

|     | Life Sciences   |   | Earth and Space Systems   | Physical Science   |   |
|-----|---|---|---|--|---|
| K   | <b>1 Introduction to Plants and Animals</b><br><i>K-LS1-1 (K.LS1.C.1)</i><br><i>K-ESS3-1 (K.ESS3.A.1)</i><br><i>K-2-ETS1-2 (K.ETS1.B.1)</i>   |   | <b>2 Sun and Shade</b><br><i>K-PS3-1 (K.PS3.A.1)</i><br>(1.PS3.A.1)<br><i>K-PS3-2 (K.PS3.B.1)</i><br><i>K-ESS2-1 (K.ESS2.D.1)</i><br><i>K-ESS3-2</i><br><i>K-2-ETS1-1 (K.ETS1.A.1)</i><br><i>K-2-ETS1-2 (K.ETS1.B.1)</i><br><i>K-2-ETS1-3 (1.ETS1.C)</i>                        | <b>3 Make It Go!</b><br><i>K-PS2-1 (K.PS2.A.1)</i><br><i>K-PS2-2</i><br><i>K-2-ETS1-1</i><br>(K.ETS1.A.1)<br><i>K-2-ETS1-2</i><br>(K.ETS1.B.1)<br><i>K-2-ETS1-3</i><br>(K.ETS1.C.1)<br>(K.PS2.A.2)   | <b>4 Seeing, Hearing, Smelling and Touching Like a Scientist</b><br><i>K-ESS3-3</i><br>(K.ESS3.C.1)<br>(K.PS1.A.1)  |
| 1st | <b>5 Birds, Beaks and Babies</b><br><i>1-LS1-1</i><br><i>1-LS1-2</i><br><i>2-LS4-1</i><br><i>K-ESS2-2</i><br>(K.ESS2.E.1)<br><i>K-2-ETS1-2</i><br>(1.ETS1.B.1)<br><i>K-2-ETS1-3</i><br>(1.ETS1.C.1)     | <b>6 Seeds, Sprouts and Sunshine</b><br><i>K-LS1-1</i><br>(K.LS1.C.1)<br><i>1-LS1-1</i><br><i>1-LS3-1 (1.LS3.A.1)</i><br><i>K-2-ETS1-2</i><br>(1.ETS1.B.1)<br><i>K-2-ETS1-3</i><br>(1.ETS1.C.1)                     | <b>7 Sun and Moon</b><br><i>1-ESS1-1 (1.ESS1.A.2)</i><br><i>1-ESS1-2 (K.ESS1.B.1)</i><br>(1.ESS1.A.1)   | <b>8 Putting on a Show with Light and Sound</b><br><br><i>1-PS4-1 (1.PS4.A.1)</i><br><i>1-PS4-2</i><br><i>1-PS4-3</i><br><i>1-PS4-4 (1.PS4.C.1)</i><br><i>K-2-ETS1-1 (1.ETS1.A.1)</i><br><i>K-2-ETS1-2 (1.ETS1.B.1)</i><br><i>K-2-ETS1-3 (1.ETS1.C.1)</i><br>(2.PS4.A)   |   |
| 2nd | <b>9 Helping Seeds Travel</b><br><i>2-LS2-1 (2.LS2.A.1)</i><br><i>2-LS2-2 (2.LS2.A.2)</i><br><i>2-LS4-1</i><br><i>K-2-ETS1-2 (1.ETS1.B.1)</i>   |   | <b>10 Wind and Water Change the Earth</b><br><i>2-ESS1-1 (2.ESS1.C.1)</i><br><i>2-ESS2-1 (2.ESS2.A.1)</i><br><i>2-ESS2-2 (2.ESS2.B.1)</i><br><i>2-ESS2-3 (2.ESS2.C.1)</i><br><i>K-2-ETS1-1 (2.ETS1.A.1)</i><br><i>K-2-ETS1-3 (2.ETS1.C.1)</i><br><i>K-2-ETS1-2 (1.ETS1.B.1)</i> | <b>11 A Home for a Penguin</b><br><i>2-PS1-1 (2.PS1.A.1)</i><br><i>2-PS1-2 (4.PS2.A.1)</i><br><i>2-PS1-3</i><br><i>2-PS1-4 (3.PS1.B.1)</i><br><i>K-2-ETS1-1</i><br>(2.ETS1.A.1)<br><i>K-2-ETS1-3</i><br>(2.ETS1.C.1)<br><i>K-2-ETS1-2</i><br>(1.ETS1.B.1)<br>(2.PS1.A.1) | <b>12 Tools of the Trade</b><br><i>2-PS1-3</i><br><i>K-2-ETS1-1</i><br>(1.ETS1.A.1)<br><i>K-2-ETS1-2</i><br>(2.ETS1.B.1)<br><i>K-2-ETS1-3</i><br>(2.ETS1.C.1)<br>(2.PS1.A.1)                            |
| 3rd | <b>13 Adapting to Change</b><br><i>3-LS2-1</i><br><i>3-LS4-1</i><br><i>3-LS4-3</i><br>(3.LS1.A.1)<br><i>3-LS4-4</i><br>(3.LS3.D.1)  | <b>14 Change Over Time</b><br><i>3-LS1-1 (3.LS1.B.1)</i><br><i>3-LS3-1</i><br><i>3-LS3-2</i><br><i>3-LS4-2 (3.LS3.B.1)</i><br><i>3-5-ETS1-1</i><br>(3.ETS1.A.1)<br><i>3-5-ETS1-2</i><br>(3.ETS1.B.1)<br>(3.LS3.A.1) | <b>15 Observing Weather Patterns</b><br><i>3-ESS2-1 (3.ESS2.D.1)</i><br><i>3-ESS2-2 (3.ESS2.D.2)</i><br><i>3-ESS3-1 (3.ESS3.B.1)</i><br><i>3-5-ETS1-1 (3.ETS1.A.1)</i><br><i>3-5-ETS1-2 (3.ETS1.B.1)</i>  | <b>16 How Things Move</b><br><i>3-PS2-1 (4.PS2.A.2)</i><br><i>3-PS2-2 (4.PS2.A.1)</i><br><i>3-PS2-3 (3.PS2.B.1)</i><br><i>3-PS2-4</i>  |   |
| 4th | <b>17 Structure Function and Survival</b><br><i>4-LS1-1 (4.LS1.A.1)</i><br><i>4-LS1-2 (4.LS1.D.1)</i><br><i>4-PS4-2 (5.PS4.A.1)</i><br><i>3-5-ETS1-2 (4.ETS1.B.1)</i><br><i>3-5-ETS1-3 (4.ETS1.C.1)</i> |   | <b>18 Our Dynamic Earth</b><br><i>4-ESS1-1 (4.ESS1.C.1)</i><br><i>4-ESS2-1</i><br>(4.ESS2.A.1)<br><i>4-ESS2-2 (4.ESS2.B.1)</i><br><i>4-ESS3-2 (4.ESS3.A.1)</i><br><i>3-5-ETS1-1 (4.ETS1.A.1)</i><br><i>3-5-ETS1-2 (4.ETS1.B.1)</i>  | <b>19 Transfer of Energy and Information</b><br><i>4-PS4-1 (4.PS4.A.1)</i><br><i>4-PS4-3</i><br><i>4-PS3-2</i><br><i>4-PS3-4 (4.PS3.B.2)</i><br><i>3-5-ETS1-1</i><br>(4.ETS1.A.1)<br><i>3-5-ETS1-2</i><br>(4.ETS1.B.1)   | <b>20 What Energy Does</b><br><i>4-PS3-1 (4.PS3.A.1)</i><br><i>4-PS3-3</i><br>(4.PS3.C.1)<br>(4.PS2.A.1)<br><i>3-5-ETS1-1</i><br>(4.ETS1.A.1)<br><i>3-5-ETS1-2</i><br>(4.ETS1.B.1)<br><i>3-5-ETS1-3</i> |

