1st Grade Science Curriculum

Course Description: First graders will have three science units; earth and space science, physical science, and life science. During the earth and space unit, students will observe patterns of the sun, moon, and stars. They will be able to describe these patterns and make accurate relative predictions. Students will also make seasonal observations and relate amounts of daylight to different times of the year. In the physical science unit, students will be able to observe and record how sound is made. Students will also create and design an instrument that creates sounds. Students will also understand the concept of reflection and how it affects light movement. Students will use light or sound to solve a problem of communicating over distance. During life science units, students will use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. Students will make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

Scope and Sequence:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Earth and Space Science</td>
<td></td>
</tr>
<tr>
<td>Topic 1: Patterns in Space</td>
<td>4-5 weeks</td>
</tr>
<tr>
<td>Topic 2: Seasonal Patterns</td>
<td></td>
</tr>
<tr>
<td>2. Physical Science</td>
<td></td>
</tr>
<tr>
<td>Topic 1: Sound</td>
<td>7 weeks</td>
</tr>
<tr>
<td>Topic 2: Behavior of Light</td>
<td></td>
</tr>
<tr>
<td>Topic 3: Communication</td>
<td></td>
</tr>
<tr>
<td>3. Life Science</td>
<td></td>
</tr>
<tr>
<td>Topic 1: Parts of Animals</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Topic 2: Parts of Plants</td>
<td></td>
</tr>
<tr>
<td>Topic 3: Animal Survival</td>
<td></td>
</tr>
<tr>
<td>Topic 4: Plant Survival</td>
<td></td>
</tr>
<tr>
<td>Topic 5: Animal Trait Inheritance and Variation</td>
<td></td>
</tr>
<tr>
<td>Topic 6: Plant Trait Inheritance and Variation</td>
<td></td>
</tr>
</tbody>
</table>
Unit 1: Earth and Space

Subject: Science  
Grade: 1  
Name of Unit: Earth and Space Science  
Length of Unit: 20 days  
Overview of Unit:  
The Earth and Space Unit is divided into two topics: Topic 1: Patterns in Space and Topic 2: Seasonal Patterns. In Topic 1, students will observe patterns of the sun, moon, and stars. They will be able to describe these patterns and make accurate relative predictions. In Topic 2, students will make seasonal observations and relate amounts of daylight to different times of the year.  
Materials to Prepare for Unit:  
- Teachers should prepare moon phase cards for small groups of students. It is suggested that teachers print, laminate and cut moon phase cards for reuse.  
- Ask your school librarian or visit the public library to gather children’s books about the 4 seasons.

Topic 1: Patterns in Space

Suggested Length of Time: 9 days  
Essential Questions (Student Wondering):  
- How do you know that the Sun will rise and set tomorrow?  
Enduring Understanding (Learning Objectives):  
- The student is expected to use observations of the sun, moon, and stars to describe patterns that can be predicted.  
Standards Addressed  
Priority:  
- 1-ESS1.A.1- The Universe and its Stars: Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.  
Supporting:  
- 1-ESS1-1-Use observations of the sun, moon, and stars to describe patterns that can be predicted.  
- Patterns in the World- Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.  
- Observations- Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.
### Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-ESS1.A.1 Observations Patterns in the World</td>
<td>ENGAGE Accessing Prior Knowledge &amp; Hook</td>
<td>1 Day</td>
<td>2 Activities *(Hook) Teacher uses globe and flashlight to model the position of the Earth and sun *(APK) Students Make a T-Chart for Day and Night By the end of this lesson students should be able to say what they see in the daytime versus the nighttime.</td>
</tr>
<tr>
<td></td>
<td>EXPLORE D1: Scientific Investigation</td>
<td>4 Days</td>
<td>Students make predictions and observations about sky during different times of the day for 4 days. Teacher will ask students about what they noticed about the sun each morning? What did they notice about the sky at noon? What they noticed about the sky each afternoon? Students can draw or write observations. Materials: Student journals By the end of this lesson students should be able to notice that there is a pattern in the sky with the sun and the moon at specific times in the day.</td>
</tr>
<tr>
<td></td>
<td>EXPLORE D2: Activity</td>
<td>1 Day</td>
<td>In small groups students order the moon phase cards. Students will draw each moon phase card in their journals. Materials: copies of moon phase cards for small groups, student journals CER- formative assessment idea to be recorded in science notebook By the end of this lesson students should be able to notice a pattern in the phases of the moon.</td>
</tr>
</tbody>
</table>
### Observations

