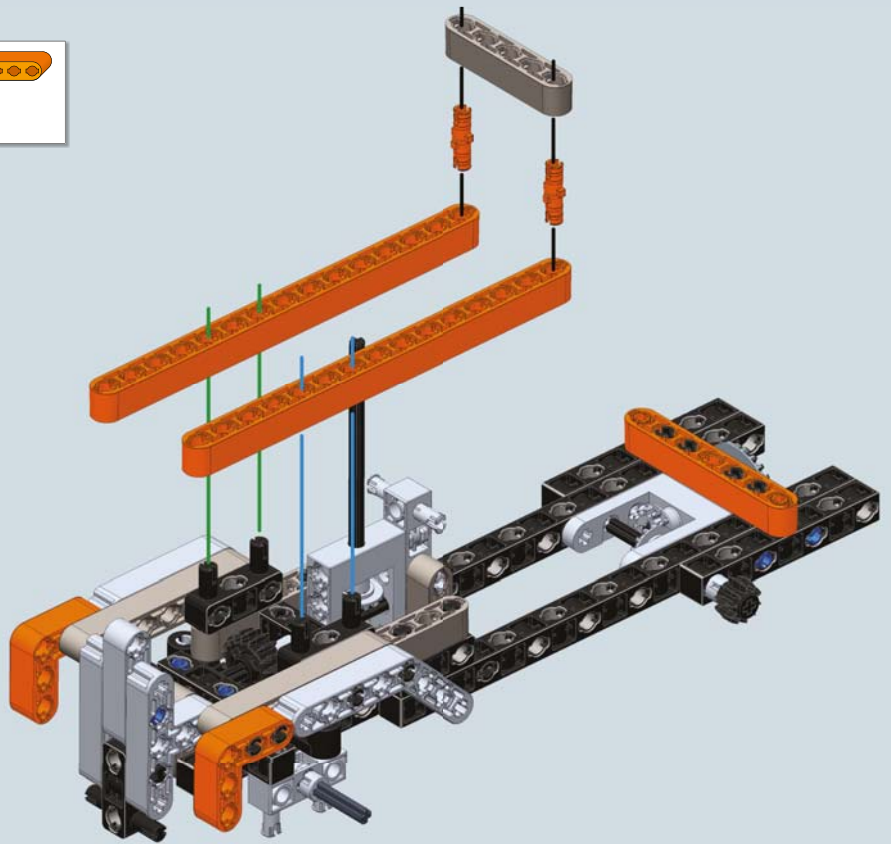
14

- X4 [Black Technic Pin]
- X4 [Black Technic Pin]
- X2 [Black Technic Axle Connector]
- X4 [Grey Technic Beam 1x6 with Holes]
- X2 [Orange Technic L-Shape]
- X2 [Grey Technic Beam 1x6 with Holes]

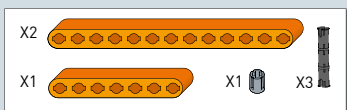
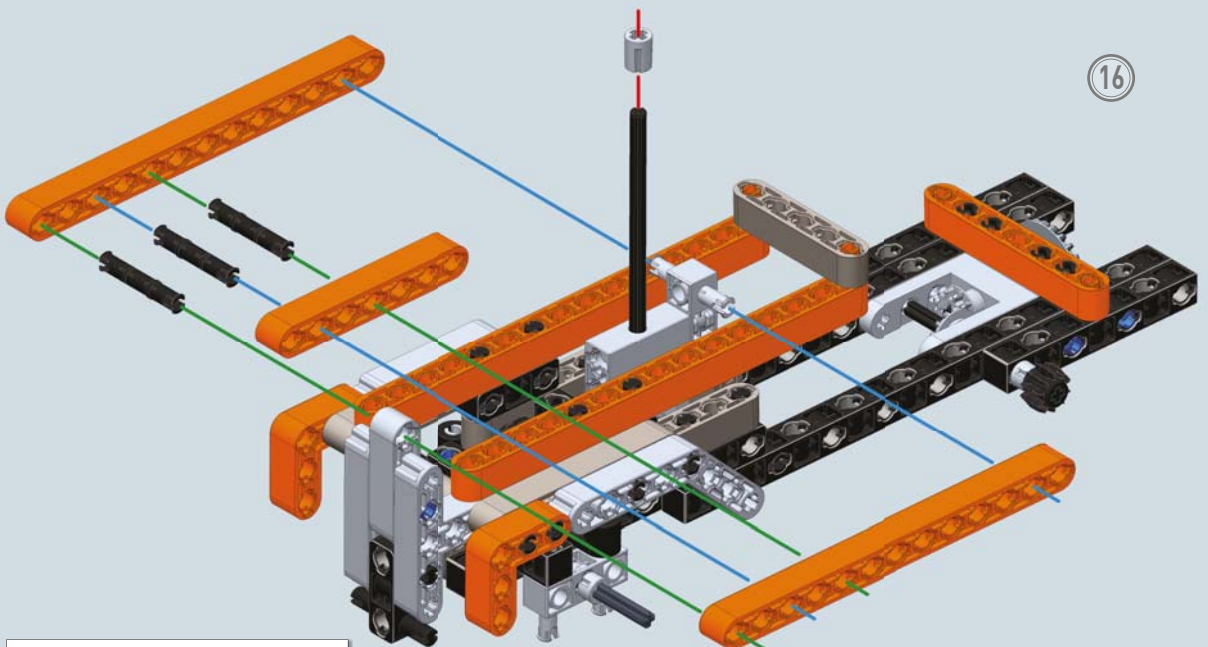


