EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

GRADE 5

EPSD Unit 5: Earth Systems
Third Marking Period

<table>
<tr><td colspan="2" rowspan="2">Overview: In this unit of study, students are able to describe ways in which the geosphere, biosphere, hydrosphere, and atmosphere interact. The crosscutting concept of systems and system models is called out as an organizing concept for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in developing and using models, obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 5-ESS2-1 and 5-ESS3-1.</td><td colspan="3">HMH Science Dimensions Program Resources</td></tr>
<tr><td colspan="3">Unit 6: Earth Systems
Unit Video (water from the hydrosphere); Unit Overview p. 363; Vocabulary p. 365; Making Connections 365H; Unit Project p. 365I; Unit Performance Task pp. 438-439; Unit Review pp. 440-442</td></tr>
<tr><td colspan="2">Standards: (5-ESS2-1) Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interacts. (5-ESS3-1) Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.</td><td colspan="3">Standard for all Units: Interactive Glossary (D); Leveled Readers (D); Beginning-of-Year Test (D/P); Unit Pretest; (D) Lesson Quizzes (D/P); Unit Test (D/P)

Note: Refer to the Curriculum Alignment Common Language (CACL) Guide to decipher acronyms.</td></tr>
<tr><td colspan="2">Instructional Days: 20</td><td>Lesson 1: What Are Earth's Major Systems? pp. 366-387

D/P- CYEI (digital image) Earth’s water moves in a cycle; water we drink today was on Earth 100 million year ago. p. 367

P- ENB (prompt) What is a cycle? Gather evidence to answer question. p. 367</td><td>Lesson 2: How Do Earth’s Systems Interact? pp. 388-411

D/P- CYEI (video) Farmers use different systems to grow and harvest crops. p. 389

P- ENB (prompt) How do you think Earth’s systems are interacting in the image? p. 389</td><td>Lesson 3: What is the Role of the Oceans in Earth's Systems? pp. 412-437

D/P- CYEI (digital image) World’s oxygen is supplied mostly by tiny microscopic living things called phytoplankton. p. 413

P- ENB (prompt) How do you think something so</td></tr>
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Objective 1: Students will identify nonliving and living features found in a watershed and understand possible human negative interactions and positive solutions. **Objective 2:** Students explain the rain shadow effect and why it happens. **Objective 3:** Students develop a model to describe Earth's four major systems. **Objective 4:** Students identify ways that humans pollute the soil, air, and water on Earth and create a new sign that could be used to stop pollution. **Objective 5:** Students will create a product by reusing a common household item such as paper towel rolls, newspaper, or plastic bags.	P- ENB (prompt) For each system (biosphere, hydrosphere, geosphere, and atmosphere), write down something in your neighborhood that is part of that system. p. 369 D/P- LS Using the skill of contrasting, students explain to friends the difference between soil and dirt. p. 371 D/P- Students explore the Rock Cycle p. 372 P- DTM Measuring Layers (Students calculate which layer of the atmosphere has the greatest range in distance) p. 373 D- Pressurized Particles (Video of air pressure on a solid). D/P- HO Activity Modeling Earth's Layers (Students collaborate with peers to learn more about the layers in the geosphere) pp. 375-377 P- CER Students exchange models from HO Activity and use rulers to assess whether the layers of each are to scale. Groups write	P- ENB (prompt) Students identify ways that Earth's systems interact in the water cycle. Consider all four major Earth systems in the response. p. 390 P- DTM How Big Is a Drop? (Students order fractions.) p. 391 P- AWYK HO Activity Pollution in Action (Students use food dye to model pollution.) p. 393 D/P- HO Activity What Happens During the Water Cycle? pp. 394-395 P- CER One student group work with another student group to discuss each other's claims and evidence from Step 7 in HO Activity. p. 395 P- AWYK HO Activity Let It Shine p. 396 D/P- LS Students summarize the information about the sun's energy and Earth by stating a main idea and two supporting details about the topic. p. 397 P- ENB (prompt) Identify an effect of the uneven	small could be the base of a food chain and the main provider of the world's oxygen? p. 413 D- Video about the distribution of Earth's water. D/P- DTM Earth's Water (Students fill in a grid to model the distribution of Earth's water.) p. 414 P- AWYK HO Activity Salty Seas (Students explore the relationship between the salinity of water and how easy it is for something to float or sink in water) p. 415 D- Mixing Waters (Students watch the video to discover more about how ocean ecosystems change with depth.) P- LS Students research and report on ocean submersibles. p. 416 P- HO Activity How Do Oceans Shape Coastlines? (Students collaborate to explore physical interactions between the hydrosphere and
Topics: Earth Systems Twenty-First Century Themes and Skills include: • The Four C's • Environmental Literacy • Global Awareness			
Essential Questions: In what ways do the geosphere, biosphere, hydrosphere, and/or atmosphere interact? How do individual communities use science ideas to protect Earth's resources and environment?			

