EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

GRADE 6

EPSD Unit 2: Earth Systems: Rocks and Minerals (part V)
Second Marking Period

<table>
<tr><td colspan="2" rowspan="2">Overview: Students use practices to understand the significant and complex issues surrounding human uses of rock and mineral resources and the resulting impacts on the development of these resources. Students also understand that the distribution of these resources is uneven due to past and current geosciences processes or removal by humans. The crosscutting concepts of patterns, cause and effect, and stability and change are called out as organizing concepts for these disciplinary core ideas. In this unit of study students are expected to demonstrate proficiency in asking questions, analyzing and interpreting data, constructing explanations, and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas.</td><td colspan="3">HMH Science Dimensions Program Resources Module G</td></tr>
<tr><td colspan="3">Unit 4: Human Impacts on Earth Systems
Unit Video: (Perito Moreno Glacier calving in Argentina); Why it Matters p. 178; Unit Starter p. 179; Vocabulary p. 179I; Unit Project p. 179K; Unit Connections p. 246; Unit Review pp. 247-250; Unit Performance Task pp. 251-252</td></tr>
<tr><td colspan="2"></td><td colspan="3">Standard for all Units: (D) Interactive Multilingual Glossary; (D/P) Unit Pretest; (D) Lesson Quizzes; (D/P) Unit Tests

Note: Refer to the Curriculum Alignment Common Language (CACL) Guide to decipher acronyms.</td></tr>
<tr><td rowspan="2">Standards: (MS-ESS2-1) Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. (MS-ESS3-1) Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater</td><td rowspan="2">Instructional Days: 10 - 15</td><td>Lesson 1: Human Impacts on the Environment pp. 180-199

D/P – WIM Questions p. 178

D/P- CYEI (digital picture) How can farming on land contribute to the growth of algal blooms in the ocean? p. 181

P- ENB (prompt) Gather evidence to explain how</td><td>Lesson 2: Engineer It: Reducing Human Impacts on the Environment pp. 200-223

D/P – WIM Questions p. 178

D/P- CYEI (digital picture) What are two environmental problems that contour farming solves? p. 201</td><td>Lesson 3: Climate Change pp. 224-243

D/P – WIM Questions p. 178

D/P- CYEI (digital picture) What could be causing ice and permafrost to melt in Shishmaref? p. 225

P- ENB (prompt) Gather evidence to help explain why ice and permafrost</td></tr>
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resources are the result of past and current geoscience processes. (MS-ESS3-4) Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.		farming on land relates to the growth of algal blooms in the ocean. p. 181 P- ENB (prompt) Describe the environment of the algae shown at the beginning of the lesson. How are the algae connected to their environment? p. 182 D/P- LS Identify Facts (Students read a newspaper article excerpt about a dam and its impact on the environment and identify statements that present facts and statements that present opinions.) p. 184 P- HOL Activity Model Ocean Pollution from Land (Students work in pairs and make a model to explore how land and ocean pollution are connected.) p. 186 P- ENB (prompt) Identify the different materials that may enter a body of water by the same process explored in the HOL Activity. Record evidence. p. 186 D/P- ENGIT Evaluate Tradeoffs (Students use the	P- ENB (prompt) Gather evidence to explain the effects of contour farming on the environment. p. 201 D/P- DTM Compare Concentrations (Students complete the statements comparing concentrations.) p. 204 P- ENB (prompt) What substances might runoff from a farm contain? How might these substances affect the quality of nearby surface water or of the soil in the field? p. 206 D/P- The Engineering Design Process Flow Chart. p. 208 D/P- HOL Activity Design a Method to Monitor Solid Waste from a School pp. 209-210 P- LS Choose a Promising Solution (Students evaluate all the possible solutions from Step 3 in the HOL Activity and choose the solution they think will best satisfy the	are melting in Shishmaref. p. 225 D/P- Students explore diagram to learn how the greenhouse effect warms Earth's atmosphere. p. 227 D/P- HOL Activity Model the Greenhouse Effect (Students construct and use a physical model to explain how greenhouse gases affect Earth's temperature.) pp. 228-229 P- LS Explain Temperature Ranges on Earth and the Moon (Students explain why the range of temperatures on Earth is so different from that on the moon and cite evidence to support their explanation.) p. 229 D/P- ENB (prompt) Which climate change factors might be contributing to phenomena occurring in Shishmaref? Think about how changes can be gradual, sudden, natural, or human caused. p. 233 D/P- DTM Compare Quantities of Carbon
Objective 1: Students will: Identify properties of minerals. Describe the process of mineral formation. Cite reasons for areas of high and low mineral distribution on a map. List uses of minerals. **Objective 2:** Students will: Identify the three main types of rocks. Explain how the rock cycle demonstrates the cycling of Earth's materials.				
Topic 1: Mineral Properties; Mineral Distribution; Uses of Minerals; and Twenty-First Century Themes and Skills (TFCTS) to include: The Four C's, Life and Career Skills, Information and Media literacy, Global Awareness and Environmental Literacy **Topic 2:** Rock Formation and TFCTS				
Essential Questions: Why aren't rocks and minerals distributed evenly across the world? How might we treat resources if we thought about the Earth as a spaceship on an extended				

