WEATHER VS. CLIMATE

Video: <http://video.nationalgeographic.com/video/climate-weather-sci>



**Questions to Consider:**

1. Define *Weather* and *Climate.*
2. Give some examples of climate zones.
3. What makes weather more dangerous than climate?
4. Provide some examples of types of weather.

AIR MASSES

Video: <https://www.youtube.com/watch?v=66MC2iPfoJU>



**Questions to Consider:**

1. Define Air Mass.
2. What defines a specific air mass?
3. Differentiate between continental and maritime air masses.
4. Differentiate between tropical and polar air masses.
5. Be able to define the major air masses in Northern America.

WINDS

Video #1: <https://www.youtube.com/watch?v=D52rTzibFRc>

Video #2: <https://www.youtube.com/watch?v=RzSqhrn2dDM>



**Questions to Consider:**

1. How is wind created?
2. What factors on earth create areas of high and low pressures?
3. Differentiate between high and low pressure centers.
4. What percent of solar energy is converted into wind energy?
5. What is the Coriolis effect and how does it affect wind movement?

FRONTAL SYSTEMS

Video#1: <https://www.youtube.com/watch?v=tkK4_F0VKhM>

Video #2: <https://www.youtube.com/watch?v=PgPbsAK39hw>

Video #3: <https://www.youtube.com/watch?v=Mfm8H8asRa4>



**Questions to Consider:**

1. Define Front.
2. What causes a frontal system to form?
3. Identify each of the four types of frontal systems.
4. Classify the weather that would be expected at each of the different frontal systems.
5. Identify the symbols that represents each frontal system.

CYCLONES & HURRICANES

Video: <https://www.youtube.com/watch?v=SSx_gisp24w>



**Questions to Consider:**

1. How do cyclones, typhoons, and hurricanes differ?
2. What factors allow for a hurricane to form?
3. Explain the formation of a hurricane in relation to air movement.

HIGH & LOW PRESSURE SYSTEMS

Website: <http://www.bom.gov.au/lam/Students_Teachers/pressure.shtml>



**Questions to Consider:**

1. How do high and low pressure systems differ?
2. What type of weather is expecting at each system?
3. Describe how the winds are moving at each system and what drives their movement.
4. How do these systems compare in the Northern Hemisphere as compared to the Southern Hemisphere? What causes the change?

CORIOLIS EFFECT

Video: <https://www.youtube.com/watch?v=i2mec3vgeaI>



**Questions to Consider:**

1. Take a scrap sheet of paper. Try to draw a straight line while you turn the paper. What happens?
2. Try spinning the spinner one way. What happens? Spin in the opposite direction? What happens?
3. Define the Coriolis Effect.
4. How does this impact wind patterns? Give specific examples.

RAIN SHADOW EFFECT

Video: <https://www.youtube.com/watch?v=DoKTTHd-XEQ>



**Questions to Consider:**

1. What is the difference between the leeward and windward side of a mountain?
2. What is the rain shadow effect?
3. Provide examples of places that experience the rain shadow effect.
4. How does the rain shadow effect impact climates?

GLOBAL WIND CIRCULATION

Video: <https://www.youtube.com/watch?v=UdBqa4H98LA>



**Questions to Consider:**

1. What creates highs and lows around Earth’s major latitudinal belts?
2. How are convection cells generated around Earth?
3. Differentiate between the major convection cells: Hadley, Ferrel, & Polar.
4. How do these global wind circulations impact climates around Earth?

MONSOONS

Video: <https://www.youtube.com/watch?v=jN9Z0rn3W1g>



**Questions to Consider:**

1. Define monsoon.
2. Where do monsoons occur most often? What season are they prevalent?
3. What causes a monsoon to form?
4. Explain how a land and sea breeze are generated?
5. What can be said about the specific heat capacity of water compared to land?