

**Centerville-Abington Elementary Curriculum Mapping**  
**Science – 5<sup>th</sup> Grade**  
**1<sup>st</sup> Nine Weeks**

| Unit<br>Chapter<br>Lesson                 | Indiana Standard(s)   | Key Concepts  | Resources/Activities  | Vocabulary   | Assessments  |
|---|---|---|---|--|--|
| Pre -<br>Lesson<br>pgs. 2-14              | <b>SEPS. 1-8</b>  | Identify the steps in the scientific method.<br><br>Learn how scientists form and test a hypothesis.                  | pgs. 2-14<br>Science Fair or<br>Science Fair<br>Alternative (ex.<br>google slides project<br>on the scientific<br>method) | scientific method<br>hypothesis<br>variables<br>data | teacher made<br>tests<br>and/or<br>project based<br>rubric |
| Unit 1<br>Lesson 1:<br>Volume             | <b>5.PS.1</b> Describe and measure the volume and mass of a sample of a given material.   | Describe matter and what is made of.<br><br>Explain how to measure the volumes of both liquids and solids.            | pgs. 18-33<br>Science Lab pg. 20<br>Lit .Skills pg. 273,274<br>Quick Lab pg. 303  | matter (NCA)<br>atom<br>volume (NCA)<br>meniscus     | teacher made<br>tests<br>and/or<br>project based<br>rubric |
| Unit 1<br>Lesson 2:<br>Mass and<br>Weight | <b>5.PS.2</b> Demonstrate that regardless of how parts of an object are assembled the mass of the whole object is identical to the sum of the mass of the parts; however, the volume can differ from the sum of the volumes. (Law of Conservation of Mass | Describe and measure the mass and weight of a given material.<br><br>Describe the difference between mass and weight. | pgs. 34-47<br>Science Lab pg. 36<br>Lit .Skills pg. 275,276<br>Quick Lab pg. 304  | mass (NCA)<br>pan balance<br>gravity<br>weight       | teacher made<br>tests<br>and/or<br>project based<br>rubric |

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| <p>Unit 1<br/>Lesson 3:<br/>Conservation of Matter</p> | <p><b>5.PS.4</b> Describe the difference between weight being dependent on gravity and mass comprised of the amount of matter in a given substance or material.</p>            | <p>Demonstrate that the weight of a whole object is equal to the sum of the weights of its parts.</p> <p>Demonstrate that the volume of a whole object can differ from the sum of volumes of its parts.</p>                               | <p>pgs. 48-59<br/>Science Lab pg. 50<br/>Lit .Skills pg. 277,278<br/>Quick Lab pg. 305</p> | <p>conserve<br/>pressure<br/>contract<br/>expand</p> | <p>teacher made tests and/or project based rubric</p> |
| <p>Unit 1<br/>Lesson 4:<br/>Changes To Matter</p>      | <p><b>5.PS.3</b> Determine if matter has been added or lost by comparing mass when melting, freezing, or dissolving a sample of a substance. (Law of Conservation of Mass)</p> | <p>Determine if matter has been added or lost by comparing weights when melting and freezing a sample of a substance.</p> <p>Determine if matter has been added or lost by comparing weights when dissolving a sample of a substance.</p> | <p>pgs. 60-75<br/>Science Lab pg. 62<br/>Lit .Skills pg. 279,280<br/>Quick Lab pg. 306</p> | <p>melting<br/>freezing<br/>dissolve</p>             | <p>teacher made tests and/or project based rubric</p> |

