

ALTERNATIVE LESSON PLANS FOR DISTANCE LEARNING

These alternative lesson plans condense what is taught and suggest ways to support students learning at home. We acknowledge that every situation is unique and strive to provide plans that can be used online or as printed packets. Focus on fewer scientific principles. Use print and audio readings. Share the videos that you can. Discuss if you can.

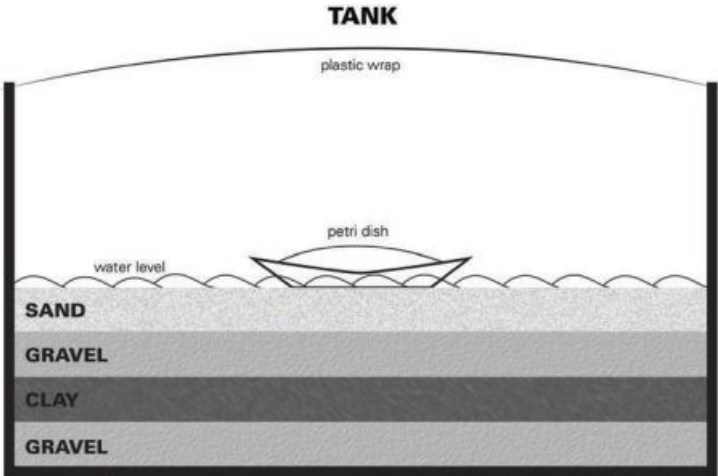
UNIT TITLE	ES1
DRIVING QUESTION	How does water shape our world?

Lesson 1 (2 days)	How Is the Land Shaped Differently?
Activity 1.1	How Does Natural Compare to Human-Made? Share Projected Images: <ol style="list-style-type: none"> 1. Mount Rushmore 2. Human-Made or Natural 1 3. Human-Made or Natural 2 4. Human-Made or Natural 3 5. Human-Made or Natural 4 6. Human-Made or Natural 5
Activity 1.2	Investigating Landforms Share Projected Images: <ol style="list-style-type: none"> 1. U.S. Map Case Study Parks 2. Park Comparison 3. Kamoamoa Beach, HI (Site 6,) 4. Landforms <p>Also share: Park Guides for Hawaii Volcanoes National Park and Grand Canyon National Park</p>
Activity 1.3	How Does Home Compare?
Reading 1	<i>What Is a National Park?</i>

Lesson 2 (2 days)	What Do Our National Parks Look Like?
Activity 2.1	Making Sense of the Task Share Projected Images: <ol style="list-style-type: none"> 1) Landforms 2) National Park Service Letter (A or B) 3) United States National Parks Map <p>Also share: Park Guide Landform Chart</p>
Reading 1	<i>Landforms on Earth</i>
Activity 2.2	Developing the Driving Question Board Share Projected Image: National Park Service Letter (A or B)

Lesson 3 (3 days)	Where Is Water?
Activity 3.1	Where Is Water on the Map? Share Projected Images: <ol style="list-style-type: none"> 1. Image of a globe, PI 2. Map of HVNP (Hawaii Volcanoes National Park) 3. Map of GCNP (Grand Canyon National Park)
Reading 1	<i>How Do I Know How Humid It Is?</i>
Activity 3.3	Where Else Is Water Found? Share Projected Images: <ol style="list-style-type: none"> 1) Vasey's Paradise 2) Diagram of a Well
Reading 2	<i>What Is a Glacier?</i>
Activity 3.4	How Do the Reservoirs Compare? Share set up video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/Lesson%203.4_Earths%20Water%20Demo.mp4 . Teachers may want to share a complete data collection/observation table with students after watching the set up video and discuss. Students can make predictions about how water will flow over the surface of their model.

Lesson 4 (4 days)	How Does Water Move?
Activity 4.1	How Does Water Move over the Surface? Share Projected Image: Kaibab Plateau, Share set up video: https://d16dnhlej6sizh.cloudfront.net/assets/media/Landform_Modeling.mp4 , Have students draw a model and share.
Activity 4.2	Can Maps Help Figure Out Flow? Share Projected Images: <ol style="list-style-type: none"> 1. Map of HVNP (Hawaii Volcanoes National Park) 2. Map of GCNP (Grand Canyon National Park)
Reading 1	<i>Down the Drain!</i>

Activity 4.3	<p>How Does Water Move into the Ground?</p> <p>Share Projected Images:</p> <ol style="list-style-type: none"> 1. Map of HVNP (Hawaii Volcanoes National Park) 2. Vasey's Paradise <p>Also share the image from A.4.4 of the setup of the tank.</p> 
Activity 4.4	How Does Water Move In and Out of the Atmosphere?

