

Teachers' Guide

Objectives of the lesson

Cognitive objectives

- Students explain how the cam works
- Students design applications of the cam

Emotional objectives

- Students are willing to extend their knowledge and enrich their way of thinking

Psychomotor objectives

- Students collaborate with each other to achieve the objectives of the activity
- Students can communicate effectively with their groups and in the plenary discussion, develop their critical thinking skills and be creative when they are asked to solve a problem
- Students develop fine motor skills
- Students design and build their own construction, having certain characteristics

Introduction to the activity

The activity starts with a question, if and how something can move up and down. Emphasize the answer from the girl, that everything is possible, if only we can find the appropriate way. The teacher suggests using the cam. Refer to the rotational and retrogressive motion, even though the second may be difficult for students to understand it or remember it. Examples of applications of the cam in the industry and in games follow.

Building

The building is short, and each group can finish their own on time

Answers to the worksheet

1. You will describe how the cam works, where the initial rotational motion is converted into retrogressive (up-down or front-back motion)
2. Connect the brick to the external hole of the gear.
3. Connect the cam to the brick (maybe you need a bigger brick) from its upper edge (on the narrow part).
4. Open building. You can show them the picture below for inspiration:

