Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
KA220-SCH - Cooperation partnerships in school education





Simple & Powered Machines

Simple & Powered Machines

Off-centered motion

I want to build something that moves up-and-down, using the motor, but I haven't succeeded yet… I can only move at a straight line…

I don't think what you say is possible…

I am sure that it is possible, but I don't know how… Let's ask!



Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion





Indeed, it is possible. And it is not difficult, we just need to connect an axle to a point different than the center of a disc or a gear.



This mechanism is called “cam” and there is in our set. We will talk about it in another lesson.



Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

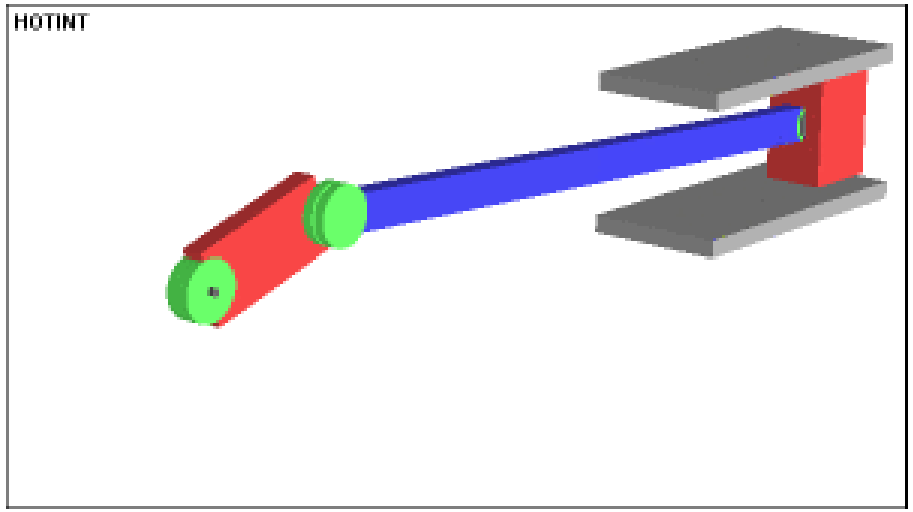
Discuss with your students if they have seen a cam again.

Simple & Powered Machines

Off-centered motion

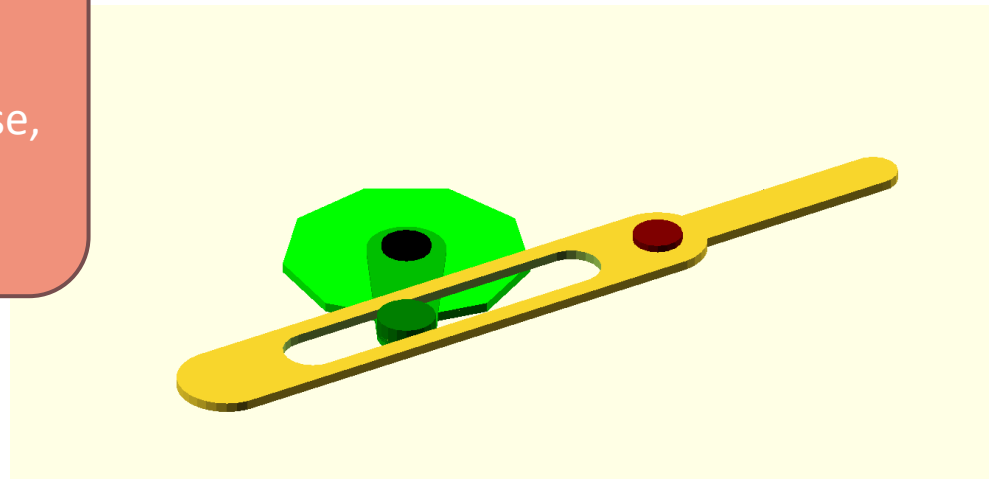


The cam is a mechanism that transforms the rotational motion to retrogressive (up-and-down, back-and-forth).





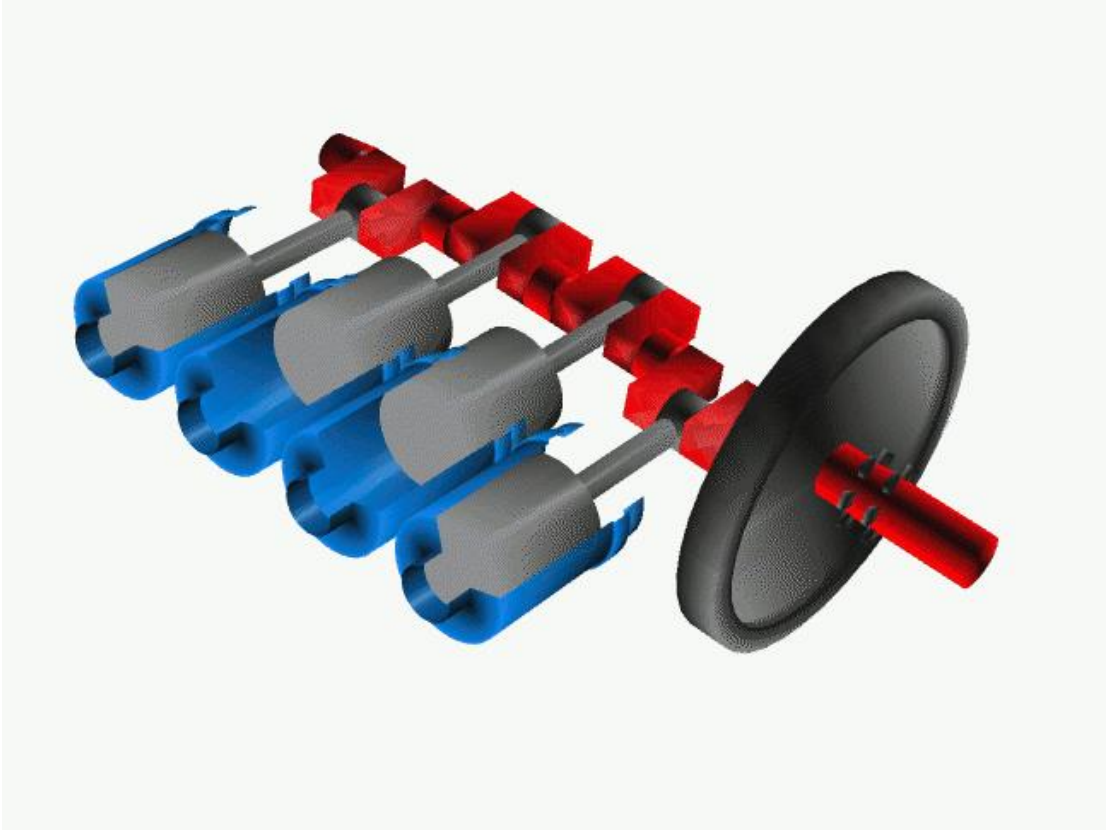
It is used in pistons, in the wheels of a train and, of course, in toys!



Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Discuss with your students if they have seen mechanisms with a cam before.