**Curriculum Mapping**  
**Science – 5<sup>th</sup> Grade**  
 2<sup>nd</sup> Nine Weeks

| Unit<br>Chapter<br>Lesson                  | Indiana<br>Standard(s)   | Key Concepts   | Resources/Activities  | Vocabulary  | Assessments                                    |
|--|--|--|---|---|--|
| Unit 2<br>Lesson 1:<br>Earth and<br>Sun    | <b>5.ESS.2</b> Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.   | Observe how the Sun appears to move across the sky.<br><br>Explain how shadows are affected by the relative positions of Earth and the Sun.  | pgs. 86-103<br>Science Lab pg. 88<br>Lit .Skills pg. 281,282<br>Quick Lab pg. 307   | rotation<br>revolution<br>shadow  | teacher made tests and/or project based rubric |
| Unit 2<br>Lesson 2:<br>Earth and<br>Moon   | <b>5.ESS.1</b> Analyze the scale of our solar system and its components: our solar system includes the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets. | Describe how the shape of the Moon changes over the course of a month.<br><br>Describe patterns in the rising and setting times of the Moon.<br><br>Explain how eclipses occur.          | pgs. 104-117<br>Science Lab pg. 106<br>Lit .Skills pg. 283,284<br>Quick Lab pg. 308 | phase<br>solar eclipse<br>lunar eclipse   | teacher made tests and/or project based rubric |
| Unit 2<br>Lesson 3:<br>The Solar<br>System | <b>5.ESS.1</b> Analyze the scale of our solar system and its components: our solar system includes the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets. | Recognize that Earth is part of our Solar System.<br><br>Observe that the parts of our solar system are the Sun, the Moon, eight planets and their moons, and many other smaller bodies. | pgs. 118-137<br>Science Lab pg. 120<br>Lit .Skills pg. 285,286<br>Quick Lab pg. 309 | star<br>solar system (NCA)<br>planet<br>inner planet<br>outer planet<br>comet<br>meteor<br>asteroid<br>moon | teacher made tests and/or project based rubric |

# Curriculum Mapping

## Science – 5<sup>th</sup> Grade

3<sup>rd</sup> Nine Weeks

| Unit<br>Chapter<br>Lesson                            | Indiana<br>Standard(s)   | Key Concepts  | Resources/Activities  | Vocabulary  | Assessments  |
|--|--|---|---|---|--|
| Unit 3<br>Lesson 1:<br>Producers<br>and<br>Consumers | <b>5.ESS.4</b> Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.  | Observe the relationship and interactions of organisms in their ecosystem.<br><br>Classify organisms as producers, consumers, predator, and prey. | pgs. 148-163<br>Science Lab pg. 150<br>Lit .Skills pg. 287,288<br>Quick Lab pg. 310 | ecosystem<br>food chain (NCA)<br>producer (NCA)<br>consumer (NCA)<br>predator (NCA)<br>prey (NCA) | teacher made tests<br>and/or<br>project based rubric |
| Unit 3<br>Lesson 2:<br>Decompose<br>rs               | <b>5.LS.3</b> Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.<br><b>5.LS.1</b> Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. | Describe the actions of different decomposers.<br><br>Compare the role of decomposers with that of producers and consumers.                       | pgs. 164-177<br>Science Lab pg. 166<br>Lit .Skills pg. 289,290<br>Quick Lab pg. 311 | decomposer (NCA)<br>organic matter  | teacher made tests<br>and/or<br>project based rubric |

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| <p>Unit 3<br/>Lesson 3:<br/>Indiana<br/>Organisms</p>     | <p><b>5.LS.2</b> Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.</p> | <p>Classify Indiana organisms as producers, consumers, decomposers, predators, and prey.</p> <p>Observe food chains and food webs within Indiana ecosystems.</p>               | <p>pgs. 178-191<br/>Science Lab pg. 180<br/>Lit .Skills pg.<br/>291,292<br/>Quick Lab pg. 312</p> | <p>plankton<br/>foodweb<br/>competition</p>  | <p>teacher made tests and/or project based rubric</p> |
| <p>Unit 3<br/>Lesson 4:<br/>Changes in<br/>Ecosystems</p> | <p><b>5.ESS.3</b> Investigate ways individual communities within the United States protect the Earth's resources and environment</p>   | <p>Describe how changes in one part of an ecosystem can cause changes in other parts of the ecosystem.</p> <p>Describe the natural and human-caused changes in ecosystems.</p> | <p>pgs. 192-209<br/>Science Lab pg. 194<br/>Lit .Skills pg.<br/>293,294<br/>Quick Lab pg. 312</p> | <p>nonnative species<br/>extinct species<br/>endangered species<br/>threatened species</p> | <p>teacher made tests and/or project based rubric</p> |