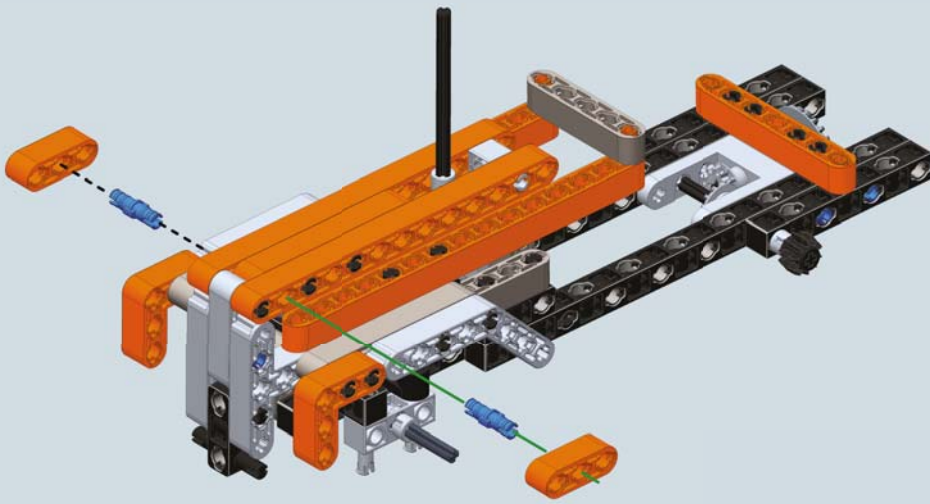


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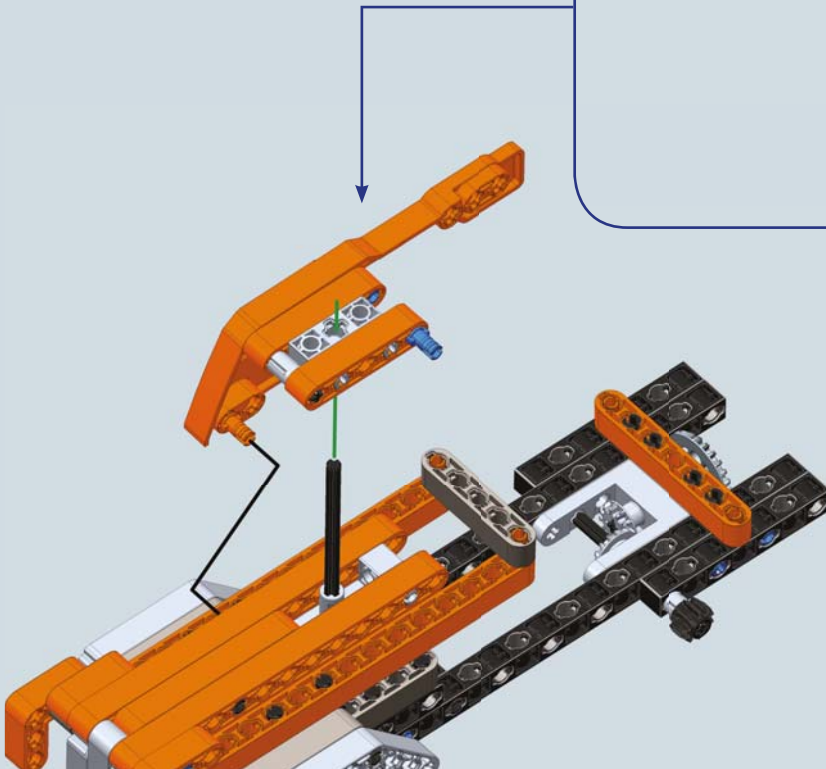
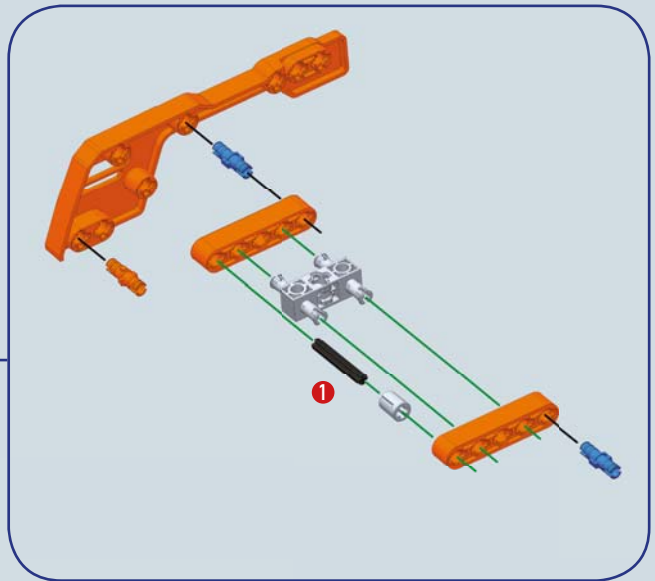
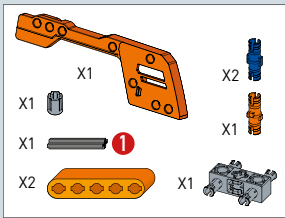
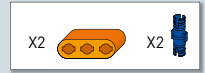