See how the rotational motion is transformed into linear

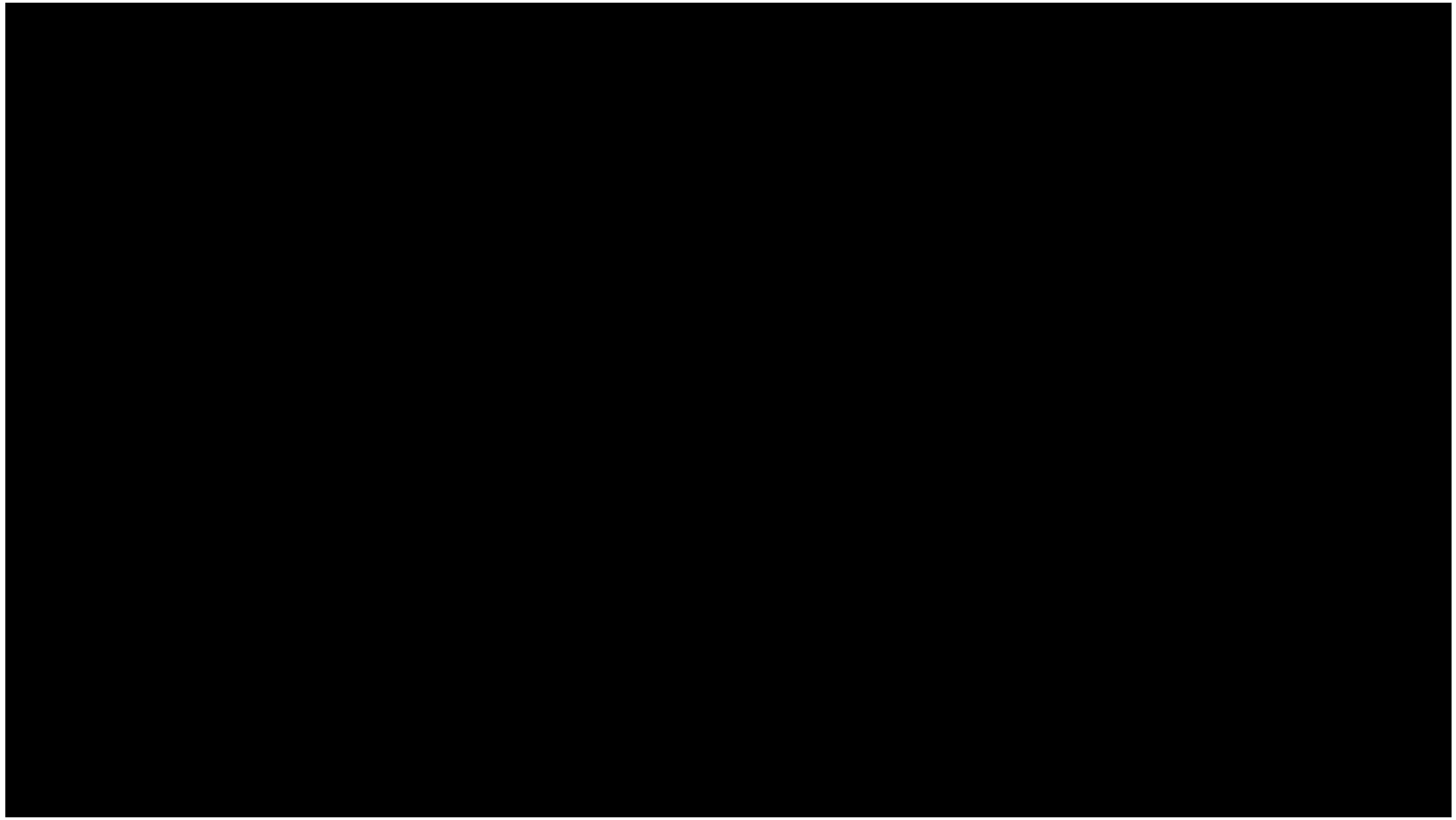


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Simple & Powered Machines

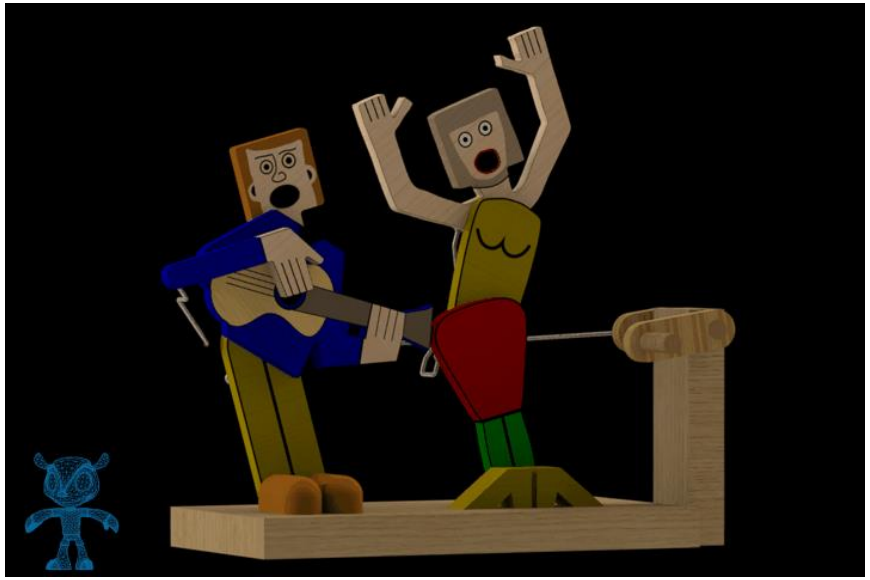
Off-centered motion

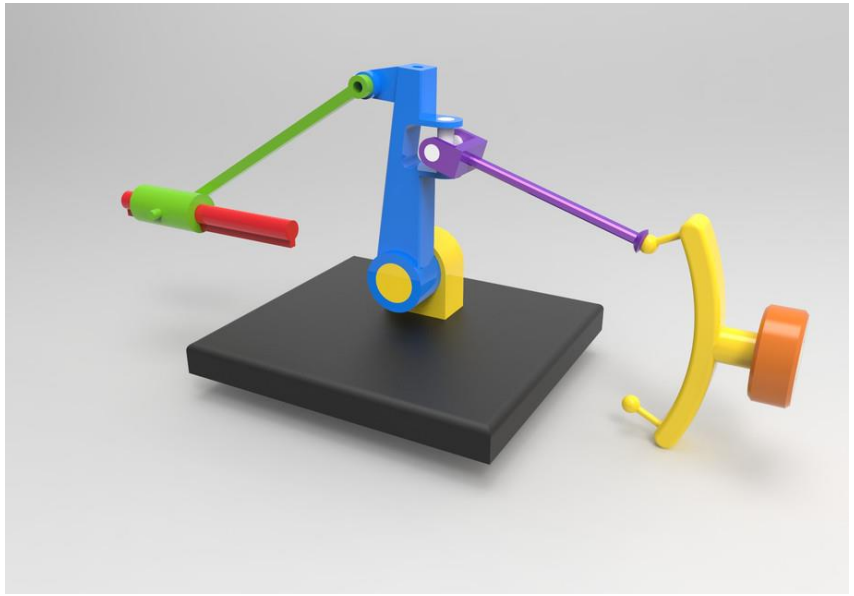


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Toys with off-centered motion





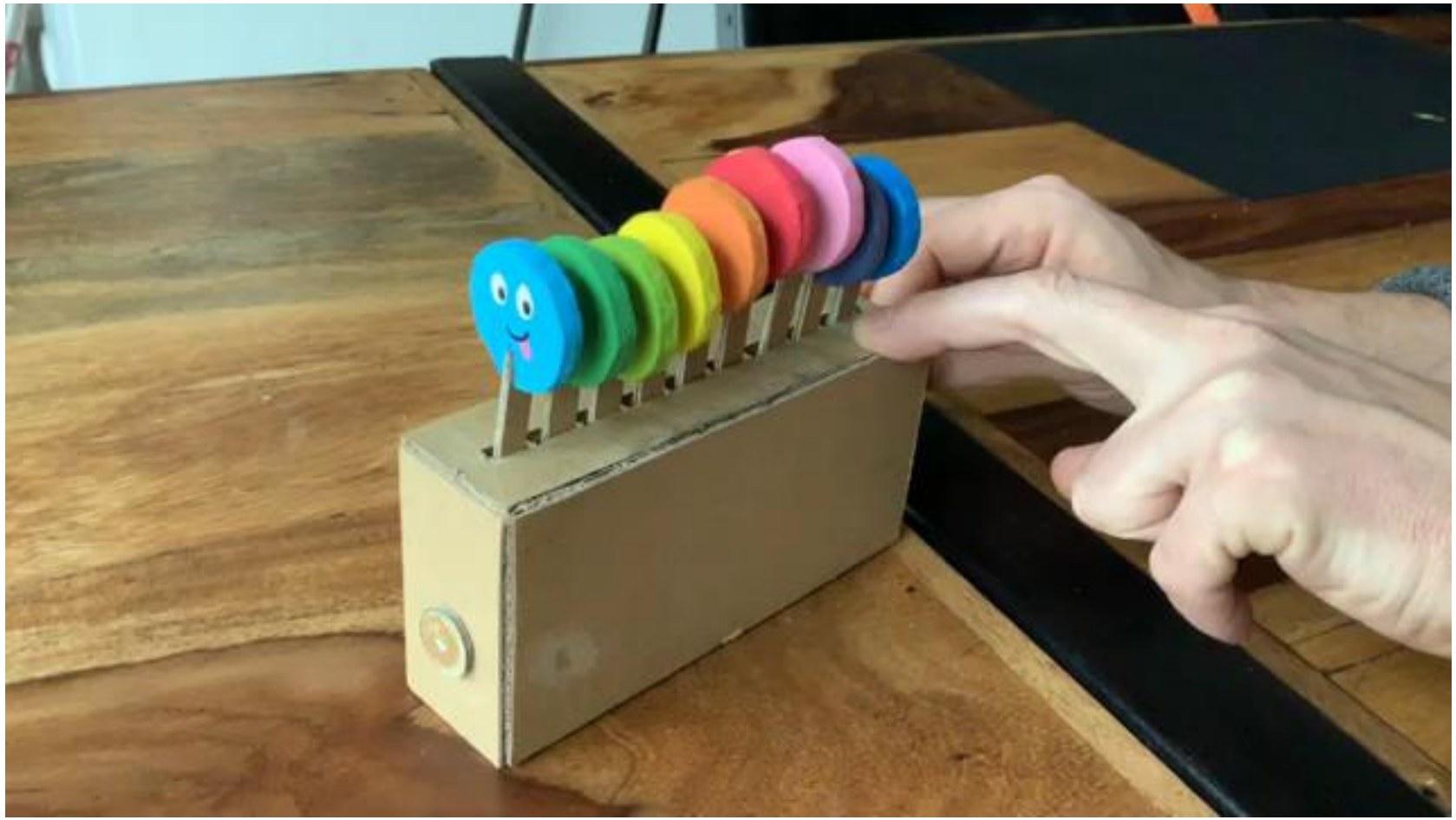


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Simple & Powered Machines

Off-centered motion

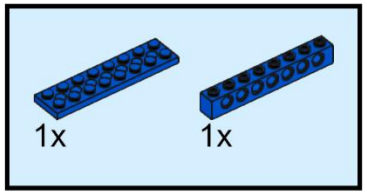


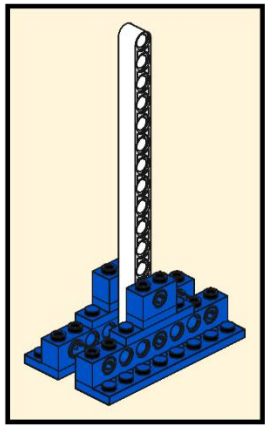
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

