



# Прости и задвижвани машини



# Simple & Powered Machines

## Off-centered motion

Искам да построя нещо,  
което да се движи нагоре-  
надолу с помощта на  
двигателя, но все още не  
съм успял... Мога да се  
движи само по права  
линия...

Не мисля, че това,  
което казваш, е  
възможно...

Сигурна съм, че е  
възможно, но не  
знам как... Нека  
попитаме!



# Simple & Powered Machines

## Off-centered motion



Всъщност това е възможно. И не е трудно, просто трябва да свържем една ос с точка, различна от центъра на диска или зъбното колело.



Този механизъм се нарича „ексцентрик“ и се намира в нашия комплект. Ще говорим за него в друг урок.



Обсъдете с учениците дали са виждали тази специфична част от комплекта.

# Simple & Powered Machines

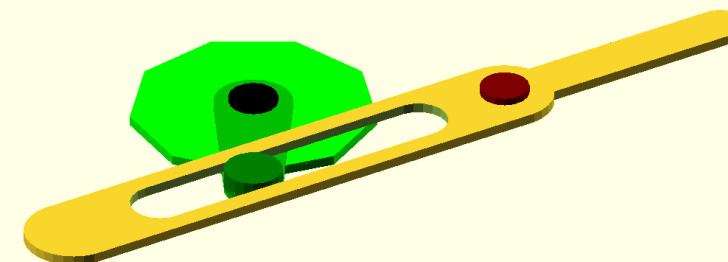
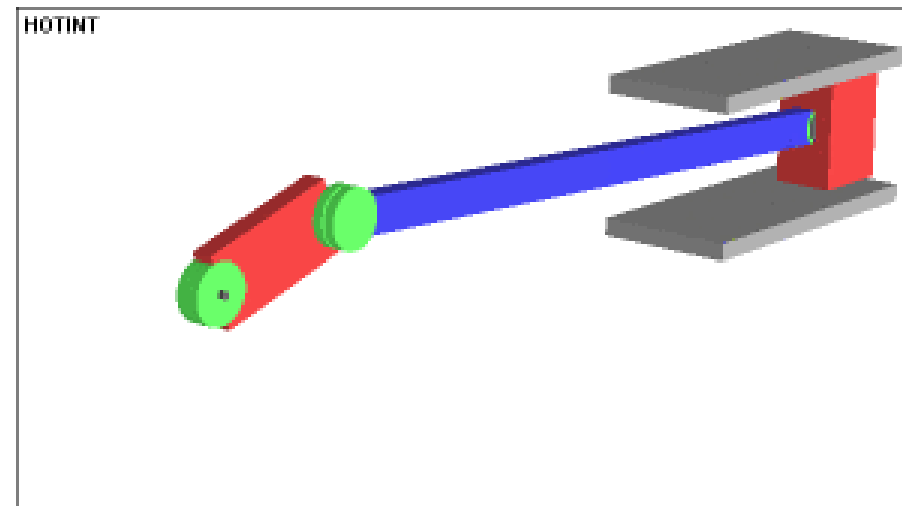
## Off-centered motion



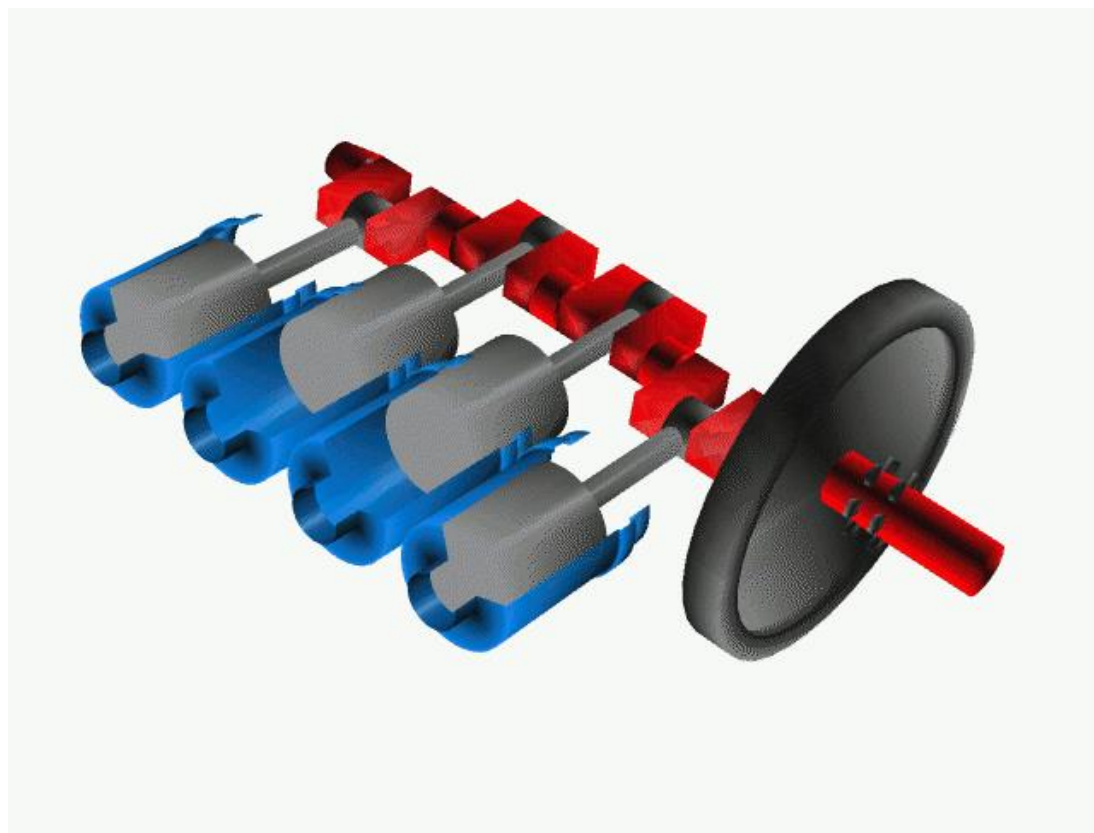
Това е механизъм, който преобразува въртеливото движение във възвратно-постъпателно (нагоре-надолу, назад-напред).



Използва се в буталата, в колелата на влаковете и, разбира се, в играчките!

