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| **Objective/Question:** | **Location:** | **Website(s):** | **Vocabulary Terms:** | **Notes:** |
| ***Earth*** |  |  |  |  |
| **1. Know** the properties of air: What causes the pressure of air to change? Name two main weather differences that occur with high pressure and low pressure. | Pages 368-369 (What changes air pressure?) | https://www.youtube.com/watch?v=jmQ8FWnM0fA | \*barometer  \*air pressure | \*There are four basic variables that can change air pressure: change in volume; change in temperature ; distance from Earth’s surface; amount of water vapor in the air  \*When air pressure is low it often means bad weather, storms, and precipitation  \* High pressure causes air to flow down slowly and fan out, moving with clockwise rotation at the ground in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. High pressure days generally have clear skies because sinking air prevents clouds from forming  \* Low pressure causes air to flow up slowly. As air rises, it cools and water vapor within the air is unable to remain a gas. It forms tiny water droplets, making clouds in the sky. Remember to bring an umbrella with you on low pressure days because those clouds might cause precipitation |
| **2. Define** atmosphere, and label the different layers of Earth’s atmosphere: What are the differences that exist among the layers of the atmosphere? Name each layer and show its location. | Pages 366-367 (What are the layers of the atmosphere?) |  | \*troposphere  \*stratosphere  \*mesosphere  \*thermosphere  \*exosphere  \*weather | \*There are five main layers of Earth’s atmosphere  \*The latitude, temperatures, air pressure of each layer differs  \*Beyond the farthest layer, the exosphere, Earth’s atmosphere is replaced by space  \*Nearly all of the water in the atmosphere is in the troposphere  \*The ozone layer is contained mostly in the stratosphere  \*Weather is the condition of the troposphere at a particular time and place |
| **3. Identify** the atmosphere’s chemical components: What makes up Earth’s atmosphere? What causes changes to the gases present in the troposphere? |  | <http://www.windows2universe.org/earth/Atmosphere/chemical_composition.html>  http://www.windows2universe.org/earth/Atmosphere/ozone\_layer.html | \*greenhouse gases  \*ozone layer | \*About 80% of the atmosphere is made up of nitrogen  \*Oxygen is the next abundant gas but only makes up about 20% of the atmosphere  \*Greenhouse gases such as carbon dioxide and methane help keep Earth from getting too cold and trap heat from the Sun  \*Differences may exist in chemicals in different layers of the atmosphere |
| **4. Explain** where Earth’s water is located: Where is Earth’s water located? | Pages 342-343 (What are sources of freshwater?) | <http://water.usgs.gov/edu/earthwherewater.html> | \*reservoir  \*aquifer | \*96.5% of Earth’s water is ocean water  \*2.5% of Earth’s water is fresh water, with most of it in glaciers or in the ground  \*Reservoirs are important in storing standing freshwater  \*Groundwater seeps into the ground through aquifers , an underground layer of rock or soil that has pores capable of absorbing water |
| **5. Explain** how water moves into the atmosphere from the Earth’s surface and how water moves from the atmosphere to the Earth’s surface: How does water move from the atmosphere to the surface of Earth? How does water move from Earth’s surface into the atmosphere? | Pages 380-383 (How do clouds form? How does precipitation form?) |  | \*cirrus  \*cumulus  \*stratus | \*Water vapor is formed from water that is heated from the sun and evaporates, moving into the air and atmosphere  \*As the water vapor rises it loses energy, cools and moves closer together and condenses  \*When water vapor particles have slowed enough, they condense around tiny particles of dust and form clouds  \*As small drops that have condensed onto dust particles collide and become larger, they are able to fall to the ground as precipitation |
| **6. Explain** why the relative humidity of air is important to the water cycle: How does the relative humidity of the air impact the water cycle? What effect does a decrease in humidity have? |  | <https://climate.ncsu.edu/edu/k12/.humidity>  http://ocw.usu.edu/Forest\_\_Range\_\_and\_Wildlife\_Sciences/Wildland\_Fire\_Management\_and\_Planning/Unit\_4\_\_Temperature-Moisture\_Relationship\_4.html | \*relative humidity  \*dew point | \*Humidity is a measurement of how much water vapor is present in the air at a given time  \*A high water vapor content is necessary to produce clouds and precipitation  \* When the relative humidity is 100%, the air is saturated.  If the relative humidity is 50%, the air contains half the water vapor required for it to be saturated.  \* If the water vapor content stays the same and the temperature drops, the relative humidity increases.  If the water vapor content stays the same and the temperature rises, the relative humidity decreases.  This is because colder air doesn’t require as much moisture to become saturated as warmer air. |
| **Pages covered:** 368-369, 366-367, 342-343, 382-383 |  |  |  |  |