

Name:

Date:

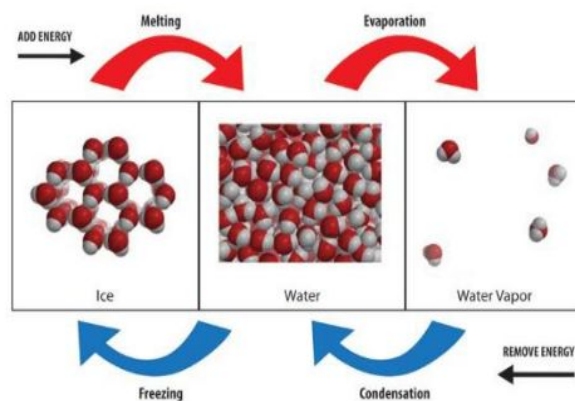
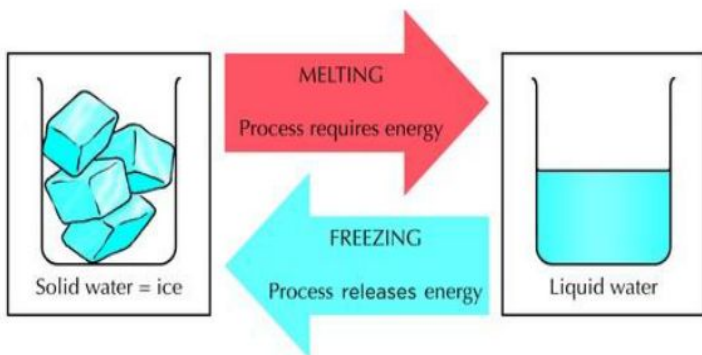
Melting Magic: Snow Ice Science

When there is snow outside, it is a great time to do a science experiment! With this experiment, you will develop greater understanding of science and molecular changes/changing states when melting occurs. You will be following the scientific method for this experiment.

*If we do not have snow AMI, do AMI DAY 2.

Key Concepts

- Melting is a process that causes a substance to change from a solid to a liquid.
- Melting occurs when the molecules of a solid speed up enough that the motion overcomes the attractions so that the molecules can move past each other as a liquid.

**Experiments are about learning science and having fun! So, let's get started:**

1. Read over this entire handout.
2. Think about how snow and ice naturally melts, think about where you will have the jars placed, think about what will most likely happen as time passes, etc.
3. Read all instructions and complete the attached Scientific Method Worksheet and experiment question.

For extra help: watch these video clips online if you have internet access.

http://www.middleschoolchemistry.com/multimedia/chapter2/lesson5#ice_and_water

Materials:

- 3 matching jars with lids (mason jars are great, but can be any similar type of jar or container with a lid)
- Water
- Ice cubes
- Snow

Directions

1. Fill the first jar with water and put on the lid. The lid prevents evaporation and mishaps. This jar is your control group for this experiment. You are working on developing your understanding of scientific process and using a control is part of that process. The control doesn't change.
2. Fill the second jar with ice cubes. Use cubes, not shaved ice. Secure the lid.
3. Go outside and fill the third jar with snow. Pack it with as much snow as possible. Secure with a lid. ***If there is not enough snow on the ground to collect, you may use shaved or finely crushed ice prepared in a blender. If you do not have enough snow or a blender, just proceed with the two previous jars (filled with water and ice cubes).
4. Now set the three jars with secure lids in a safe place and see what happens over time.

The Scientific Method

Step 1: Ask a question. It should be a question about melting snow or ice cubes. something you have observed or wondered about (rate, amount of time, etc). Begin with how, what, when, who, which, why or where. *Example: Why does ice melt faster when salt is applied?*

*The above example is only an example. Your experiment question should relate to the specific experiment in this lesson. Do NOT use the above example as your question for your experiment as you are not using any additives (sugar, salt, etc). Your experiment uses only water, ice & snow.

Step 2: Do some research. See what others have already found out about your question (if you have access to internet). If not, go on to Step 3.

Step 3: Formulate an hypothesis. What is your prediction or guess as to what will be the results of your experiment? It must be measurable and answer your original question in Step 1. *Example: I think a combination of salt and ice will melt faster than ice only as salt lowers the freezing point of water.*

Step 4: Conduct your experiment. Fill your three jars and wait.

Step 5: Record and analyze results. Once the experiment is complete, look at your results (data) and see if it supports (true) or disproves (false) your hypothesis.

Step 6: Draw your conclusion. Write a sentence summarizing what you found out as a result of your experiment.

MELTING MAGIC: SNOW ICE SCIENCE WORKSHEET

THE SCIENTIFIC METHOD WORKSHEET

ASK A QUESTION?

MAKE A HYPOTHESIS:

TEST THE HYPOTHESIS (EXPERIMENT):

Materials:

Procedure:

RECORD THE RESULTS:

CONCLUSION:

DID THE EXPERIMENT PROVE OR DISPROVE YOUR HYPOTHESIS?

PROVED

DISPROVED