



Weather

Lesson 1: “The Solve”

Student Handout

I. Read/Watch Mosa Mack

Read or watch Mosa Mack’s mystery on Weather, then answer the Episode Question. Include a page number/time code in your answer as evidence of where you found your answer.

Name: _____

Date: _____

Episode Questions

1. Why are the wedding planners so upset and confused by the weather they are experiencing?

2. Why is it warmer at the Equator? Draw a diagram to help you explain your answer.



MOSA MACK SCIENCE

STUDENT GUIDE

3. Why are all the molecules rising off the surface of the Earth?
4. Draw and explain the rock in a bucket of water analogy. What type of weather does this cause?

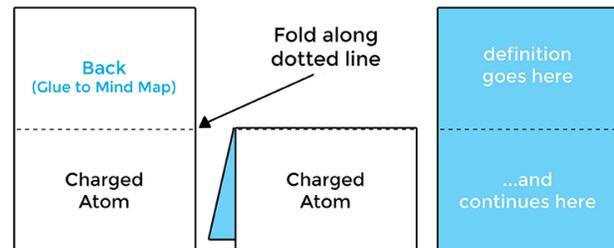
5. In a high-temperature, low-pressure air mass, what happens to the gaseous water in the warm air when the air mass rises? What problematic weather results?
6. Why is there so much wind at Henry's wedding?
7. What did Mosa figure out? Where did Mosa take everyone and why?



II. Vocabulary Activity

Complete the activity by following the instructions below, or complete it [here online](#).

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



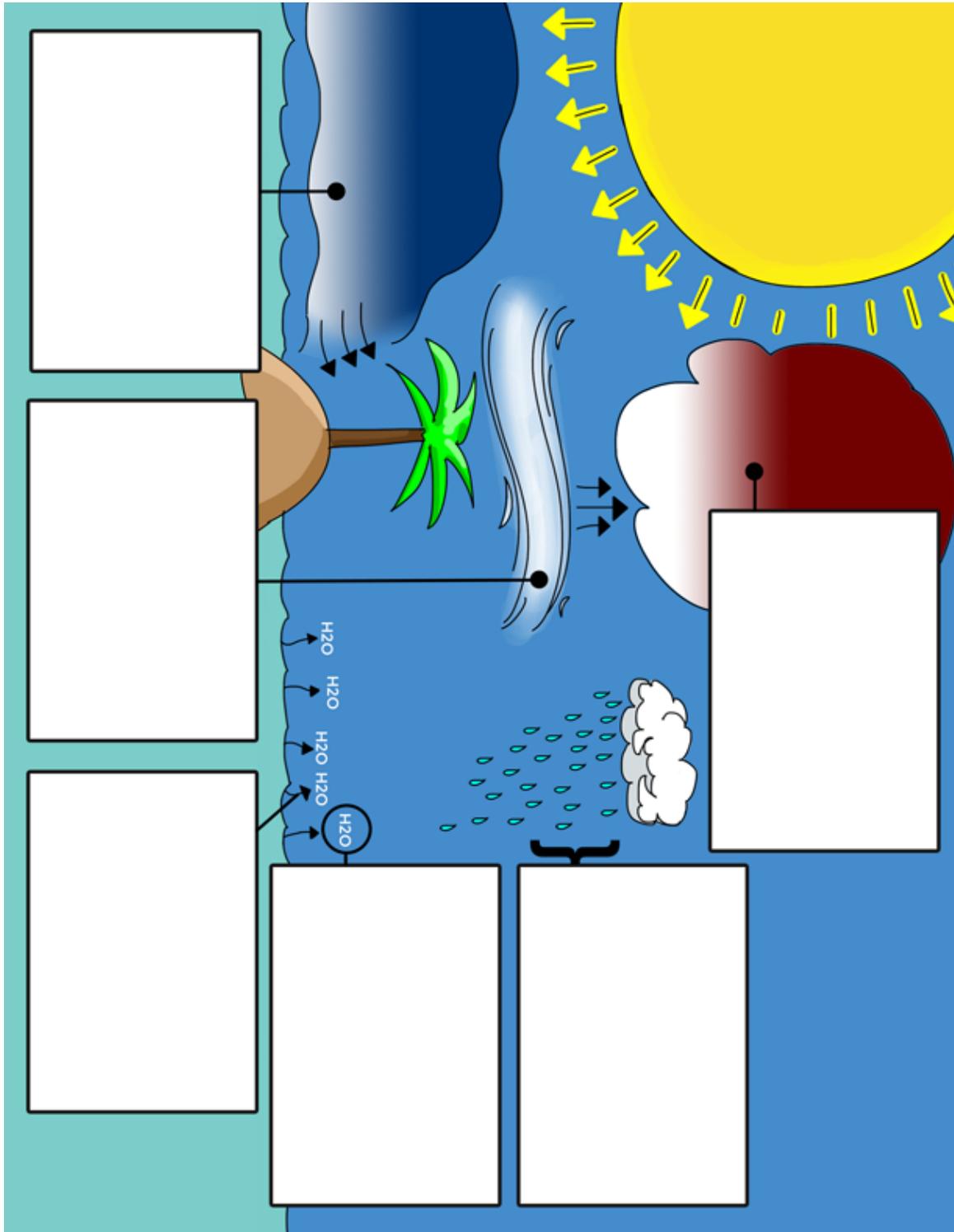
3. Write the definition of each term on the inside of the card using the definitions below.
4. Use the clues from the Vocabulary Mind Map to place the cards in the correct location. Explain your thinking to your group as you go.
5. When you're ready to glue or tape, raise your hand so your teacher can check your Mind Map.
6. Use glue or double-sided tape to connect the back of the vocabulary card to the correct place on the Mind Map.