<table>
<thead>
<tr>
<th>EXPLAIN &amp; ELABORATE</th>
<th>2 -3 Days</th>
<th>Pick 2 - 3 activities to extend concept, consider adding voice and choice for students. <strong>Must Do StemScopedia and Picture Vocabulary (Whole Group)</strong> Recommended: Content Connection Video 1, Content Connection Video 2, and Content Connection Video 3 Optional: Math Connection,, Science Rock Interactive By the end of this lesson students should be able to integrate the vocabulary in their everyday language.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stemscoolpedia &amp; Picture Vocabulary</td>
<td>2 -3 Days</td>
<td>Must Do StemScopedia and Picture Vocabulary (Whole Group) Recommended: Content Connection Video 1, Content Connection Video 2, and Content Connection Video 3 Optional: Math Connection,, Science Rock Interactive By the end of this lesson students should be able to integrate the vocabulary in their everyday language.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-ESS1.A.1</th>
<th>EVALUATE</th>
<th><strong>Teacher models CER with the class</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>Assess: CER/ Open-Ended Response/Multiple Choice</td>
<td>Performance Expectation Assessment Task requires both the seasonal patterns and patterns in space mastery.</td>
</tr>
<tr>
<td>1 Day</td>
<td><strong>Teacher models CER with the class</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

### Topic 2: Seasonal Patterns

**Suggested Length of Time: 11 days**

**Essential Questions (Student Wondering):**

- Can the order of the seasons change?

**Enduring Understanding (Learning Objectives):**

- The student is expected to make observations at different times of year to relate the amount of daylight to the time of year.

**Standards Addressed**

**Priority:**

- 1.ESS1.B.1-Earth and the Solar System: Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

**Supporting:**

- 1-ESS1-2-Make observations at different times of year to relate the amount of daylight to the time of year.
- Patterns in the World-Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
- Make Observations-Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.
**Detailed Description/Instructions:**