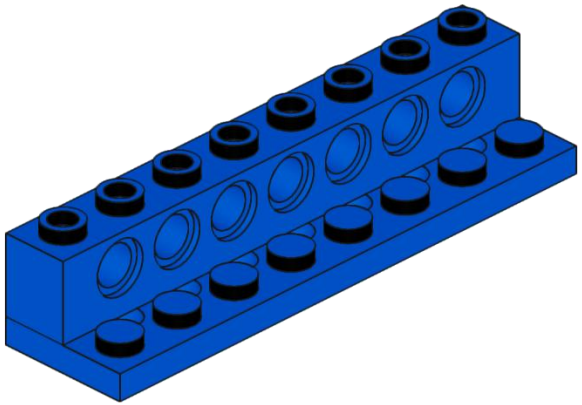
Simple & Powered Machines

Off-centered motion

1



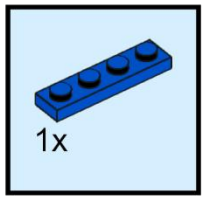


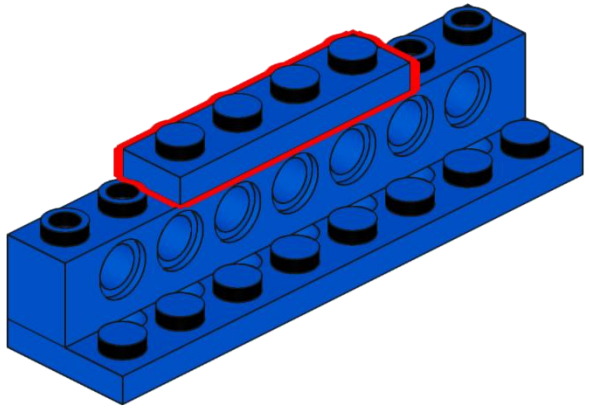


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

2

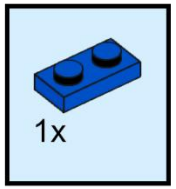


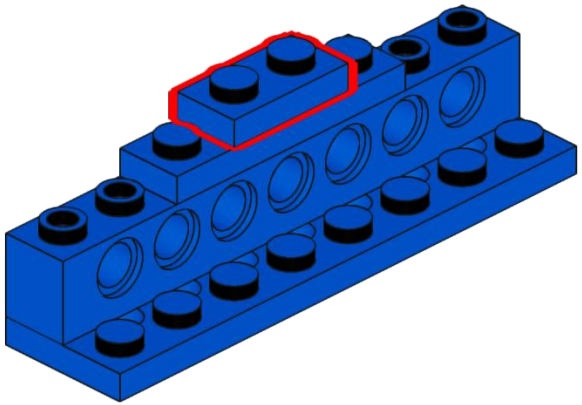


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

3

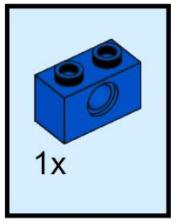


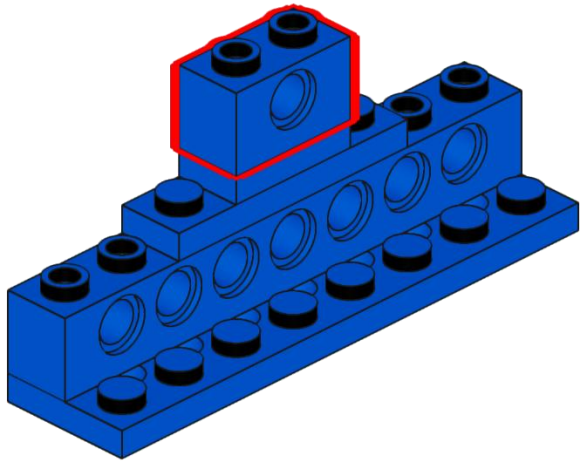


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

4



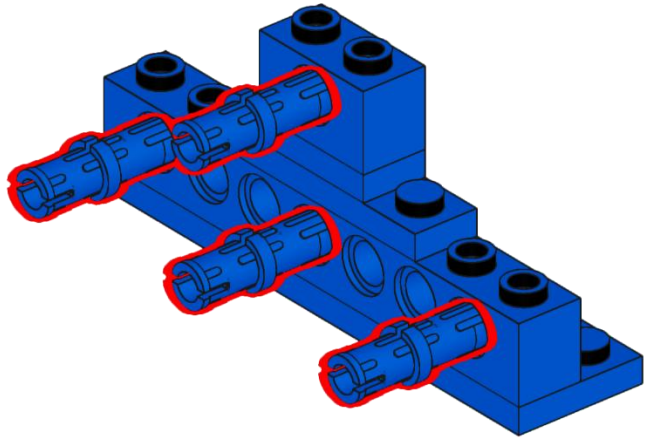


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

5

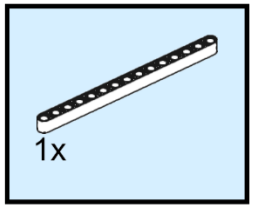


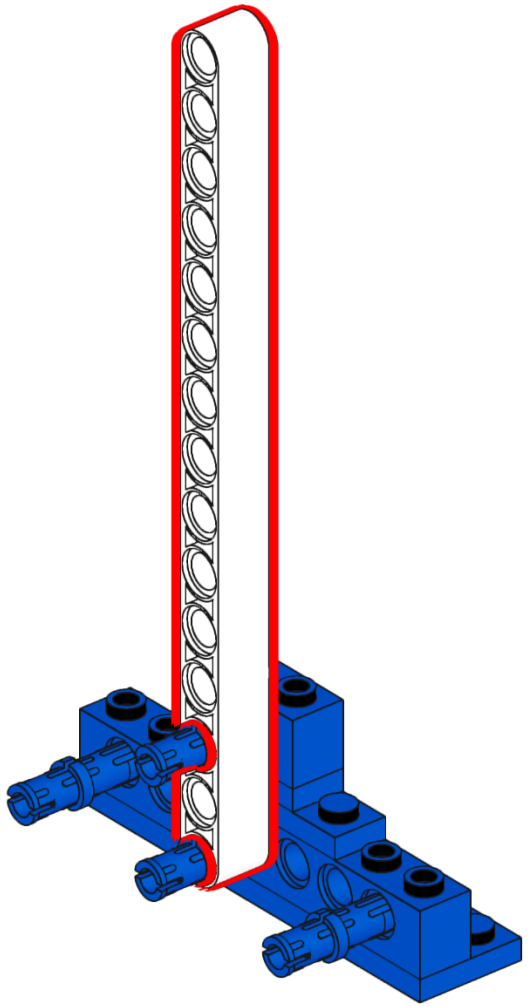


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

6



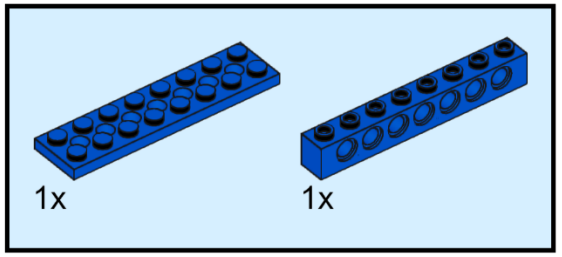


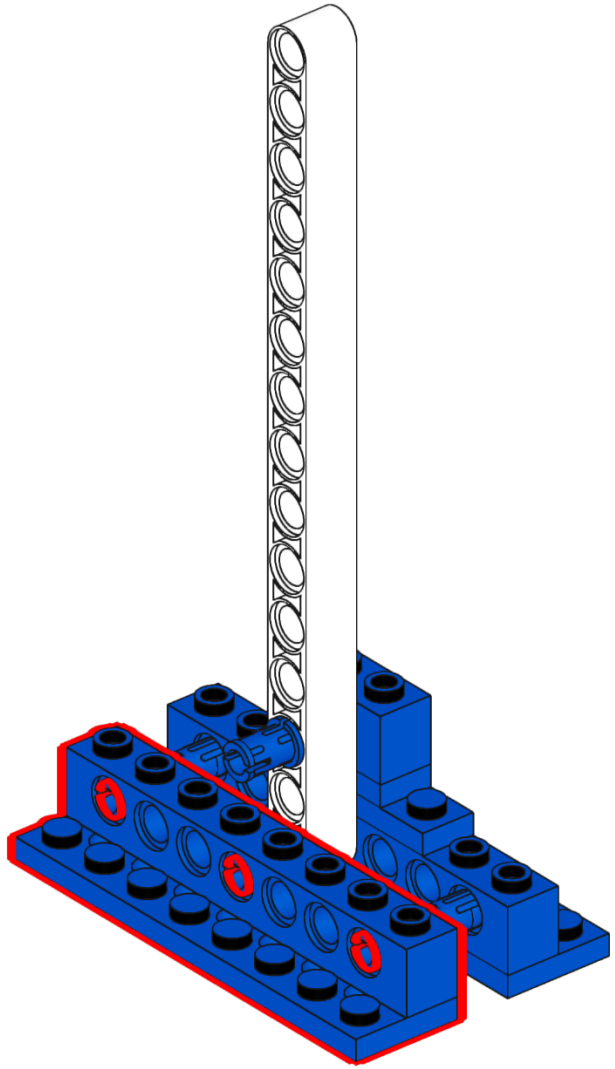
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Simple & Powered Machines