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|     |   |  |   | 3-5-ETS1-3<br>(4.ETS1.C.1)  | (4.ETS1.C.1) |
| 5th | <b>21 From Sun to Food</b><br>5-PS3-1 (5.PS3.D.1)<br>5-LS1-1 (5.LS1.C.1)<br>5-LS2-1 (5.LS2.B.1)<br>5-ESS3-1 (5.ESS3.C.1)<br>3-5-ETS1-2 (4.ETS1.B.1)   | <b>22 Using Our Resources Wisely</b><br>4-ESS3-1<br>5-ESS2-1 (5.ESS2.A.1)<br>5-ESS2-2 (5.ESS2.C.1)<br>5-ESS3-1 (5.ESS3.C.1)<br>3-5-ETS1-1 (4.ETS1.A.1)<br>3-5-ETS1-2 (5.ETS1.B.1)<br>3-5-ETS1-3 (5.ETS1.C.1) | <b>23 Our Place in the Universe</b><br>5-PS2-1 (5.PS2.B.1)<br>5-ESS1-1 (5.ESS1.A.1)<br>5-ESS1-2 (5.ESS1.B.2)<br>5-ESS1-3 (5.ESS1.B.1) | <b>24 What's Consistent About Matter?</b><br>5-PS1-1 (5.PS1.A.1)<br>5-PS1-2 (5.PS1.A.2)<br>5-PS1-3<br>5-PS1-4 (5.PS1.B.2)<br>3-5-ETS1-1 (5.ETS1.A.1)<br>(5.PS1.B.1) |              |
|     | <b>25 Science in St. Louis</b><br>3.PS1.A.1 3.PS1.B.1 3.PS2.B.1 3.LS1.A.1 3.LS1.B.1 3.LS3.A.1 3.LS3.B.1 3.LS3.C.1 3.LS3.D.1 3.ESS2.D.1<br>3.ESS2.D.2 3.ESS3.B.1 4.PS2.A.1 4.PS2.A.2 4.PS2.B.1 4.PS2.B.2 4.PS3.A.1 4.PS3.B.1 4.PS3.B.2 4.PS3.C.1<br>4.PS4.A.1 4.LS1.A.1 4.LS1.D.1 4.ESS1.C.1 4.ESS1.A.1 4.ESS2.B.1 4.ESS3.A.1 5.ETS1.A.1 5.ETS1.B.1 5.ETS1.C.1 |  |   |   |              |