**Curriculum Mapping**  
**Science – 5<sup>th</sup> Grade**  
 4<sup>th</sup> Nine Weeks

| Unit<br>Chapter<br>Lesson                       | Indiana<br>Standard(s)  | Key Concepts  | Resources/Activities   | Vocabulary   | Assessments                                    |
|---|---|---|--|--|--|
| Unit 4<br>Lesson 1:<br>Technology<br>and YOU    | <b>3-5.E.1</b> Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost. | Explain how technology is used to solve problems.<br><br>Describe the different fields of technology.   | pgs. 220-231<br>Science Lab pg. 222<br>Lit .Skills pg. 295,296<br>Quick Lab pg. 314  | technology   | teacher made tests and/or project based rubric |
| Unit 4<br>Lesson 2:<br>Technology<br>and Nature | <b>3-5.E.1</b> Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost. | Investigate technologies that mimic human and animal musculoskeletal systems.<br><br>Describe the needs met by prosthetic and robotic technologies. | pgs. 232 -245<br>Science Lab pg. 234<br>Lit .Skills pg. 297,298<br>Quick Lab pg. 315 | mimic<br>bionics<br>prosthesis<br>musculoskeletal system<br>robotics | teacher made tests and/or project based rubric |

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| <p>Unit 4<br/>Lesson 3:<br/>The Design Process</p> | <p><b>3-5.E.2</b> Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.<br/><b>3-5.E.3</b> Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</p> | <p>Explain how the design process is used to solve problems.</p> <p>Investigate the purpose of prototypes and models when designing a solution to a problem.</p> | <p>pgs. 246-263<br/>Science Lab pg. 248<br/>Lit .Skills pg. 299,300<br/>Quick Lab pg. 316</p>                                    | <p>engineering model<br/>design process<br/>brainstorm<br/>criteria<br/>schematic<br/>prototype</p> | <p>teacher made tests and/or project based rubric</p>   |
| <p>Notes:</p>                                      | <p>**Revised 2016 Indiana State Standards do not match the adopted textbook as well as the previous state standards. Teachers should be aware and supplement the textbook in these areas.</p>  |  | <p>** Teacher may choose to do other labs to teach the same content or use additional materials (readworks or short videos).</p> |   | <p>** Adopted textbook did not write assessments for Indiana. The included assessments found online are written for the national standards. Teachers will need to develop their own</p> |

5<sup>th</sup> Grade Science Standards and Standard Descriptions

|                              |  |
|------------------------------|--|
| <b>Physical Science (PS)</b> |  |
| <b>5.PS.1</b>                | Describe and measure the volume and mass of a sample of a given material.  |
| <b>5.PS.2</b>                | Demonstrate that regardless of how parts of an object are assembled the mass of the whole object is identical to the sum of the mass of the parts; however, the volume can differ from the sum of the volumes. (Law of Conservation of Mass) |
| <b>5.PS.3</b>                | Determine if matter has been added or lost by comparing mass when melting, freezing, or dissolving a sample of a substance. (Law of Conservation of Mass)  |
| <b>5.PS.4</b>                | Describe the difference between weight being dependent on gravity and mass comprised of the amount of matter in a given substance or material.   |
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|--------------------------------------|---|
| <b>Earth and Space Science (ESS)</b> |   |
| <b>5.ESS.1</b>                       | Analyze the scale of our solar system and its components: our solar system includes the sun, moon, seven other planets and their moons, and many other objects like asteroids and comets. |
| <b>5.ESS.2</b>                       | Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.   |
| <b>5.ESS.3</b>                       | Investigate ways individual communities within the United States protect the Earth's resources and environment.   |



**5.ESS.4** Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

**Life Science (LS)**

**5.LS.1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

**5.LS.2** Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.

**5.LS.3** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

**Engineering (E)**

**3-5.E.1** Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.

**3-5.E.2** Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

**3-5.E.3** Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.