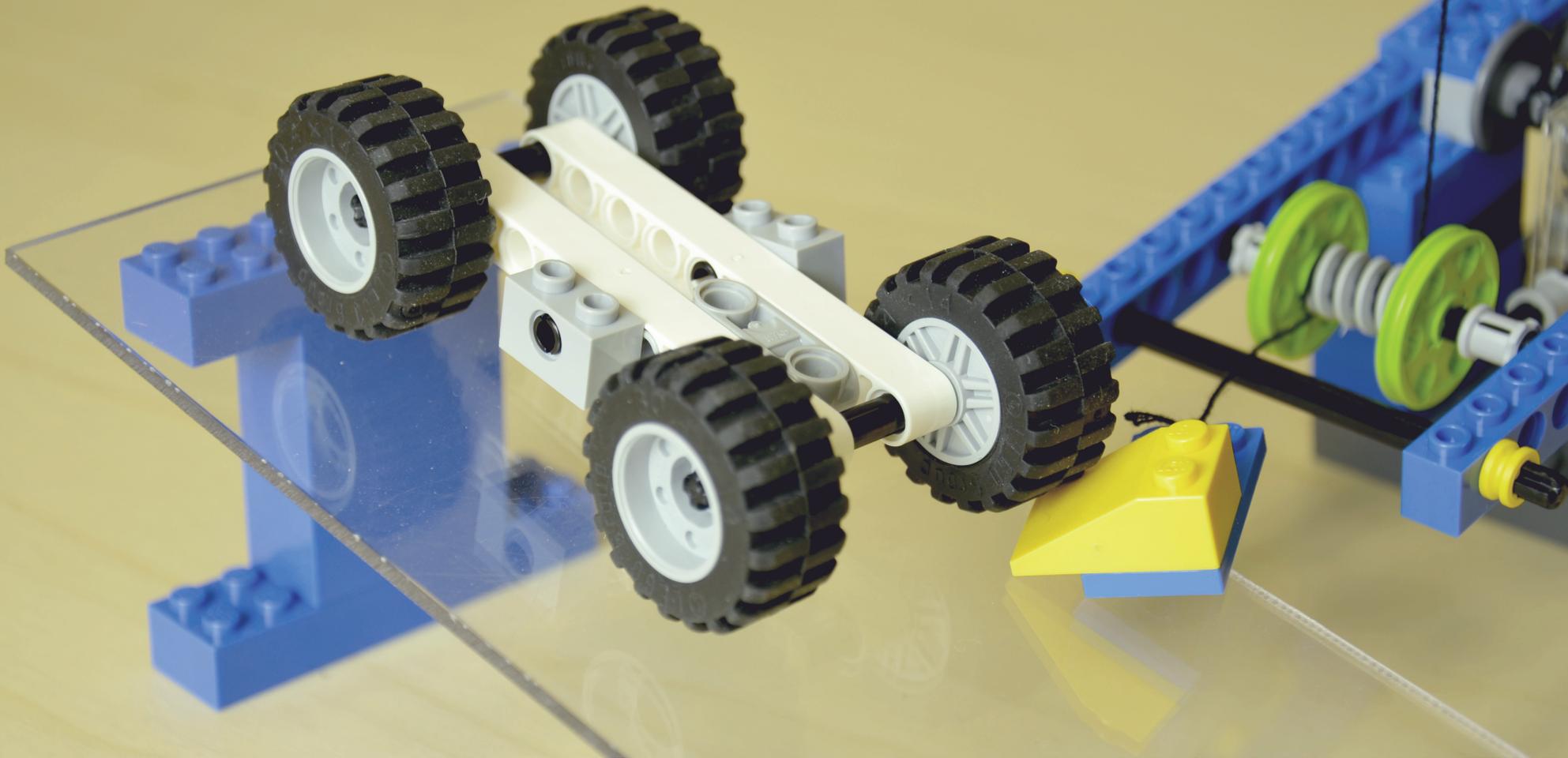


# AT HOME EXPERIMENT



## ACTIVITY 4: WHEEL & AXLE

# ACTIVITY 4: WHEEL & AXLE AT HOME EXPERIMENT

The wheel and axle is a great way to show simple machines in action! Follow this lesson plan to have an interactive experience with wheels and axles.

## At Home Experiment

Watch the Enable Education video for the wheel and axle. With your students, think of an everyday item that they know uses a wheel and axle.

Tell your students that they will be making their own wheel and axles by building their own car.

## Enable Example Car

### Our materials:

- A water bottle.
- Toothpicks.
- 4 water bottle plastic lids.



## Materials/Preparation

- *Axle:* Skewers, pencils, stir sticks, tooth picks or hard plastic drinking straws.
- *Wheel:* Buttons, thread spools, LEGO® wheels, plastic container lids, or water bottle/pop bottle lids.
- *Frame:* Tissue boxes, piece of wood, plastic container, water bottle or small cereal box.
- *Design:* Glue, paint, glitter, stickers, or other art materials.

**Note:** If you are working with wood, you may need woodscrews, screwdrivers and additional adult supervision.

## Enable Education Sense

The most effective approach to inquiry based learning is having children test and evaluate for themselves. Let your students speculate about what kind of materials they could use to build their car, and ask them to search for everyday items for builds.

# ACTIVITY 4: WHEEL & AXLE AT HOME EXPERIMENT

## What we did

1. Take an empty water bottle and make 4 holes that will be placeholders for the axle.
  - Using your materials, brainstorm different ways to select the best place for the axle. Do you need a stronger/ larger axle?
2. Poke the toothpicks through the holes in the water bottle lids
  - Does your car frame sit evenly on your axles? Do you need to adjust their placement?
3. Poke holes in the water bottle lids and poke them through the toothpicks on the outside of the car.
4. Race your car down an incline plane and time how fast it gets from point A to point B.

## Enable Questions

### Enable Engineering Questions

- How did your car perform? Do you think it would go faster with larger wheels? Do you think it would go faster with a longer axle? Do you think the wheel base needs to be longer or shorter?

Find out the answers to these questions by altering your car. Use the same or different materials to adjust your wheels and axles on your car, and experiment with another race.

- Did changing the plan of your car make a difference in the speed?
- Make sure you have written down everything that happened in your experiments.

### Enable Question

- Based on all your new knowledge about wheels and axles, what do you think would be the best way to build a fast car? Why?