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| **WCSD High School Earth Science Unit Resources**  This course model arranges the Performance Expectations for High School Earth Science into different units with guiding questions. The **HS-ETS1-1, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4** engineering design standards will be integrated throughout the units at the teacher’s discretion. | | |
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| **1st Semester Earth Science Resources** | | |
| **Unit Title & Performance Expectation(s)** | **Key Topics** | **Resources** |
| **Unit Title: Maps**  **HS-ESS2-2** | * Map Types * Longitude * Latitude * Location | [**EarthCaching**](http://www.earthsciweek.org/classroom-activities/earthcaching)  [**Cardboard contour maps**](http://www.geoblox.com)  [**Lat/Long Google Earth**](http://www.aktsunami.com/exercises/atep_GIT_9-12_LatitudeAndLongitudeWithGoogleEarth.pdf) |
| **Unit Title: Composition of the Earth**  **HS-ESS2-3\*** | * Rocks | **The Chocolate Rock Cycle: Geological Society of London**  [Rock Cycle Game](https://www.nasa.gov/sites/default/files/rockingtherockcycle.pdf) |
| **Unit Title: Atmosphere**  **HS-ESS2-4**  **HS-ESS2-6**  **HS-ESS2-7**  **HS-ESS3-1**  **HS-ESS3-3**  **HS-ESS3-5**  **HS-ESS3-6** | * Weather * Carbon Cycle * Climate * Biogeochemical Cycles | [**The Greenhouse Effect**](http://phet.colorado.edu/en/simulation/greenhouse)  [**What is the future of the Earth's climate?**](http://authoring.concord.org/sequences/47)  [**Cloud scramble**](http://spaceplace.nasa.gov/cloud-scramble/en/)  [**Ozone Resource**](http://aura.gsfc.nasa.gov/ozone.html)  [**Slideshow Gallery of Climate & Weather Pictures**](http://climatekids.nasa.gov/weather-and-climate-gallery/)  [**Slideshow Gallery of Carbon Travels**](http://climatekids.nasa.gov/carbon-gallery/)  [**Student Carbon Footprint Calculator**](http://www3.epa.gov/climatechange/students/calc/calculator.html)  [Will the Air be Clean Enough to Breathe?](http://concord.org/stem-resources/will-air-be-clean-enough-breathe)  [Stanford University Climate Change Curriculum](https://pangea.stanford.edu/programs/outreach/climatechange/curriculum)  [Ted Talk Climate Change](https://www.youtube.com/watch?v=7vnzKPq390Q)  [Carbon Cycle Game](http://oceanservice.noaa.gov/education/pd/climate/teachingclimate/carbon_cycle_game.pdf)  [Weather vs. Climate video](https://www.youtube.com/watch?v=VHgyOa70Q7Y)  [Graphing the Layers of the Atmosphere](http://www.haystack.mit.edu/edu/pcr/climate_CHANGE/Earth's%20Atmosphere/Graphing%20Layers%20of%20Atmosphere.pdf) |
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| **2nd Semester Earth Science Resources** | | |
| **Unit Title & Guiding Question(s)** | **Key Topics** |  |
| **Unit Title: Surface Processes**  **HS-ESS2-5**  **HS-ESS3-1\***  **HS-ESS3-4** | * Surface Water * Mass Movement * Weathering * Erosion * Deposition * Soil * Groundwater * Oceans | [**Will there be enough fresh water?**](http://concord.org/stem-resources/will-there-be-enough-fresh-water)  [**Slideshow Gallery of Freshwater**](http://climatekids.nasa.gov/freshwater-gallery/)  [**Flooding Simulation**](http://www.stopdisastersgame.org/en/playgame.html)  [**Land & People: Finding a Balance**](http://www.earthsciweek.org/classroom-activities/land-and-people-finding-balance)  [**Weathering of Building Stones**](https://higherlogicdownload.s3.amazonaws.com/GEOSOCIETY/a2a49183-ba2a-469c-9d3b-68daf22c94bd/UploadedImages/TAP%20Photos/Lesson%20Plans/Rocks,%20Minerals%20and%20Mining/NIST_StoneWallActivity_9-12.pdf)  [Glaciers](http://phet.colorado.edu/en/simulation/glaciers)  [Hurricane Katrina Engineering Impact](https://www.youtube.com/watch?v=wnyDyre9994)  [Predicting Ground Water Flow](https://www.epa.gov/sites/production/files/2015-08/documents/mgwc-gwb10.pdf)  [Glaciers - Day 5 How Glaciers Shaped the Land](https://www.nature.nps.gov/views/Teacher%20resources/Knowledge%20centers/Glaciers/Lesson%20plans/Entire%202%20Week%20Unit.pdf) |
