EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

GRADE 4

EPSD Unit 3: Structure and Function (part I)
Second Marking Period

Overview: In this unit of study, students develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. The crosscutting concepts of systems and system models are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in engaging in argument from evidence. Students are also expected to use this practice to demonstrate understanding of the core idea. This unit is based on 4-LS1-1.

Standards: (4-LS1-1) Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Instructional Days: 10-15

Objective 1: Students will explore how different animal mouth shapes allow it to obtain food and survive.

Objective 2: Students will be able to understand specialized body parts of bees and their role in agricultural science.

HMH Science Dimensions Program Resources

Unit 4: Plant Structure and Function
Unit Video (man picking apples off a tree); **Unit Overview** p. 229; **Vocabulary** p. 231; **Making Connections** p. 231H; **Unit Project** p. 231I; **Unit Performance Task** p. 278-280; **Unit Review** pp. 276-277

Standard for all Units: Interactive Glossary (D); Leveled Readers (D); Beginning-of-Year Test (D/P); Unit Pretest (D/P); Lesson Quizzes (D/P); Unit Test (D/P)

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

Lesson 1: What Are Some Plant Parts and How Do They Function? pp. 232-253

D/P- CYEI (video) Plant responding to its environment. p. 233

P- ENB (prompt) Why do you think the plants in the pictures bend in the directions that they do? How would this behavior help the plant grow and survive? p. 233
P- ENB (prompt) Which part of the plant uses light? What does it use light for? p. 238
D/P- LS Writing Opinion Pieces (Students make a claim about which plant part they

Lesson 2: How Do Plants Grow and Reproduce? pp. 254-275

D/P- CYEI (video) Video about how fruit is produced. p. 255

P- ENB (prompt) How did the one flower turn into fruit? Why did some of the other flowers not turn into fruit? p. 255
D/P- Flower Power/Parts of a Flower (Students take a closer look at parts of a flower.) p. 256
D/P- Where did the Pollen Go? (Students watch video and explore online to learn more about how pollen is moved from plant to plant.) p. 257

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Objective 3: Students observe the external and internal parts of a plant and flower to understand how this plant survives and reproduces. **Objective 4:** Students will understand how insect mouthparts are adapted for a particular food source. **Objective 5:** Students will explore seed dispersal and classify seeds by the method of dispersal. **Topics:** Animal Structures and Plant Structures Twenty-First Century Themes and Skills include: Environmental Literacy • The Four C's • Global Awareness **Essential Questions:** How do internal and external parts of plants and animals help them to survive, grow, behave, and reproduce?	think is most important overall for plant growth.) p. 238 D/P- Slurp! (Students explore online to learn more about how water moves inside plants.) p. 239 D/P- LS Interpreting Visual Information (Students describe the two different tube systems in a plant.) p. 240 D/P- ENGIT Green Roofs (Students view video to explore more about how green roofs are built.) p. 241 P- AWYK HO Activity (Students make a 3D model of a plant's water system.) p. 242 P- ENB (prompt) Think about the tube systems in plants and the learning plants pictured at the beginning of the lesson. Which tube system needs light to do its function or job? p. 242 D/P- AWYK HO Activity Engineer It!: Hold the Soil (Students collaborate with peers to build a system to grow plants in water instead of soil.) pp. 243-245 P- CER (For Step 10 in the HO Activity, group members come to a consensus for a valid claim they could make, based on their results.) p. 245 D/P- Move and Groove (Students watch the videos to learn more about how plants behave.) p. 246 D/P- Oh, Behave! (Students explore online to learn more about how plants respond to their environment.) p. 247	D/P- Summarize (Students summarize the process a flowering plant goes through for fertilization using the words "pollination" and "fertilization.") p. 257 P- ENB (prompt) Students think about the image from the beginning of the lesson and: identify the pollinators that they saw, what the pollinators were doing to the flower, and how the flower changed as a result of the pollinators' visits.) p. 259 P- AWYK HO Activity Pollination Models (Students make two models of flowers using cups to represent the flowers.) p. 259 P- AWYK HO Activity Pinecone Parts (Students explore a real pinecone and its structure and draw what they see in detail.) p. 261 P- ENB (prompt) What type of reproductive method and structure did Madison's apple tree have? Provide evidence to support answer. p. 264 P- LS Using Evidence (Based on the provided scenario, students identify whether they agree or disagree and provide evidence to support their response.) p. 264 P- ENB (prompt) Students construct an argument to prove that apples grow on apple trees as part of the tree's life cycle. p. 267

	P- ENB (prompt) Which photo in the eBook or on p. 247 show a plant's bending behavior similar to what was seen at the beginning of the lesson? p. 248 P- AWYK HO Activity (Students choose one of the ways a plant responds to its environment and draw a comic strip in their ENB with at least three panels showing one of the plant behaviors they learned about.) p. 248 P- LS Multiple Sources (Using multiple sources, students explain how plant behavior helps plants survive.) p. 248 D/P- TIF (enrich) People in Science & Engineering: Clayton Anderson pp. 249-250 D- Burrr! D- How Unusual! P- ENGIT Upside Down Plants (Students imagine themselves being a scientist who have been hired by a museum and are asked to make a device to hang a plant upside down to teach young children about how plants respond to the force of gravity.) p. 250 D/P- Lesson Check pp. 251-252 D/P- Lesson Roundup p. 253 D- Lesson Quiz P- DI (ELL/RTI) p. 231G P-Extension p. 231G	P- LS Inference (Students respond to two questions, #17 and #18, to test their understanding of how seeds are dispersed.) p. 267 D/P- AWYK HO Activity Flying High (Students collaborate in small groups to design and test a device that disperses a seed using wind.) pp. 268-270 P- CER (Students work with a partner to critique each other's claims and evidence from the HO Activity.) p. 270 D/P- TIF (enrich) Careers in Science & Engineering: Pomologist pp. 271-272 D- Wait, There's More! D- It's What's On the Inside D/P- Lesson Check pp. 273-274 D/P- Lesson Roundup p. 275 D- Lesson Quiz P- DI (ELL/RTI) p. 231G P-Extension p. 231G P- COLLAB p. 231H P- Making Connections p. 231H D- Science Safety HB D- CCC-HB D- ELA-HB D- SEP-HB D- ScienceSarurs Reference HB

	P- COLLAB p. 231H P- Making Connections p. 231H D- Science Safety HB D- CCC- HB D- ELA-HB D- SEP-HB D- ScienceSarurs Reference HB D- YSI Simulation Plant Structure and Function: Growing Plants in Different Environments	

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.

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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.
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.

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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.