

**Flint Community Schools
Science Curriculum Pacing**

Earth Content

Seventh Grade

UNIT 2: FLUID EARTH SYSTEMS AND HUMAN ACTIVITIES		Pacing: : November thru January, Total of 12 weeks
STANDARD: Earth Systems		
Big Ideas: <ul style="list-style-type: none"> • Human interaction and use of natural resources affects the environment. <i>*You may wish to integrate this section on “Human Consequences” throughout the first two sections of this unit rather than teaching it separately here</i>		Essential Question(s): <ul style="list-style-type: none"> • How do humans cause changes in animal habitats, climate, watersheds, and species extinctions? • Is global warming due to human activity, forces in nature, or is it part of a natural cycle? How can we be sure we know the truth?
Concepts/Content Expectations	Knowledge/Skills <i>*Inquiry GLCE’s are in italics under “Skills”</i>	Vocabulary <i>*Assessable Instructionally useful</i>
Human Consequences E.ES.07.41 Explain how human activities (surface mining, deforestation, overpopulation, construction and urban development, farming, dams, landfills, and restoring natural areas) change the surface of the Earth and affect the survival of organisms. E.ES.07.42 Describe the origins of pollution in the atmosphere, geosphere,	Knowledge (Students will understand that.....) <ul style="list-style-type: none"> • Humans cause changes on the Earth’s surface, in its water and atmosphere • Human inventions cause pollution which affects animals, plants, and climate Skills (Students will be able to...) <ul style="list-style-type: none"> • Walk around your school building. Collect and analyze data about the pollution or potential pollution you see. Make a power point or poster presentation • Research differing opinions among scientists regarding the cause of global warming • <i>Identify patterns in data regarding fluid earth systems and human activities.</i> • <i>Describe the effect humans and other organisms have on the balance of the natural world in terms of the water cycle and the sun's warming of the Earth.</i> • <i>Describe limitations in personal and scientific knowledge regarding fluid earth systems and human activities.</i> 	*surface mining *deforestation *overpopulation *construction and urban development farming *dams *landfills *farming *acid rain *pollution pollutant habitat destruction endangered species extinct species portable non-portable

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<p>and hydrosphere (car exhaust, industrial emissions, acid rain, and natural sources), and how pollution impacts habitats, climatic change, and threatens or endangers species.</p>		
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<p>Assessment Examples Note-taking and Summarization Strategies/Graphic Organizers can be used.</p>	<p>Formative:</p> <ul style="list-style-type: none"> • <i>Demonstrations and explorations</i> • <i>Experiment design and conclusion</i> • <i>Classroom discussion</i> • <i>Student journal entries</i> • <i>Quick Writes</i> 	<p>Summative:</p> <ul style="list-style-type: none"> • <i>End of unit test</i> • <i>Poster, brochure, or Power Point presentation on the water cycle and how the sun's warming of the Earth causes ocean and air currents</i> • <i>Written report on the effect of human activities and action steps that can be taken</i> • <i>Models of water cycle, solar still, design for cleaning a sample of polluted water</i> 	
<p>Resources</p>	<p><u>Science Plus</u> Level Red Chapter 18, 19</p> <p><u>ScienceSaurus</u> Pages 332-345</p>	<p><u>Physical Science</u> Chapter 26 (Prentice Hall)</p>	<p>VersaTiles - Earth Science Levels 5-8</p>

VOCABULARY:	Fluid Earth Systems (Unit Two)
<ul style="list-style-type: none"> • Absorption: taking in of sunlight by Earth's surface or other material • Acid rain: rain that has a pH lower than 7 because of the air pollutants in it • Air mass: large body of air with similar temperature and humidity throughout • Air pressure: force that air puts on objects • Atmosphere: envelope of gases that surround the earth • Barometric pressure: air pressure • Climate: average weather in a particular region over many years • Cloud: cluster of water droplets or ice crystals floating in the atmosphere • Cloud formation: development of water droplets or ice crystals in the atmosphere to form clouds • Cold front: boundary where a mass of cooler air is pushing away a warmer air mass • Condensation: phase change from gas to liquid 	

Vocabulary continued on next page

- **Conduction:** transfer of heat by direct contact
- **Construction and urban development:** when humans cover over land and natural habitats with homes, buildings, roads, parking lots, etc.
- **Convection:** transfer of heat by up and down currents in a liquid or gas
- **Dams:** structures built on rivers to hold back water
- **Deforestation:** removing all the trees from an area
- **Dew:** water droplets that form when the temperature of humid air cools
- **Elevation:** height of an object or place measured from sea level
- **Energy:** ability to do work
- **Evaporation:** phase change from a liquid to a gas
- **Farming:** clearing and using land to grow plants or raise animals for food
- **Fog:** tiny drops of water that make a thick whitish mist near the ground
- **Frontal boundary:** where one mass of air meets another mass of air with different temperature and humidity
- **Groundwater:** water that flows or collects beneath the Earth's surface. It comes from rain and snowmelt that infiltrate the ground
- **Infiltration:** when rainwater soaks down through soil and rock
- **Jet stream:** narrow band of very fast winds at higher altitudes
- **Landfills:** a disposal site where solid waste is buried
- **Occluded front:** boundary where a cold air mass catches up with a warm one
- **Ocean currents:** fast flowing movements of ocean water in a particular direction
- **Overpopulation:** where too many animals compete for natural resources in one area
- **Pollution:** harmful substances such as wastes, smoke, gases, chemical and pesticides added to the environment
- **Precipitation:** water that falls on the Earth as part of the water cycle
- **Radiation:** transfer of thermal energy by electromagnetic waves
- **Stationary front:** boundary where two air masses meet but aren't moving
- **Surface mining:** stripping off the top of the land in search for minerals
- **Surface runoff:** when rainwater flows over the land toward streams, rivers, lakes or oceans
- **Transpiration:** release of water vapor into the air by plants through leaves
- **Warm front:** boundary where a mass of warmer air is pushing away a mass of cooler air
- **Water cycle:** continuous circulation of water through evaporation, condensation, and precipitation between Earth's surface and the atmosphere
- **Watershed:** ridge forming a boundary between two different river systems
- **Water vapor:** gaseous state of water produced when water evaporates
- **Weather:** state of the atmosphere at a given time and place
- **Wind:** moving air created by convection currents in the atmosphere