

# Goo Worm Investigation

**PSS Kit Number 10**

**Description Goo Worms**

**Kit Contains**

6 Insta-Worm Kits





PINT SIZE SCIENCE

# SCIENCE SPROUTS

## Goo Worm Investigation

### MATERIALS NEEDED:

- Spill Trays
- Calcium Chloride Solution
- Water
- 250 mL Beaker
- Sodium Alginate
- Paper & Pencil (record questions & results)
- Assessment Recording Sheet



**\*This investigation takes preparation. Use the trays to minimize clean up.**

- Before beginning, mix the calcium chloride with the water according to the package directions and store in a container with a lid.
- Have a student pour the calcium solution into the 250 mL beaker. *What does it look like? What does it smell like?*
- Show the students the sodium alginate liquid. *What does it look like? What color is it? What do you think will happen if you mix both liquids together?*
- Have a student squeeze the bottle contents into the calcium solution for 3 seconds. *Are they mixing? What is happening?*
- It takes about 30 seconds for the worm to form. Ask the students to count out the seconds with you. Reach into the liquid, and grab the 'worm.' Allow the students to touch and feel the worm. *Is it still a liquid or a solid? What do you think would happen if you put the worm back into the solution?*
- Compare your results to your predictions.
- The calcium chloride solution can be stored in a container with a lid and reused many times. The Goo Worm can be thrown in the garbage at the conclusion of the activity.

## Explanation of the Goo Worm Investigation:

Adding the calcium chloride to the water creates a type of salt solution. The second liquid that is used is called sodium alginate, which comes from seaweed. When the two are mixed, the calcium ions leave the water solution and replace the sodium ions creating calcium alginate. This creates a polymer, or a long chain, of simple sugars becoming a polysaccharide. This type of reaction is being used today by some chefs in a field known as molecular gastronomy. They can add sauces or juices to the sodium alginate liquid. After dropping it in small amounts into the calcium chloride, they will have flavored, edible gel beads. Do not allow the children to eat the gel. It is never a good idea to teach them to taste or eat science experiments. Make sure to keep the lids on the bottles of solution. Calcium chloride will absorb moisture from the air, making it less reactive in the future. When you are done, pour the gels in the garbage, not down the drain.

**Liquid + Liquid = Solid**



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