Off-centered motion

7



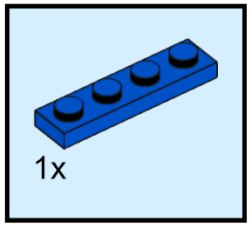


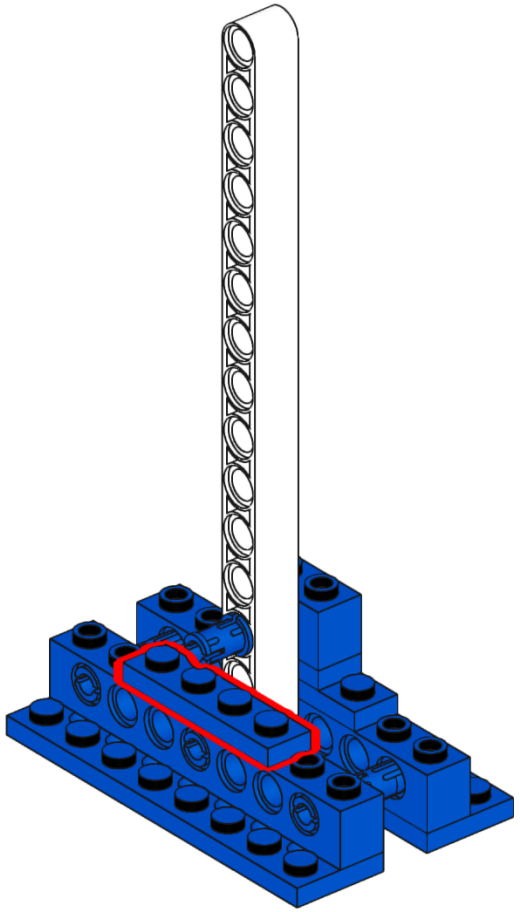
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

8





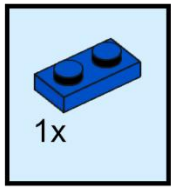
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

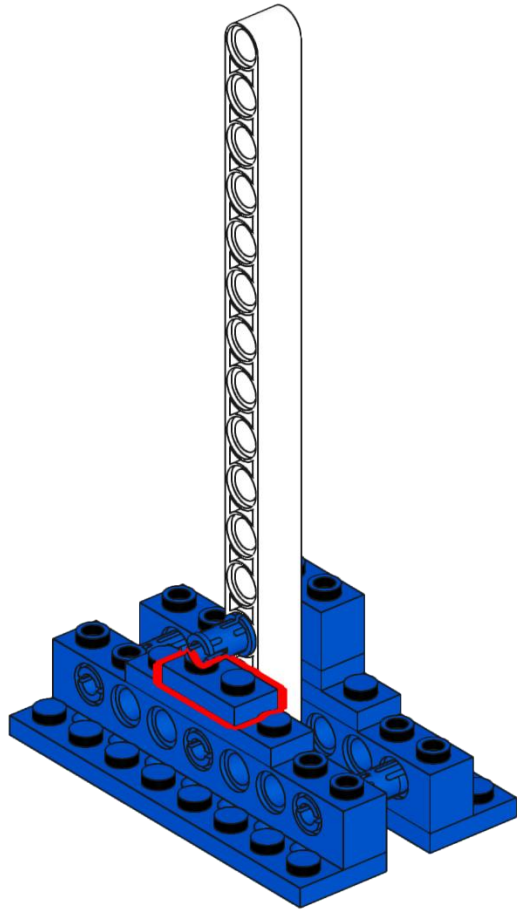
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Simple & Powered Machines

Off-centered motion

9



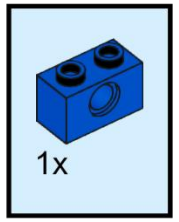


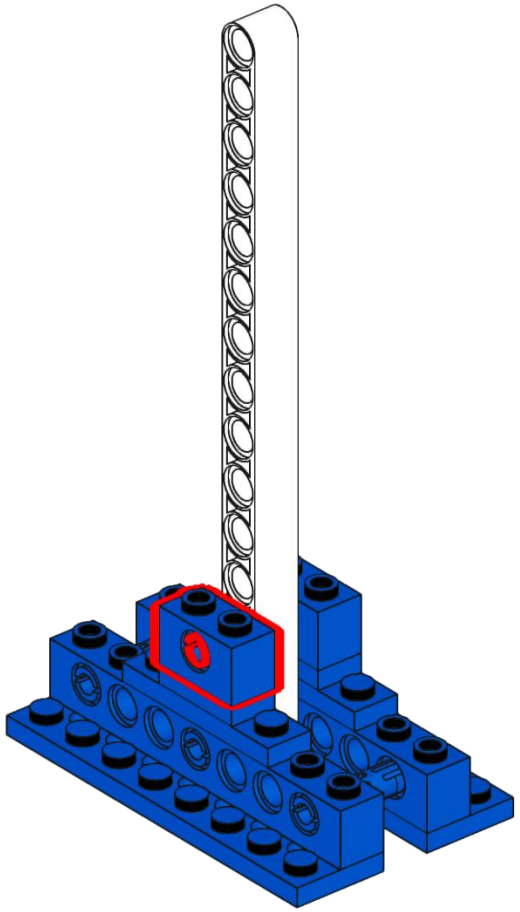
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

