EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

GRADE 7

EPSD Unit 8: Living Things and Body Systems
Fourth Marking Period

Overview: Students develop a basic understanding of the needs of living things, the role of cells in body systems, and how those systems work to support the life functions of the organism. Students will construct explanations for the interactions of systems in cells and organisms. Students understand that special structures are responsible for particular functions in organisms, and that for many organisms, the body is a system of multiple-interaction subsystems that form a hierarchy, from cells to the body. Students construct explanations for the interactions of systems in cells and organisms and for how organisms gather and use information from the environment. The crosscuttings concepts of systems and system models and cause and effect provide a framework for understanding the disciplinary core ideas. Students are expected to demonstrate proficiency in engaging in argument from evidence and obtaining, evaluating, and communicating information. Students use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.

Standards: (MS-LS1-3) Use argument supported by evidence for how the body is a

Instructional Days: 15-20

HMH Science Dimensions Program Resources Module B

Unit 2: Organisms as Systems
Unit Video (Venus flytrap catching a fly) **Why it Matters** p. 44; **Unit Starter** p. 45; **Vocabulary** p. 45I; **Unit Project** p. 45K; **Unit Connections** p. 114; **Unit Review** pp. 115-118; **Unit Performance Task** pp. 119-120

Standard for all Units: (D) Interactive Multilingual Glossary; (D/P) Unit Pretest; (D) Lesson Quizzes; (D/P) Unit Test

Note: Refer to the Curriculum Alignment Common Language (CACL) Guide to decipher acronyms.

Lesson 1: Levels of Organization in Organisms pp. 46-63 D/P- WIM Questions p. 44 D/P- CYEI (digital pictures) How can systems with such different structures perform the same function? p. 47	**Lesson 2:** Plant Bodies as Systems pp. 64-79 D/P- WIM Questions p. 44 D/P- CYEI (digital picture) How can the onyanga thrive in the harsh conditions of the Namib Desert? p. 65	**Lesson 3:** Animal Bodies as Systems pp. 80-97 D/P- WIM Questions p. 44 D/P- CYEI (digital picture) How does this nautilus move and catch food? p. 81 P- ENB (prompt) Gather evidence	**Lesson 4:** Information Processing in Animals pp. 98-113 D/P- WIM Questions p. 44 D/P- CYEI Why is it so difficult to catch a fly? p. 99 P- ENB (prompt) Students gather evidence to help

system of interacting subsystems composed of groups of cells. (MS-LS1-8) Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.		P- ENB (prompt) Gather evidence to help explain the structures of the two digestive systems. p. 47 D/P- Analyze Levels of Organization in a Lizard (Students explore hotspots online to find out about the levels of organization in the circulatory system of the frilled lizard.) p. 50 D/P- HOL Activity Model Tissue Structure and Function (Students work in small groups to model two different tissue types and relate their structure to their function.) p. 51 P- ENB (prompt) The gizzard in the earthworm contains small stones that help grind up bits of	P- ENB (prompt) Gather evidence to help explain how the onyanga's body systems help it survive. p. 65 D/P- Exploring Plant Body Systems (Students take a closer look at photos online to find out about different types of plant bodies.) p. 66 D/P- The Plant Body System (Students explore hotspots online to find out about plant cells, tissues, organs, and organ systems.) p. 67 P- ENB (prompt) The onyanga has a wide, shallow root system. How might this type of root system help the onyanga collect nightly fog? Record evidence. p. 68 D/P- Analyze a Plant Body System	to help explain how the body systems of the nautilus function. p. 81 D/P- The Animal Body: Animal Diversity (Students take a closer look online to learn about ocean animals and nine different phyla.) p. 83 D/P- Functions of Animal Bodies: The Human Body (Students explore images online to learn about some of the body systems.) p. 84 p- ENB (prompt) Students record how they think the nautilus body provides support and movement. p. 87 P- ENB (prompt) Students describe how they think the nautilus body	them explain how a fly processes information. p. 99 D/P- Describing Information Processing in Animals: Animal Responses to Changes in Temperature (Students record some behaviors an animal might perform in the digital diagram.) p. 100 D/P- Animal Responses to Environmental Stimuli (Students use words from word bank to participate in a matching activity online.) p. 102 D/P- Processing Sensory Information: Major Areas of the Human Cerebral Cortex (Students explore hotspots on line to learn
Objectives: Students will: Explore sensory responses to stimuli. Use an oral and written argument supported by evidence to support or refute an explanation or a model of how the body is a system of interacting subsystems composed of groups of cells.					
Topics: Characteristics of Living Things; Stimulus/Response; Body Systems; and Twenty-First Century Themes and Skills (TFCTS) to include: The Four C's, Life and Career Skills, and Information and Media literacy.					
Essential Questions: What are humans made of? What is the evidence that a body is actually a system of interacting subsystems composed of groups of interacting cells? How do organisms receive and respond to information from their environment?					

