ANNEX 10



How does it work?

My animated object: Cam and roller system

VOCABULARY:

CAM: Animated shape of a rotary movement that acts by contact with another shape in order to transmit movement. A cam may be round (exocentric), oval, cylindrical or curved.
Roller: Shape that is pushed by the cam (rod, bar, lever …)

1. Carry out the experiment on the « EXERCISE WITH CAMS » sheet.

MY OBSERVATIONS

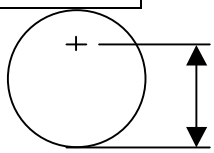
1. What I observe when the cam changes size (diameter).
The bigger the cam, the higher the band rises.

2. What I observe when the cam changes positions.
When the cam moves away from the pivot point in the band of cardboard, the cardboard does not move up as high. When the cam is too close of the pivot, it blocks and can not make a complete turn.

3. You have four lines of the same colour. For these lines, trace a perpendicular line as indicated on the table below. Measure and note the length of the perpendiculars.
The answers depend on the size of the cams chosen.

Measurement of the perpendicular line	From line A passing by point A ☐	From line B passing by point B ☐	From line C passing by point C ☐	From line D passing by point D ☐

What do you notice about the lengths of your perpendicular lines? Explain.
The measurement is the same for all the perpendiculars. This measurement corresponds to the distance between the pivot of the cam and the point furthest from the circle's circumference.



4. If we bring the hole (the pivot) closer to the center of the circle, what will happen with the band of cardboard? It will be less inclined.

5. If the cam was placed above the band of cardboard, the band would remain inclined after the passage of the cam. What could you do to bring it back to its initial position? Make a drawing and explain.

