## **EPSD Curriculum and**



#### **GRADE 5**

# EPSD Unit 3: Energy and Matter in Ecosystems (part II) Second Marking Period

Overview: In this unit of study, students develop an understanding of the idea that plants get the materials they need for growth chiefly from air and water. Using models, students can describe the movement of matter among plants, animals, decomposers, and the environment, and they can explain that energy in animals' food was once energy from the sun. The crosscutting concepts of energy and matter and systems and system models are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate gradeappropriate proficiency in developing and using models and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 5-LS1-1, 5-LS2-1, and 5-PS3-1.

Standards: (5-LS1-1) Support an argument that plants get the materials they need for growth chiefly from air and water. (5-LS2-1) Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-PS3-1) Use models to describe that

Instructional Days: 15

### **HMH Science Dimensions Program Resources**

### **Unit 4: Energy and Matter in Ecosystems**

Unit Video (organisms at an African watering hole interacting); Unit Overview p. 219; Vocabulary p. 221; Making Connections 221H; Unit Project p. 221I; Unit Performance Task pp. 264-265; Unit Review pp. 266-268

**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.

**Lesson 1:** How Do Energy and Matter Move through Ecosystems? pp. 222-243

D/P- CYEI (video) How a change in the environment may affect different species. p. 223

P- ENB (prompt) Students respond to the following questions: Why do you think the owls (refer to eBook or p. 223) left the area? What do you think can be done to get them back? How would you test your idea? p. 223

D/P- Tracing Matter and Energy from Grasses to Owls (Students digitally

**Lesson 2:** How Do Organisms Change Their Ecosystems? pp. 244-263

D/P- CYEI (video) Burmese pythons p. 245

P- ENB (prompt) Students respond to the following questions: How do you think pythons were first introduced into the ecosystem in Florida? Why is the population growing so quickly? How could the python problem be fixed? p. 245

D/P- Organisms' Effects (Students view video to discover more about how beavers build dams. p. 246

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energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

**Objective 1:** Students will be able to identify some of the living creatures that help decompose organic materials after creating a habitat for a living creature.

**Objective 2:** Students will define a bio dome and name its important features and will use the engineering design process to create a model bio dome of a particular environment.

**Objective 3:** Students will explain the meaning of an ecosystem.

**Objective 4:** Students will understand and demonstrate how energy moves through an ecosystem.

**Topics:** Energy and Matter in Ecosystems Twenty-First Century Themes and Skills include: The Four C's • Environmental Literacy • Global Awareness

**Essential Questions**: Where do plants get the materials they need for growth? How does matter move among plants, animals,

interact and explore parts of an ecosystem.) p. 224 P- ENB (prompt) Thinking back to the beginning of the lesson, students identify what they noticed about the amount of grass available. Using the model in eBook or p. 24, students identify the impact on the rabbit population and record observations in ENB. p. 224 D/P- Explore the Tundra (Students explore the tundra online to learn more about its inhabitants and their roles.) p. 225-227 D/P- LS Making Inferences (Students infer an explanation relating to the following questions: How does the leftover matter and energy in dead organisms get recycled back to the soil? Which organism in the tundra food chain would use this recycled matter?) p. 227 D/P- Following Matter and Energy (Student explore on line to learn more about consumers, scavengers and producers, and the limiting factors in a food web.) pp. 228-231 P- ENB (prompt) Students research other types of animals that are prey for owls. Think if or how these animals might help the owls to return. Write evidence in FNB. p. 231 D/P- HO Activity Modeling Matter Moving

within an Ecosystem (Students

collaborate with a partner to choose and

model an ecosystem and use model to

D/P- Diverse Effects (Students explore digital images to discover more about some diverse ecosystems.) p. 247 D/P- We Cause Changes (Students watch videos to discover more about how humans affect ecosystems.) p. 248 P- ENGIT Students work with a partner and research ways that humans may damage the environment and ways humans attempt to reduce the damage afterwards. p. 249 D/P- LS Students use the information they have learned thus far to respond to questions. p. 249 P- ENB (prompt) Students describe how Burmese pythons might be changing the Everglades ecosystem. p. 249 D/P- New in Town (Students view video to learn more about Kudzu.) p. 250 D/P- DTM Pig Populations (Students apply basic multiplication to calculate answers to questions) p. 253 D/P- ENGIT Toad Trap (Students think about ways to trap toads without hurting them; students sketch design.) p. 254 D/P- Unwelcome Guests (Students select one invasive species and write a scientific explanation of specific ways in which this species causes changes to the ecosystem. p. 254 D/P- HO Activity Invasion (Students collaborate with a group to model how invasive species, such as the northern

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decomposers, and the environment? How can energy in animals' food be traced to the sun?

show how matter moves among organisms and their environment.) pp. 232-234

P- CER Students work with a partner to critique each other's claims and evidence in Step 9. p. 234

D/P- DTM Calculate Energy Units p. 235 D/P- LS Students compare the amount of producers to the amount of first-level consumers and explain their reasoning. p. 237

D/P- AWYK HO Activity Picturing Energy Transfer (Students use drawing tools to show the energy available to each population using a decimal square.) p. 238 P- ENB (prompt) Students examine the energy pyramid in eBook or on p. 238. How would a disappearing rabbit population impact the owls' source of energy? Enter observations in ENB. p. 238

D/P- TIF (enrich) Interview a Scientist pp. 239-240

D- Exploring a Desert Ecosystem; Exploring a Deep Sea Ecosystem

D/P- Lesson Self Check pp. 241-242 D/P- Lesson Roundup p. 243

D/F- Lesson Roundup p. 24

D- Lesson Quiz

P- DI (ELL/RTI) p. 221G

P- Extension p. 221G

P-COLLAB p. 221H

snakehead, can affect the food supply of an area. Students watch video to discover more about northern snakeheads) pp. 255-258 P- CER Students cite evidence to support their claims in Steps 8 and 9 of the HOL Activity. p. 258

D/P- TIF (enrich) Careers in Science and Engineering: U.S. Army Corps of Engineers pp. 259-260 D- it's News to Me; Fantastic Field Guides

D/P- Lesson Self Check pp. 261-262 D/P- Lesson Roundup p. 263 D- Lesson Quiz

P- DI (ELL/RTI) p. 221G

P- Extension p. 221G

P-COLLAB p. 221H

P- Connections to Other Disciplines p. 221H

D- Science Safety HB

D- ELA-HB

D- Math-HB

D- SEP-HB

D- ScienceSaurus Reference HB

D- VBP Alligator Up Close

D- YSI Simulation Build an Ecosystem

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P- Connections to Other Discipline	es p.
221⊔	

- D- Science Safety HB
- D- ELA-HB
- D- Math-HB
- D- SEP-HB
- D- ScienceSaurus Reference HB
- D- YSI Simulation Build an Ecosystem

# **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.

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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.
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.
НВ	Handbooks	
ССС-НВ	Crosscutting Concepts	Students who need extra support in grasping concepts
ELA-HB	English Language Arts	or to refresh student knowledge of skills.
М-НВ	Math	
SEP-HB	Science and Engineering Practices	
НО	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.

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YSI	You Solve It (Simulation)	Open-ended simulation-based learning with multiple
		answer options.