|     | Life Sciences   | Earth and Space Systems   | Physical Science  |   |
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| K   | <p><b>1 Introduction to Plants and Animals</b><br/><i>Needs and Classification of Living Things, How Living Things Interact with the Environment</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 20 +monitoring seed growth</p> <p><b>Anchoring Phenomenon:</b> A deer eats in the forest</p> <p><b>Design Challenge:</b> How can we make a model and use it to compare the basic needs of plants and wild animals?</p> <p><b>Concepts:</b> <i>Needs and Classification of Living Things, How Living Things Interact with the Environment</i></p> <p><b>NGSS(MLS):</b> K-LS1-1 (K.LS1.C.1)<br/>K-ESS3-1 (K.ESS3.A.1)<br/>K-2-ETS1-2 (K.ETS1.B.1)</p> | <p><b>2 Sun and Shade</b><br/><i>Temperature and Shade, Seasons, Weather Forecasting</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 25</p> <p><b>Anchoring Phenomenon:</b> The school playground has parts that are hotter or colder depending on place, time of day and time of year.</p> <p><b>Design Challenge:</b> What can we design to keep Mr. Bear shaded throughout the day?</p> <p><b>NGSS (MLS):</b><br/>K-PS3-1 (K.PS3.A.1)<br/>K-PS3-2 (K.PS3.B.1)<br/>(1.PS1.A.1)<br/>K-ESS2-1 (K.ESS2.D.1)<br/>K-ESS3-2<br/>K-2-ETS1-1 (K.ETS1.A.1)<br/>K-2-ETS1-2<br/>K-2-ETS1-3 (1.ETS1.C)</p> | <p><b>3 Make It Go!</b><br/><i>Pushes and Pulls, Introduction to Forces and Motion, Speed</i></p> <p><b>Estimated Instructional Days for the Unit:</b>17-19</p> <p><b>Anchoring Phenomenon:</b>A galimoto toy moves back and forth.</p> <p><b>Design Challenge:</b> How can we make a galimoto toy and use it to demonstrate pushes and pulls.</p> <p><b>NGSS (MLS):</b> K-PS2-1.<br/>(K.PS2.A.1.)<br/>K-PS2-2<br/>K-2- ETS1-1. (K.ETS1.A.1.)<br/>K-2- ETS1-2. (K.ETS1.B.1.)<br/>K-2- ETS1-3. (K.ETS1.C.1.)<br/>(K.PS2.A.2)</p> | <p><b>4 Seeing, Hearing, Smelling and Touching Like a Scientist</b><br/><i>Observing Properties of Materials, Scientific Tools and Practices, Problem Solving</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 20-22</p> <p><b>Anchoring Phenomenon:</b>At school there are blue trash bins and black trash bins.</p> <p><b>Design challenge:</b> How could we make something to clean up trash?</p> <p><b>NGSS (MLS):</b><br/>K-ESS3-3. (K.ESS3.C.1)<br/>(K.PS1.A.1)</p>   |
| 1st | <p><b>5 Birds, Beaks and Babies</b><br/><i>Growth and Development of Organisms, Animal Structures and Behaviors, Inheritance and Variation</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 19</p> <p><b>Anchoring Phenomenon:</b> Birds pick up sticks on the ground with their beaks.<br/><b>Design Challenge:</b> How can we design a nest that will hold eggs?</p> <p><b>NGSS (MLS):</b><br/>1-LS1-2<br/>1-LS3-1. (1.LS3.A.1.)<br/>K-2-ETS1-2. (1.ETS1.B.1.)<br/>K-2-ETS1-3. (1.ETS1.C.1.)<br/>K-ESS2-2. (K.ESS2.E.1.)</p>  | <p><b>6 Seeds, Sprouts and Sunshine</b><br/><i>Plant Needs, Structures and Behaviors, Plant and Animal Interactions</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 28</p> <p><b>Anchoring Phenomenon:</b> A plant grows from a seed.<br/><b>Design Challenge:</b> How can we design a solution to a human problem by mimicking a plant part?</p> <p><b>NGSS (MLS):</b><br/>K-LS1-1 (K.LS1.C.1)<br/>1-LS1-1 (1.LS1.A.1)<br/>1-LS3-1 (1.LS3.A.1)</p>  | <p><b>7 Sun and Moon</b><br/><i>Time, Seasonal Patterns, Relative Position of the Sun, Earth and Moon, Day and Night</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 20-21</p> <p><b>Anchoring Phenomenon:</b> I could track when my birthday is happening even if I didn't have a calendar.</p> <p><b>Design Challenge:</b> How can we represent the patterns of the sun, moon and stars on our birthday?</p> <p><b>NGSS (MLS):</b> 1-ESS1-1 (1.ESS1.A.2)<br/>1-ESS1-2 (1.ESS1.B.2)<br/>(1.ESS1.A.1)</p>          | <p><b>8 Putting on a Show with Light and Sound</b><br/><i>Properties of Sound and Light, Communication Over Long Distances, Coding</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 23</p> <p><b>Anchoring Phenomenon:</b> We can see and hear the story of The Three Little Pigs in a movie.</p> <p><b>Design Challenge:</b> How can we communicate through musical instruments and shadow puppet shows.</p> <p><b>NGSS (MLS):</b> 1-PS4-1 (1.PS4.A.1)<br/>1-PS4-2<br/>1-PS4-3<br/>1-PS4-4 (1.PS4.C.1)<br/>K-2-ETS1-1 (1.ETS1.A.1)<br/>K-2-ETS1-2 (1.ETS1.B.1)<br/>K-2-ETS1-3 (1.ETS1.C.1)<br/>(2.PS4.A)</p> |