16





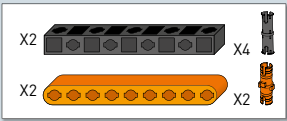
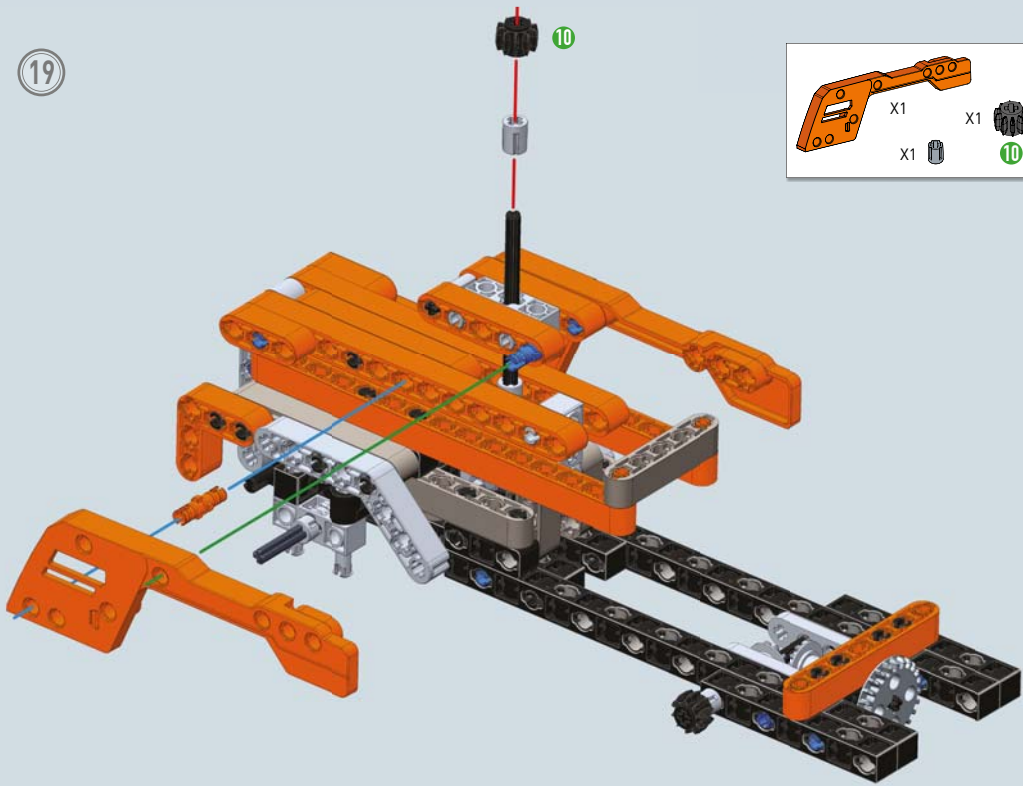
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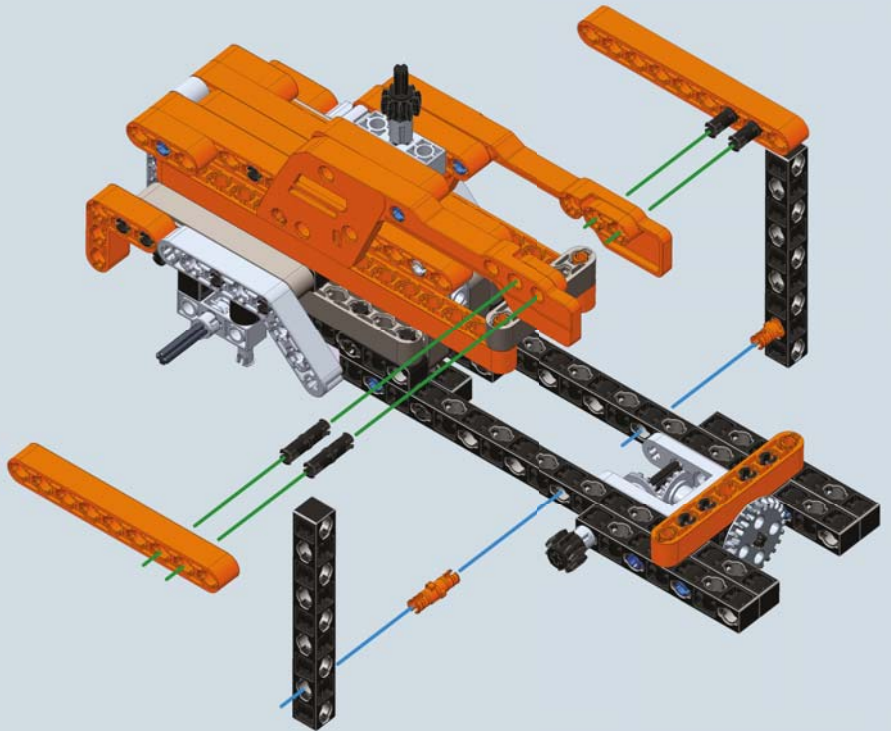
