



Climate Change 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 Climate Change. 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. At the beginning of the mystery, why was Mosa Mack getting calls from around the world?
2. What did Mosa Mack and her team learn at the National Weather Service about sea levels?
3. What did Mosa Mack learn while looking at the glacier in Alaska? How does that impact sea levels?
4. The scientist in Alaska told Mosa that in addition to the melting glaciers, there were other factors responsible for causing the sea levels to rise. What experiment did the scientist do for Mosa Mack and what did it show?
5. In about 100 years, the average temperature rose a little less than one degree. An increase of one degree didn't sound like much to Dullis, the sloth, but the scientist was more concerned about this. Why?
6. Methane, nitrous oxide, and carbon dioxide are examples of what types of gas?



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7. How do greenhouse gases work?

8. Mosa notices that since the turn of the 20th century, the amount of greenhouse gases in the atmosphere have been rising because of an increase in industry, agriculture, transportation, and electricity. She noticed they all use fossil fuels. How do fossil fuels affect greenhouse gases?

9. What did Mosa Mack figure out at the end of the mystery? Why was the atmosphere warming?



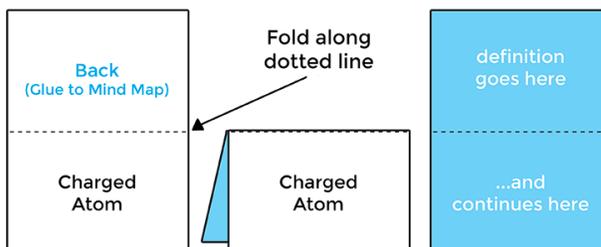
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II. Vocabulary Activity

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

1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**. Note: Do not cut at the dotted lines.



2. Fold the cards at the dotted lines.

3. Write the definition of the term on the inside of the card using the definitions below.

4. Use the clues from the Mind Map images, definitions, and vocabulary terms to place the cards in the correct location in the Mind Map, explaining your thinking to group members as you go.



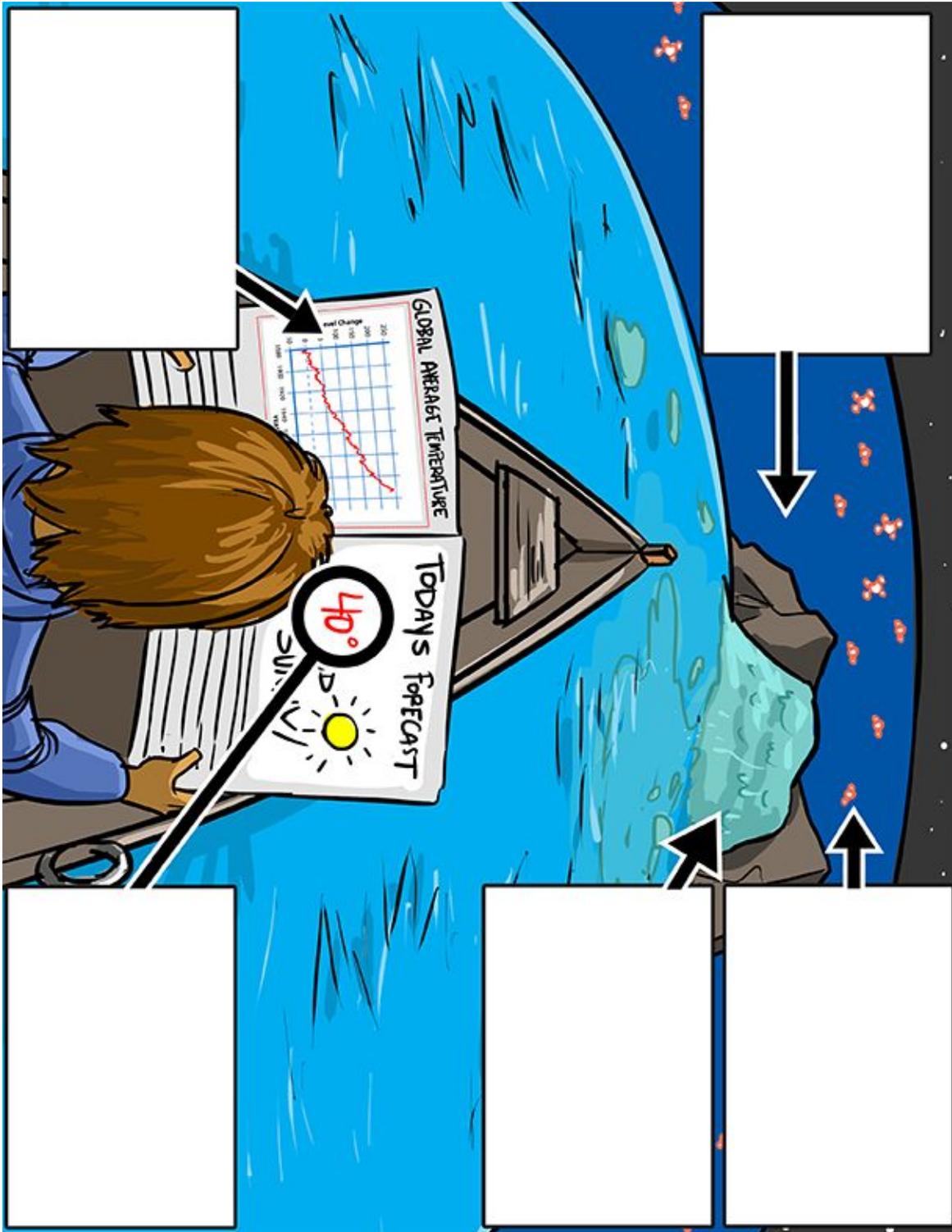
5. When you're ready to glue or tape, raise your hand so you can check your Mind Map with your teacher.
6. Use glue or double-sided tape to connect the back of the vocabulary card to the correct place on the Mind Map.