	food. Why might the earthworm have a gizzard but the cow does not? Record evidence in ENB.) p. 52 D/P- DTM (Students follow steps to solve math problems that involve writing and solving equations and using concepts of probability.) p. 52 D/P- Relating Structure to Function in Living Things: Structure and Function of Animal Tissues (Students explore hotspots online to learn more about the rat tissues.) p. 53 D/P- Structure and Function of Organs (Students explore online to learn more about the structures of the organs in a tulip	(Students watch video online to find out how the sundew traps an insect.) p. 68 D/P- Describing How Plant Systems Process Nutrients: Making Food (Students complete digital diagram online to explore the process of photosynthesis.) p. 69 D/P- ENGIT Students identify what plant structure might engineers look at when they are designing the way that solar cells are arranged; students explain their reasoning. p. 69 D/P- Moving Materials (Students use word bank to compare root systems and complete the Venn diagram.) p. 70	structures help it catch and eat food and what sensory stimulus they think it uses; students record evidence in their ENB. p. 88 D/P- Whale Breaching Behavior (Students watch video of whale detecting a stimulus in the environment.) p. 89 D/P- LS Sequence an Animal Response (Students choose one idea about why whales breach and write a detailed sequence of events describing the interaction of body systems that happens when the whale breaches.) p. 89	about the frontal lobe.) p. 103 P- ENB (prompt) Students think back to the picture of the fly at the beginning of the lesson and identify what types of stimuli the fly is responding to when they try to catch it and which body structures might be involved; students record their evidence in their ENB. p. 104 D/P- LS Explain Sensory Receptor Patterns (Students identify why they think parts of the body have such differences and write an argument to explain the differences in the sensitivities of the different parts of the body.) p. 104 D/P- Describing Animal Responses

	flower and a scarlet macaw bird.) pp. 54-55 D/P- LS Relate Cells to Organ Systems (Students develop an argument that explains how an organism is made up interacting body systems, which are all made up of cells; students also explain how each level of organization is made up of a system of interacting parts.) p. 55 P- ENB (prompt) In the cow, food travels through four different stomach compartments so that it can be fully broken down. Students identify factors they think contribute to the structure of the cow's digestive system and record	D/P- HOL Activity Observe Transport (Students compare and contrast the movement of water through the stems of two different types of plants.) p. 71 D/P- LS Use Observation to Develop an Argument (Students identify the type of environmental conditions might a plant with shallow roots, short stems, and leaves covered in fuzzy hair, live; students use observations as evidence to support their argument.) p. 72 D/P- DTM Calculate Stomata Percentage (Using a photo of a leaf, students use data to calculate the percentage of	D/P- HOL Activity Measure System Response to Exercise (Students perform an exercise and measure the responses of their respiratory and cardiovascular systems.) pp. 91-92 D/P- DTM Students calculate the average of the three trials in the HOL Activity and identify if the values recorded for each trial are the same. pp. 91 D/P- ENGIT Design a Video Game Character (Students apply engineering design to develop a video game character with unique features and abilities.) p. 92	to Information (Students read text and identify immediate behaviors that each animal might perform and what might be stored as memory for each animal.) p. 105 D/P- DTM Analyze Hibernation (Students use a graph to analyze the average mass of dormice over time.) p. 106 D/P- HOL Activity Measure Reaction Time (Students measure their reaction time in response to a falling object and compare their data with other groups.) pp. 107-108 P- ENB (prompt) Students look back at the photo of the fly and identify if the fly has a fast reaction to their

	evidence in their ENB. p. 56 D/P- Students watch video to observe a hummingbird in flight. p. 58 D/P- ENGIT Compare Natural and Designed Systems (Students read text and analyze the steps of the papermaking process and compare it to the process of an animal digesting food.) p. 58 D/P- TIF (enrich) Biomimicry pp. 59-60 D- Hands-On Labs; Engineering Organs and Tissues; Propose Your Own Path D/P- Lesson Self Check pp. 61-63 D- Lesson Quiz	stomata on the surface of a leaf.) p. 73 P- ENB (prompt) The onyanga opens its stomata only at night for necessary gas exchange. How might this adaptation help the plant survive in its environment? Record evidence in the ENB. p. 74 D/P- Construct an Explanation (Students watch video to observe a plant wilting; students then identify how interactions at the cell and tissue levels cause a plant to wilt.) p. 74 D/P- TIF (enrich) Growing Plants in Space pp. 75-76 D- Hands-On Labs; Feeding the World Using Less Water;	D/P- TIF (enrich) Careers in Science: Animal Scientists pp. 93-94 D- Hands-On Labs; Leonardo da Vinci; Propose Your Own Path D/P- Lesson Self Check pp. 95-97 D- Lesson Quiz D-Make Your Own Study Guide P- DI (ELL/RTI) p. 45I P- Extension p. 45I P- COLLAB p. 45J P- Connections to Other Disciplines p. 45J D-Science Safety HB D- CCC-HB D- ELA-HB D-M-HB D- SEP HB D-ScienceSaurus Reference HB	swatter or a slow reaction; students also identify what effect might memory and experience have on the fly's reaction time in the long-term. Students record evidence. p. 108 D/P- ENGIT Compare Information Processing in Different Systems (Students analyze data from the text in the lesson and communicate how information processing is similar for animals and computers.) p. 108 D/P- TIF (enrich) Migration pp. 109-110 D- Hands-On Labs; Sensory Organ Adaptations;

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	D-Make Your Own Study Guide P- DI (ELL/RTI) p. 45I P- Extension p. 45I P- COLLAB p. 45J P- Connections to Other Disciplines p. 45J D-Science Safety HB D- CCC-HB D- ELA-HB D-M-HB D- SEP-HB D-ScienceSaurus Reference HB	Propose Your Own Path D/P- Lesson Self Check pp. 77-79 D- Lesson Quiz D-Make Your Own Study Guide P- DI (ELL/RTI) p. 45I P- Extension p. 45I P- COLLAB p. 45J P- Connections to Other Disciplines p. 45J D -Science Safety HB D- CCC-HB D- ELA-HB D-M-HB D- SEP-HB D-ScienceSaurus Reference HB		Propose Your Own Path D/P- Lesson Self Check pp. 111-113 D- Lesson Quiz D-Make Your Own Study Guide P- DI (ELL/RTI) p. 45I P- Extension p. 45I P- COLLAB p. 45J P- Connections to Other Disciplines p. 45J D-Science Safety HB D- CCC-HB D- ELA-HB D-M-HB D- SEP-HB 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.