SUCCESS ACADEMY EDUCATION INSTITUTE

Weather and the Atmosphere

Name: _____

Teacher: _____

Class: _____

Earth and Space Science
Unit 3
Exit Tickets

Lesson 2 Exit Ticket:
Weather vs. Climate

Li Wei is looking at two maps on the weather.gov website: one climate map and one weather map.

1. Which map will look completely different in 24 hours? Explain. [3]

2. How does the average annual surface temperature compare in locations with different latitudes? [1]

    A. As latitude increases, the average annual surface temperature decreases.

    B. As latitude increases, the average annual surface temperature remains the same.

    C. As latitude increases, the average annual surface temperature increases.

Lesson 3 Exit Ticket: How Does Air Move?

1. Air moves from areas of ? [1]

    A. lower pressure to areas of higher pressure
    B. higher pressure to areas of lower pressure
    C. higher longitude to areas of lower longitude
    D. lower longitude to areas of higher longitude

2. A high-pressure center is generally characterized by ? [1]

    A. warm, dry weather
    B. cool, wet weather
    C. warm, wet weather
    D. cool, dry weather

Lesson 4 Exit Ticket:
What Goes Up Must Come Down

Directions: The graph and table below provide information about the weather conditions in Orlando, Florida, over several hours one day. Florida is bordered by the Atlantic Ocean on three sides.

Weather Conditions for Orlando, FL

Time	Humidity	Precipitation
6:00 AM	21%	None
9:00 AM	43%	None
12:00 PM	65%	None
3:00 PM	88%	None

Current Temperature in Orlando, FL

Time	6:00 AM	9:00 AM	12:00 PM	3:00 PM
Temperature	78°F	85°F	93°F	94°F

1. Based on the weather data above, do you predict that the people in Orlando, Florida, should expect precipitation in the next 24 hours? Include evidence and reasoning to support your response. [3]

2. As a sample of very moist air rises from sea level to a higher altitude, the probability of condensation occurring in that air sample will ?[1]

   A. decrease

   B. increase

   C. remain the same

Lesson 5 Exit Ticket:
How Air Creates Our Climate

Directions: Use the maps below to help you answer the questions on the next page. The first map shows the average temperature on Earth's continents throughout the year.

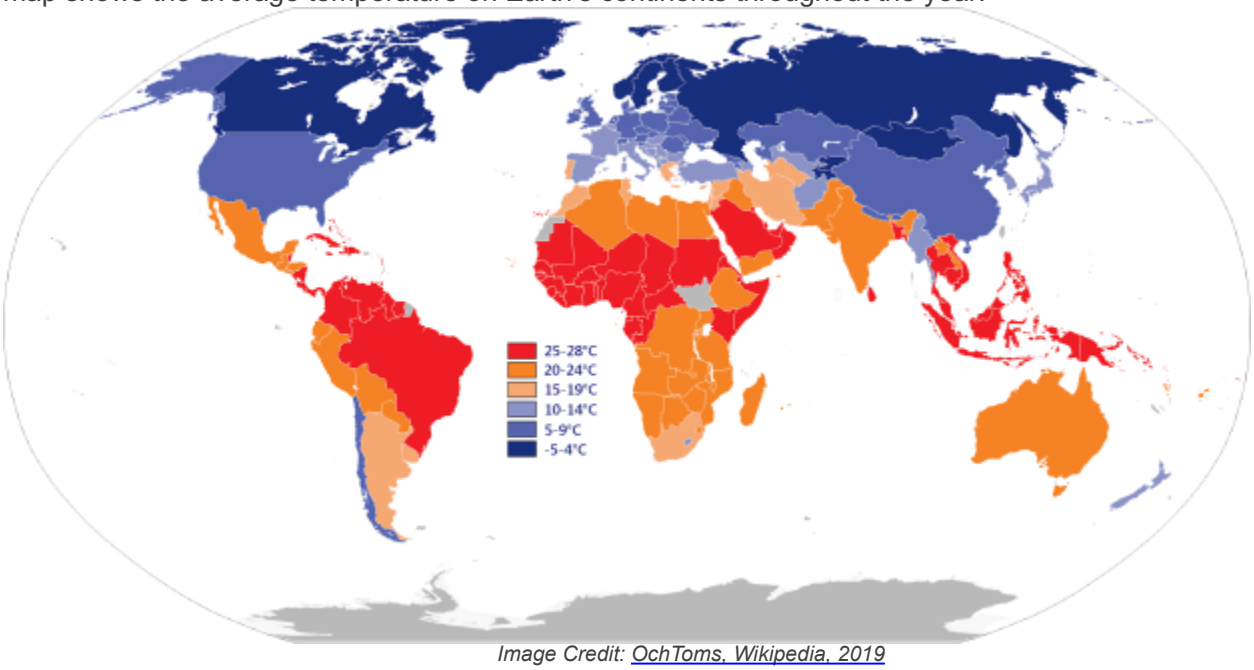

Image Credit: OchToms, Wikipedia, 2019

The second map shows the average temperature on the surface of the Earth's oceans throughout the year.