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.ESS1.B.1 Make Observations Patterns in the World</td>
<td>ENGAGE Accessing Prior Knowledge &amp; Hook</td>
<td>1 day</td>
<td>2 Activities: Accessing Prior Knowledge: Students write/draw what they would wear or use for each season. Hook: Teacher shares activities that happen during the day or night. Students hold up day and night signs accordingly. (Example activities that teacher may share: going to school, seeing fireworks) -Materials: Student journals and Day or Night?-signs By the end of this lesson students should be able to recognize that different seasons and different times of the day, impact everyday choices.</td>
</tr>
<tr>
<td>1.ESS1.B.1 Make Observations Patterns in the World</td>
<td>EXPLORE D1:Scientific Investigations</td>
<td>2 days</td>
<td>For this activity, teacher must gather a year’s worth of data on the number of daylight hours for their city and for a city in the opposite hemisphere. Examples: Kansas City and Australia. Students will record sunset and sunrise data throughout the course of a year. Students will learn that different places have each seasons during different times of the year because of their position on Earth. Website to access data: <a href="http://www.sunrisesunset.com/USA/Missouri.asp">http://www.sunrisesunset.com/USA/Missouri.asp</a> Questions to ask students: What months had the most amount of daylight? What months had the least amount of daylight? What months fall within each season? Materials: student journal, Day and Night Google doc, CER- formative assessment idea to be recorded in science notebook. By the end of this lesson students should be able to see a pattern in the hours of daylight for each season and then compare to a city in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.ESS1.B.1</th>
<th>Make Observations Patterns in the World</th>
<th>EXPLORE D2:Research</th>
<th>3-4 days</th>
<th>Students will conduct research about the seasons and then create a poster within a small group. Prior to the lesson, teacher must gather various seasonal weather material. Teacher choice: students can research independently or complete whole group read alouds with the teacher. (books, e-books, etc.). After completing each poster, students will present their knowledge of the seasons to the whole class. *Pebble Go has videos and short readings about each of the four seasons. Students could create a Google or PowerPoint Presentation instead of designing a poster. By the end of this lesson students should be able to work with a group to describe the characteristics of each season.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.ESS1.B.1</td>
<td>Make Observations Patterns in the World</td>
<td>EXPLAIN &amp; ELABORATE Stemscopedia &amp; Picture Vocabulary</td>
<td>2-3 days</td>
<td>Pick 2 - 3 activities to extend concept, consider adding voice and choice for students. <strong>Must Do StemScopedia and Picture Vocabulary (Whole Group)</strong> Recommended: <strong>Content Connection Video 1 &amp; 2</strong> Optional: <strong>Math Connection, Science Rock Interactive</strong> By the end of this lesson students should be able to integrate the vocabulary in their everyday language.</td>
</tr>
<tr>
<td>1.ESS1.B.1</td>
<td>Patterns in the World</td>
<td>EVALUATE Assess: CER/ Open-Ended Response/Multiple Choice</td>
<td>1 day</td>
<td>Pick one of the assessment options AND complete the PEAT. <strong>Performance Expectation Assessment Task will be completed at the end of this unit. YOU WILL ONLY COMPLETE THE PART II OF THE PEAT.</strong></td>
</tr>
</tbody>
</table>
Engaging Scenario: Patterns in the Sky

Engaging Scenario Patterns in the Sky: For Part II, students will analyze and discuss the sunlight patterns for Portland, Oregon within each season. As a class, students will graph the results and answer questions accordingly.

Rubric for Engaging Scenario:
Part II: Make Observations at Different Times (1-ESS1-2)
The student predicts that the data will show summer as having much sunlight and winter as having little. The student observes from the pictograph that sunlight increases during the spring and summer and then decreases during the fall and winter. The student tells how the length of the day will be observed and recorded. The student accurately compares the amount of seasonal sunlight in his city to that of Portland, Oregon.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The student fails to address the purpose of the assignment.</td>
<td>The student attempts to address the purpose of the assignment, but is unsuccessful.</td>
<td>The student does a decent job of addressing the purpose of the assignment.</td>
</tr>
</tbody>
</table>


Unit 2: Physical Science

Subject: Science  
Grade: 1st  
Name of Unit: Physical Science  
Length of Unit: 35 days

Overview of Unit:
The Physical Science Unit is divided into three topics: Topic 1: Sound, Topic 2: Behavior of Light, and Topic 3: Communication. In Topic 1, students will be able to observe and record how sound is made. Students will also create and design an instrument that creates sounds. In Topic 2, students will understand the concept of reflection and how it affects light movement. In Topic 3, students will use light or sound to solve a problem of communicating over distance.

Materials to Prepare for the Unit:
- Teachers should order a purchase order for greeting card and rice for Sound Do 1 Activity.  
- Teachers should communicate to parents materials needed for students make instruments. Example: toilet paper rolls, Kleenex boxes, aluminum cans, milk jugs, etc.  
- Teachers should make three cardstock frames per group, one with wax paper, one with plastic wrap, and one with black construction paper on the inside. Number and label the frames: Frame 1 - Wax Paper, Frame 2 - Plastic Wrap, and Frame 3 - Construction Paper.

Topic 1: Sound

Suggested Length of Time: 13 days

Essential Questions (Student Wondering):
- Why does the speaker shake when you play music?

Enduring Understanding (Learning Objectives):
- The student is expected to plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

Standards Addressed

Priority:
- 1-PS4.A.1-Wave Properties: Sound can make matter vibrate, and vibrating matter can make sound.

