**MECHANISM ACTIVITIES**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Group:\_\_\_\_\_\_\_\_\_\_**

1. The drawing in figure 1 represents a mechanism.

* What is its name?
* If we hang the rope, as it is seen, 5 kg, how much can we lift?

1. The drawing in Figure 2 represents another mechanism.

* What is it called? The triangle represents something. What is it called?
* On one side we have hung 4 Kg. How much can we lift on the other side? (must measure with a ruler).
* Where should you place the support to be able to lift 6 kg.

1. Figure 3 represents another mechanism.

* What is it called?
* The big gear rotates to the right giving 2 turns every second. In what direction does the small gear spin?
* At what speed does the small gear turn? (you will have to count the number of teeth).

1. In the seesaw of a park that measures six meters, It is seated a child (on the right), whose weight is 30 kg, at a distance of 2 m from the fulcrum (point of support). To equilibrate the seesaw we are going to sit a second child (on the left) whose weight is 60 kg. How far from the fulcrum the child of the left will have to sit?



1. In the picture on the right, answer the following questions:

* Which mechanism is being used to lift the weight of the drawing?
* If we know that the weight lifted is 100 kg. How much force we need to do?
* What is the advantage of this mechanism?

1. We have a system of two friction wheels. The first wheel has a diameter of 4 cm and is connected to an engine. The second wheel has a diameter of 8 cm.

* Draw the mechanism. We know that the engine turns in the sense of the clockwise. Write all the data of the problem in the drawing.
* What is the transmission ratio? Write the formula.
* The second wheel rotates with a speed of 1000 rpm What is the speed of the engine?
* Explain the speed variation using the transmission ratio and the drawing.

1. We have a system of two gears. The first gear has 10 teeth and is connected to an engine that turns in the counterclockwise. The second gear has 5 teeth.

* Draw the mechanism. Write all the data of the problem in the drawing.
* What is the transmission ratio? Write the formula.
* The first gear rotates with a speed of 2500 rpm. What is the speed of the second gear?
* Explain the speed variation using the transmission ratio and the drawing.

1. Draw the following examples:

* A belt and pulley mechanism turning in the same direction.
* A belt and pulley mechanism turning in the opposite directions.