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| <p>2nd</p> | <p><b>9 Helping Seeds Travel</b><br/><i>Needs and Parts of Flowering Plants, Biodiversity, Pollination and Seed Dispersal</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 20 +3 weeks to observe seed growth</p> <p><b>Anchoring Phenomenon:</b> A flower turns into a strawberry fruit</p> <p><b>Design Challenge:</b> How can we make a model that mimics the function of an animal in seed dispersal or pollination of plants?</p> <p><b>NGSS (MLS):</b><br/>2-LS2-1 (2.LS2.A.1)<br/>2-LS2-2 (2.LS2.A.2)<br/>2-LS4-1<br/>K-2-ETS1-2. (1.ETS1.B.1)</p> | <p><b>10 Wind and Water Change the Earth</b><br/><i>Maps and Globes, Landforms, Bodies of Water, Erosion</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 23</p> <p><b>Anchoring Phenomenon:</b> A rock is in the shape of an arch on the beach.</p> <p><b>Design Challenge:</b> How can we design, test and improve structures to prevent wind erosion?</p> <p><b>NGSS (MLS):</b> 2-ESS1-1. (2.ESS1.C.1)<br/>2-ESS2-1. (2.ESS2.A.1)<br/>2-ESS2-2. (2.ESS2.B.1)<br/>2-ESS2-3. (2.ESS2.C.1)<br/>K-2-ETS1-1. (2.ETS1.A.1)<br/>K-2-ETS1-2. (1.ETS1.B.1)<br/>K-2-ETS1-3. (2.ETS1.C.1)</p>                            | <p><b>11 A Home for a Penguin</b><br/><i>Properties of Matter, Heating and Cooling Substances</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 25</p> <p><b>Anchoring Phenomenon:</b> A penguin can live in the St. Louis Zoo, which can be very hot in the summer.</p> <p><b>Design Challenge:</b> How can we design, test and improve our prototype of an emperor penguin habitat?</p> <p><b>NGSS (MLS):</b><br/>2-PS1-1. (2. PS1.A.1)<br/>2-PS1-2. (2.PS1.A.2)<br/>2-PS1-3<br/>2-PS1-4. (3.PS1.B.1)<br/>K-2-ETS1-1 (2.ETS1.A.1)<br/>K-2-ETS1-2 (1.ETS1.B.1)<br/>K-2-ETS1-3 (2.ETS1.C.1)<br/>(3.PS1.A.1)</p> | <p><b>12 Tools of the Trade</b><br/><i>Paleontology, Scientific Tools and Practices</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 24</p> <p><b>Anchoring Phenomenon:</b> We can view a picture of what a dinosaur looked like even though they are extinct.</p> <p><b>Design Challenge:</b> How can we design, test and improve a tool that helps paleontologists solve a problem?</p> <p><b>NGSS (MLS):</b><br/>K-2-ETS1-1. (1.ETS1.A.1)<br/>K-2-ETS1-2. (2.ETS1.B.1)<br/>K-2-ETS1-3. (2.ETS1.C.1)<br/>2-PS1-3<br/>(2.PS1.A.1)</p>   |
| <p>3rd</p> | <p><b>13 Adapting to Change</b><br/><i>Ecosystem Interactions, Social Groups, Fossils, Adaptations, Ecosystem Changes</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 28</p> <p><b>Anchoring Phenomenon:</b> Some types of bees are disappearing in Missouri.</p> <p><b>Design Challenge:</b> How can we choose the best solution to reduce the impact of a problem created by a change in an ecosystem?</p> <p><b>NGSS (MLS):</b><br/>3-LS2-1<br/>3-LS4-1<br/>3-LS4-3 (3.LS3.C.1)<br/>3-LS4-4 (3.LS3.D.1)</p>   | <p><b>14 Change Over Time</b><br/><i>Life Cycles, Inheritance and Variation of Traits, Natural Selection</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 18</p> <p><b>Anchoring Phenomenon:</b> During an insect research trip, a scientist finds less pink katydid than green katydids.</p> <p><b>Design Challenge:</b> How can we develop a model to compare the life cycles of different living things??</p> <p><b>NGSS (MLS):</b><br/>3-LS1-1 (3.LS1.B.1)<br/>3-LS3-1 (3.LS3.A.1)<br/>3-LS3-2 (3.LS3.A.1)<br/>3-LS4-2 (3.LS3.B.1)<br/>3-5-ETS1-1 (3.ETS1.A.1)<br/>3-5-ETS1-2 (3.ETS1.B.1)<br/>3.LS3.A.1</p> | <p><b>15 Observing Weather Patterns</b><br/><i>Weather and Climate, Reducing Impacts of Weather-Related Hazards</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 25</p> <p><b>Anchoring Phenomenon:</b> We have been experiencing many floods in the St. Louis region lately.</p> <p><b>Design Challenge:</b> How can we design a levee or a flood wall to reduce the impact of a flood?</p> <p><b>NGSS (MLS):</b><br/>3-ESS2-1 (3.ESS2.D.1)<br/>3-ESS2-2 (3.ESS2.D.2)<br/>3-ESS3-1 (3.ESS3.B.1)<br/>3-5-ETS1-1 (3.ETS1.A.1)<br/>3-5-ETS1-2 (3.ETS1.B.1)</p>   | <p><b>16 How Things Move</b><br/><i>Balanced and Unbalanced Forces, Contact and Non-Contact Forces, Changes in Motion, Types of Interactions</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 31</p> <p><b>Anchoring Phenomenon:</b> A group of connected objects interact to eventually do a job, like serve a piece of cake.</p> <p><b>Design Challenge:</b> How can we design a chain reaction machine that demonstrates balanced and unbalanced forces?</p> <p><b>NGSS (MLS):</b><br/>3-PS2-1. (4.PS2.A.2)<br/>3-PS2-2. (4.PS2.A.1)<br/>3-PS2-3. (3.PS2.B.1)<br/>3-PS2-4</p> |

