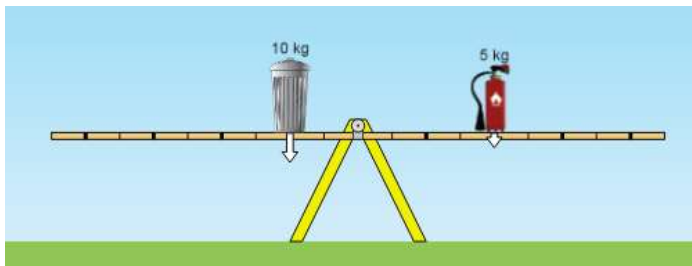


Balance lab - lever law

Name: _____

Date: _____

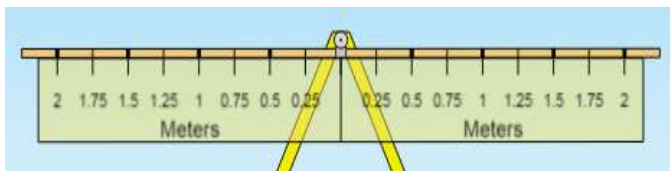
Take a look at the diagram below. It is a seesaw that, with the objects on top, it is in balance:



To calculate the weights of the objects you can use the approximation $g = 10 \text{ N / m}$.

(NOTE: weight is measured in Newtons (N); mass is measured in kilograms (kg))

To know the exact point where they are, you can use the ruler:



How heavy is the wastebasket?

How far from the fulcrum is it?

And the fire extinguisher, how heavy is it?

How far from the fulcrum is it?

And the fulcrum, what force does it make? Where?

Check if the lever law is followed

$$F_1 \cdot d_1 = F_2 \cdot d_2$$

$F_1 =$ $d_1 =$ $F_1 \cdot d_1 =$

$F_2 =$ $d_2 =$ $F_2 \cdot d_2 =$

Is it followed?

EXERCISES:

You have to do the activities proposed below: do the calculations and check the result with the Simulator.

Directions:

Log on to your computer.

Go to the following website:

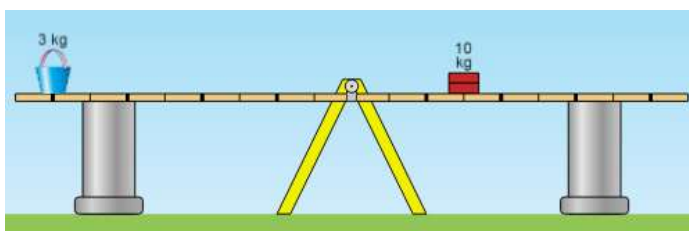
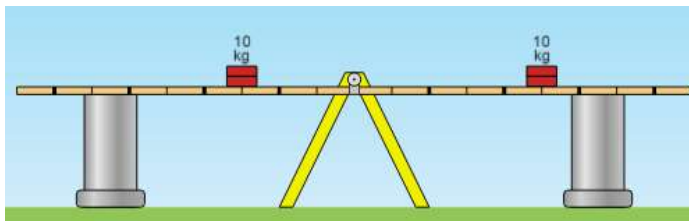
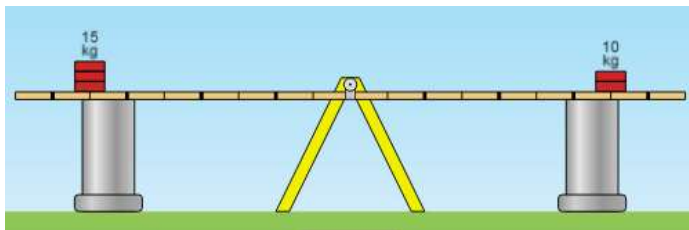
https://phet.colorado.edu/sims/html/balancing-act/latest/balancing-act_en.html