10



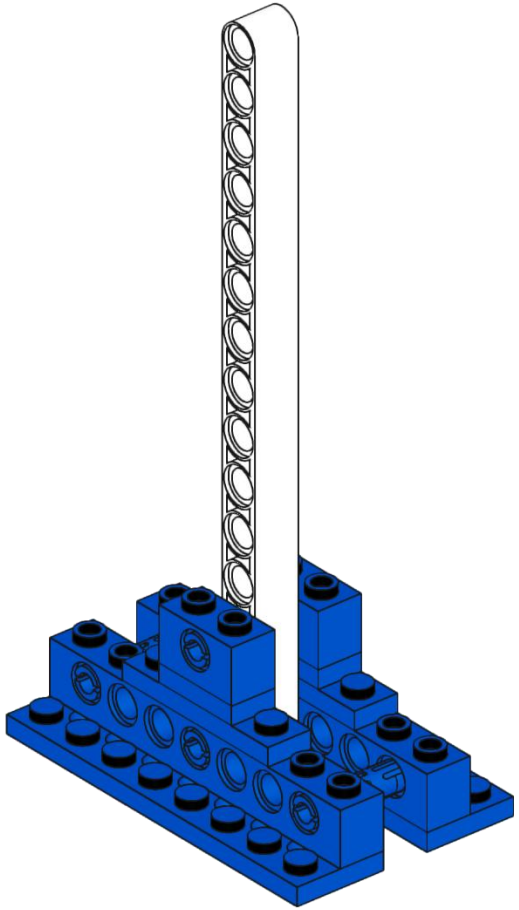


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

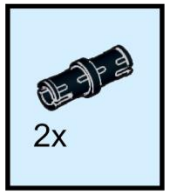
11

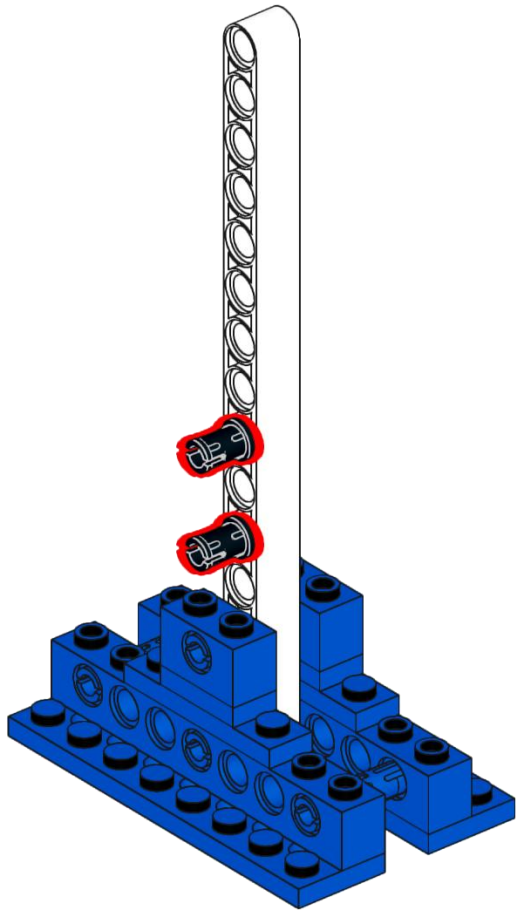


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

12



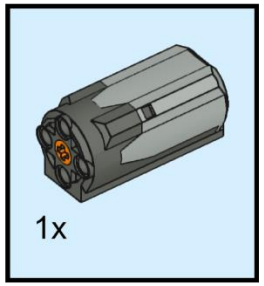


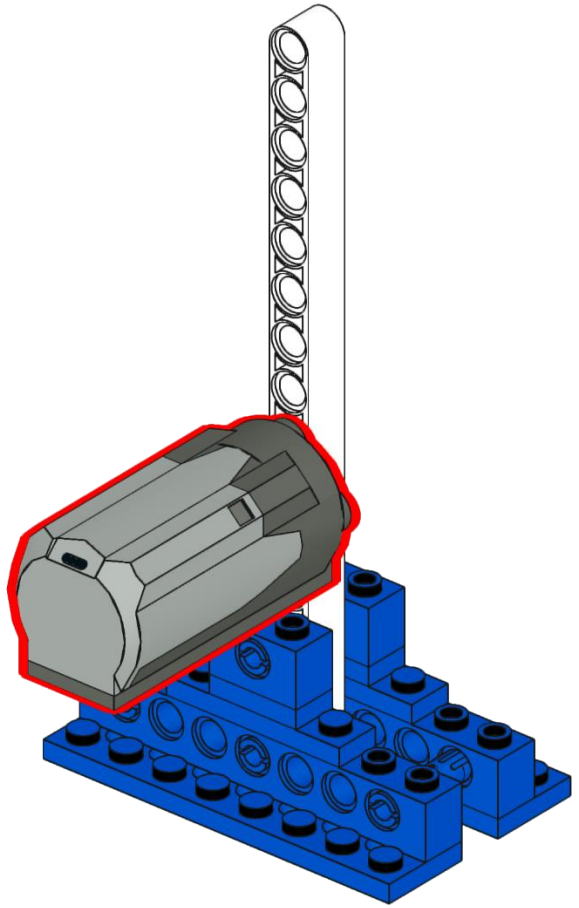
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

13

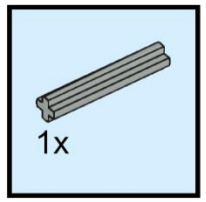


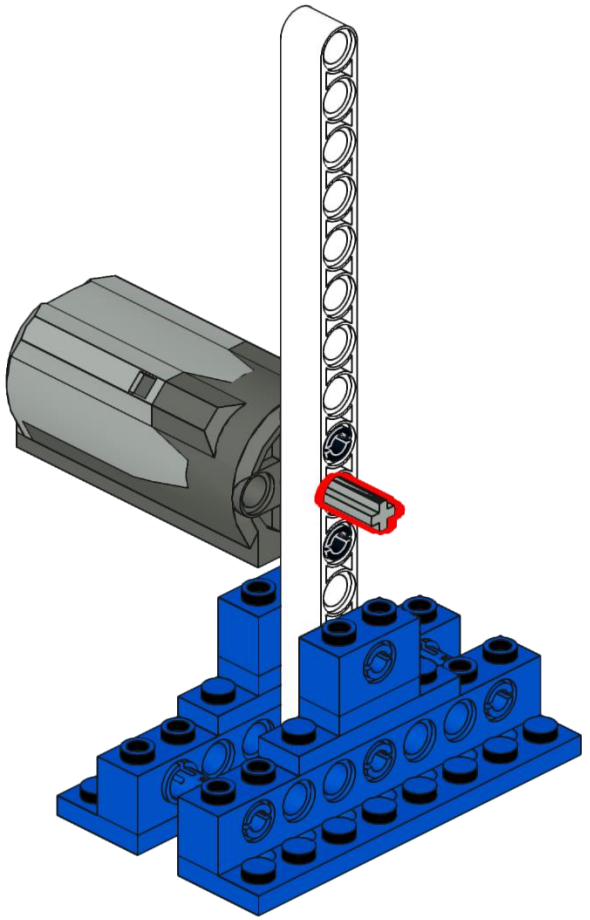


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

14



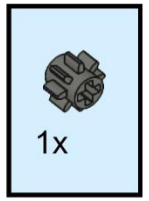


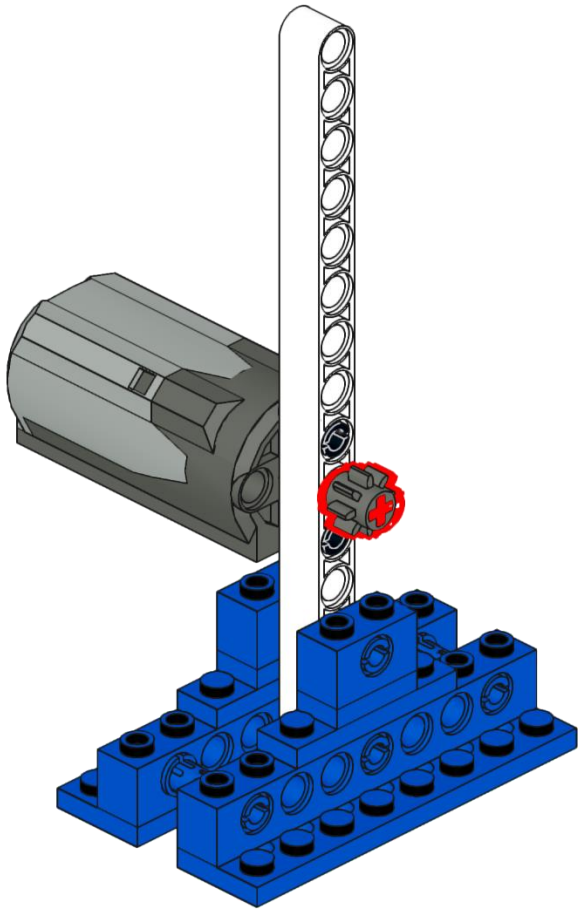
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

15

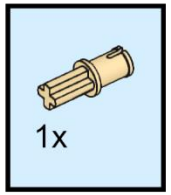


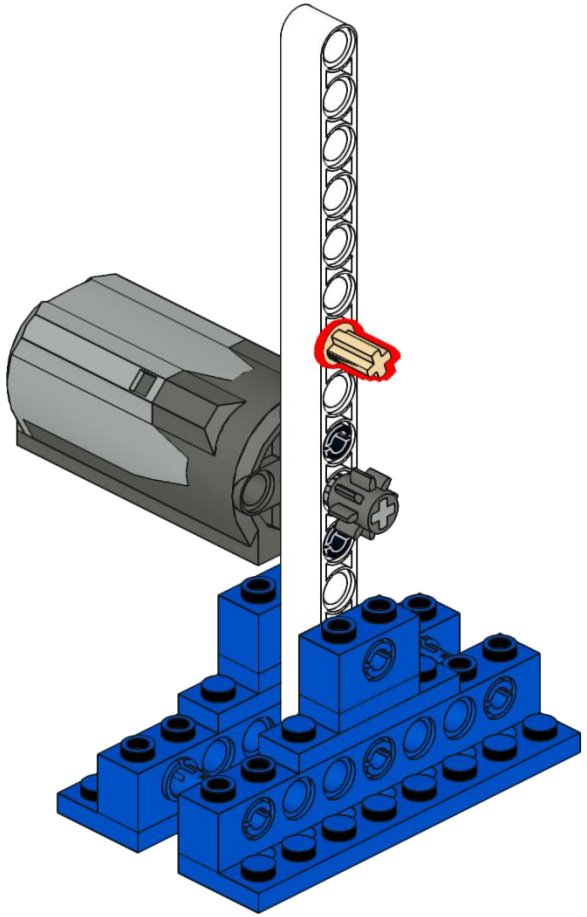


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

16



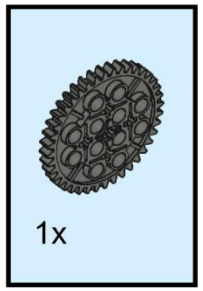


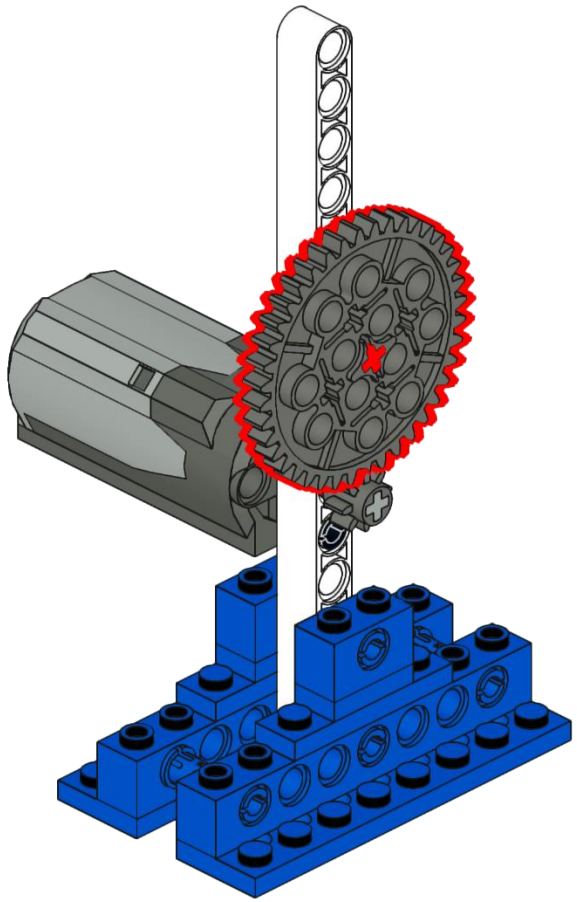
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