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| <p>4th</p> | <p><b>17 Structure Function and Survival</b><br/> <i>Animal Structures and Behaviors, Information Processing</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 32 days</p> <p><b>Anchoring Phenomenon:</b><br/> A person gets scared, moves around, and shouts when a bug flies around him.</p> <p><b>Design Challenge:</b> How can we design an ideal habitat for an insect?</p> <p><b>NGSS (MLS):</b><br/> 4-LS1-1 (4.LS1.A.1)<br/> 4-LS1-2 (4.LS1.D.1)<br/> 4-PS4-2 (5.PS4.A.1)<br/> (5.LS1.A.1)<br/> 3-5-ETS1-2. (4.ETS1.B.1)<br/> -5-ETS1-3. (4.ETS1.C.1)</p>   | <p><b>18 Our Dynamic Earth</b><br/> <i>Maps, Weathering, Erosion, Landforms, Earth's Systems and Changes, Fossils, Plate Motion, Natural Hazards</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 21</p> <p><b>Anchoring Phenomenon:</b> Some regions of our country are at higher risk of earthquakes than other places.</p> <p><b>Design Challenge:</b> How can we design and test structures to reduce the impact of earthquakes?</p> <p><b>NGSS (MLS):</b><br/> 4-ESS1-1 (4.ESS1.C.1)<br/> 4-ESS2-1<br/> 4-ESS3-2 (4.ESS3.A.1)<br/> 4-ESS2-2 (4.ESS2.B.1)<br/> 3-5-ETS1-1. (4.ETS1.A.1)<br/> 3-5-ETS1-2. (4.ETS1B.1)<br/> (4.ESS2.A.1)</p> | <p><b>19 Transfer of Energy and Information</b><br/> <i>Properties of Waves, Light, Sound, Electrical Energy, Communicating with Technology, Coding</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 26</p> <p><b>Anchoring Phenomenon:</b><br/> Some regions of our country are at higher risk of earthquakes than other places.</p> <p><b>Design Challenge:</b><br/> How can we design and compare structures to reduce the impact of earthquakes?</p> <p><b>NGSS (MLS):</b><br/> 4-PS3-4 (4.PS3.B.2)<br/> 4-PS3-2 (4.PS3.B.1)<br/> 4-PS4-1 (4.PS4.A.1)<br/> 4-PS4-3<br/> 3-5-ETS1-1 (4.ETS1.A.1)<br/> 3-5-ETS1-2 (4.ETS1.B.1)<br/> 3-5-ETS1-3 (4.ETS1.C.1)</p> | <p><b>20 What Energy Does</b><br/> <i>Energy Transfer, Changes in Energy, Work, Speed, Simple Machines</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 29</p> <p><b>Anchoring Phenomenon:</b><br/> A girl avoids taking out the trash by making an invention that does it for her.</p> <p><b>Design Challenge:</b><br/> How can we design a machine to solve a problem?</p> <p><b>NGSS (MLS):</b><br/> 4-PS3-1. (4.PS3.A.1)<br/> 4-PS3-3<br/> (4.PS3.C.1)<br/> 3-5-ETS1- 1. (4.ETS1.A.1)<br/> 3-5-ETS1- 2. (4.ETS1B.1)<br/> 3-5-ETS1- 3. (4.ETS1.C.1)</p>  |