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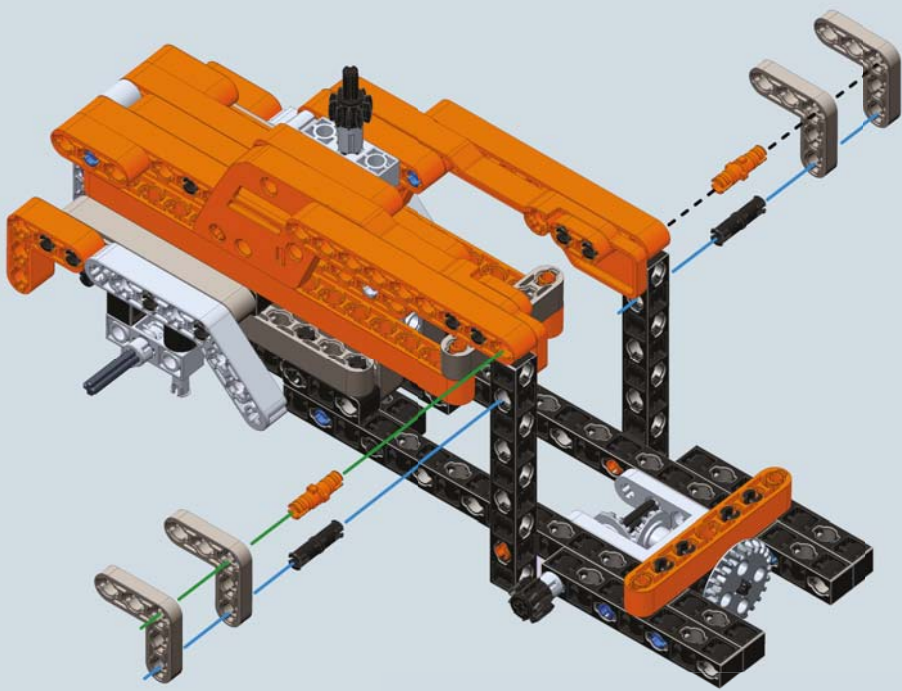
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20