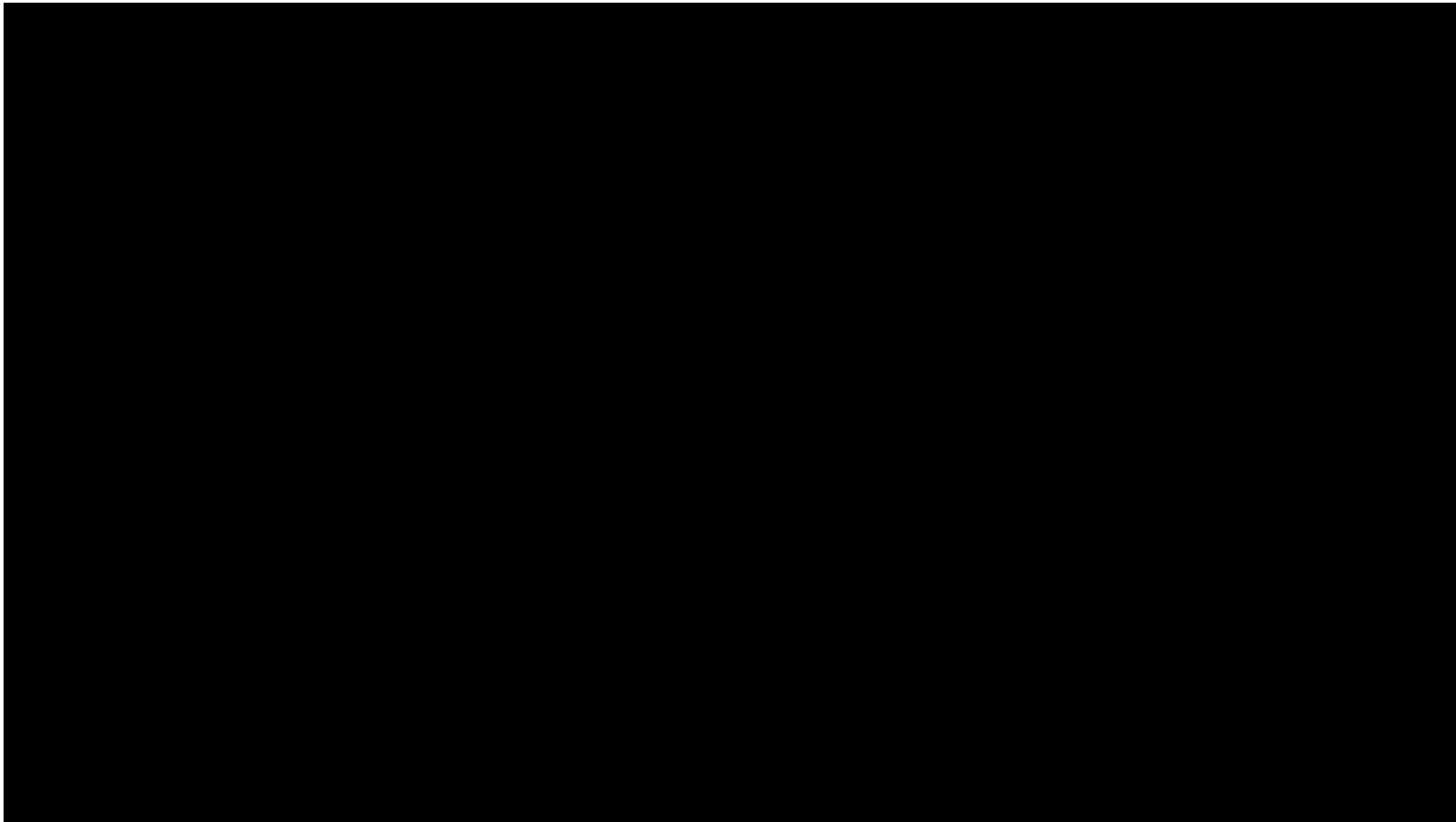


Вижте как въртеливото движение  
се трансформира в линейно



# Simple & Powered Machines

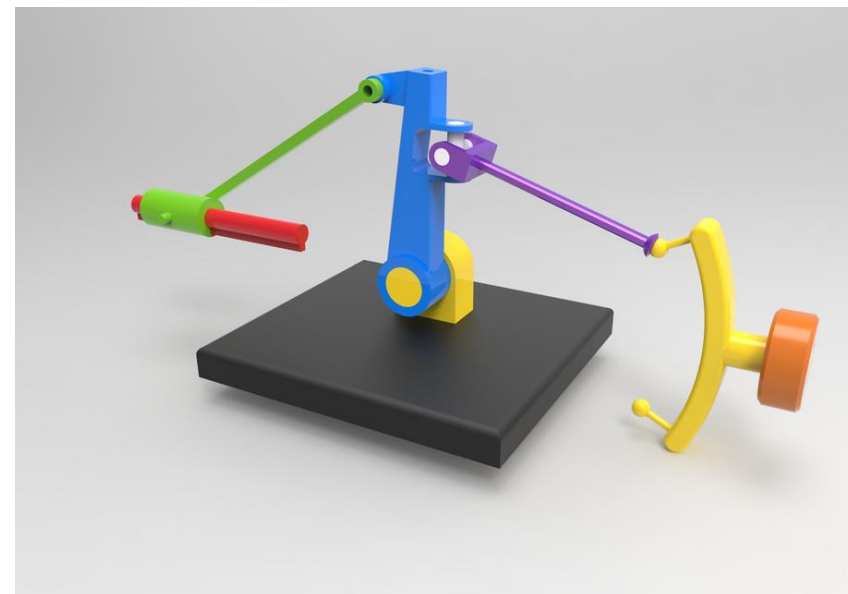
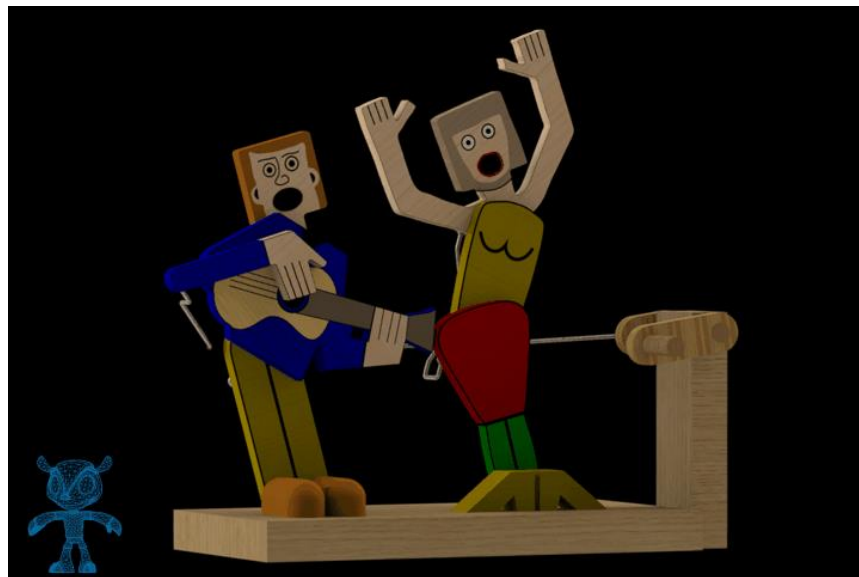
Off-centered motion





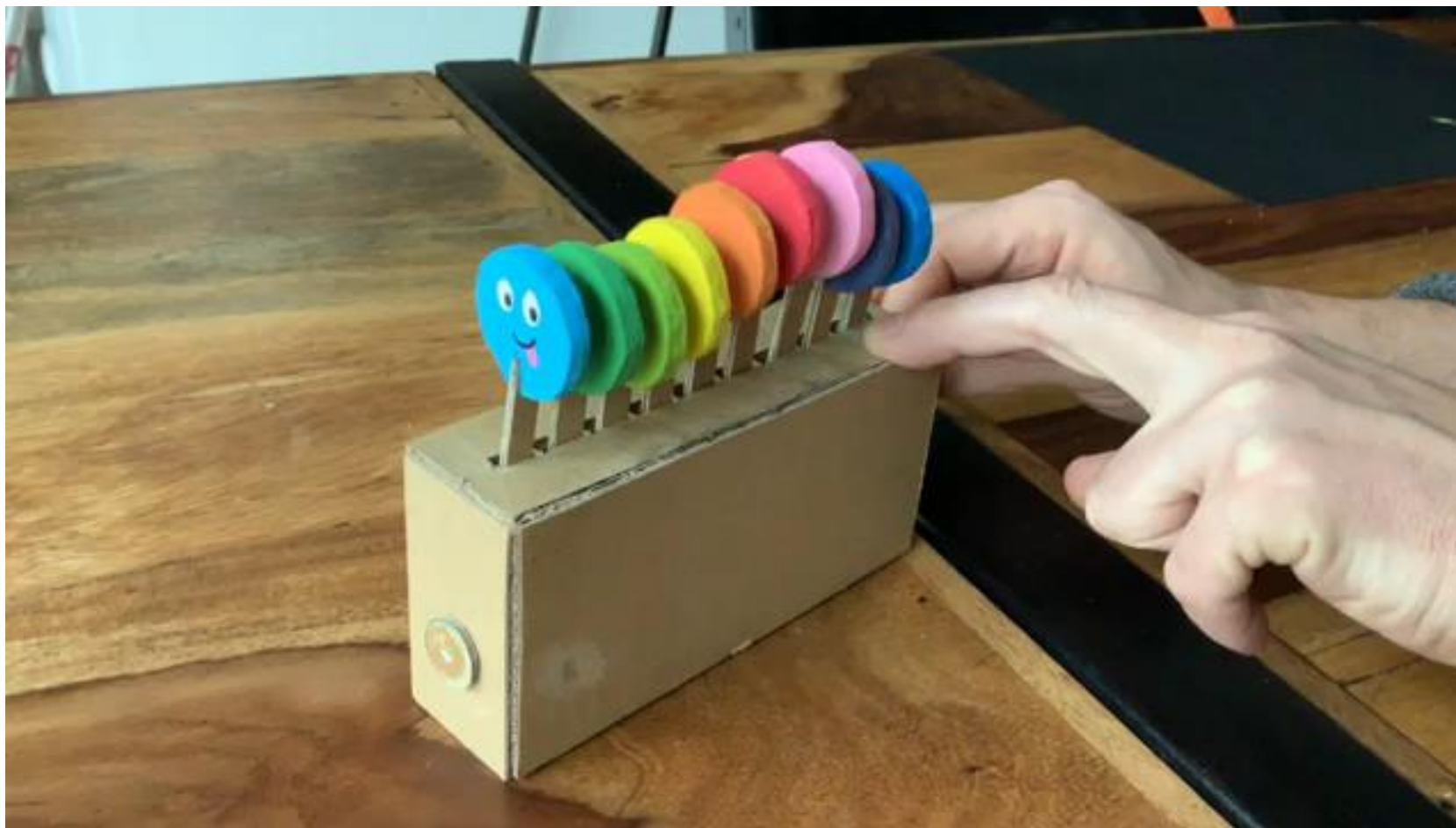


Играчки с  
нецентрирано  
движение



# Simple & Powered Machines

## Off-centered motion

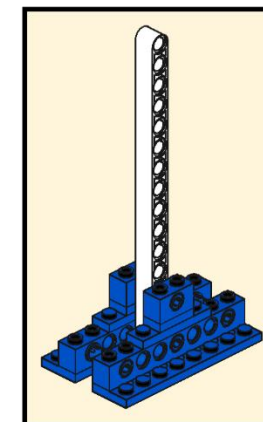
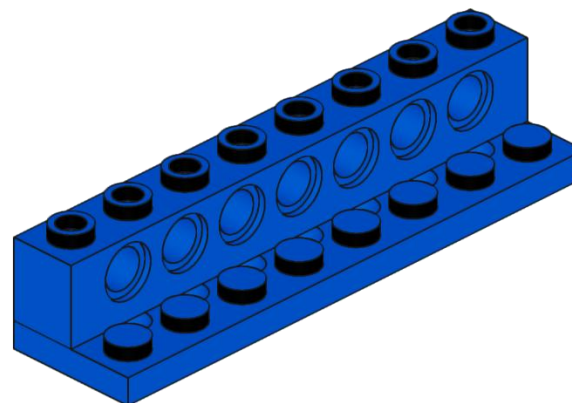
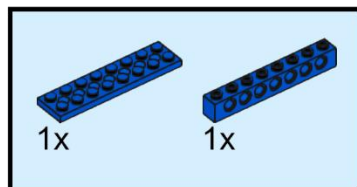




