

# PROJECT!

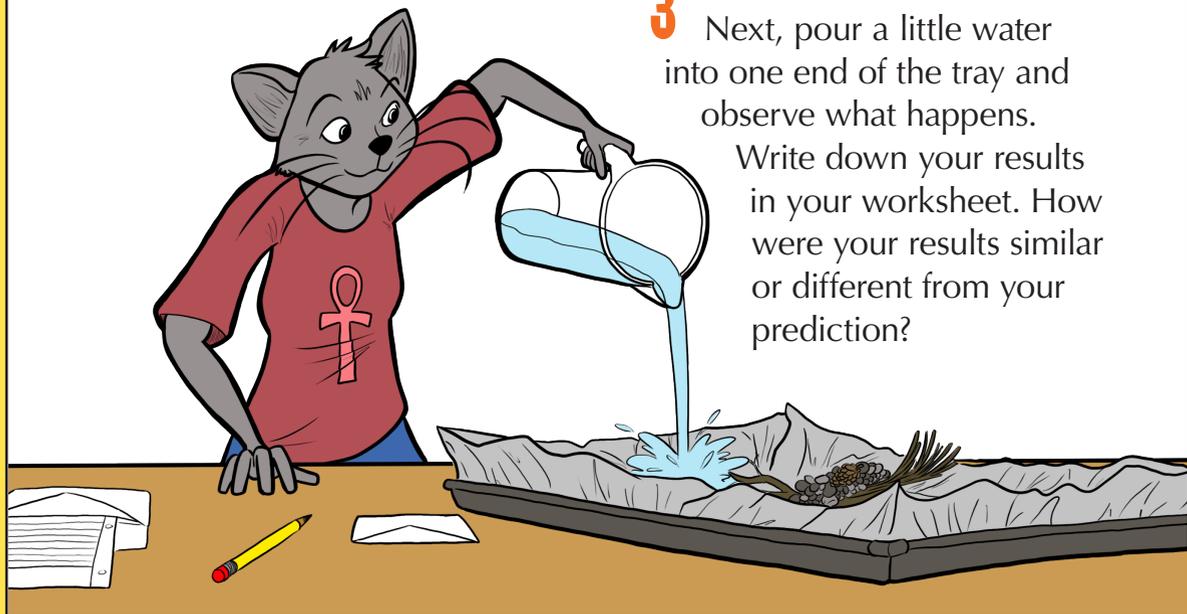
## ENGINEER A BEAVER DAM

Beavers are amazing engineers. Do you think that you can build a dam as well as a beaver? This is your chance to try. Design, create, and test your own model of a beaver dam.

**1** Place tinfoil on the baking sheet or container. Mold the foil high on the sides. This will allow you to add more water to the experiment.

**2** Place your container on a flat surface inside or outside. Create a dam using sticks, pinecones, and pebbles in the center of the tray. What is the problem you are trying to solve? Take a notecard out of your engineering notebook and set up a scientific method worksheet. Write down what you think will happen when you pour water onto the tray.

**3** Next, pour a little water into one end of the tray and observe what happens. Write down your results in your worksheet. How were your results similar or different from your prediction?



### SUPPLIES

- \* tinfoil
- \* baking sheet with deep sides or long plastic container
- \* sticks, pinecones, and pebbles
- \* plastic jug
- \* engineering notebook
- \* pencil
- \* drying cloth
- \* model magic or other modeling clay

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**4** Remove the sticks. Dry your tray with the cloth. Now, rebuild your dam using modeling clay for mud. Write down what you think will happen when you pour water onto the tray.

**5** Pour a little water at the top of the tray and observe what happens. Record your results in your scientific method worksheet. How were your results similar or different from your prediction?

**TRY THIS!** Use the engineering design process to design and build a better dam with some additional natural items, including leaves, bark, and grass. Can you build the dam higher and thicker? Try using more water or building a longer river with tinfoil. Test it outdoors! Keep track of your designs and results in an engineering design worksheet.

## FORCES

There are forces all around you. You can't see them, but you can see what they do. Have you ever kicked a ball, used a remote control, or written on a piece of paper? Then you have used push as a force to move the ball, button, or pencil. Have you ever opened a drawer, played tug of war, or put on a pair of socks? You have used pull as a force to move the drawer, a person, and your socks. What are some other ways you use pushing and pulling forces at school and home?