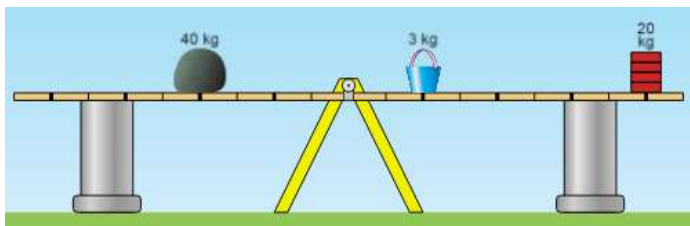
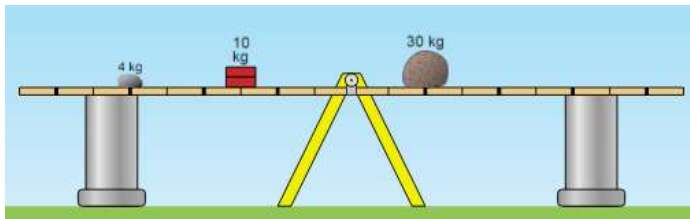
<http://bit.ly/28lm3ts>

Click "Intro".

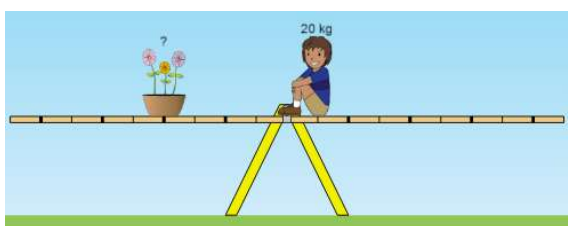
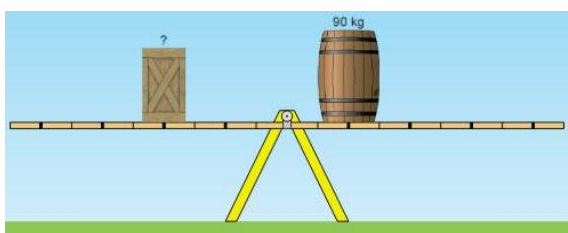
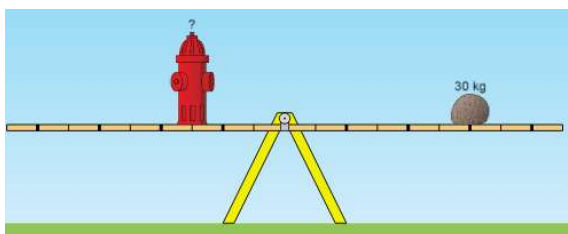
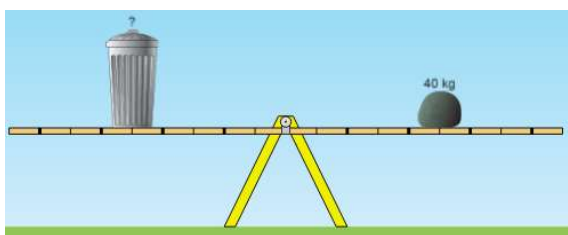
Take a moment to look over the site and find all the different options.

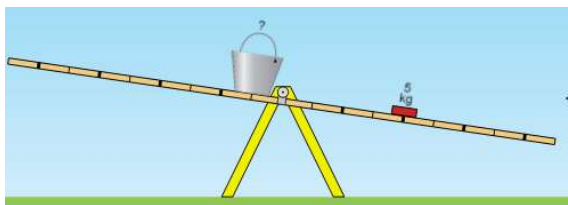
EXERCISE 1: Look at the objects on the seesaw. What do you think will happen when we remove the columns that keep the seesaw horizontal: will it stay in balance or will it lean to the right or to the left?





EXERCISE 2: Calculate the mass of the object





NOTA, no está en equilibrio.

EXERCISE 3: A 60 kg lady brings two 20 and 25 kg creatures to the park. Make the necessary calculations and indicate how all three could be placed on the seesaw so that it stays in balance.