# Simple & Powered Machines

## Off-centered motion

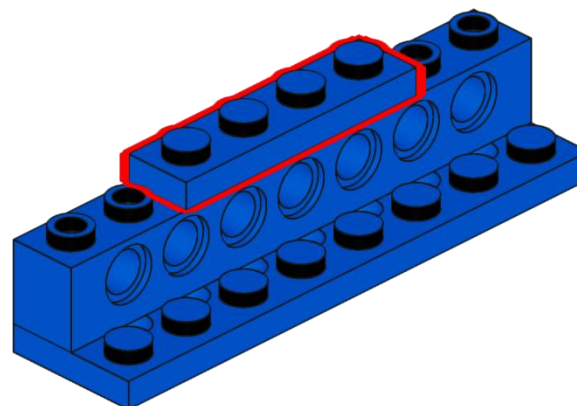
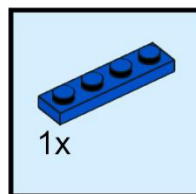
1



# Simple & Powered Machines

## Off-centered motion

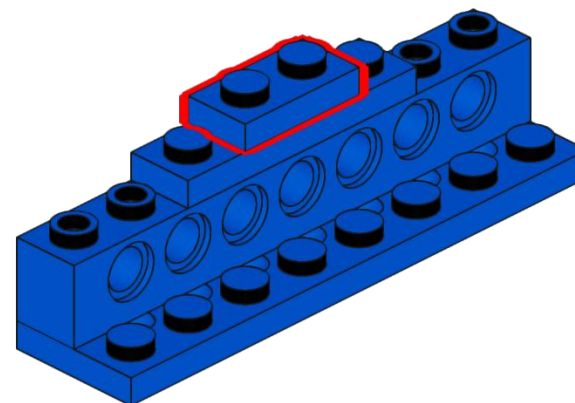
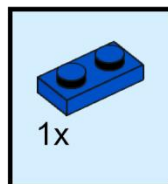
2



# Simple & Powered Machines

## Off-centered motion

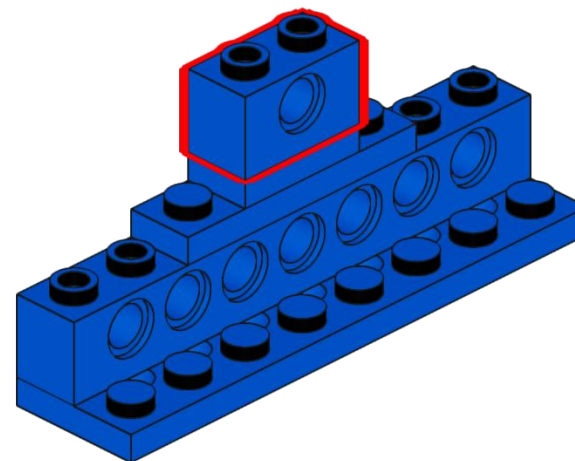
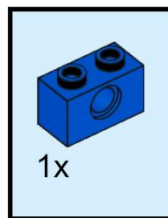
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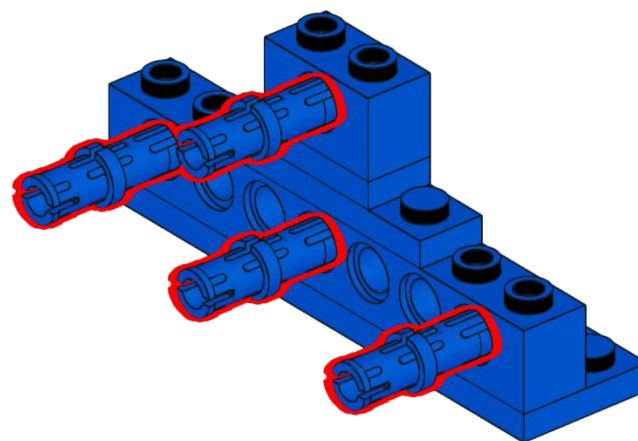
# Simple & Powered Machines

## Off-centered motion

4



5

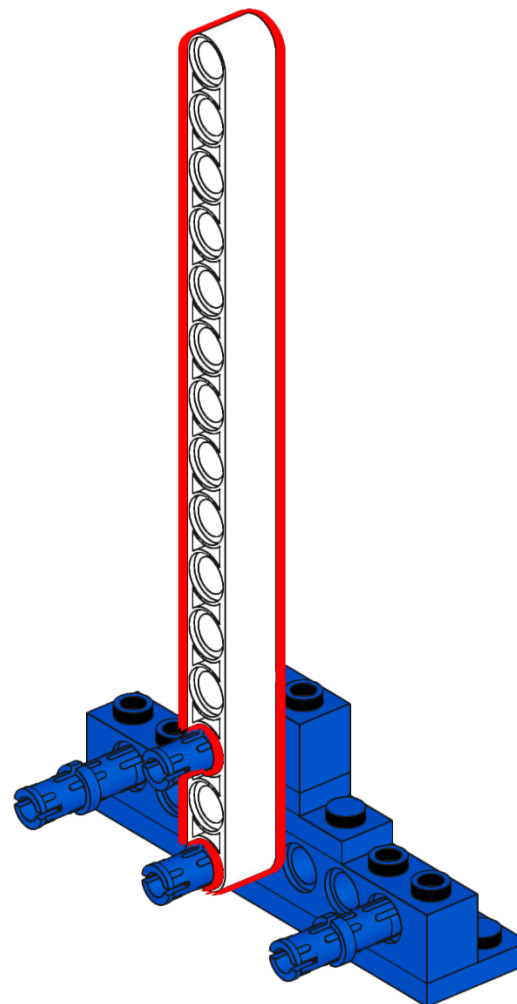
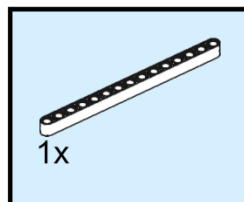




# Simple & Powered Machines

## Off-centered motion

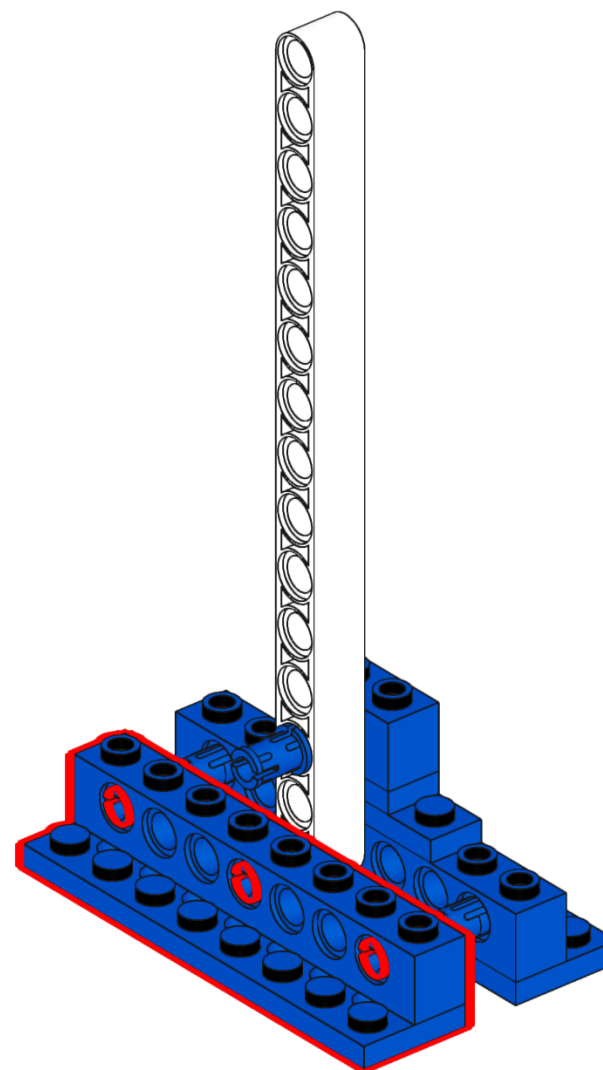
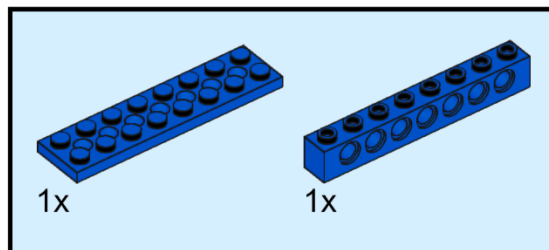
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# Simple & Powered Machines

