

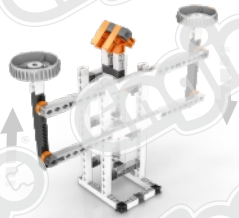
# STEM Mechanics Master Set

## E97.1 QUIZ

The **STEM Mechanics Master set** is the ultimate combination of the main subjects of Simple Machines and Physics, including Levers, Pulleys, Gears, Linkages, Newton's Laws, Energy conversion, Solar Power and Structures. The patented geometry of ENGINO® components allows connectivity to all directions of the 3D space, enabling users to easily create technical models. This unique set enhances creativity and imagination while also teaching a variety of STEM principles. A geared DC motor with a large solar panel is included for animating the ENGINO® builds, converting solar energy to electricity. The set comes with a library of high-precision gears, pulleys and axles for changing speed, force and direction of motion. From this set, besides open projects, students can find digital instructions for 100 working models and amazing animated contraptions such as cars, cranes, bridges!

### Including Themes.

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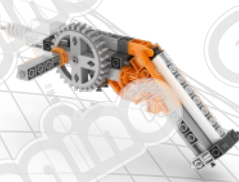
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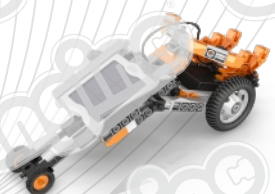
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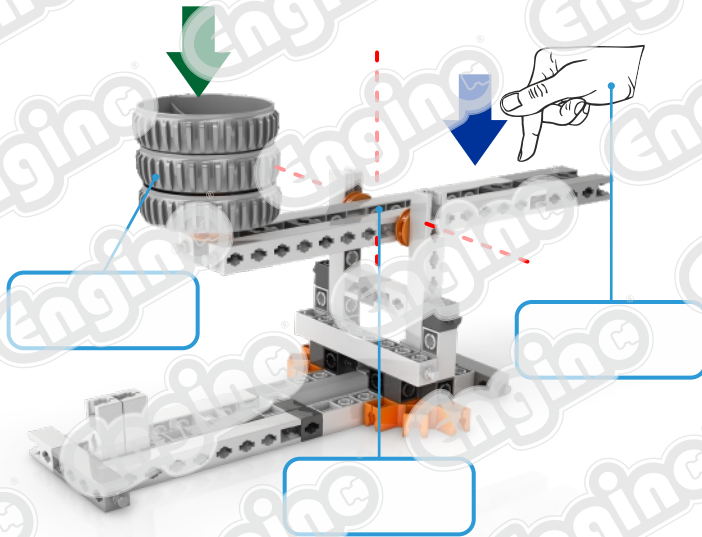
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# Levers & Linkages

## Exercise 1

Fill in the boxes using the words: **load**, **effort**, **fulcrum** (1 point)



What class is this type of lever? Write some everyday life examples of the same class of lever (1 point)

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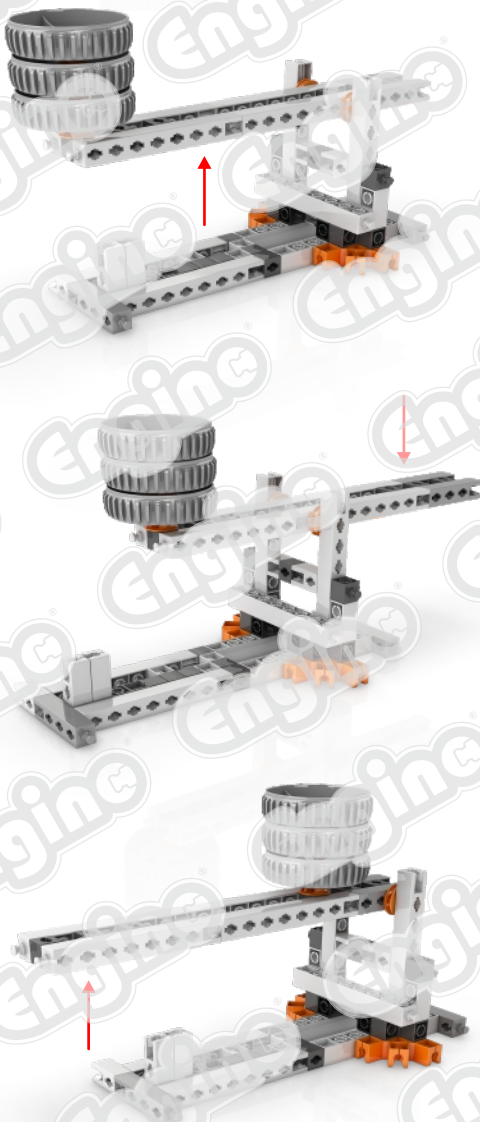
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## Exercise 2

Join the pictures with the correct sentences (1 point)



1 First-class lever

2 Second-class lever

3 Third-class lever



### Exercise 3

Below you can see various devices and tools which we use in daily life. Study the images carefully and write the class of each lever: **first-class**, **second-class** or **third-class**. Then fill in the small squares writing **E** for effort, **L** for load and **F** for fulcrum, at the exact points where they are applied (**3 points**)



### Exercise 4

Complete the gaps using the appropriate words from the box (**2 points**)

load, first-class, second-class, big, fulcrum, gain, effort, third-class, lever, lose.

A ..... is a rigid rod (or bar) that rotates around a fixed point called ..... and can be used for moving heavy objects easily.

The weight of the object that we want to move is called ....., while the force we apply in order to move it is called .....

With the help of levers, we can apply a small amount of effort in order to move a ..... weight. Attention though! What we ..... in force we ..... it in distance.

### Exercise 5

Study the next picture and express the meaning of Archimedes famous saying about levers: **"Give me a place to stand on and I will move the Earth!"** (**2 points**)

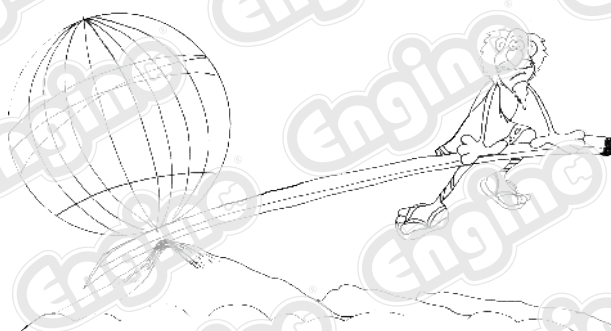
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