

**Please use the following resources to learn about making observations and inferences.**

**Watch this Video:** <https://www.youtube.com/watch?v=Ke1qGciyT7U> (stop at 3:27)

**Answer these questions:**

- What is a “cause” in science? How can this help us learn science?
- What is an “effect” in science?
- How do engineers use the cause and effect questions when they design?

**Activities:** Follow these directions to make your own Mystery Cups.

You will need:

<ul style="list-style-type: none"> <li>• Styrofoam or plastic cups</li> <li>• Scissors</li> <li>• Tape</li> <li>• A lab partner</li> </ul>	<ul style="list-style-type: none"> <li>• Dice (cube)</li> <li>• Nut (hexagon)</li> <li>• Screw (cone)</li> </ul> <p>* you can use other small items</p>	<ul style="list-style-type: none"> <li>• Marble (sphere)</li> <li>• Penny or button (disk)</li> <li>• Paper clip</li> </ul>
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1. Each lab partner prepares one or two of the cups by cutting 4 vertical slits halfway down the sides.
2. Place one of the objects in the prepared cup. Don't let your partner see which object you chose!
3. Fold down two opposite sides to cover the opening of the cup. (see picture)
4. Fold the other two sides down on top of the first 2 sides.
5. Tape the folded sides down with masking tape so that the object is completely hidden. (see picture below)
6. Exchange one Mystery Cup with your partner. Observe the sounds that the object makes when you move the cup around. Think about what is causing the noises you hear. Which partner can be the first to correctly identify the object inside the cup?
7. Optional: Challenge other people to identify the objects in the cups. Which are the hardest for them? Which are the easiest? Why? Think about the cause and the effect of the items moving in the cup.



## Make observations & use Claims, Evidence, and Reasoning!

1. **Claim:** I used cause and effect to guess an object correctly.
  - **Evidence:**
  
  - **Reasoning:**
  
2. **Claim:** Sometimes, using cause and effect can give a wrong answer.
  - **Evidence:**
  
  - **Reasoning:**