## Off-centered motion

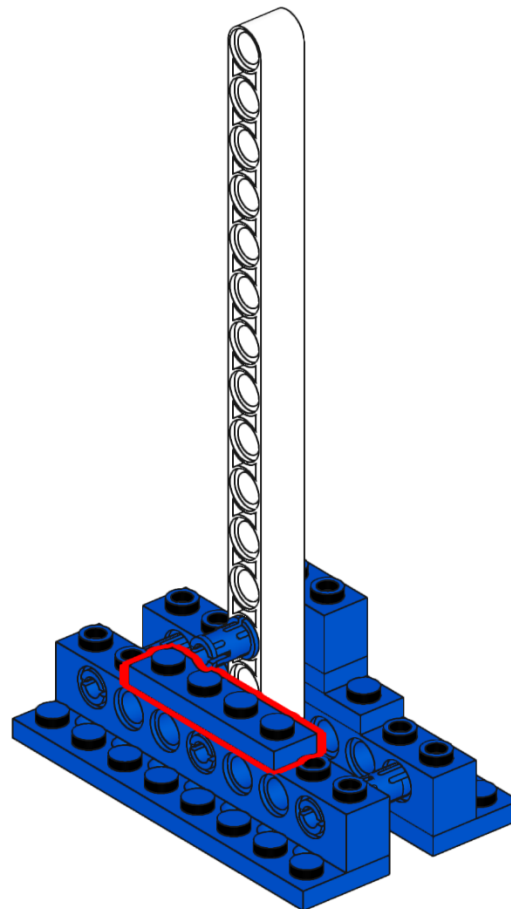
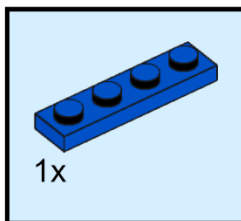
7



# Simple & Powered Machines

## Off-centered motion

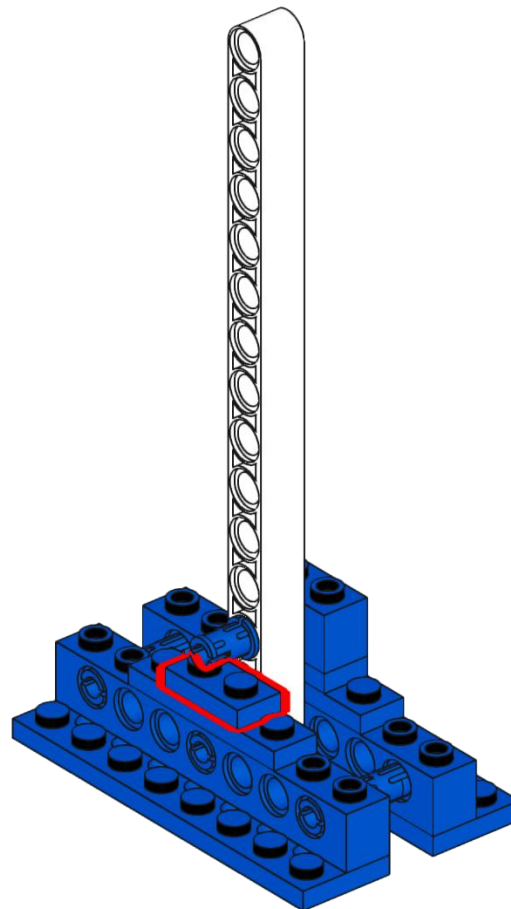
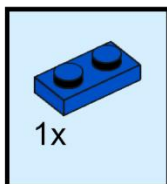
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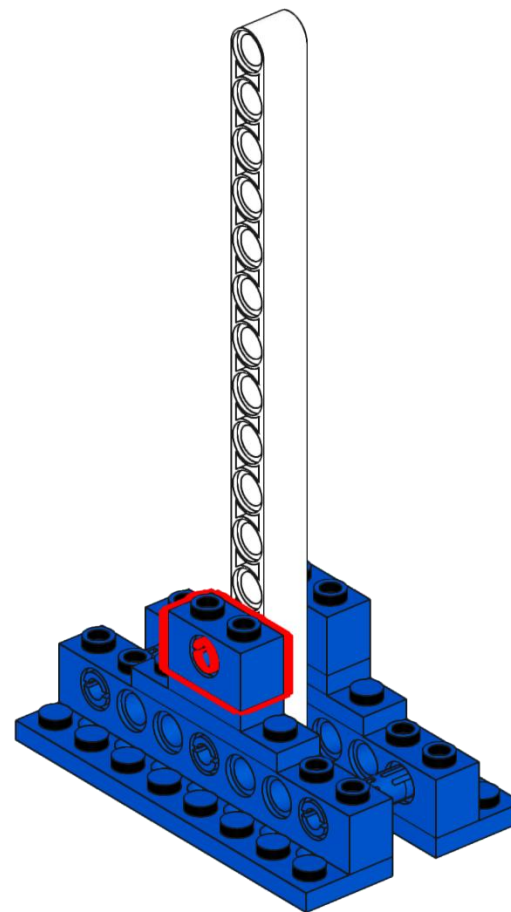
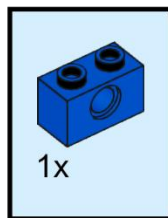
# Simple & Powered Machines

## Off-centered motion

9

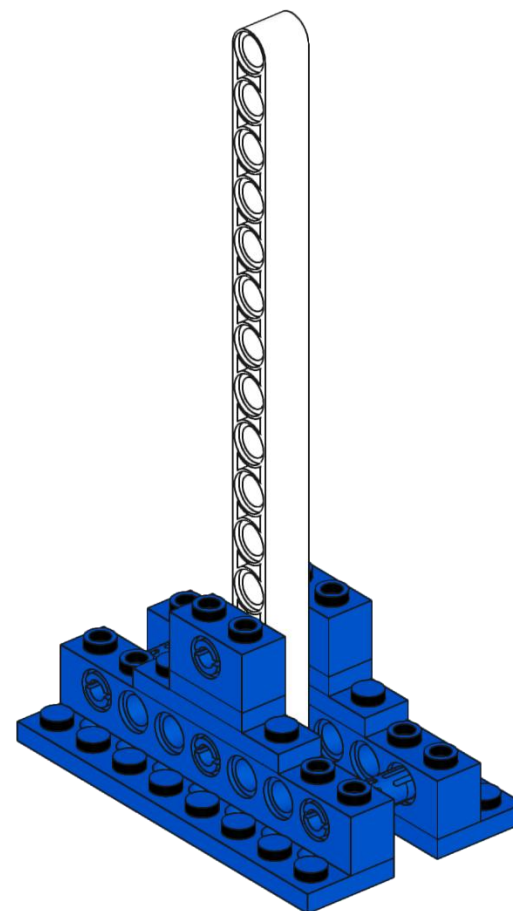


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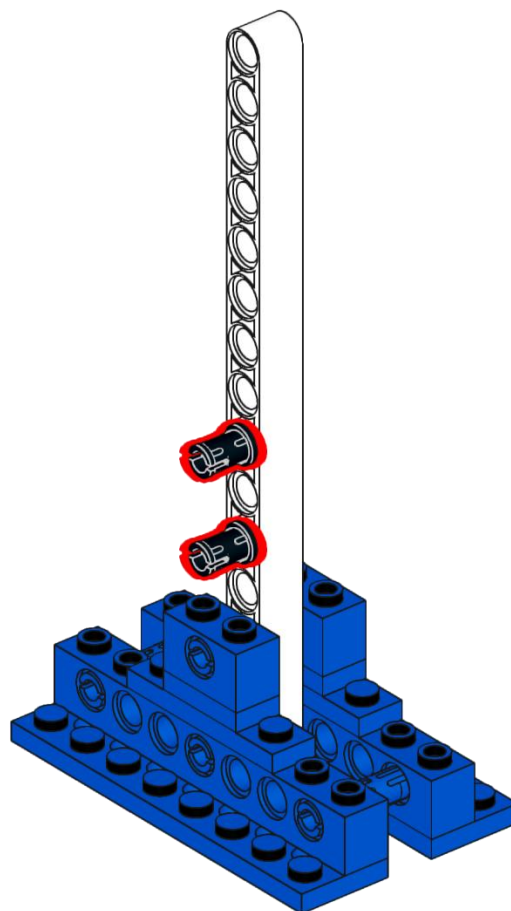
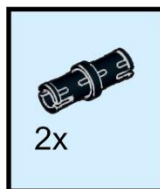




