

## Germ and Soap Mini Challenge Sheet

**Materials:** Bowl of water  
Pepper  
Dish or Hand Soap  
Paper Towels  
Pen and Paper

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

**Scenario:** How do germs stick to hands and what role soap play in keeping germs off hands?

**Question/Issue:**

How do germs:

- 1) Spread?
- 2) Stick to your hands or surfaces?
- 3) What exactly does soap do?

**Design:**

1. Set out a clean bowl and fill it with water.
2. Gently sprinkle pepper on the surface of the water.
3. Keep a few paper towels on hand to keep things clean!

**Brainstorm:**

- What do germs even look like?
- Why are they so small?
- What are different words for “germs”?
- What do you think fat has to do with this?
- How does soap work?
- What is saponification?
- What is static electricity?

**Build:**

1. Place your clean finger into the water with pepper on it.
  - Record what happens when you do that.
2. Now put a drop of soap into the pepper.
  - Record what happens when you do that.
3. Place your clean finger into the area where the soap is on the water.
  - Record what happens when you pull your finger clear.

**Modify:**

- What happens when you use soapy water and pepper?
- Can you see a difference between how hand soap and dish soap work differently?
- Does the type of material the bowl is made of matter?

**Evaluate:**

When you test your pepper germ:

- 1) Record what you THINK is going to happen
- 2) What is the control?
  - Just water and pepper?
- 3) Record what happened
- 4) When you add the soap, what do you THINK is going to happen?
- 5) Now when you add the soap, what happens?
- 6) Record all of that.
- 7) Why do you think that is?
- 8) Make sure you wash your hands!

**Share:**

Share your creation on Social Media!

Tag us on Facebook, Twitter or Instagram @pastfoundation

Use the hashtag #ThisIsPAST or #DesignThinking