17

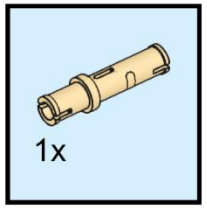


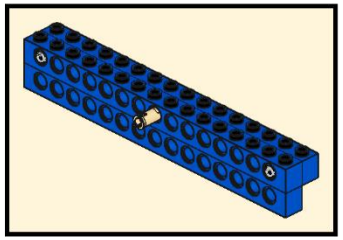


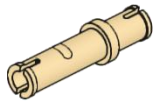
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

18



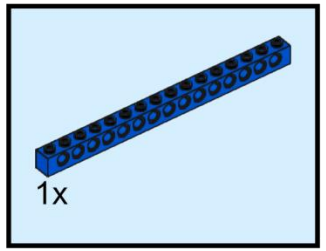


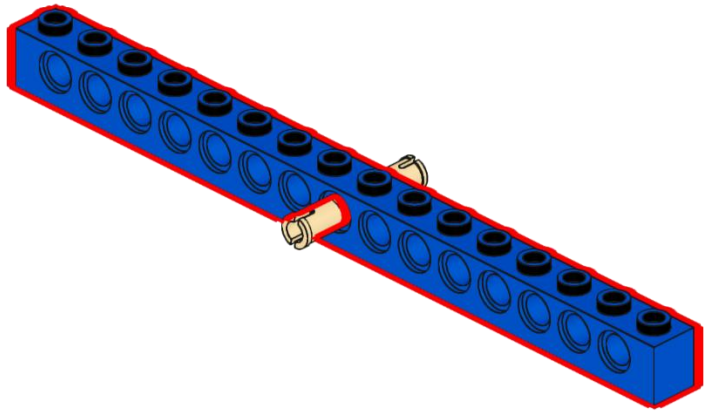


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

19

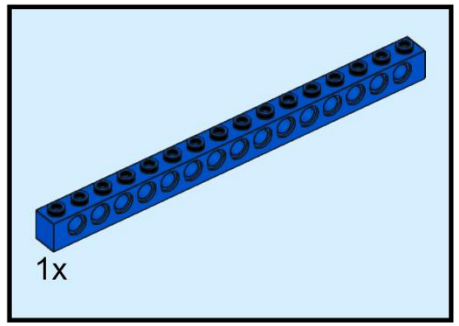


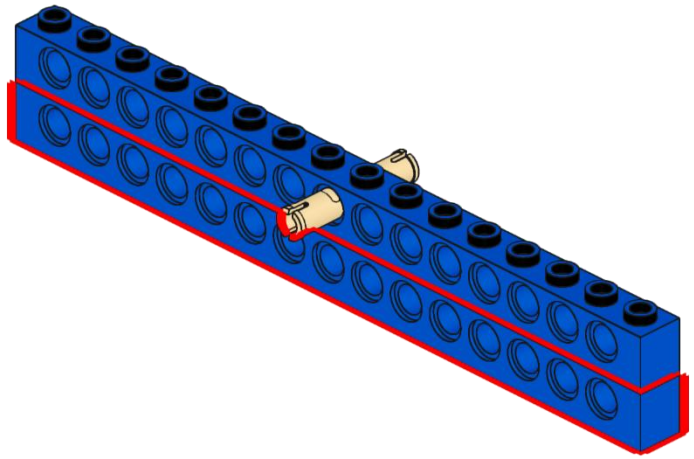


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

20

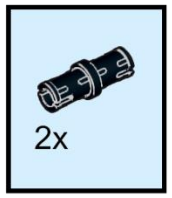


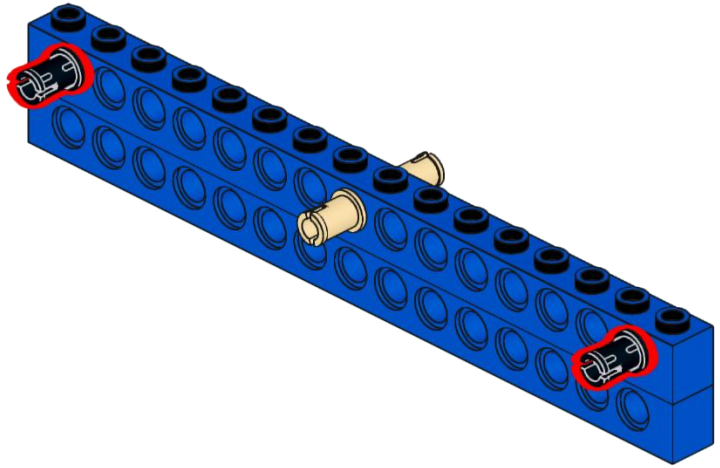


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

21

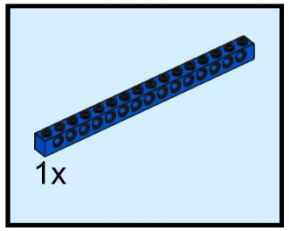


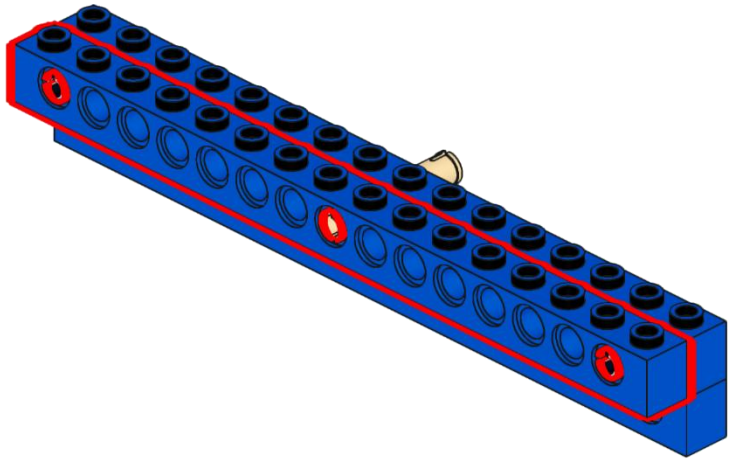


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

22

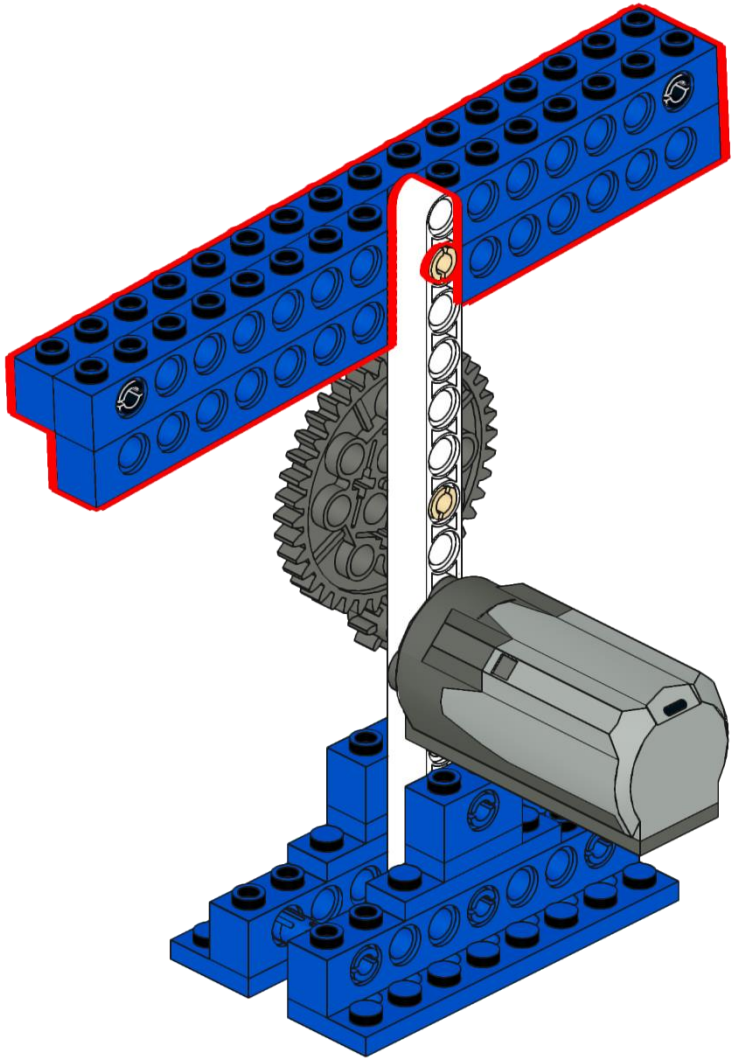




Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

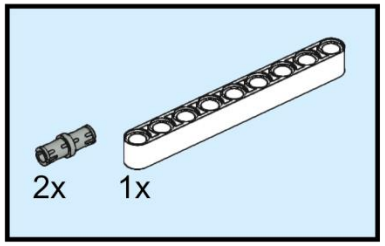
23

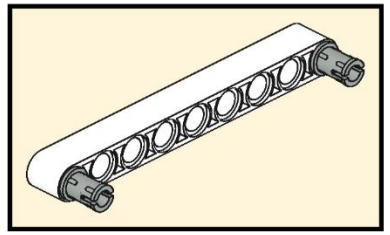


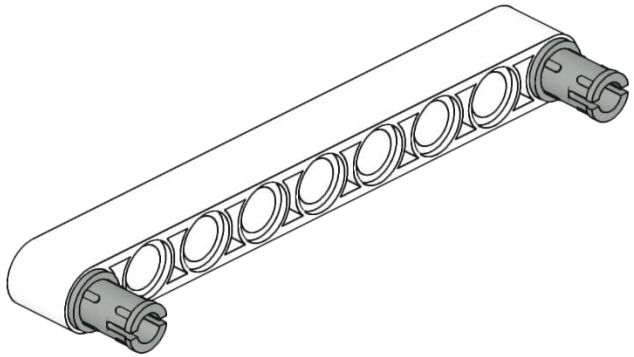
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