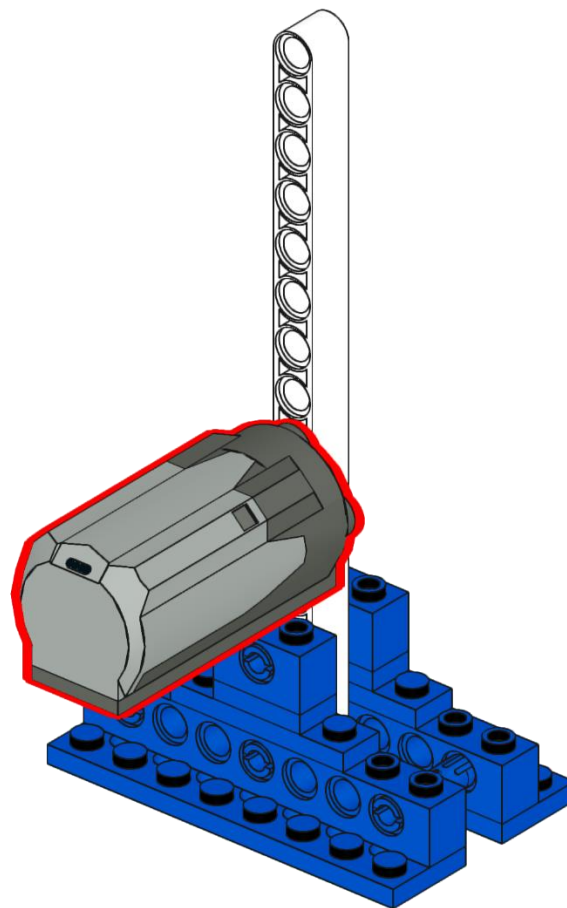
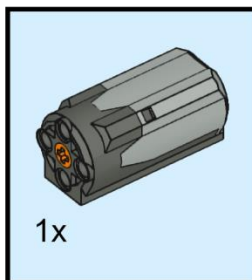
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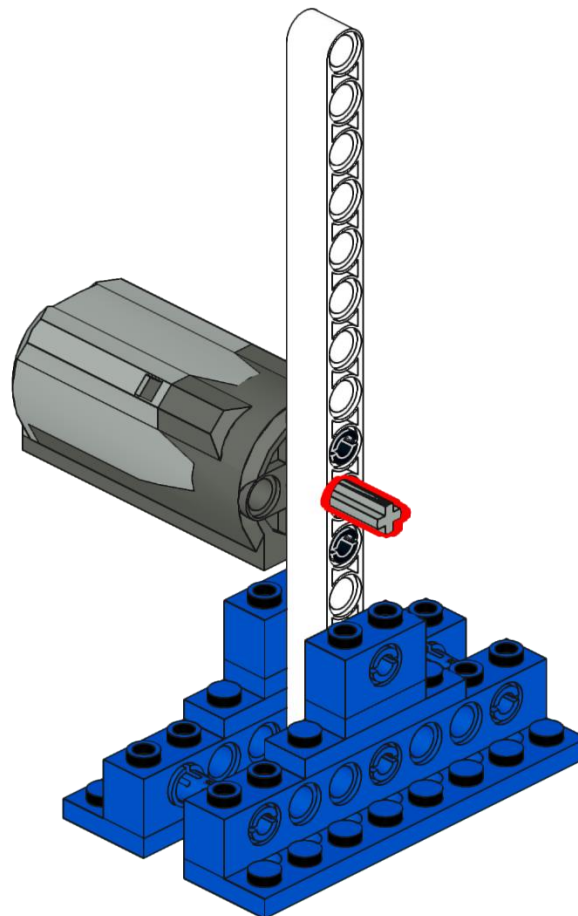
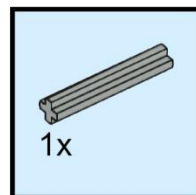
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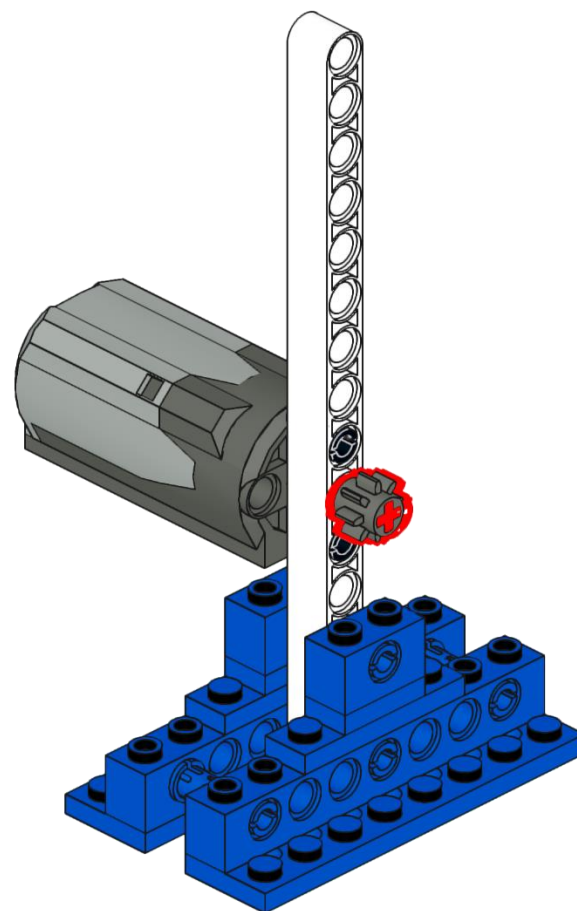
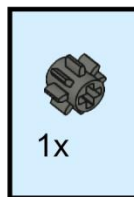
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14

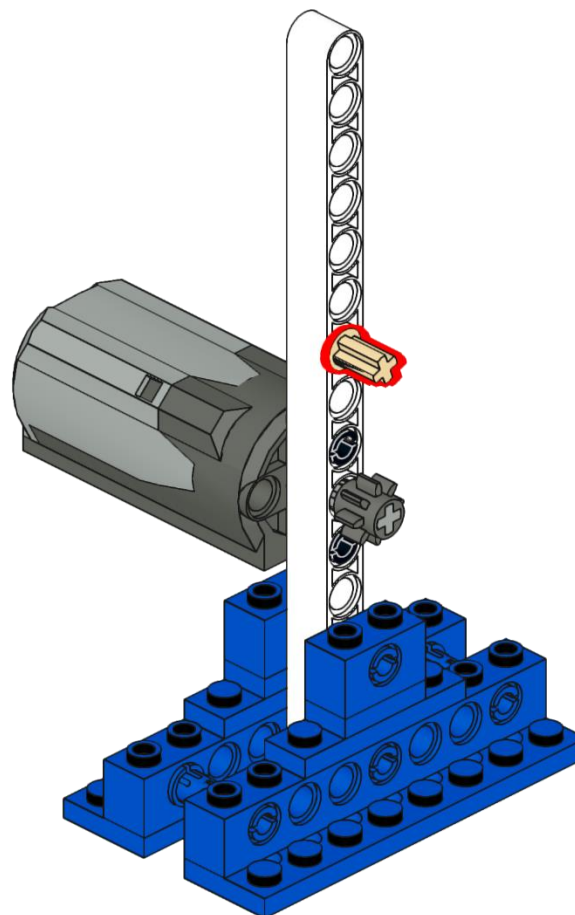
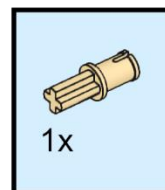


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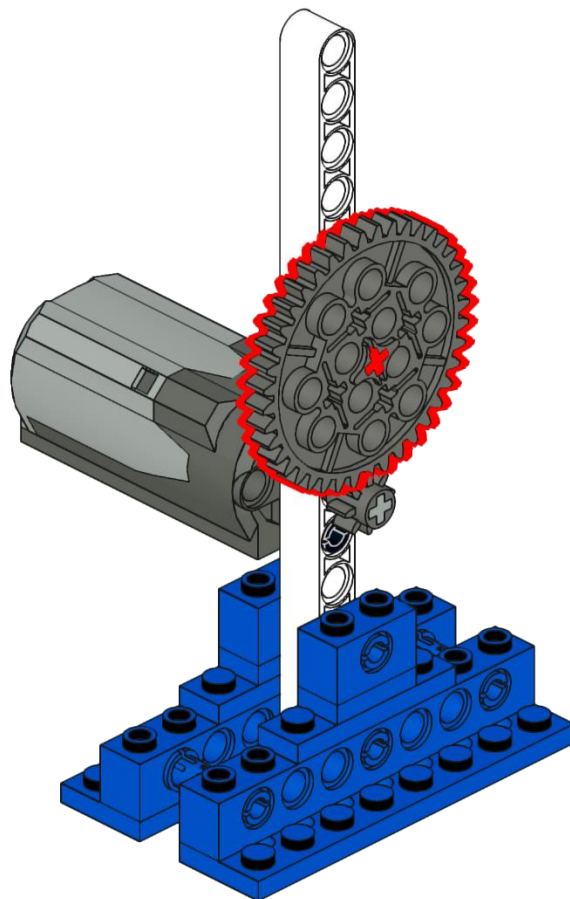
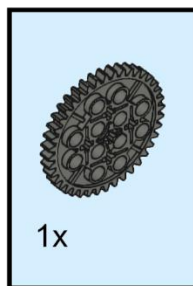