Lesson 5 (0 days)	What Is It Like to Be a Water Molecule? OMIT AT THIS TIME
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Lesson 6 (1 day)	How Does Water Move in Our Park?
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Activity 6.1	<p>Does the Water Cycle Work in the Case Study Parks?</p> <p>Share Projected Images:</p> <ol style="list-style-type: none"> 1) Water Cycle Model 2) Water in HVNP (Hawaii Volcanoes National Park) 3) Map of HVNP (Hawaii Volcanoes National Park)
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Reading 1	<i>I Think I Have Seen This Water Before</i>
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Lesson 7 (3 days)	Does Water Affect the Land?
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Activity 7.1	<p>How Does Flowing Water Affect Earth Materials?</p> <p>Share set up video</p> <p>-https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/Lesson%207.1%20-%20Large%20Stream%20Table.mp4</p>
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Reading 1	<i>How Long Does It Take for a River to Form?</i>
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Lesson 8 (2 days)	What Happens When Pieces of Rock Collide?
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Reading 1	<i>What Causes Rock to Break into Pieces?</i>
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Activity 8.2	<p>How Does Moving Water Carry Particles?</p> <p>Use Erosion video from the Teacher Portal found in Teaching the Lesson Resources.:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/ES1_se_v2_0_5-es1_lesson_8_video-87.mp4</p>
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Activity 8.3	<p>What Happens to the Pieces of Rock that Are Weathered and Eroded?</p> <p>Share Projected Image: Earth Processes</p>
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Reading 2	<i>Flooding the Canyon</i>
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Lesson 9 (1 days)	Investigating Stream Tables
Reading 1	<i>Landslides and Erosion</i>

Lesson 10 (2 days)	How Does Water Shape the Land in Our Park?
Activity 10.1	<p>How Does Water Shape the Landforms in the Case Study Parks? Share Projected Images:</p> <ol style="list-style-type: none"> 1. Deer Creek Falls (Site 3) 2. Park Guide for Grand Canyon National Park <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/6ES-Park_Pack-GrandCanyon.pdf</p> <p>Teachers may want to use discussion prompts for students to answer questions regarding images and record data, or provide the data from the Deer Creek PI and park guide to support students in writing a CER.</p>
Activity 10.2	<p>How Does Water Shape the Landforms in Our Park? Share:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/6ES-Park_Pack-Hawaii_Volcanoes.pdf</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/6ES-Park_Pack-Isle_Royale.pdf</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/6ES-Park_Pack-Rocky_Mountain.pdf</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/es1/6ES-Park_Pack-Shenandoah.pdf</p> <p>Teachers might use this as an optional activity for use with students who are able to work more independently based on their experience with Activity 10.1</p>
Reading 1	<i>What Is Sand?</i>

Lesson 11 (1 day)	How Does New Rock Form from Old Rock?
Reading 1	<i>Cooling the Lava</i>

Lesson 12 (1 day)	How Does Rock Shape Landforms?
Reading 1	<i>Sea Creatures on Mountains?</i>
Reading 2	<i>Hoodoos: How Do You Do?</i>
Activity 12.3	<p>How Does Rock Type Affect Landforms? Teachers may want to use discussion prompts for students to answer questions regarding images, record data for students to complete the CER and share the Earth Process Chart for the TE.</p>

Lesson 13 (1 day)	How Water Shapes Our World
Activity 13.1	Putting Together the Answer (<i>see Summative assessment below</i>)

Appendix 1 (1 day)	Human Impacts on Non-Living Resources
Activity 1.1	Cycling of Fossil Fuels Share Projected Images: <ol style="list-style-type: none"> 1) Global Energy Consumption 2) World Oil Reserves by Region 3) Energy Consumption per Person by Country 4) Global per Capita Energy Use
Reading 1	<i>Energy Resources</i>
Activity 1.2	Investigating Natural Resources: Soil and Plants Use only the teacher demo part of this lesson. Search for a video with white carnations and food coloring such as this: https://youtu.be/KV4YuzuXpjQ

Appendix 2 (1 day)	Human Impacts on Living Resources
Activity 2.1	Deforestation Share Projected Images: <ol style="list-style-type: none"> 1) Causes of Deforestation (circle graph) 2) Deforestation in the: United States (4 maps on one page) 3) Population Growth versus Deforestation (line graph) 4) Deforestation in the Amazon (4 maps on one page) 5) Observed Deforestation in the Amazon Compared to Future Targets <p>Teachers may want to support students by providing graphs and answers, and then just discuss.</p>

Appendix 3 (1 day)	Trapping Water Pollution
Activity 1.1	Trapping Water Pollution
Reading 1	<i>Pollutants in Earth's Water Reservoirs</i>

SUMMATIVE ASSESSMENT: Students should be able to write a scientific explanation or create an artifact to answer the driving question “How does water shape our world?” Suggested artifacts include a poster, coloring book, electronic presentation (PowerPoint, video, etc.), or brochure. Students could use data from the unit in the artifact in an interesting way. Data could include the water cycle investigations, student illustrations.

You might choose to emphasize only a portion of this as a final assessment, given what you are able to teach and what students are actually able to do during this remotely taught unit.