

Lesson 1.4: Reading “What Are Clouds?”

You may have seen many types of clouds in the sky—sometimes they look like thin, wispy strings, and other times like full, puffy cotton balls. In this lesson, you will explore how these different types of clouds are formed. As you read, you will use what you know about water condensation and how it relates to cooling and cloud formation to think about the question *What causes an air parcel to cool?* The article will introduce you to a pioneering scientist who first studied clouds over 50 years ago. Reading about her work and the discoveries she and others made will help you to better understand clouds and how they form.

Unit Question

- Why do some rainstorms have more rain than others?

Chapter 1 Question

- What causes the rainfall in Galetown?

Key Concepts

- When liquid water becomes warmer it can evaporate and become water vapor in the air. All air contains water.
- When water vapor in an air parcel cools, it can condense into liquid water which can form a cloud and fall as rain.

Vocabulary

- air parcel
- condensation
- energy
- evaporation
- temperature
- transfer
- water vapor
- weather

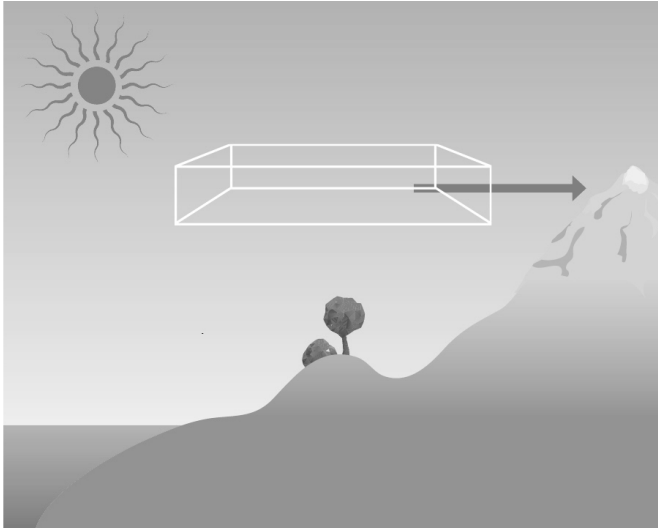
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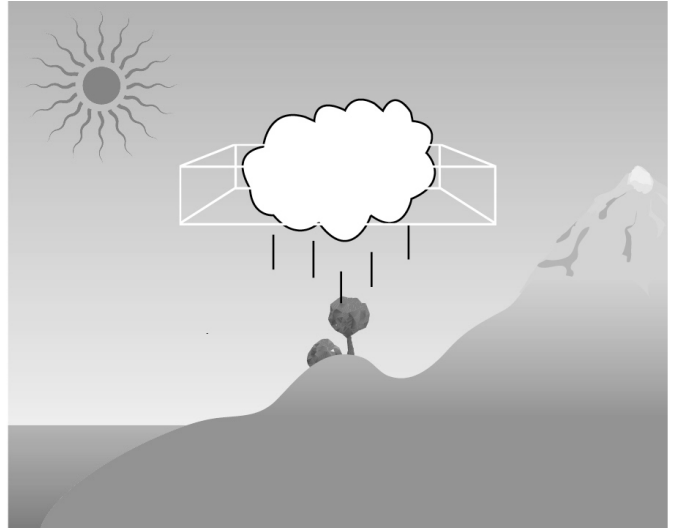
Warm-Up

Observe the image and answer the questions below.

Before



After



What is the **Before** image showing?

What is the **After** image showing?

What does the **arrow** show?

Reading “What Are Clouds?”

1. Read and annotate the article “What Are Clouds?”
2. Choose and mark one or two of your annotations to discuss with your partner. Once you have discussed these annotations, mark them as discussed.
3. Now, choose and mark a question or connection, either one you already discussed or a different one you still want to discuss with the class.
4. Answer the reflection question below.

What is something about the text that you discussed with your partner?