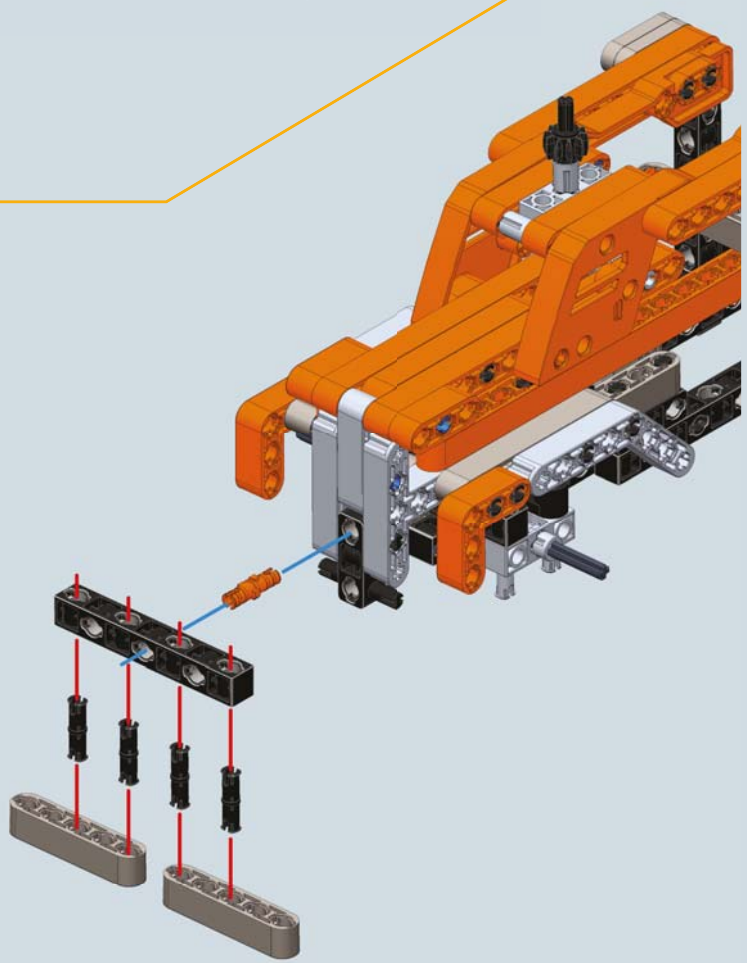


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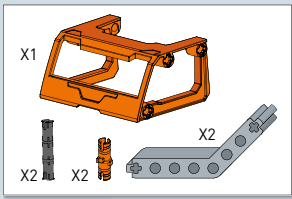