	brief critiques of each other's models. p. 377 P- AWYK HO Activity Water Fresh and Salty p. 379 P- LS Students role play scientists at a conference who are discussing the importance of water to living things. p. 380 P- ENP (prompt) What do you use water for? What are other uses of water? Do you think it is important to keep water free from pollution? Why? p. 380 P- LS Students compare the organizational levels of two different systems. p. 381 D/P- TIF (enrich) Careers in Science and Engineering: Volcanologist pp. 383-384 D- Model Earth: Above and Below; Caves D/P- Lesson Self Check pp. 385-386 D/P- Lesson Roundup p. 387 D- Lesson Quiz P- DI (ELL/RTI) p. 365G P- Extension p. 365G	heating of land and air on Earth. p. 398 D- Video of rain showers. P- ENB (prompt) Describe examples of weathering and erosion in the schoolyard or around the neighborhood. p. 401 D/P- LS Students describe the cause-and-effect relationship among at least two of Earth's spheres that leads to soil formation. p. 403 D/P- Case Study- Soil (Video about how weathering of rock occurs over time.) p. 406 D/P- TIF (enrich) Measuring Weather Across the Spheres pp. 407-408 D- Monsoons; Agricultural Engineering D/P- Lesson Self Check pp. 409-410 D/P- Lesson Roundup p. 411 D- Lesson Quiz P- DI (ELL/RTI) p. 365G P- Extension p. 365G	geosphere that occur at coastlines.) pp. 418-419 D/P- Video about coastal erosion and buildup. p. 420 P- LS Students describe how the ocean can reshape coastlines in ways that are both gradual and sudden. p. 421 D/P- Rocky Shores (Video about the Cliffs of Moher, Ireland.) P- ENB (prompt) Record evidence of how the ocean has reshaped cliffs over time. p. 422 D/P- Beach Rescue (Students examine digital pictures to discover more about solutions to beach erosion.) p. 423 D/P- Heater and Cooler (Students examine digital pictures to discover more about ocean currents and the great ocean conveyor belt.) p. 424-425 P- ENB (prompt) How does the ocean affect the atmosphere and hydrosphere? p. 425

	P- COLLAB p. 365H P- Connections to Other Disciplines p. 365H D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Earth's Systems	P- COLLAB p. 365H P- Connections to Other Disciplines p. 365H D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Earth's Systems	D/P- LS Students compare and contrast an El Nino event with a typical year.) p. 427 P- ENGIT Water Quality (Students identity an example that demonstrates how a small change in ocean water temperature affects Earth's other major systems or spheres.) p. 428 D- Video about how scientists monitor ocean water quality. P- ENB (prompt) Photosynthetic organisms usually make up the lowest levels of food chains. Students identify what they think this means about ocean food chains? p. 429 P- AWYK HO Activity Losing Light (With a partner, students explore how light is filtered out by water the deeper you go.) p. 430 D- Tidal Life (Video that shows how life changes with the tides.)

			D/P- LS Students research how the crab's behavior changes from one tide to the next. Students identify the connection between the crab's changing behavior and its changing environment. p. 431 D/P- Students watch the video to see what occurs in the open ocean. p. 432 D/P- TIF (enrich) People in Science and Engineering: Warren Washington and David Sandwell pp. 433-434 D- The Gulf Stream; Harnessing Wave Energy D/P- Lesson Self Check pp. 435-436 D/P- Lesson Roundup p. 437 D- Lesson Quiz P- DI (ELL/RTI) p. 365G P- Extension p. 365G P- COLLAB p. 365H P- Connections to Other Disciplines p. 365H

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			D- Science Safety HB D- CCC-HB D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Earth's Systems

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Curriculum Alignment Common Language (CACL) Guide K-5		
Acronym	**Word/Phrase**	**Description**
AWYK	Apply What You Know	Hands on opportunities for students to apply learning.
CER	Claims Evidence Reasoning	Students make a claim and gather evidence along the way (during EXPLORATORY activities) to support claim.
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 Science**	Differentiated Instruction (English Language Learner/Response to Intervention) Collaboration Connections to Science	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.

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ENB	Evidence Notebook (prompt)	Student notebook or journal used to gather evidence during EXPLORATORY learning activities to support their claims.
ENGIT	Engineer It	Integrated subject learning.
HB **CCC-HB** **ELA-HB** **M-HB** **SEP-HB**	Handbooks Crosscutting Concepts English Language Arts Math Science and Engineering Practices	Students who need extra support in grasping concepts or to refresh student knowledge of skills.
HO	Hands-On (Activity)	Student collaboration activities.
LS	Language Smarts	Integrated subject learning.
P	Print	Program resources and features in print form.
TIF	Take It Further (enrich)	Enrichment activities for students in print or digital.
YSI	You Solve It (Simulation)	Open-ended simulation-based learning with multiple answer options.