| **Unit Title: History of the Earth**  **HS-ESS1-5**  **HS-ESS1-6** | * Impact Theory * Fossils * Earth’s Formation * Radioactive Decay * Half-life | [**Radioactive Decay Model**](http://www.earthsciweek.org/classroom-activities/dating-popcorn)  [Radioactive Dating Game](http://phet.colorado.edu/en/simulation/legacy/radioactive-dating-game)  [A Relative Age Dating Activity](https://higherlogicdownload.s3.amazonaws.com/GEOSOCIETY/a2a49183-ba2a-469c-9d3b-68daf22c94bd/UploadedImages/TAP%20Photos/Lesson%20Plans/Geology%20&%20Geologic%20Time/Relative_Age_7-14.pdf)  [What craters on the teach us about Earth: two videos included](http://www.universetoday.com/99365/what-craters-on-the-moon-can-teach-us-about-earth/)  [Isotopes and Atomic Mass](http://phet.colorado.edu/en/simulation/legacy/isotopes-and-atomic-mass) |
| **Unit Title: Space**  **HS-ESS1-1**  **HS-ESS1-2**  **HS-ESS1-3**  **HS-ESS1-4** | * Solar Systems * Nuclear Fusion * Galaxies * Stars * Universe * Big Bang Theory | [My Solar System](http://phet.colorado.edu/en/simulation/legacy/my-solar-system)  [Gravity and Orbits](http://phet.colorado.edu/en/simulation/gravity-and-orbits)  [Kepler's Planetary Motion Lab](https://washoeschools-my.sharepoint.com/personal/mpedwards_washoeschools_net/_layouts/15/guestaccess.aspx?guestaccesstoken=kTzXxpoUHnHSgpV%2fEAQob5E8QUccgRS4%2fAR%2fqPeRZBM%3d&docid=084f090e37f5347b5aaa6298b0dcd7fc6)  [Blackbody Spectrum](http://phet.colorado.edu/en/simulation/blackbody-spectrum)  [Wave Interference](http://phet.colorado.edu/en/simulation/wave-interference)  [Spectrum lab](http://www.trschools.com/staff/g/cgirtain/Weblabs/spectrolab.htm)  [Parallax lab](http://blossoms.mit.edu/sites/default/files/video/download/Parallax-Activity.pdf)  [Life Cycle of Stars](http://www.schoolsobservatory.org.uk) |
| **General Reources** | | |
| **EarthLab**  [**http://serc.carleton.edu/earthlabs/index.html**](http://serc.carleton.edu/earthlabs/index.html)  **Resource Packet for Earth Science. Contains a wide range of resources.**  [**http://newyorkscienceteacher.com/sci/files/2011/esrt2011.pdf**](http://newyorkscienceteacher.com/sci/files/2011/esrt2011.pdf)  **Subscribe to get daily articles related to Earth Science**  [**www.sciencedaily.com**](http://www.sciencedaily.com) **A Collection of Classroom Activities and Lesson Plans** [**http://geology.com**](http://geology.com)  **Center for Geoscience and Society**  [**http://geocntr.org**](http://geocntr.org)  [**You Tube Earth's Interior Song set to Uptown Funk**](https://www.youtube.com/watch?v=lulLsmTlB50)  [**You Tube Earth's Interior Rap to Black and Yellow**](https://www.youtube.com/watch?v=RiHRI_Z2Kgs)  [You Tube Plate Tectonics Alfred Wegener](https://www.youtube.com/watch?v=T1-cES1Ekto&list=PLunm0r3Z9wSaLZu7lvQPyJdhNpZwEuOvU)  <https://science.nasa.gov/>  <http://sciencecases.lib.buffalo.edu/cs/collection/results.asp?subject_headings=Environmental%20Science>  <http://sciencecases.lib.buffalo.edu/cs/collection/results.asp?subject_headings=Environmental%20Science>  <http://www.bozemanscience.com/next-generation-science-standards/>  <http://www.nextgenscience.org/resource-library>  [Scientific Method Lab](http://mytoe.org/labs/SavingSam.pdf) | | |