*NAMES:*

*WEBQUEST FOR PHASE CHANGES OF MATTER*

QUESTIONS TO MAKE YOU THNK?????? TRY TO ANSWER THESE 2 QUESTIONS BEFORE YOU BEGIN DOING YOUR RESEARCH.

1. A family from Minnesota turns off the heat and flies to Florida for a winter holiday. When they come home, all of their water pipes have burst. What do you think happened?

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2. A snowplow drops salt on the roads to melt the ice. How does this work?

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**Section 1:**

<http://www.chem.purdue.edu/gchelp/liquids/character.html>

In which phase are the molecules held rigidly together? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In which phase do molecules move freely? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In which phase are the molecules held in a define shape? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In which phases do the molecules take the shape of their container? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 2:**

Predict: Based on your prior knowledge, predict the following:

At what temperature will water change from a liquid to a solid? (Freeze) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

At what temperature will water change from a solid to a liquid? (Melt) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

At what temperature will water change from a liquid to a gas? (Boil) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

<http://www.dummies.com/how-to/content/the-changing-states-of-solids-liquids-and-gases.seriesId-168208.html>

Investigate: Use the website above and read about phase changes. Answer the questions below.

At what temperature does water freeze? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ -This is the freezing point

At what temperature does ice melt? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - This is the melting point

At what temperature does water boil? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - This is the boiling point

If you watch the temperature as ice melts, what do you notice about the temperature while water is in the process of melting?

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Does the temperature change as any of the phase changes are occurring? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 3:**

<http://www.inquiryinaction.org/chemistryreview/states_of_matter/>

If you put food coloring in cups of hot and cold water, the food coloring mixes faster in the hot water than the cold. Why does this happen?

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**Section 4:**

<http://antoine.frostburg.edu/chem/senese/101/solutions/faq/why-salt-melts-ice.shtml>

Looking at the particles in motion, at 0 degree Celsius.

What do you notice about the particles on the left, right and in the middle of the simulator? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Change the temperature to 20 degrees Celsius. What do you notice? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Change the temperature to 100 degrees Celsius. What do you notice? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain how temperature is related to the motion of the molecules. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Propose a hypothesis: Based on what you have observed, explain why you think phase changes occur.

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Look back at your answer for #2 in Questions that make you think and make sure you know why salt melts ice based on the information you just read on this website.

**Section 5:**

Visit [www.brainpop.com](http://www.brainpop.com) and watch the video on matter changing states. (The UN is ims

and the pw is icsd).

List 2 things you learned from the video:

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 6:**

Visit these two sites and play around to learn more about matter changing phases.

<http://mutuslab.cs.uwindsor.ca/schurko/animations/waterphases/status_water.htm>

<http://www.crickweb.co.uk/ks2science.html#changingstate>

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