# 16



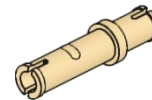
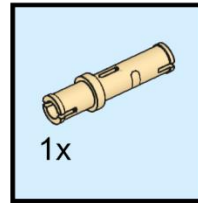
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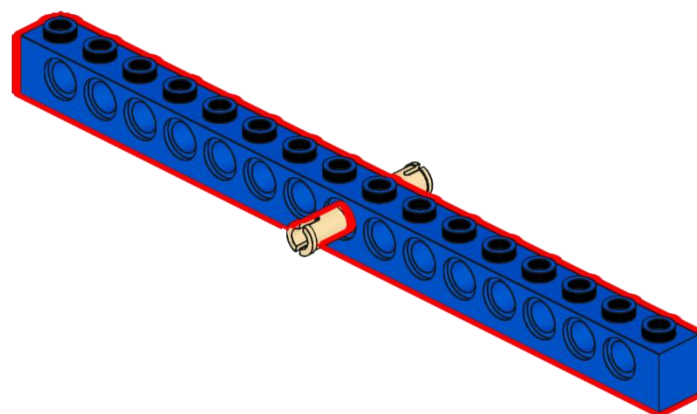
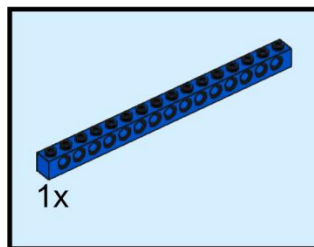
# Simple & Powered Machines

## Off-centered motion

18



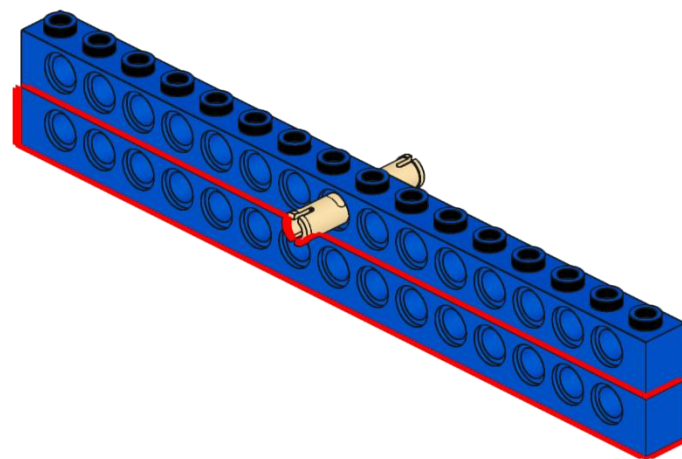
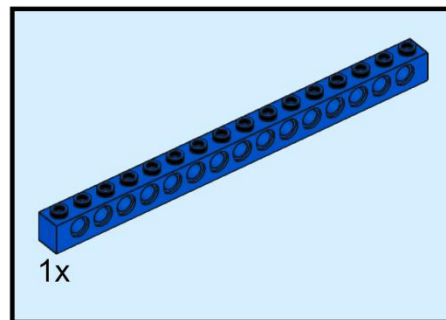
# 19



# Simple & Powered Machines

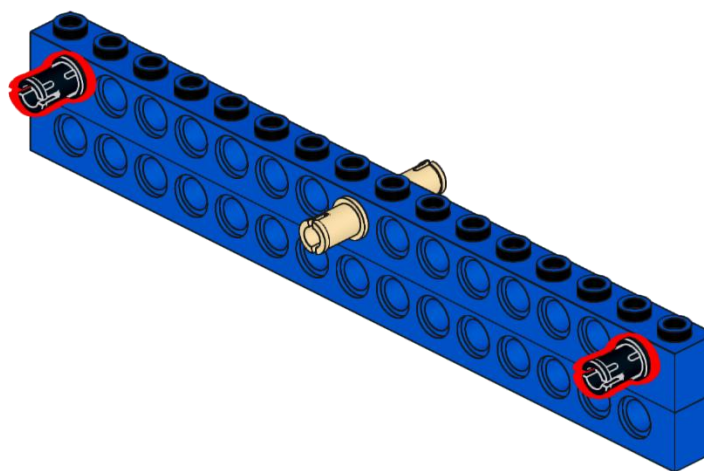
## Off-centered motion

20





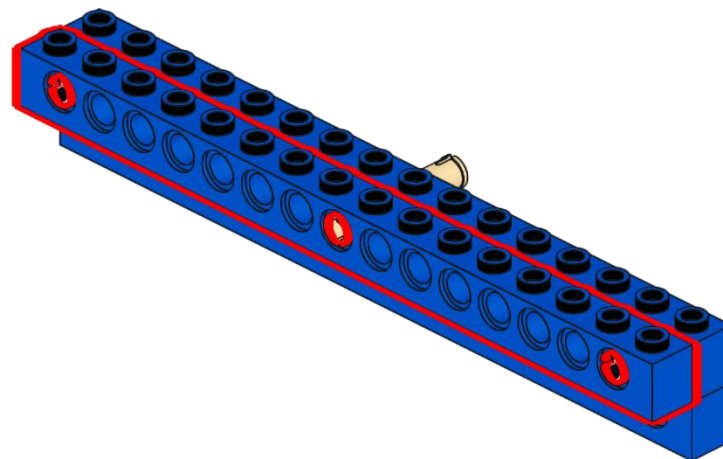
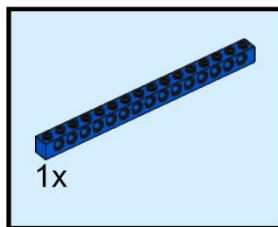
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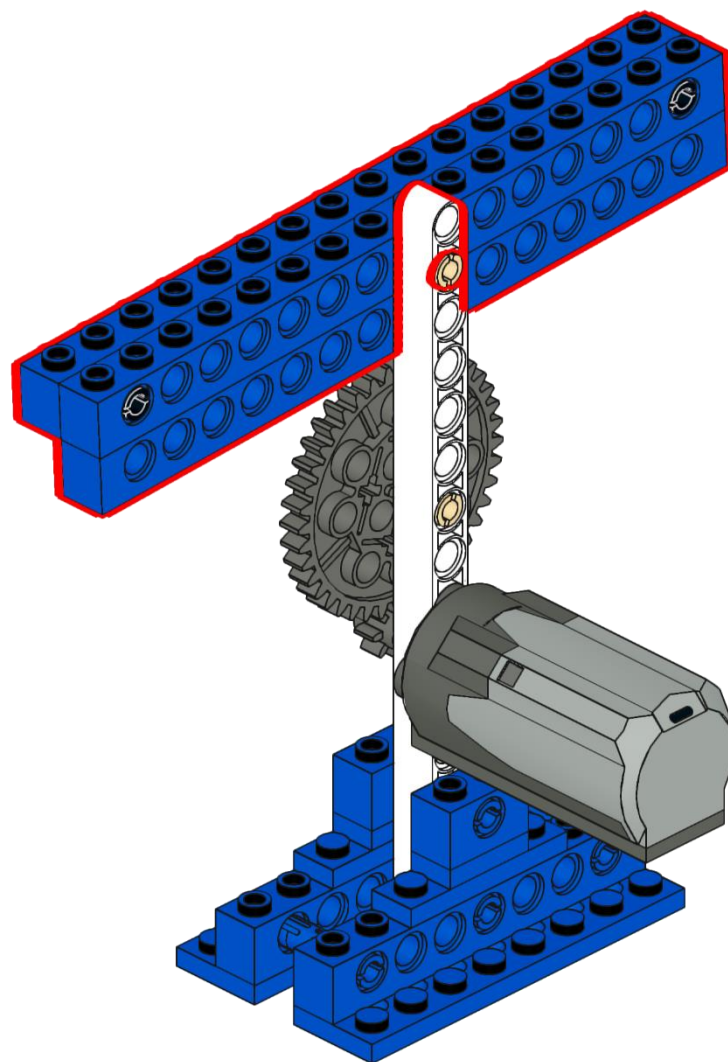
# Simple & Powered Machines