Supporting:
- 1-PS4-1-Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
- Simple Tests-Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- Collaborative Investigation-Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.
### Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-PS4.A.1 Collaborative Investigation Simple Tests</td>
<td>ENGAGE Accessing Prior Knowledge &amp; Hook</td>
<td>1 day</td>
<td>2 Activities &lt;br&gt;-Stopwatch Sound: In this activity, students write down as many things that make a sound as they can. Then, while touching their throat, students say their name and share what they feel.  &lt;br&gt;-Laser Show: Students observe and describe what happens to a laser light when a vibrating tuning fork is placed on it.  &lt;br&gt; Materials: Student Journals, Laser, Tuning Fork  &lt;br&gt; <em>By the end of this lesson students should be able to understand that a sound is created by movement.</em></td>
</tr>
<tr>
<td>1-PS4.A.1 Collaborative Investigation Simple Tests</td>
<td>EXPLORE D1: Activity</td>
<td>2-3 days</td>
<td>See STEMscope material list. Students visit four stations to observe and record how sound is made.  &lt;br&gt; <em>By the end of this lesson students should be able to further develop their knowledge that sound is created by movement.</em></td>
</tr>
<tr>
<td>1-PS4.A.1 Collaborative Investigation Simple Tests</td>
<td>EXPLORE D2: PBL</td>
<td>4-5 days</td>
<td>Rock Out: Students design and make an instrument that makes sound within a small group. Each student will be assigned a specific role in the design process. Groups will then perform with their musical instrument.  &lt;br&gt; See STEMscope material list.  &lt;br&gt; <em>By the end of this lesson students should be able to design an instrument that produces sound and explain how the sound is created by vibrating matter.</em></td>
</tr>
<tr>
<td>1-PS4.A.1 Collaborative Investigation Simple Tests</td>
<td>EXPLAIN &amp; ELABORATE Stemscopedia &amp; Picture Vocabulary</td>
<td>2-3 days</td>
<td>Pick 2 - 3 activities to extend concept, consider adding voice and choice for students.  &lt;br&gt; <strong>Must Do:</strong> STEMscopedia &amp; Picture Vocabulary (Whole Group)  &lt;br&gt; <strong>Recommended:</strong> Content Connection Videos 1 &amp; 2</td>
</tr>
</tbody>
</table>
Optional: Math Connection, Extensions, Linking Literacy
By the end of this lesson students should be able to integrate the vocabulary in their everyday language.

| 1-PS4.A.1 Collaborative Investigation | EVALUATE: CER/ Open-Ended Response/Multiple Choice | 1 day | Performance Expectation Assessment Task requires the sound, behavior of light, and communication mastery. |

---

**Topic 2: Behavior of Light**

**Suggested Length of Time:** 9 days

**Essential Questions (Student Wondering):**
- What could you do if the light from the window in your bedroom was too bright?

**Enduring Understanding (Learning Objectives):**
- The student is expected to make observations to construct an evidence-based account that objects can be seen only when illuminated.
- The student is expected to plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.

**Standards Addressed**

**Priority:**
- 1-PS4.B.1-Electromagnetic Radiation: Objects can be seen if light is available to illuminate them or if they give off their own light.
- 1-PS4.B.2-Electromagnetic Radiation: Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.)

**Supporting:**
- 1-PS4-2-Make observations to construct an evidence-based account that objects can be seen only when illuminated.
- 1-PS4-3-Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light
- Simple Tests-Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- Make Observations-Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
### Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1-PS4.B.2 1-PS4.B.1 Phenomenon Explanations Relationships | ENGAGE: Accessing Prior Knowledge and Hook | 1 Day | 2 Activities:  
- Behavior of Light: In this activity, students observe three different containers and make observations about their characteristics.  
- I See the Light: Students explore the importance of light through drawing with no light, full light, and glow light. Materials: Student Journal, glow stick  

*By the end of this lesson students should be able to understand that they are able to see better with light and that light is able to travel through some objects and not others.* |
| 1-PS4.B.2 1-PS4.B.1 Phenomenon Explanations Relationships | EXPLORE: D1: Activity | 1 Day | Students listen to the fable “A Dog and His Bone”. Explore with mirrors and how they are used. Materials: Student Journal, fable, mirrors  

*By the end of this lesson students should be able to understand that reflection is created with a mirror and light.* |
| 1-PS4.B.2 1-PS4.B.1 Phenomenon Explanations Relationships | EXPLORE: D2: Activity | 1 Day | Star Qualities-Students will see how light changes direction as a reflection in a mirror. Materials: Student Journal, 2 mirrors, masking tape, Star Quality Model located under Teacher Resources.  