| <p>5th</p> | <p><b>21 From Sun to Food</b><br/> <i>Matter and Energy in Ecosystems, Food Chains, Plant Needs, Structure and Function, Human Impacts</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 30 + days for plant monitoring</p> <p><b>Anchoring Phenomenon:</b><br/> We eat pizza which has many different ingredients on it.</p> <p><b>Design Challenge:</b> How can we design a farm that minimally impacts the natural world and still feeds people?</p> <p><b>NGSS (MLS):</b><br/> 5-PS3-1. (5.PS3.D.1)<br/> 5-LS1-1. (5.LS1.C.1)<br/> 5-LS2-1. (5.LS2.B.1)<br/> 5-ESS3-1. (5.ESS3.C.1)<br/> 3-5-ETS1-2. (4.ETS1B.1)</p> | <p><b>22 Using Our Resources Wisely</b><br/> <i>Natural Resources, Earth Systems, Renewable and Non-Renewable Energy, Human Impacts</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 22-23</p> <p><b>Anchoring Phenomenon:</b><br/> An island in Denmark uses no fossil fuels.</p> <p><b>Design Challenge:</b><br/> How can we design a wind turbine that will lift a bucket of pennies?</p> <p><b>NGSS (MLS):</b><br/> 4-ESS3-1<br/> 5-ESS2-1 (5.ESS2.A.1)<br/> 5-ESS2-2 (5.ESS2.C.1)<br/> 5-ESS3-1 (5.ESS3.C.1)<br/> 3-5-ETS1- 1. (4.ETS1.A.1)<br/> 3-5-ETS1- 2. (5.ETS1.B.1)<br/> 3-5-ETS1- 3. (5.ETS1.C.1)</p>                             | <p><b>23 Our Place in the Universe</b><br/> <i>Gravity, Parts of the Solar System and Universe, Observable Seasonal Patterns</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 26</p> <p><b>Anchoring Phenomenon:</b><br/> Daylight hours are longer in the summer and shorter in the winter.</p> <p><b>Design Challenge:</b><br/> How can we analyze and interpret data to write an opinion piece about where we want to spend our next birthday?</p> <p><b>NGSS (MLS):</b><br/> 5-PS2-1 (5. PS2.B.1)<br/> 5-ESS1-1 (5.ESS1.A.1)<br/> 5-ESS1-2 (5.ESS1.B.2)<br/> (5.ESS1.B.1)</p>   | <p><b>24 What's Consistent About Matter?</b><br/> <i>States and Properties of Matter, Changes and Interactions of Matter, Mixtures and Solutions, Physical and Chemical Changes</i></p> <p><b>Estimated Instructional Days for the Unit:</b> 24</p> <p><b>Anchoring Phenomenon:</b> Raw cake ingredients are mixed together to make batter, which can then turn into a cake.</p> <p><b>Design Challenge:</b> How do we use physical and chemical changes to prepare delicious food?</p> <p><b>NGSS (MLS):</b><br/> 5-PS1-1. (5.PS1.A.1)<br/> 5-PS1-2. (5.PS1.A.2)<br/> 5-PS1-3<br/> 5-PS1-4. (5.PS1.B.2)<br/> 3-5-ETS1-1. (5.ETS1.A.1)<br/> (5.PS1.B.1)</p> |