7. Discuss with your group:
 - a. What different weather factors do you see pictured in the mind map?
 - b. What relationship do you notice between a warm air mass and a cold air mass?
 - c. What one factor do you think impacts all the rest of the weather factors?





Vocabulary Mind Map





Vocabulary Cards

Warm Air Mass	Rain	Water Molecule
Evaporation	Wind	Cold Air Mass

Vocabulary

- **Warm Air Mass:** A warm body of air that reflects the conditions of the surface below it. Warm air masses move with molecules spread apart, and tend to rise.
- **Cold Air Mass:** A cold body of air that reflects the conditions of the surface below it. Cold air masses move with molecules packed closely together, and tend to sink.
- **Wind:** the perceptible natural movement of the air, created by the movement of air masses
- **Rain:** moisture condensed in the atmosphere that falls visibly in drops
- **Water Molecule:** smallest unit of water, consisting of two hydrogen atoms and an oxygen atom
- **Evaporation:** the process of a substance changing from its liquid to its gaseous state



III. Exit Ticket

Name: _____

Date: _____

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

1. Where on Earth do the Sun's rays hit at the most direct angle?
 - a. The North Pole
 - b. The South Pole
 - c. North America
 - d. The Equator

2. The sun beats down on the Tropics and causes what molecules to evaporate into the air mass above it?
 - a. Nitrogen
 - b. Oxygen
 - c. Water
 - d. Carbon Dioxide

3. Which of the following is **true** about the movement of air?
 - a. Warm air rises
 - b. Cold air rises

4. As warm air rises, it cools and condenses. This causes which of the following?
 - a. Sun
 - b. Wind
 - c. Rain
 - d. Thunder

5. Wind is caused by which of the following?
 - a. Clouds condensing
 - b. Water evaporating
 - c. Sun shining down on Earth
 - d. A cold air mass moving in to replace a rising warm air mass



MOSA MACK SCIENCE

STUDENT GUIDE

6. What has to be present in the air in order for it to snow?
- Nitrogen
 - Oxygen
 - Water
 - Carbon Dioxide