## Off-centered motion

22



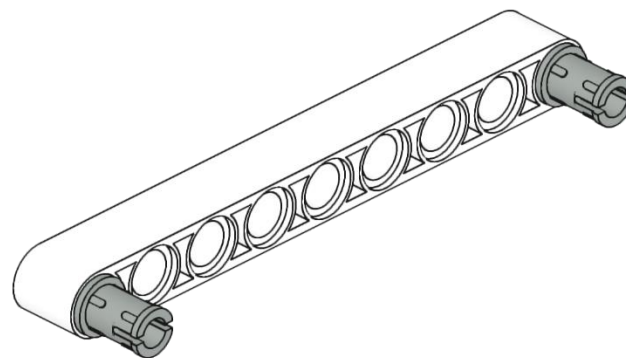
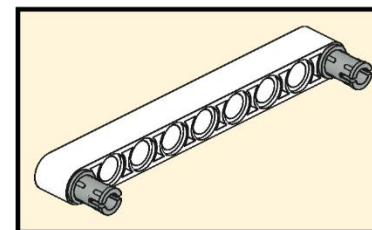
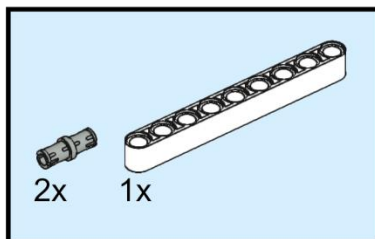
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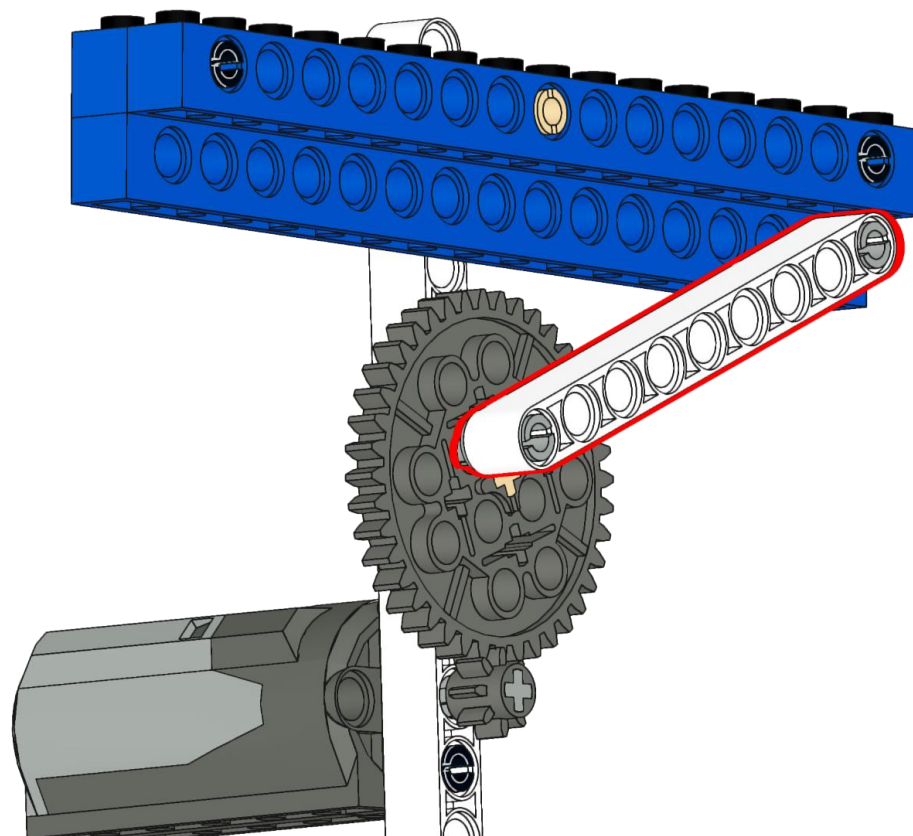
# Simple & Powered Machines

## Off-centered motion

24



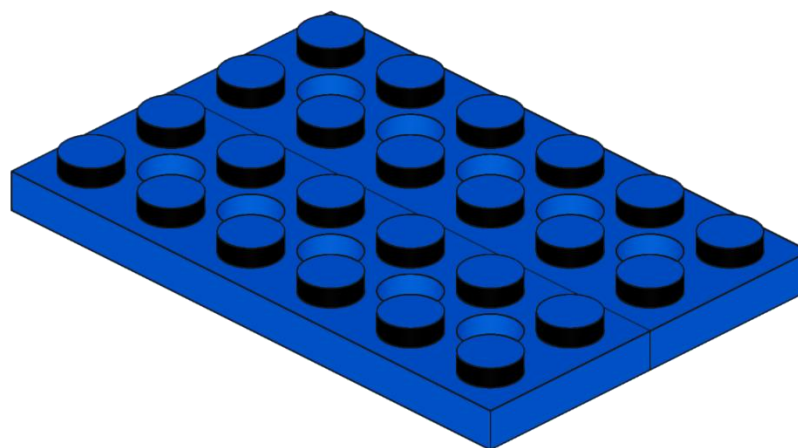
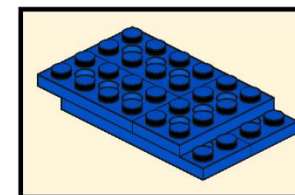
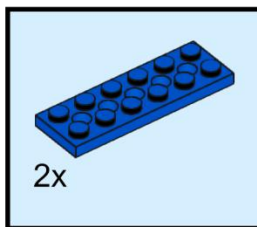
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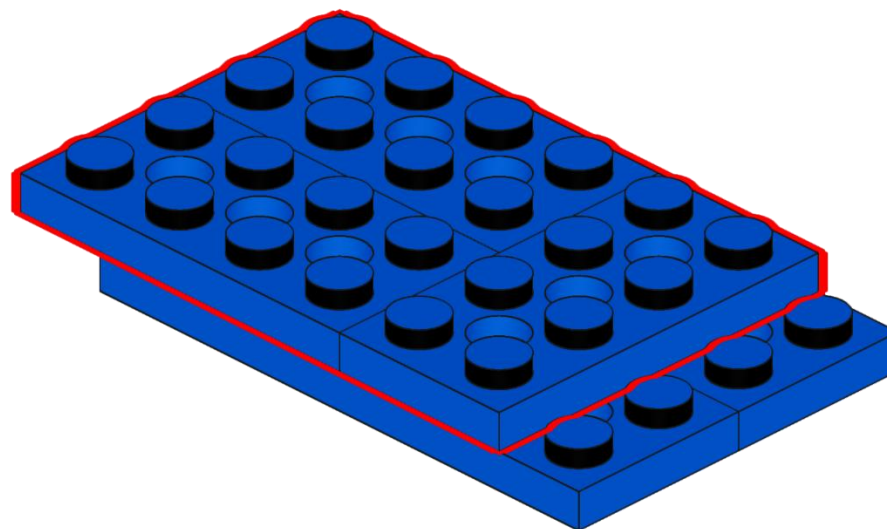
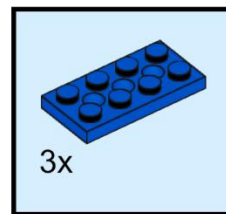
# Simple & Powered Machines

## Off-centered motion

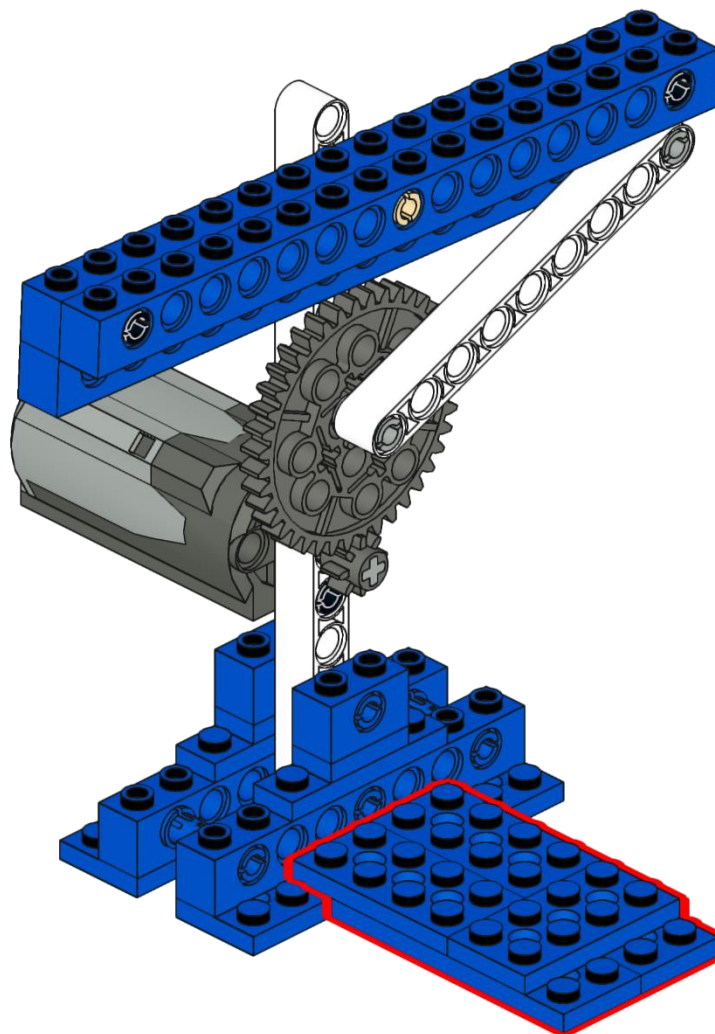
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# 27



