

### Inquiry Question

Can you use orange juice to turn a liquid into a solid?

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



When we take ice cubes out of the freezer, they melt at room temperature. That is because it reached its melting point.

We know that with enough heat a solid can change into a liquid.

In this case we get to see the transition between a solid to a liquid and then back to a solid!

Think about what happens to each particle or atom of the orange juice as it melts and then freezes.

## General Instructions

Be careful as the orange concentrate can get sticky when it is melting. Work through the instructions under hints and ideas, the worksheet can be done as a reflection.

### Materials you'll need:

- Can of frozen orange juice
- Pitcher
- Large spoon
- Water
- Paper cups
- Wooden craft sticks

### Hints and Ideas

**Step 1:** Open a can of frozen orange juice and spoon it into a large pitcher. Touch the frozen juice to feel that it is both solid and cold.

**Step 2:** Add water according to the package directions to make orange juice.

**Step 3:** Fill several paper cups about 2/3 of the way with orange juice.

**Step 4:** Put a craft stick into the liquid in each paper cup.

**Step 5:** Being careful not to spill, put the cups of juice into the freezer.

**Step 6:** Check them after two hours. Can you gently pull out the craft stick, or has the liquid orange juice frozen solid around the stick?

**Step 7:** Once the orange juice has frozen, peel off the paper cups. You and your friends can enjoy a frozen treat!

### Project Submission

Attach both a picture of your popsicle and the worksheet attached.

Can you use orange juice to turn a liquid into a solid?

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

<b>Before</b>  (When you first took the concentrate out of the freezer draw what it looked like)	<b>During</b>  (When you mixed it with water what did it look like)	<b>After</b>  (After you froze the orange juice what did it look like)
Draw what the particles would look like below:	Draw what the particles would look like below:	Draw what the particles would look like below: