



## Absorb and Repel

*Investigate how different materials repel or absorb water.*

### Big Idea

Various materials absorb water or repel it, based on what they're made of.

### Illinois Early Learning Standards

<b>10.A.ECb</b> Gather data about themselves and their surroundings to answer meaningful questions.	Children will collect data on the materials they test and track the results, helping to distinguish which materials are absorbent and which are repellent.
<b>10.B.ECb</b> Make predictions about the outcome prior to collecting information, with teacher support and multiple experiences over time.	Before experimenting with the different materials, children will make predictions about which materials will absorb or repel the applied water.
<b>12.C.ECa</b> Identify, describe, and compare the physical properties of objects.	Children will make inferences about why the materials tested had different reactions when water was sprayed on them.

### Materials

All of these items are to test out which absorbs water and which repels water. Swap any that are inaccessible to you with other things your child finds intriguing to test instead.

- **Spray bottle with water**
- **Journal and pen for recording, or recording chart provided**
- Umbrella
- Raincoat
- Cotton shirt
- Sponge
- Piece of light-weight cardboard
- Small stone
- 1 cup soil
- 1 cup sand
- 1 cup flour
- Dish Soap
- Oil
- Feather
- 2 cloth dish towels or hand towels
- Vegetable shortening

### Setup

Provide children with a journal for recordings and predictions, as well as the spray bottle. Have all testing objects arranged so children can test each and record what is absorbent and what is repellent.



## Directions

1. Have children pick out the first material they want to test for absorbency - for example, the sponge. Ask children what they think will happen to the sponge if water is sprayed on it. Have them record and subsequently test their prediction.
2. Create a prediction chart within the journal with the testing items on it and have the children make predictions and record them on their chart. Then, have them test each item and record the results on the chart.
3. Encourage children to compare their predictions to the results and see if there are any conclusions that can be made about absorbency. Which materials were more likely to absorb the water that was sprayed?
4. To extend this experiment further, after testing water, have children put oil on some of the other materials using a paint brush or their fingers. Spray water on the oil covered area to see if the result remains the same. Does the oil change the results for each object?

## Investigation Questions:

- Why do you think those materials are absorbing the water?
- Is there anything that the water mixes with? When it mixes, what does it create?
- Why is that material repelling the water?
- What do you notice about the texture of things that are absorbent or repellent?
- What does the oil do when it comes in contact with the water?
- Does the oil protect other materials from the water as well?

