



## INSTANT WATER BOTTLE FREEZE SLAM

### SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything while doing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a **CHOKING HAZARD**. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

### INGREDIENTS

- Large Metal Bowl
- Rock Salt
- Ice
- Thermometer
- Refrigerated Bottled Water

### INSTRUCTIONS

**STEP 1:** Fill the large metal bowl 1/4<sup>th</sup> of the way with ice. Pour a cup of rock salt in the bowl. Mix the ice and salt. Describe and classify the ice and salt by their observable properties before and after mixing.

**STEP 2:** Place the refrigerated bottled water into the bowl. Completely cover the bottled water with ice and salt.

**STEP 3:** Insert the thermometer into the ice. Closely watch the thermometer. Once the thermometer reads 16°F, wait 15 minutes, and then carefully remove the bottled water.

**STEP 4:** Slam the bottled water, upright, onto a flat surface and observe. Describe and classify the water by its observable properties before and after you placed it into the ice and salt.

### EXPLANATION

The lack of impurities in the bottled water allows the water to supercool. Once you slam the bottled water onto a flat surface the supercooled water molecules form a crystal in a process called nucleation. This creates a chain reaction, causing the bottled water to go from a liquid to a solid.



### SCIENCE BACKGROUND

Matter is anything that has mass and takes up space. Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. Different properties are suited to different purposes. A great variety of objects can be built up from a small set of pieces.

### I CAN STATEMENTS

- ✓ I can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

### NEXT GENERATION SCIENCE STANDARDS CONNECTION

2 – Structure and Properties of Matter I Patterns