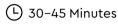
Jump up and cheer!

Build a cheerleader and explore how cams push objects up and down. Make a Minifigure jump up and down! In this lesson, your pupils will explore how pushing on an object can change the direction of its motion and start or stop its movement.









Engage (Whole Class, 5 Minutes)

- Have your pupils look at the picture of the model on their Student Worksheets and predict how the Minifigure will move.
- Ask questions to start them thinking. Here are some suggestions:
 - How do you think the Minifigure will move? (As the gears turn, the cam [sloped purple brick] moves the Minifigure move up and down.)
 - What do you think starts and stops this movement?
- Transition your pupils to the building challenge.

Explore (Individual Work, 20 Minutes)

• Have your pupils work independently to build the Cheerleader model by following steps 1-12 of the building instructions (found in the box).

Explain (Whole Class, 10 Minutes)

- Prompt your pupils to explain how the Minifigure jumps up and down.
- Ask questions like these:
 - What makes the Minifigure jump up and down? (When the small gear turns, the teeth push the big gear to make it turn. The sloped purple brick, which is also called a 'cam', pushes the Minifigure up and down as the big gear turns.)
 - Why can't the Minifigure move up and down when the small gear is turned in the other direction? (The flat side of the sloped brick stops the gear from turning.)

Elaborate (Individual Work, 10 Minutes)

 Have your pupils create drawings, short videos or audio recordings explaining how the Minifigure is moving.

Evaluate (Individual Work)

• Ask each pupil to give an example of a push force that is at work in their model.



Student Worksheet

Jump up and cheer!

Build a cheerleader.

Open the building instructions book.



- Explain how your Minifigure moves.
- Why does it stop moving when you turn the purple gear the other way?

