Weather
Meteorology and Weather Maps

Meteorology is the study of winds and weather patterns. Meteorologists, or weathermen, try to predict what the weather will be. They study weather patterns and carefully observe temperature. They also consider other factors that affect weather like humidity, wind speed, and air pressure.

Today, meteorologists can use satellite pictures to study the weather. Satellites can show fronts. A “front” is the edge between a cold mass of air and a warm mass of air. The outer edge of a mass of warm air is called a “warm front.” The outer edge of a mass of cold air is called a “cold front.” Have you ever seen your weatherman describe the movement of fronts? Have you ever looked at a weather map? Here are the symbols that weather maps use to identify cold fronts and warm fronts:

1. **Satellite** - cameras in space that circle the earth and can take pictures of the atmosphere
2. **Mass** - a lump, piece or amount of anything without any clear shape or size
Look at the warm front. Do you see the red half circles pointing up? That shows that the air is rising. Remember that warm air always rises. The curved line represents the front of the air mass.

Look at the symbol for the cold front. See how the blue triangles on the curved line are pointing downwards? This means that the cold air is falling. Remember how cold has more pressure than warm air and falls? The cold air is falling down and forcing the warm air to move up.

Cold fronts generally make thunderstorms. Thunder happens when warm air gets trapped beneath cold air and heats up the cold air really fast. This makes lightning. Thunder and lightning actually happen at the same time. Thunder is what we hear, and lightning is the flash we see. Did you know that light travels faster than sound? This is why you can see a bolt of lightning before you hear the crash of thunder. If you count the seconds between a flash of lightning and a roll of thunder, you can estimate how many miles away a storm is.

3 Estimate - a rough guess about the amount, distance or cost of something
1. Look at where a cold front meets a warm front. The sets of arrows are pointing in opposite directions because:
   a. They stand for air.
   b. Cold air rises and warm air falls.
   c. Warm air rises and cold air falls.
   d. Air is moving.

2. The line between the arrows in the picture shows:
   a. Where warm air and cold air meet
   b. The outline of clouds
   c. The place where clouds form
   d. Temperature

3. Which of the following is not true about satellites?
   a. Satellites show the movement of fronts.
   b. Satellites take pictures of the Earth’s atmosphere.
   c. Satellites orbit the Earth.
   d. Satellites are attached to the roofs of houses.

4. Which happens last in the sequence of a thunderstorm?
   a. Warm air begins to rise.
   b. Cold air moves in quickly.
   c. The cold air rapidly changes temperature.
   d. The warm air is trapped beneath the cold air.

5. This passage is mostly about:
   a. Predicting the weather using fronts
   b. How to become a meteorologist
   c. The world’s coldest cold front
   d. The differences between warm and cold thunderstorms
6. If you see a flash of lightning and then count four seconds before you hear thunder, how many miles away from a storm are you? 

________________________________________________________________
________________________________________________________________
________________________________________________________________

7. What do meteorologists do?
________________________________________________________________
________________________________________________________________
________________________________________________________________

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Thunderstorms start ________ warm air gets trapped under cold air.

   a. before  
   b. unless 
   c. when 
   d. maybe 

9. Answer the following questions based on the sentence below.

When a meteorologist sees a cold front, she knows a thunderstorm is coming.

Who? a meteorologist

(knows) What? ____________________________________________________

When? __________________________________________________________


Use the vocabulary word in a sentence: ________________________________

________________________________________________________________
Passage Reading Level: Lexile 740

Featured Text Structure: Descriptive – the writer explains, defines, or illustrates a concept or topic

Passage Summary: Meteorology is the study of winds and weather patterns. Meteorologists, or weathermen, try to predict what the weather is going to be. Looking at where warm fronts and cold fronts are moving can help us predict the weather.

1. Look at where a cold front meets a warm front. The sets of arrows are pointing in opposite directions because:
   a. They stand for air.
   b. Cold air rises and warm air falls.
   c. **Warm air rises and cold air falls.**
   d. Air is moving.

2. The line between the arrows in the picture shows:
   a. **Where warm air and cold air meet**
   b. The outline of clouds
   c. The place where clouds form
   d. Temperature

3. Which of the following is not true about satellites?
   a. Satellites show the movement of fronts.
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5. This passage is mostly about:
   a. **Predicting the weather using fronts**
   b. How to become a meteorologist
   c. The world’s coldest cold front
   d. The differences between warm and cold thunderstorms
6. If you see a flash of lightning and then count four seconds before you hear thunder, how many miles away from a storm are you?

    **Suggested answer:** If you see a flash of lightning and then count four seconds before hearing thunder, you are about four miles away from the storm.

7. What do meteorologists do?

    **Suggested answer:** Meteorologists try to predict the weather using things like satellite pictures.

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

    Thunderstorms start ________ warm air gets trapped under cold air.

    a. before  
    b. unless  
    c. when  
    d. maybe

9. Answer the following questions based on the sentence below.

    When a meteorologist sees a cold front, she knows a thunderstorm is coming.

    Who? a meteorologist

    (knows) What? a thunderstorm is coming

    When? when she sees a cold front

10. **Vocabulary Word:** estimate: make a guess about something using information.

    Use the vocabulary word in a sentence: answers may vary.