survey of the solar system? (How would astronauts manage their resources?)	graph to compare ownership costs with yearly CO2 emissions for three drive system designs.) p. 189 P- ENB (prompt) What materials might runoff in the Mississippi watershed that could contribute to algae growth in waterways? p. 193 D/P- DTM Analyze a Cod Population (Students use a graph to answer questions.) p. 194 D/P- TIF (enrich) Chernobyl Nuclear Disaster pp. 195-196 D- Hands-On Lab; Impact of Deepwater Horizon Oil Well Accident; Propose Your Own Path D/P- Lesson Self Check pp. 197-198 D- Lesson Quiz D- Make Your Own Study Guide P- DI (ELL/RTI) p. 179I P- Extension p. 179I P- COLLAB p. 179J	criteria and constraints of the problem.) p. 209 D/P- DTM (Students calculate the amount of water that is saved by giving people the option of a partial flush.) pp. 212 P- ENB (prompt) How does the slope of land or direction of plowing affect how water runs over the land? What method or technology could reduce the runoff? Record evidence. p.215 D/P- HOL Activity Evaluate a Method to Reduce the Impact of Solid Waste on the Environment (Students use the engineering design process to develop a method for reducing the environmental impact of solid waste generated by their school.) pp. 217-218 D/P- TIF (enrich) Urban Planning to Reduce Impact pp. 219-220 D- Hands-On Lab; Air Pollution Past and	Dioxide (Students choose the correct terms to compare the amounts of carbon dioxide released by human activities and by volcanoes.) p. 233 D/P- Global Temperature Change, 1880-2015 (Students watch the animation to see how global temperatures have changed from 1880-2015.) p. 234 D/P- DTM Identify Correlation and Causation (Students explore the graphs showing trends in carbon dioxide levels and global temperature over the same time period and analyze data in each graph.) pp. 235-236 P- ENB (prompt) How might the erosion in Shishmaref, Alaska, be related to the recent rise in global temperature? p. 237 P- ENB (prompt) Describe how the increase in global temperatures over the last century could be

	P- Connections to Other Disciplines p. 179J D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB	Present; Propose Your Own Path D/P- Lesson Self Check pp. 221-223 D- Lesson Quiz D- Make Your Own Study Guide P- DI (ELL/RTI) p. 179I P- Extension p. 179I P- COLLAB p. 179J P- Connections to Other Disciplines p. 179J D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- VL Human Impact D- YSI Simulation How Can You Grow a Crop Using Water Efficiently?	related to the evens in Shishmaref. D/P- ENGIT Evaluate Solutions for Climate Change p. 240 D/P- TIF (enrich) Careers in Science: Geeta G. Persad, Postdoctoral Research Scientist pp. 241-242 D- Hands-On Lab; Disappearing Coral Reefs; Propose Your Own Path D/P- Lesson Self Check pp. 243-245 D- Lesson Quiz D- Make Your Own Study Guide P- DI (ELL/RTI) p. 179I P- Extension p. 179I P- COLLAB p. 179J P- Connections to Other Disciplines p. 179J D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB

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			D- ScienceSaurus Reference HB

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Curriculum Alignment Common Language (CACL) Guide 6-8		
Acronym	**Word/Phrase**	**Description**
CER	Claims Evidence Reasoning	Students make a claim and gather evidence along the way (during EXPLORATORY activities) to support claim.
CCC-HB	Crosscutting Handbook	Students who need extra support in grasping concepts or to refresh student knowledge of skills.
CYEI	Can You Explain It	Lesson phenomenon used to ENGAGE students in learning at the beginning of the lesson.
CYSI	Can You Solve It	Lesson phenomenon used to ENGAGE students in learning at the beginning of the lesson.
D	Digital	Program resources and features in interactive digital form.
DI (ELL/RTI) **Extension** **COLLAB** **Connections to Other Disciplines**	Differentiated Instruction (English Language Learner/Response to Intervention) Collaboration Connections to Other Disciplines	A page that lists all learning activities used to differentiate learning, engage students in collaborative activities and connect learning to other subjects.
DTM	Do the Math	Integrated subject learning.
ENB	Evidence Notebook	Student notebook or journal used to gather evidence during EXPLORATORY learning activities to support their claims.
ENGIT	Engineer It	Integrated subject learning.
ELA-HB	English Language Arts Handbook	Students who need extra support in grasping concepts or to refresh student knowledge of skills.
HOL	Hands-On Lab	Activities or experiments that enable students to demonstrate scientific procedures and analysis.
LS	Language SmArts	Integrated subject learning.

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M-HB	Math Handbook	Students who need extra support in grasping concepts or to refresh student knowledge of skills.
P	Print	Program resources and features in print form.
SEP-HB	Science and Engineer Practices Handbook	Students who need extra support in grasping concepts or to refresh student knowledge of skills.
TIF	Take It Further (enrich)	Enrichment activities for students in digital or print.
VBP	Video Based Project	Real life videos related to science and/or engineering that enable students to demonstrate mastery of performance expectations.
VL	Virtual Lab	Fully interactive simulations in which students perform experiments, collect data and answer questions.
WIM	Why It Matters	Questions related to lessons within each unit that asks students to consider how science affects the world around them.
YSI	You Solve It (Simulation)	Open-ended simulation-based learning with multiple answer options.