24



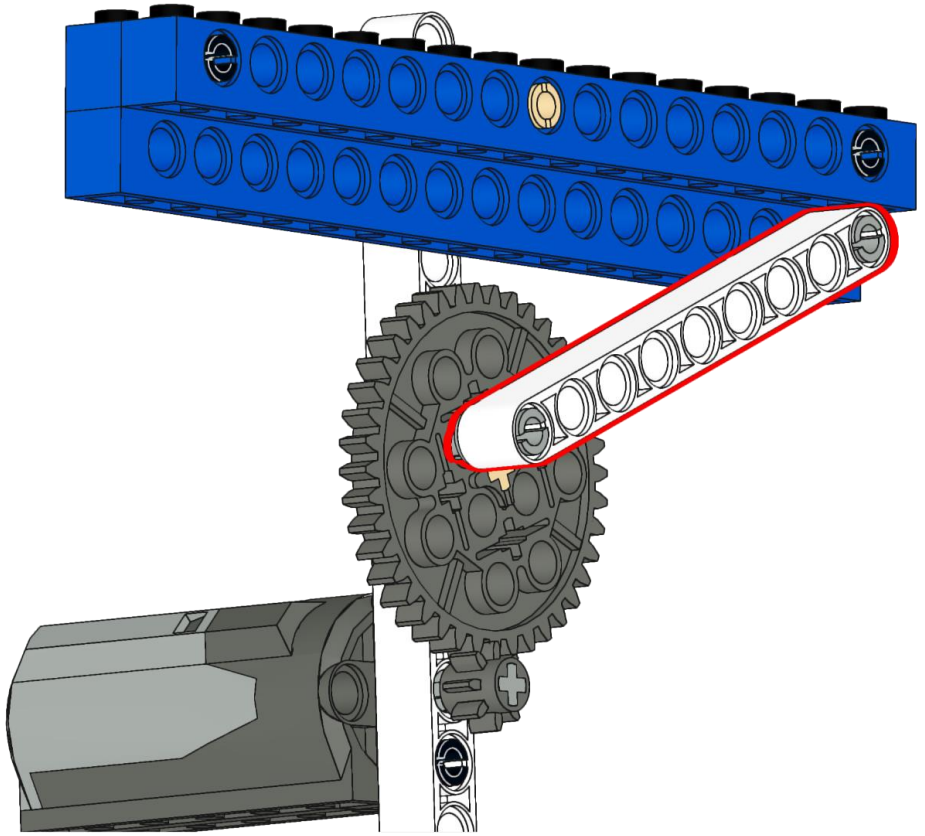




Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

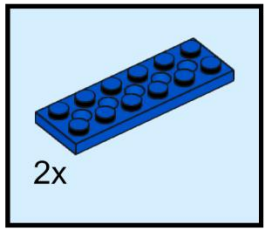
25

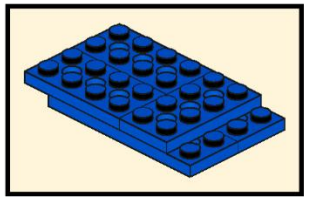


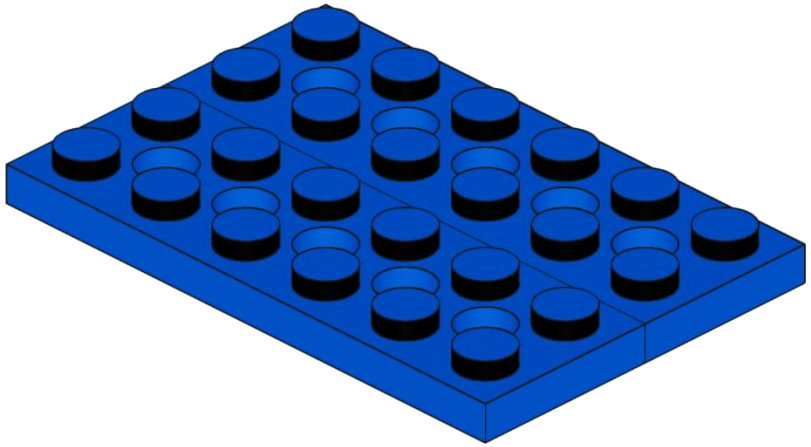
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

