EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

GRADE 5

EPSD Unit 2: Changes to Matter
First Marking Period

<table>
<tr><td colspan="2" rowspan="3">Overview: In this unit of study, students develop an understanding of the idea that regardless of the type of change that matter undergoes, the total weight of matter is conserved. Students determine whether the mixing of two or more substances results in new substances. The crosscutting concepts of cause and effect and scale, proportion, and quantity are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations and using mathematics and computational thinking. Students are expected to use these practices to demonstrate understanding of the core ideas. This unit is based on 5-PS1-4 and 5-PS1-2.</td><td colspan="3">HMH Science Dimensions Program Resources</td></tr>
<tr><td colspan="3">Unit 2: Matter
Unit Video (matter at the beach: sand, shovel, water and air); Unit Overview p. 73; Vocabulary p. 75; Making Connections 75H; Unit Project p. 75I; Unit Performance Task pp. 152-153; Unit Review pp. 154-156</td></tr>
<tr><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 rowspan="2">Standards: (5-PS1-4) Conduct an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-2) Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.</td><td rowspan="2">Instructional Days: 15</td><td>Lesson 1: What Is Matter? pp. 76-99

D/P- CYEI (video) People running a race p. 77

P- ENB (prompt) Students identify the kinds of matter in the photo (people running a race). p. 77
D/P- At the Fair (Students explore online to discover more about matter at the fair.) p. 79</td><td>Lesson 2: What Are Properties of Matter? pp. 100-125

D/P- CYEI (video) Strange substances p. 101

P- ENB (prompt) Students identify how they would describe the substance on p. 101 to a friend. p. 101
D/P- HO Activity What Affects the Rate of Dissolving? (Students collaborate with peers to</td><td>Lesson 3: How Does Matter Change? pp. 126-151

D/P- CYEI (video) Two liquids mixing together to form a solid p. 127

P- ENB (prompt) How could a solid result from the mixing of two liquids? p. 127
P- ENB (prompt) Students identify evidence they</td></tr>
</table>

EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

Objective 1: Students will complete an investigation to determine if a new substance is produced when two substances are mixed. **Objective 2:** Students will be able to identify the signs of a chemical reaction. **Objective 3:** Students will determine if changes in matter have created something new or not. **Objective 4:** Students will prove that even though new substances are produced during chemical reactions, the beginning and ending mass/weight stays the same. **Objective 5:** Students provide evidence to support their conclusion that the amount of matter present is conserved or is not conserved when matter changes state. **Topics:** Changes in Matter Twenty-First Century Themes and Skills include: The Four C's • Environmental Literacy **Essential Questions**: How can we make slime? How can baking soda and vinegar burst a zip-lock bag?	P- ENB (prompt) Students identify types of matter at the fair and explain why they selected those items. p. 79 D/P- Contents of Charcoal (Students watch animation to discover more about the matter we see---and don't see!) p.80 D/P- AWYK HO Activity Is It Still There? (Students test to see what happens to a sugar cube in water.) p. 81 D/P- LS Students describe how different particles join together to form other things. p. 82 D/P- ENGIT Carbon Fiber (Students watch video to discover more about carbon; students summarize how carbon fiber is made, some of its important properties, and why it is used to make sports equipment.) p. 83 P- AWYK HO Activity Air Is Matter (Students test to see if air has the properties of the state they assigned to the table on p. 85.) p. 85	investigate three different variables.) pp. 102-104 D/P- AWYK HO Activity Bridge Building (Students sketch a design and build a model of a bridge using various materials.) p. 109 D/P- ENB (prompt) Students think about how the properties they've learned about so far – color, size, shape, hardness, and reflectivity—would be good or not so good for identifying types of matter. p. 109 D/P- Students watch video to discover more about conduction. p. 111 D/P- AWYK HO Activity Conducting Conductors (Students make their own circuits to test different materials for conductivity.) p. 111 D/P- LS Researching Insulators and Conductors (Students research conductors and insulators to compare their properties.) p. 111	have found that show a physical change has occurred (refer to cans on p. 129). p. 129 D/P- Students watch videos to discover more about how temperature can change matter. p. 131 D/P- DTM Explaining Patterns in Melting (Students review graph and answer questions.) p. 131 D/P- Phase in, Phase out (Students watch video to see how water changes forms.) p. 132 D/P- LS Making Rice in the Kitchen (Students identify changes that take place with water when making rice.) p. 132 D/P- HO Activity Which Will React? (Students work with peers to identify substances by observing physical and chemical changes.) pp. 133-135 D/P- AWYK HO Activity Seeing Chemical Changes p. 137 D/P- ENB (prompt) Students respond to