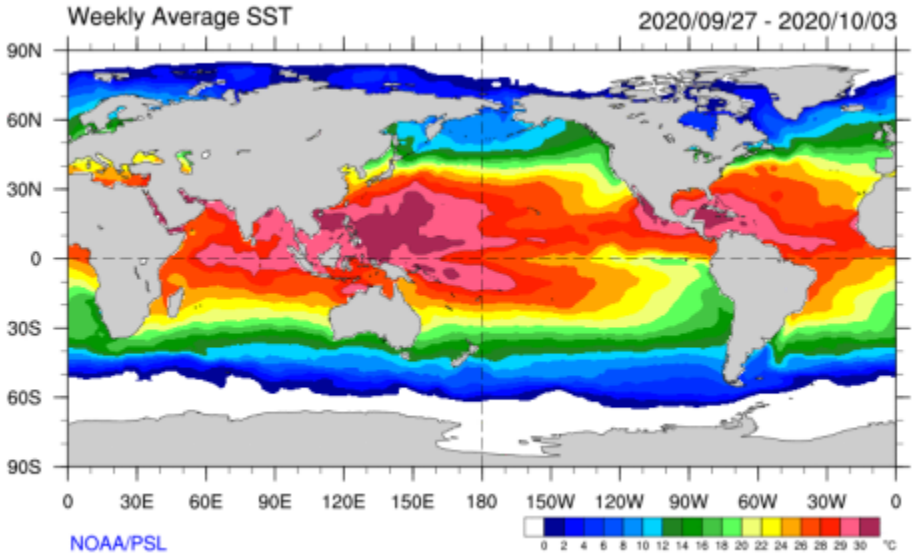

Image Credit: NOAA Physical Sciences Laboratory

Exit ticket continues on the next page!

Lesson 5

Two scientists were discussing trends they noticed in the two maps:

Dr. Raynor Schein: "*Air and ocean temperatures are warmer near the equator and colder near the poles due to differences in solar radiation.*"

Dr. Augusta Wynd: "*Air and ocean temperatures are colder near the equator and warmer near the poles because the poles have ice and the equator doesn't."*

1. Which scientist do you agree with? Include evidence and reasoning to support your response. [3]

2. On the second map, draw an **X** in one location where you might expect to find a cold, dry air mass. [1]

3. A student observed the following weather conditions in Albany, New York, for two days: *The first day was warm and humid with southerly winds. The second day, the temperature was 15 degrees cooler, the relative humidity had decreased, and the wind direction was northwest.* Which type of air mass most likely had moved into the area on the second day? [1]

    A. maritime polar

    B. continental polar

    C. continental tropical

    D. maritime tropical

Lesson 6, Day One, Exit Ticket: Fronts

1. Which statement *best* describes how an air front is formed? [1]

    A. Cold air and warm air swirl together.

    B. Two air masses with the same temperature meet.

    C. Two air masses with different temperatures meet.

    D. Clouds form within an air mass.

2. Draw a diagram to demonstrate what happens during a cold front. Ensure you include the following:

    - Arrows to indicate the direction of air movement [2]
    - Labels to indicate the relative temperature of each mass of air [2]
    - A descriptive title [1]

Exit ticket continues on the next page!

3. Why do clouds usually form at the leading edge of a cold air mass? [1]

    A. Cold air contains more dust than warm air does.

    B. Cold air flows over warm air, causing the warm air to descend and cool.

    C. Cold air contains more water vapor than warm air does.

    D. Cold air flows under warm air, causing the warm air to rise and cool.

Lesson 6, Day Two, Exit Ticket: Fronts

Directions: The map below shows a recent weather report for the Midwestern United States. Use the map to answer the questions that follow.

1. In the coming hours, is Billings or St. Louis more likely to experience stormy weather? [1]

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2. Was the weather likely warmer in Casper or Omaha at the time of this forecast? Read all statements and place a checkmark (✓) next to the correct statement. [1]

   - ❑ The weather is warmer in Omaha because a warm front just passed through, but the warm front has not yet reached Casper.
   - ❑ The weather is warmer in Casper because a warm front just passed through, but the warm front has not yet reached Omaha.
   - ❑ The weather is warmer in Casper because a cold front just passed through, but the cold front has not yet reached Omaha.
   - ❑ The weather is warmer in Omaha because a cold front is heading towards Casper.

Lesson 10 Exit Ticket:
Lights, Camera, Action!

1. What scientific understandings allow scientists to predict the weather? Include three pieces of evidence and reasoning to support your response. [5]

   Consider addressing the following in your response:

   - the water cycle
   - air temperature, pressure, and movement
   - solar radiation and latitude
   - Earth's rotation