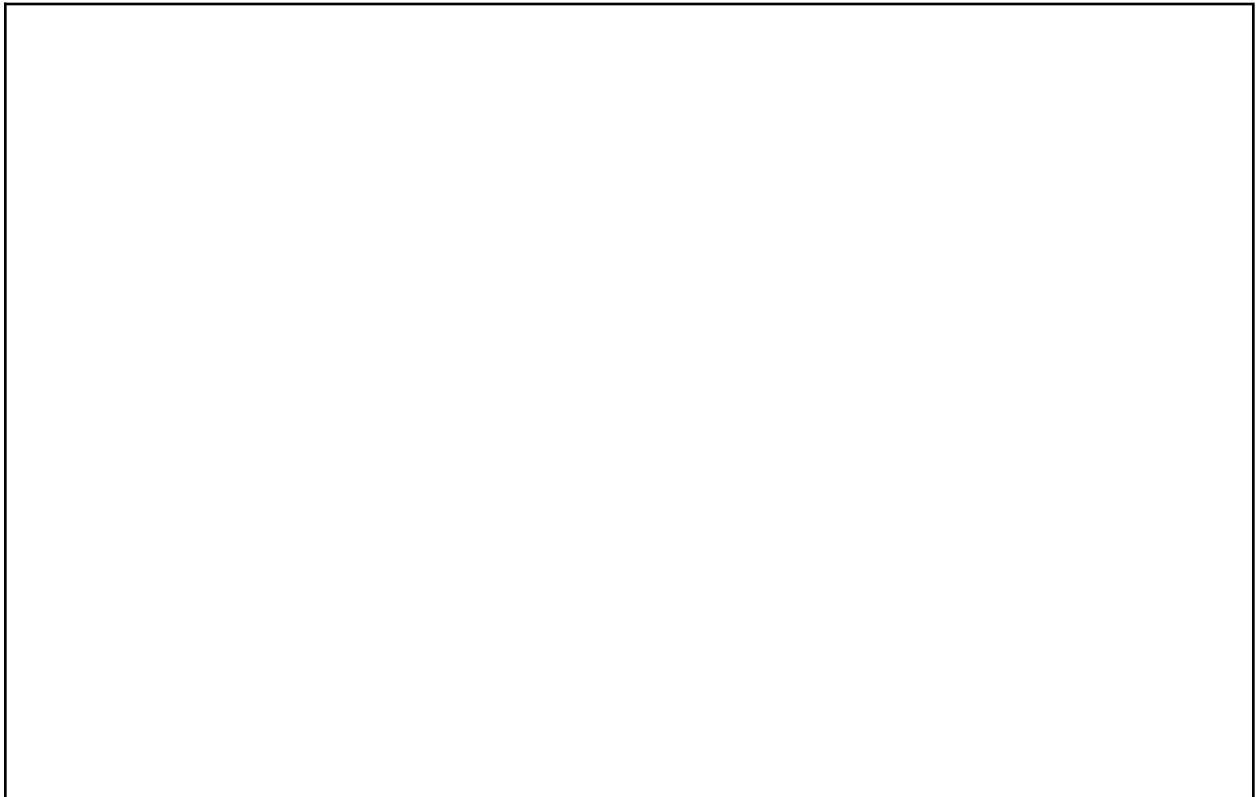


The Ice Cream Explosion

Describe the crime that you need to solve:

Look around the crime scene. Write or draw about any clues you notice.



I think that _____
_____.

My evidence is _____

_____.

Password for Level 2: _____

Interview the Witnesses!

Name of Witness	Important Clues I Notice	Questions I Now Have

Now, I think that _____
_____.

My evidence is _____

_____.

Password for Level 3: _____

Make a prediction!

Write or draw what you think will happen in this science activity.

Try It Out!

Write or draw what actually happened in this science activity.

Science ideas that I learned: _____

Watch the Video.

Science ideas that I learned: _____

Play the Simulation.

Find out what happens to matter when it changes from a solid to a liquid to a gas.

1. Go to https://phet.colorado.edu/sims/html/states-of-matter-basics/latest/states-of-matter-basics_en.html.
2. Choose **States of Matter**.
3. You can click on the dots next to the PhET logo to make the simulation full screen.

To set up the simulation, click on the thermometer to change it from **Kelvin** to **Celsius**. Use the menu in the top right corner to change the type of matter. Click on the buttons on the right side to change the state of matter.

Draw sketches to complete the chart.

Matter	Solid	Liquid	Gas
Neon			
Argon			
Oxygen			

I noticed _____

What happens when you add or remove energy? Use the slider to change the temperature.

I noticed _____

_____.

Click on the **Phase Changes** icon on the taskbar below the energy slider. You now have a new tool: the air pump. You also have a new measurement tool: the pressure gauge.

Use the energy slider to add energy to the Neon. What happens to the pressure?

I noticed _____

_____.

Play with the different tools on the page. Which things **increase** the pressure (make it go up)?

I noticed _____

_____.

Put It Together:

When a solid is heated, the molecules (check one)

- spread further out.
- get closer together.
- do not do anything.

When a solid is heated, the molecules (check one)

- move faster.
- move more slowly.
- do not do anything.

If a substance inside of a closed container is heated, the pressure (check one)

increases (gets higher).

decreases (gets lower).

does not do anything.

If the pressure is too high, the container might (check one)

disappear.

explode.

nothing happens.

Solve the Case!

I think that _____

_____.

This is the evidence that supports my claim: _____

_____.

My evidence supports my claim because _____

_____.

Password for Level 4: _____

Reflect on the Case:

How did your thinking change over the course of this investigation? _____

What clues were the most important to help you solve the case? Explain. _____

What was the most important thing you learned while working on this case? _____

How can you use what you learned in your own daily life? _____

How can you share this information with others? _____