	D/P- How Much Matter Do You Have (Students collaborate with peers to investigate volume, weight, and length.) pp. 86-87 D/P- DTM Measuring Length with the Metric System (Students measure and record the length, width, and height of their desk in centimeters and then convert measurements to meters.) p. 89 D/P- Wait for Weight (Students watch video to discover more about weights and balances.) p. 90 D/P- LS Students research the meaning of four commonly used prefixes in the metric system and write an explanation for each. p. 91 D/P- ENB (prompt) Matter has weight and volume. There are many different methods for measuring properties. Students identify the evidence they	D/P- Dissolving and Evaporating (Students watch videos to discover more about dissolving and evaporating) p. 112 D/P- DTM Interpret a Graph (Students identify the patterns shown on the graphs.) p. 113 D/P- ENB (prompt) Students identify evidence they would need to determine if something shows the properties of solubility, flexibility, and magnetism.) p. 113 D/P- ENB (prompt) Students identify how they would know if something is a solution or just a mixture. p. 117 D/P- Separating a Mixture (Students watch videos to discover more about separating mixtures.) p. 118 D/P- AWYK HO Activity Colors on the Move (Students use their knowledge of mixtures and solutions to separate a mixture.) p. 119	several questions relating to the AWYK HO Activity, Seeing Chemical Changes. p. 137 D/P- Chemical Changes up Close: Rusting and Rotting (Students watch video and answer questions that follow.) p. 138 D/P- ENGIT Electroplating (Students watch video to discover more about electroplating.) p. 139 D/P- Changes at Home: Cooking Science (Students explore online to discover more about changes that occur during cooking.) p. 140 D/P- ENB (prompt) Students identify types of things that happen in the kitchen that are chemical changes and provide evidence. p.141 D/P- AWYK HO Activity Pull the Wool Over Your Eyes (Students investigate the conservation of matter during a chemical change.) p. 145 D/P- ENB (prompt) Students respond to the

	have for these claims. p. 92 D/P- Solid in Liquid (Students watch video to discover more about displacement as a way of calculating volume.) p. 94 D/P- AWYK HO Activity How Does Matter Fit Together? (Students practice with measuring volume.) p. 94 D/P- TIF (enrich) Careers in Science and Engineering: Materials Scientists and Engineers pp. 95-96 D- Organizing Particles; More States of Matter D/P- Lesson Self Check pp. 97-98 D/P- Lesson Roundup p. 99 D- Lesson Quiz P- DI (ELL/RTI) p. 75G P- Extension p. 75G P- COLLAB p. 75H P- Connections to Science p. 75H D- Science Safety HB D- CCC-HB	D/P- ENGIT Alloys (Students examine digital pictures to discover more about alloys.) p. 120 D/P- LS A Solution of Metals (Students conduct research on superalloys and where and why they are commonly used.) p. 120 D/P- TIF (enrich) People in Science and Engineering: Shirley Ann Jackson and Anthony Atala pp. 121-122 D- Healthy Mixtures; Mineral Hardness Scale D/P- Lesson Self Check pp. 123-124 D/P- Lesson Roundup p. 125 D- Lesson Quiz P- DI (ELL/RTI) p. 75G P- Extension p. 75G P- COLLAB p. 75H P- Connections to Science p. 75H D- Science Safety HB D- CCC-HB D- ELA-HB	following question: If two liquids combined to form a solid and liquid, how much matter do you think the new substances would have compared to the amounts of matter in the original substances? Record evidence in ENB. p. 145 D/P- TIF (enrich) People in Science and Engineering: Antoine Lavoisier pp. 147-148 D- Slow Down the Spoil; Acids and Bases D/P- Lesson Self Check pp. 149-150 D/P- Lesson Roundup p. 151 D- Lesson Quiz P- DI (ELL/RTI) p. 75G P- Extension p. 75G P- COLLAB p. 75H P- Connections to Science p. 75H D- Science Safety HB D- CCC-HB D- ELA-HB

EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

	D- ELA-HB D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Maze Matters	D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Maze Matters	D- Math-HB D- SEP-HB D- ScienceSaurus Reference HB D- YSI Simulation Maze Matters

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.

EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

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.
TIF	Take It Further (enrich)	Enrichment activities for students in print or digital.

EPSD Curriculum and HMH SCIENCE DIMENSIONS 2018 Alignment TEMPLATE

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