Active Reading Guidelines

1. Think carefully about what you read. Pay attention to your own understanding.
2. As you read, annotate the text to make a record of your thinking. Highlight challenging words and add notes to record questions and make connections to your own experience.
3. Examine all visual representations carefully. Consider how they go together with the text.
4. After you read, discuss what you have read with others to help you better understand the text.

Name: _____ Date: _____

Homework: Modeling Condensation

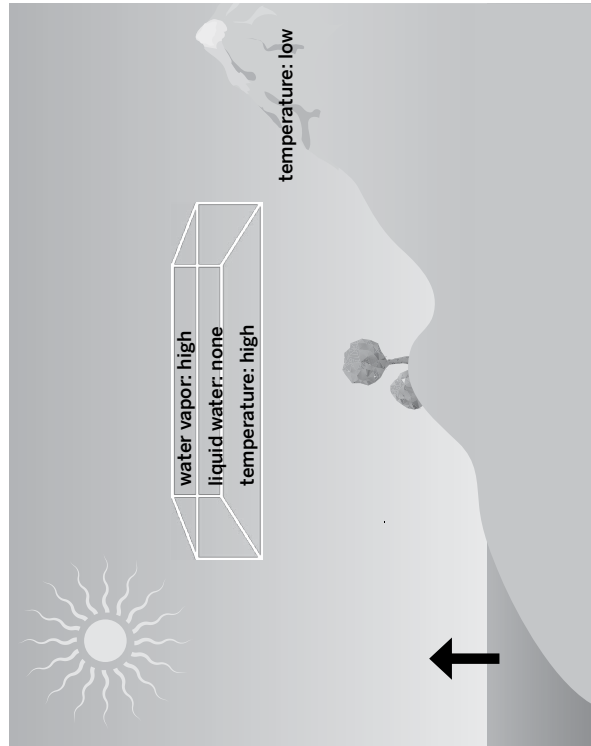
Goal: Make a model that shows how condensation occurs.

Do:

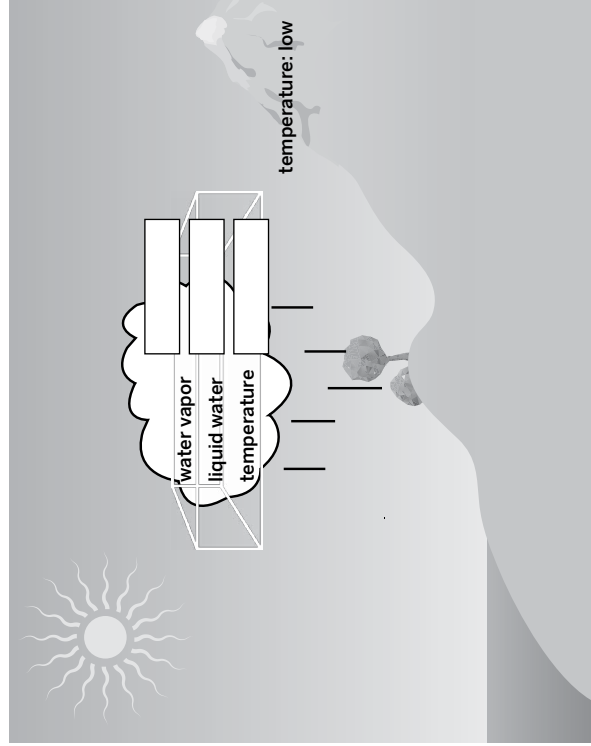
- Show the temperature of the air parcel and the surrounding air after condensation takes place.
- Show the amount of liquid water.
- Use the words in the Modeling Tool Key to fill in the boxes.

Weather Patterns Modeling Tool: Condensation

Before



After



Modeling Tool Key

Temperature:
high or low

Liquid water (cloud and rain):
high or low

Water vapor:
high or low

Name: _____ Date: _____

Homework: Reading “Why Don’t All Clouds Produce Rain?”

Read and annotate the “Why Don’t All Clouds Produce Rain?” article. Then, answer the question below.

Name three reasons why a cloud might form without rain happening.

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4. After you read, discuss what you have read with others to help you better understand the text.