- X4
- X2
- X2
-

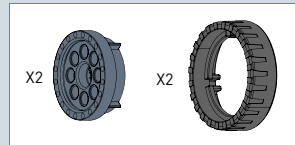
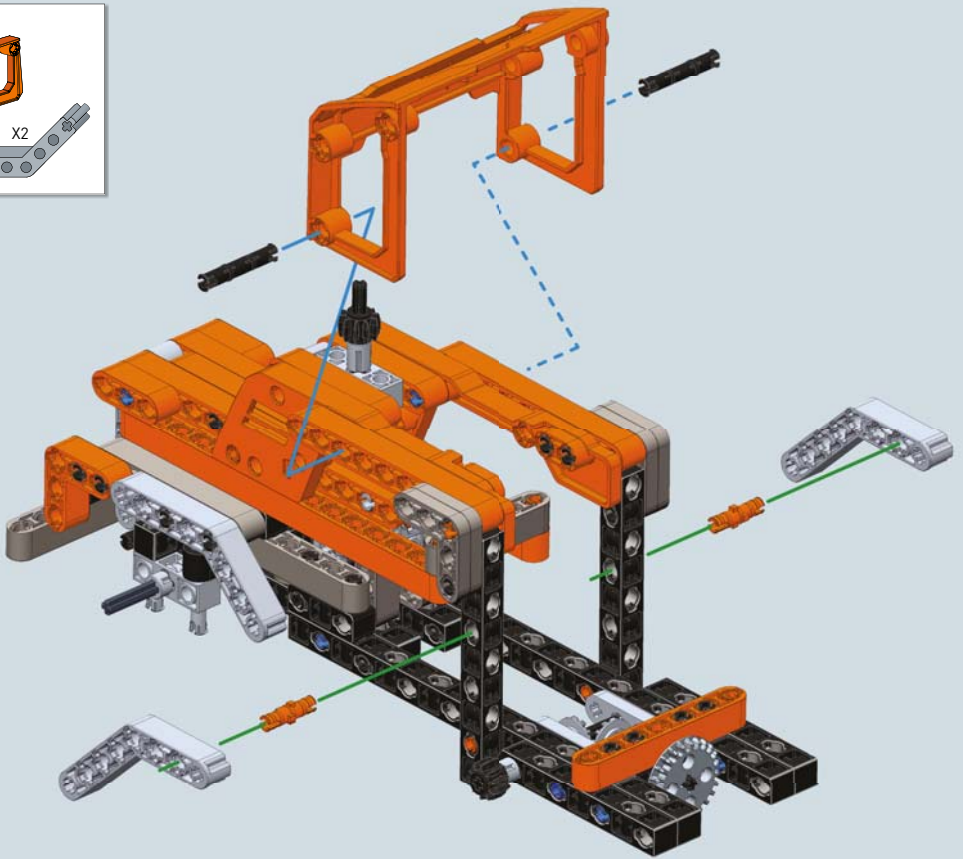
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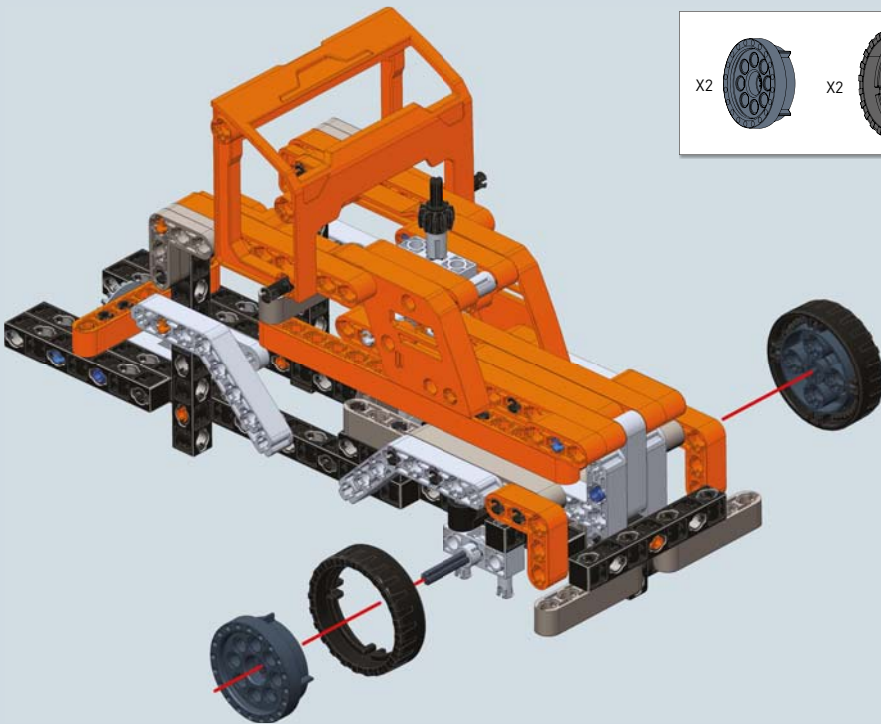
- X2
- X1
- X4
- X1