# 28

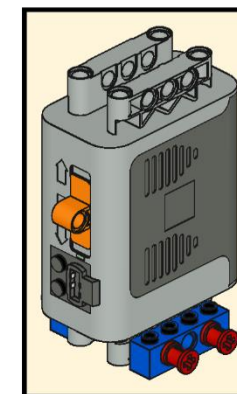
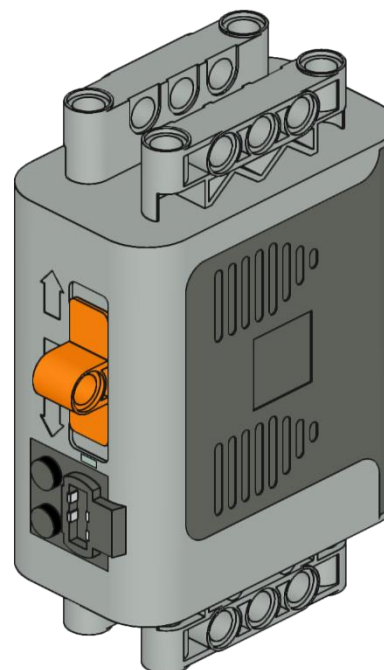
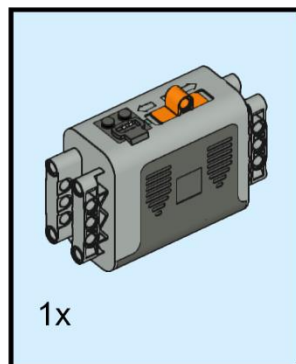




# Simple & Powered Machines

## Off-centered motion

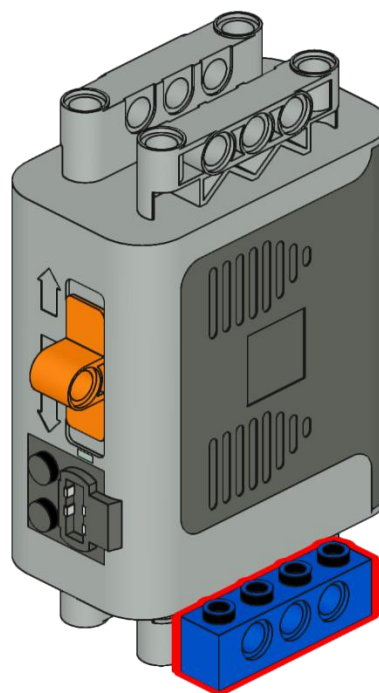
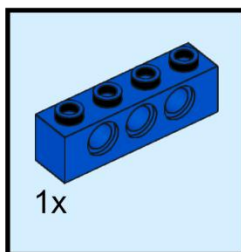
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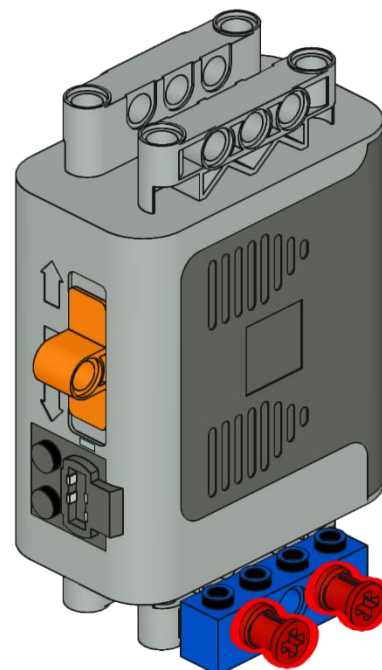
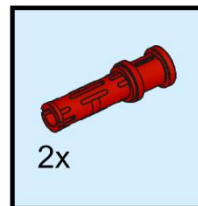
# Simple & Powered Machines

## Off-centered motion

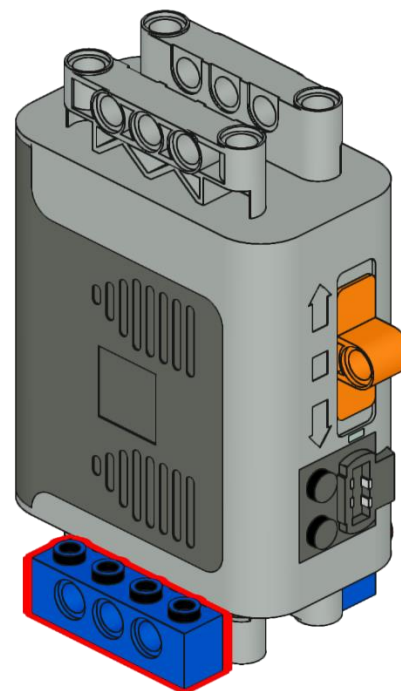
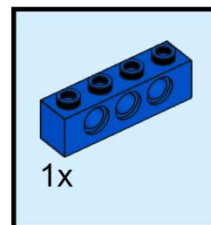
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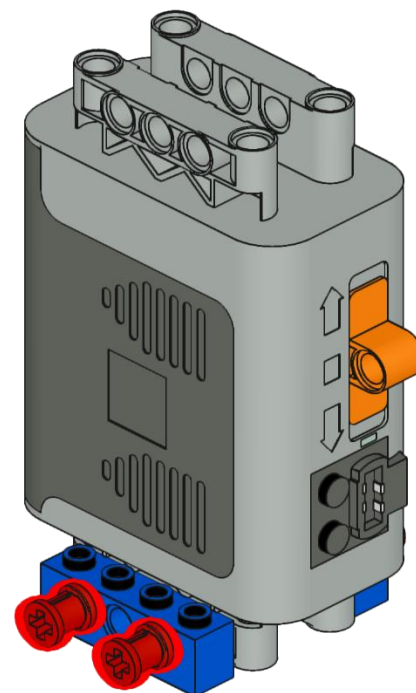
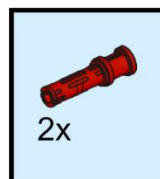
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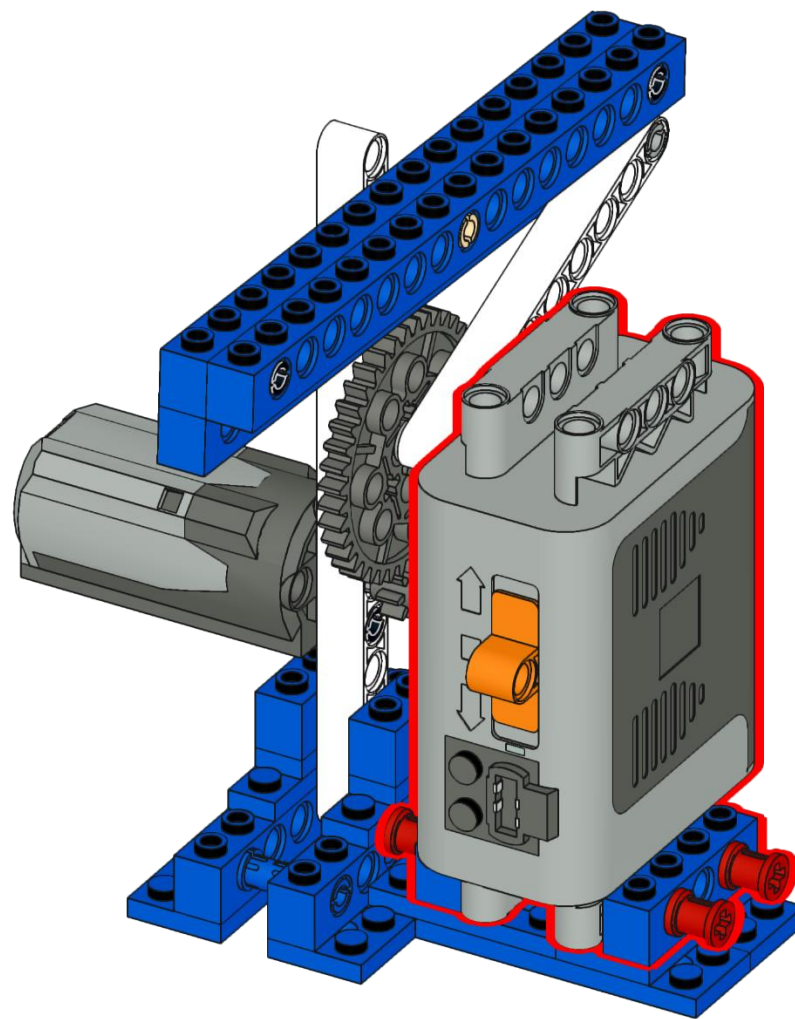
32



# 33



# 34



*Когато завършите работния лист,  
разглобете конструкцията си  
и поставете всички части на мястото им.*