## 25 Science in St. Louis

Grades 3-5 Integrated Review: *Engineering Design, Weather and Climate, Changes in Earth's Surface, Heredity and Variation, Adaptations, Energy and Energy Transfer, Forces and Motion, Waves*

**Estimated Instructional Days for the Unit:** 19

**Section 1 Anchoring Phenomena:** People visiting the observation deck at the top of the Gateway Arch are safe in spite of a thunderstorm.

**Section 2 Anchoring Phenomena:** A baseball pitched towards home plate changes direction and makes a sound when hit with a bat.

**Section 3 Anchoring Phenomena:** A City museum exhibit can use animal artifacts and specimens to introduce visitors to ideas about natural selection and animal traits.

**Section 4 Anchoring Phenomena:** The St. Louis Science Center has exhibits that capture the interest of visitors and expose them to science content.

**Design Challenge:** How might we improve or create a new exhibit to help people figure out the science behind St. Louis attractions?

### **NGSS (MLS):**

3-ESS2-2 (3.ESS2.D.2)

3-ESS3-1 (3.ESS3.B.1)

3-LS3-1 (3.LS3.A.1)

3-LS3-2

3-LS4-2 (3.LS3.B.1)

3-LS4-3 (3.LS3.C.1)

3-LS4-4 (3.LS3.D.1)

3-PS2-1 (4.PS2.A.2)

3-PS2-3 (3.PS2.B.1)

3-PS2-4

4-ESS2-2 (4.ESS2.B.1)

4-ESS1-1 (4.ESS1.C.1)

4-ESS2-1 (4.ESS2.A.1)

4-LS1-1 (4.LS1.A.1)

4-LS1-2 (4.LS1.D.1)

4-PS3-2 (4.PS3.B.1)

4-PS3-4 (4.PS3.B.2)

4-PS4-1 (4.PS4.A.1)

4-PS4-2 (5.PS4.A.1)

(4.PS2.B.1)

(4.PS3.C.1)

4-PS3-1 (4.PS3.A.1)

4-PS3-2 (4.PS3.B.1)

(4.PS2.B.2)

3-5 ETS1-1 (5.ETS1.A.1)

3-5 ETS1-2 (5.ETS1.B.1)

\*1 instructional day is 30-35 minutes at the K-2 level and 40-45 minutes at the 3-5 level.