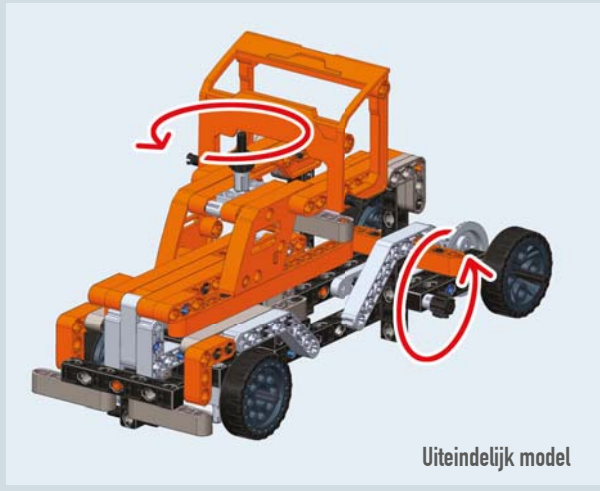
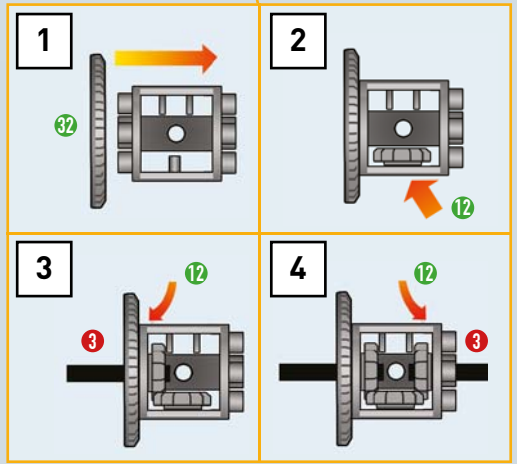
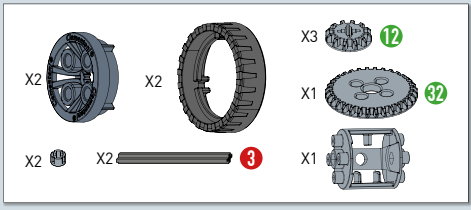
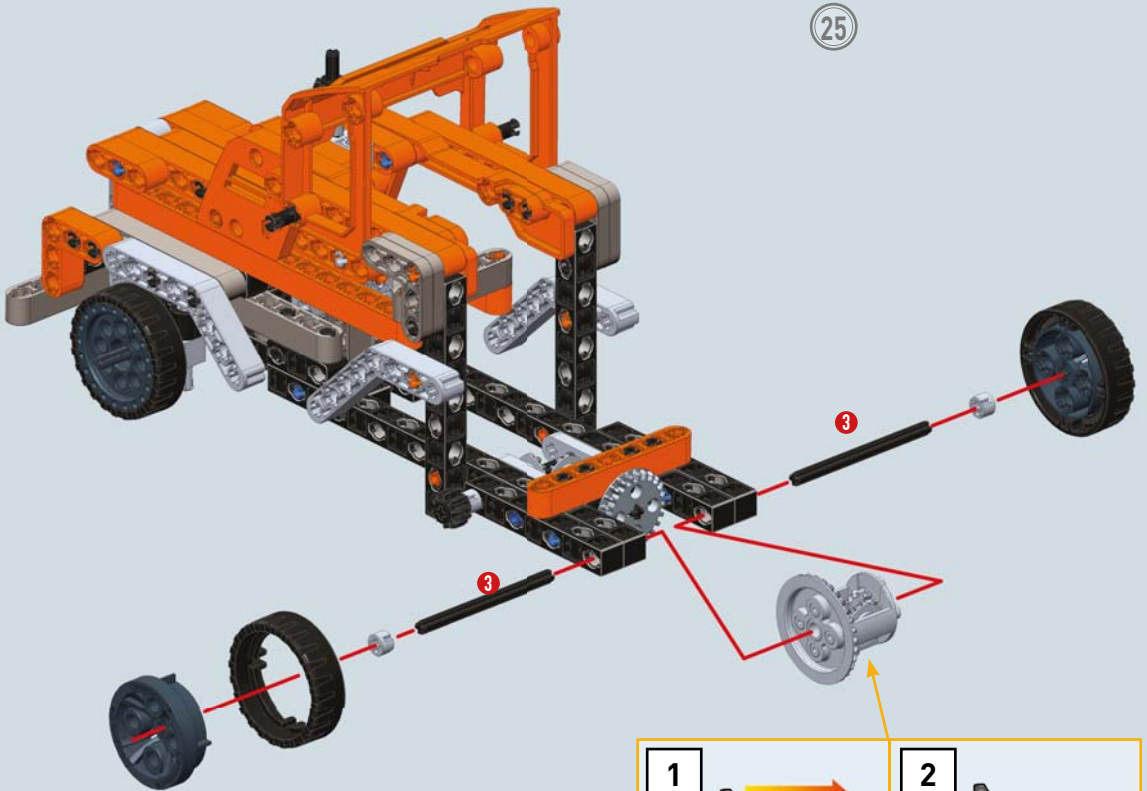


23



24





Uiteindelijk model