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Mind Map





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<hr/> Greenhouse Gas	<hr/> Atmosphere	<hr/> Temperature
<hr/> Climate	<hr/> Melting	

Vocabulary

Greenhouse Gas: A gas that absorbs heat from the sun (infrared radiation) in the atmosphere. Examples include carbon dioxide and methane.

Atmosphere: Layer of gas around a planet.

Temperature: The degree or intensity of heat. The temperature of something is how hot or cold it is.

Climate: The average weather in a place over many years.

Melting: The process of going from a solid to a liquid.



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III. Quiz: Check for Understanding

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

Name: _____

Date: _____

1. Since 1880, the average global temperature has risen by how many degrees?
 - a. 10 degrees Celsius
 - b. Almost 1 degree Celsius
 - c. 5 degrees Celsius
 - d. 0 degrees Celsius
2. The atmosphere is becoming overcrowded with which molecules? Choose all that apply.
 - a. Methane
 - b. Oxygen
 - c. Carbon dioxide
 - d. Nitrogen
3. Where do greenhouse gases come from?
 - a. Exhaust from boats burning fuel
 - b. Trees
 - c. Plants
4. When the sun's heat heats the Earth, some of it bounces back. What traps the heat in toward the Earth?
 - a. Greenhouse gases
 - b. A blanket
 - c. The sun
 - d. Dust
5. What would happen if there were absolutely no greenhouse gases in the atmosphere?
 - a. The temperature would not change from what it is now
 - b. Humans and animals on Earth would all be more likely to survive
 - c. The Earth would freeze
 - d. The temperature would rise dramatically



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6. What did Mosa conclude about the change in the overall climate? What is causing the sea level to rise?
 - a. The sun is getting hotter, raising the temperature and causing the ice to melt
 - b. The Earth is getting closer to the sun, raising the temperature and causing the ice to melt
 - c. Humans are producing greenhouse gases which trap heat, raising the temperature and causing the ice to melt
 - d. The arctic is tilting closer to the sun, raising the temperature and causing the ice to melt