26

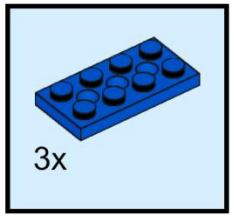


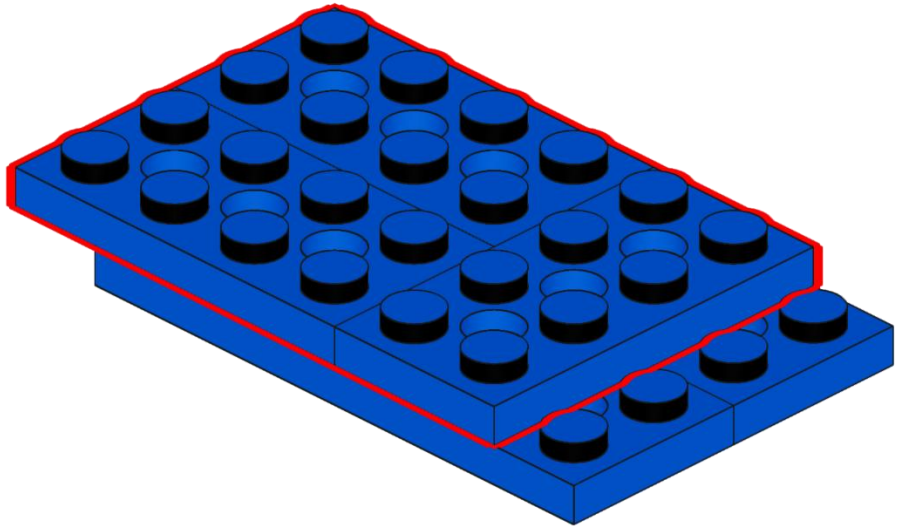




Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

27



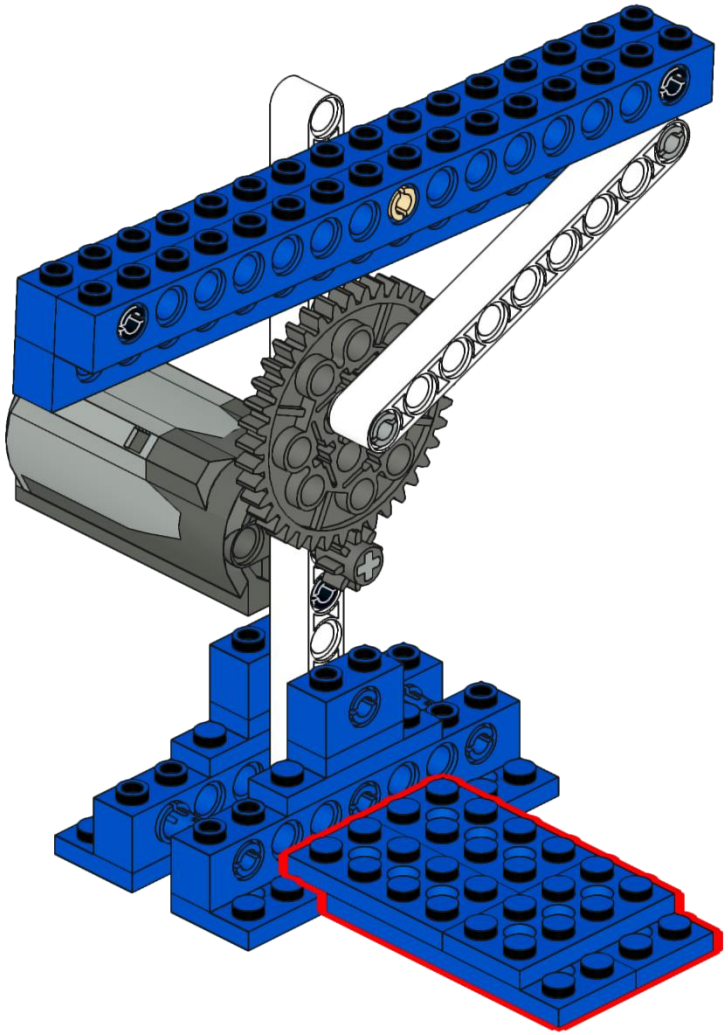


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

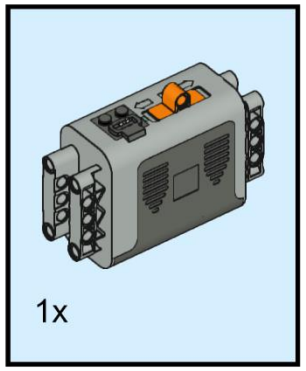
28

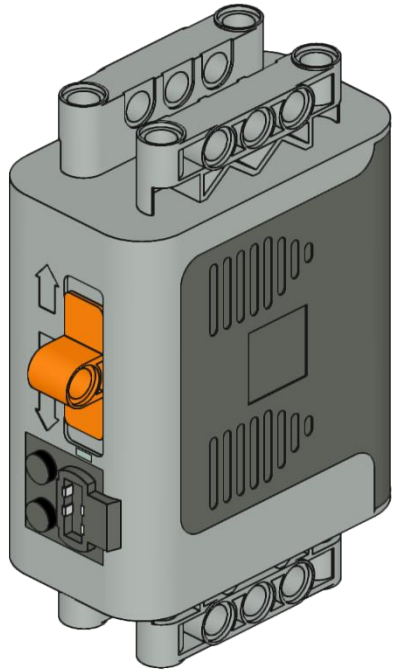


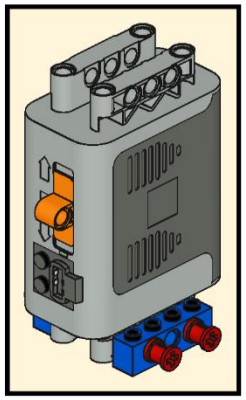
Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

29



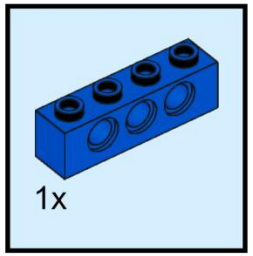


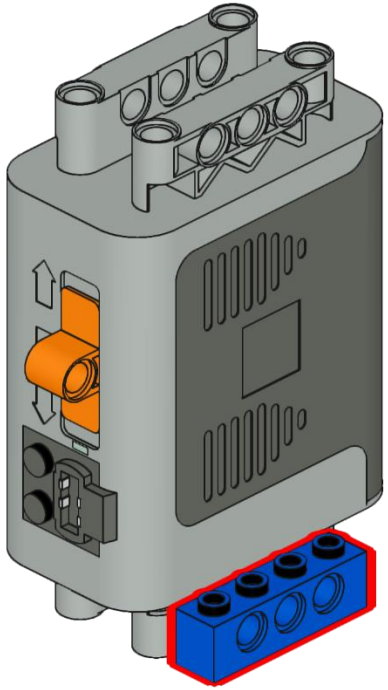


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

30

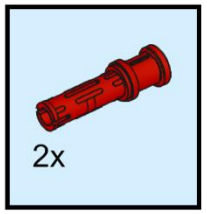


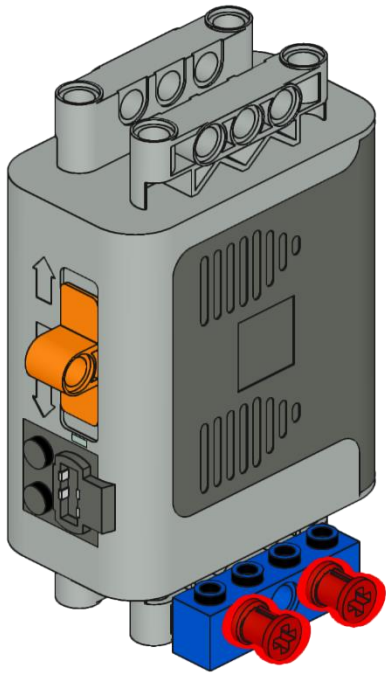


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

31

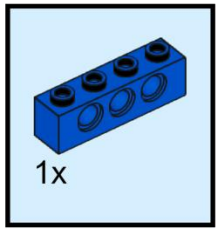


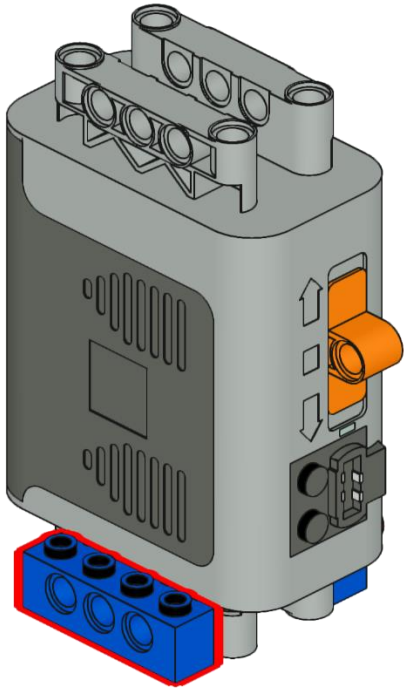


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

32

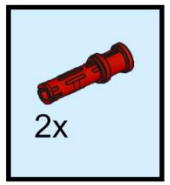


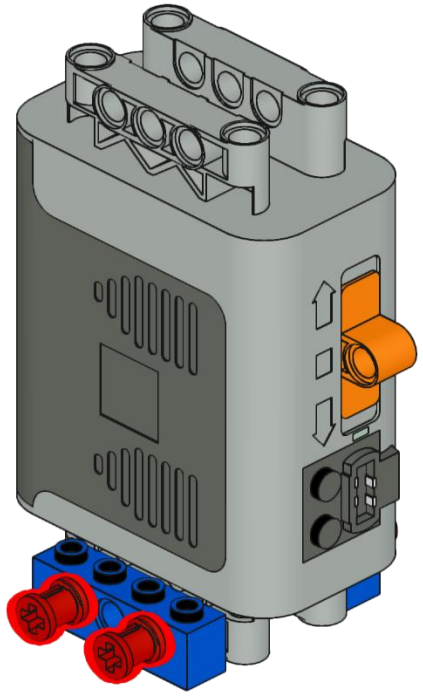


Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

33

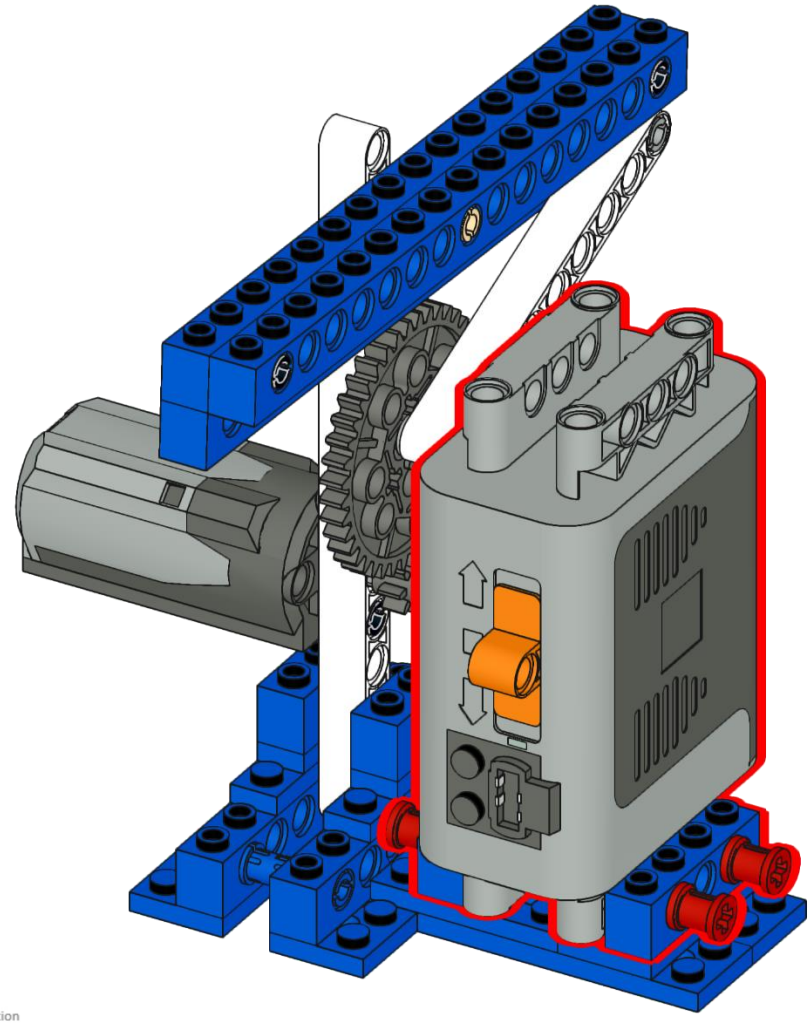




Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

Off-centered motion

34



Erasmus+
Project No.: 2021-1-EL01-KA220-SCH-000023967
Call 2021 Round 1 KA2
KA220-SCH - Cooperation partnerships in school education
STEM Education for Primary Schools
STEM for Youngsters

When you finish your worksheet

disassemble your build

and put all parts in their own place



Erasmus+

Project No.: 2021-1-EL01-KA220-SCH-000023967

Call 2021 Round 1 KA2

KA220-SCH - Cooperation partnerships in school education

STEM Education for Primary Schools

STEM for Youngsters