



States of Matter Lesson 1: “The Solve” Student Handout

I. Watch the Mosa Mack Mystery.

Either on your own, in a small group or as a class (your teacher will let you know), watch Mosa Mack’s episode on States of Matter. Then, fill out the questions below. Include a time code in your answer as evidence of where you found your answer.

Name: _____

Date: _____

Episode Questions

1. What is the birds’ first piece of evidence against humans, which occurs during Winter?

2. What is the birds’ second piece of evidence against humans, which occurs during summer?

3. Billy, Dullis, and Mosa observe the lake water as a liquid. What are at least three observations they make? Draw what the water molecules look like under the microscope.

4. How do the molecules differ under the microscope when it becomes winter? Draw them. What state is the water in at this time of year? (Hint: the common word is “ice” for water in this state!)



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5. What is the “white tar”? What causes it every year?

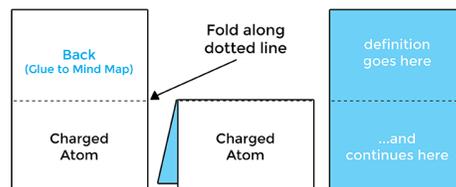
6. What happens to the liquid propane when it hits the warmer air? Draw what the molecules look like under the microscope.

7. Help Mosa solve the mystery. Where is the water from the lake going during summertime?

II. Vocabulary Activity

Note: Your teacher will tell you whether you will complete this activity [online here](#), or offline by following the instructions below.

- Using the materials at your table, cut out your vocabulary cards along the **solid lines**.
- Write the definitions on the back of the cards. Then, match the vocabulary word with the correct picture on the “States of Matter Mind Map.” When you’re ready to glue, raise your hand so you can check your Mind Map with your teacher.
- Fold along the dotted line on each vocabulary card to create a flap. Put glue **ONLY** on the hinge of your vocabulary cards (the word should be on top). **You should be able to open the flap to see the definition and the picture underneath.**
- Discuss with your group:
 - Brainstorm: What are some ways you know solids, liquids, and gases differ?
 - Can a solid, liquid, and gas still be made up of the same molecules?
 - How does particle motion differ in a solid, liquid, and gas?

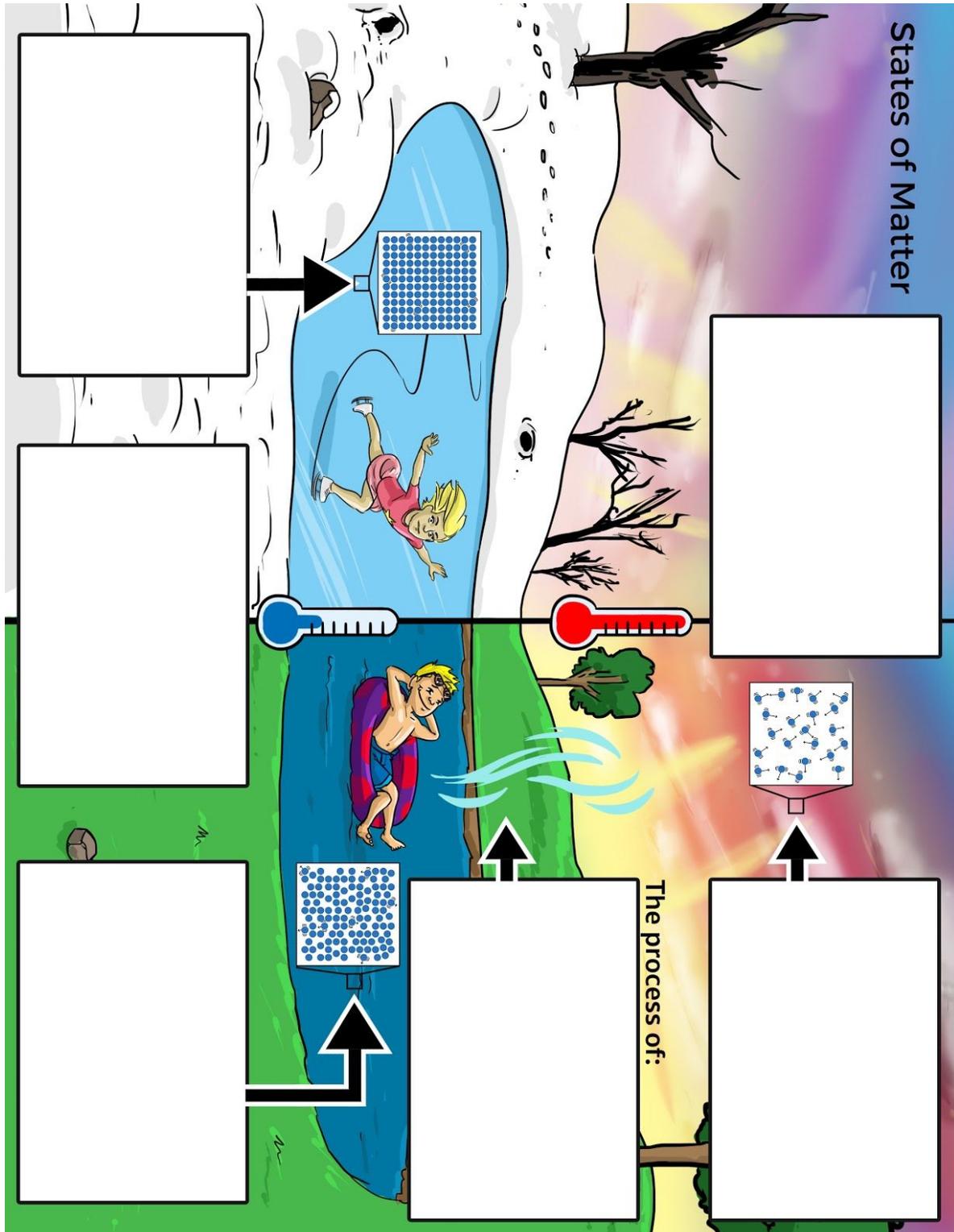




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States of Matter Vocabulary Mind Map





States of Matter Vocabulary Cards:

<hr/> Evaporation	<hr/> Freeze	<hr/> Melt
<hr/> Gas	<hr/> Solid	<hr/> Liquid

States of Matter Vocabulary:

- Liquid: a state of matter in which molecules move freely while remaining in contact
- Solid: a state of matter in which molecules vibrate in fixed positions
- Gas: a state of matter in which molecules are in constant random motion
- Melt: to change from a solid to liquid state
- Freeze: to change from a liquid to solid state
- Evaporate: to change from a liquid to gas state



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III. Quiz: Check for Understanding

Complete the exit ticket below *or* you can take the quiz online!

Name: _____

Date: _____

- Which of the following describes a liquid?
 - The molecules are tightly packed.
 - The molecules do not move.
 - It can take the shape of whatever container it is in.
 - It is invisible.
- What process describes water going from a solid to a liquid?
 - Freezing
 - Melting
 - Evaporating
 - Sublimating
- Which of the following does **not** describe a solid?
 - The molecules slide past each other.
 - The molecules are tightly packed, vibrating slightly.
 - Ice is an example.
 - It expands larger than its liquid form.
- What happens to the motion of molecules when they are heated?
 - They move faster.
 - They move slower.
 - They stay the same speed.
 - The motion doesn't change; there are just more molecules.
- Which of the following is true about when the liquid propane transformed into a gas? **Choose all that apply.**
 - The warmer temperature outside caused it.
 - The process is called freezing.
 - The molecules spread farther apart.
 - The process is called evaporation.