*By the end of this lesson students should be able to understand that the placement of mirrors creates more reflections to see and object multiple times through the reflection.* |
Part 1: Shine On: Day 1  
Part 2: To Be Seen or Not Seen: Day 2  
Materials: Teachers will create 3 frames |
By the end of this lesson students should be able to state an object that light goes through, light does not go through, and that light is cloudy (light behavior).

<table>
<thead>
<tr>
<th>Standard(s)</th>
<th>Activity/Module</th>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-PS4.B.2 1-PS4.B.1</td>
<td>EXPLAIN &amp; ELABORATE: Stemscopedia &amp; Picture Vocabulary</td>
<td>2-3 days</td>
<td>Pick 2 - 3 activities to extend concept, consider adding voice and choice for students. <strong>Must Do:</strong> Stemscopedia &amp; Picture Vocabulary (Whole Group) <strong>Recommended:</strong> Content Connection Videos 1 &amp; 2 <strong>Optional:</strong> Math Connection, Extensions, Linking Literacy</td>
</tr>
<tr>
<td>1-PS4.B.2 1-PS4.B.1</td>
<td>EVALUATE: CER/Open-Ended Response/Multiple Choice</td>
<td>1 day</td>
<td>Performance Expectation Assessment Task requires the sound, behavior of light, and communication mastery.</td>
</tr>
</tbody>
</table>

**Topic 3: Communication**

**Suggested Length of Time:** 13 days

**Essential Questions (Student Wondering):**
- Can we talk to each other without using our voices?

**Enduring Understanding (Learning Objectives):**
- The student is expected to use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

**Standards Addressed**

**Priority:**
- 1-PS4.C.1-Information Technologies and Instrumentation: People also use a variety of devices to communicate (send and receive information) over long distances.

**Supporting:**
- 1-PS4-4-Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
- Specific Problems—Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.
### Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1-PS4.C.1 | ENGAGE: Accessing Prior Knowledge and Hook | 1-2 days           | 2 Activities  
-Form of Communication or Not? In this activity, students respond with either a thumbs up or a thumbs down when asked if an image represents a form of communication.  
-How do We Communicate? Students are introduced to and discuss the different ways we communicate.  
Materials: Student Journal, communication device cards, bar graph  
By the end of this lesson students should be able to identify various forms of communication and discuss different ways to communicate. |
| 1-PS4.C.1 Specific Problems | EXPLORE: D1:Activity | 1-2 days           | Talking with Lights: Learn and Implement Morse Code  
Materials: Flashlight, dark paper, Student Journal  
CER- formative assessment idea to be recorded in science notebook  
By the end of this lesson students should be able to understand that one can communicate with light (other form than just vocal communication.) |
| 1-PS4.C.1 Specific Problems | EXPLORE: D2:PBL | 5 days             | Did You Hear What I Said?  
Students design and make a string phone within a small group. Each student will be assigned a specific role in the design process. Groups will test and then present their inventions.  
See STEMscope material list.  
By the end of this lesson students should be able to design a communication device. Students will use trial and error to determine best material for proper communication. |
| 1-PS4.C.1 Specific Problems | EXPLAIN & ELABORATE: Stemscopedia & Picture Vocabulary | 2-3 days           | Pick 2 - 3 activities to extend concept, consider adding voice and choice for students.  
**Must Do: Stemscopedia & Picture Vocabulary** (Whole Group) |
Recommended: Students can send an email to another student as a form of communication.  
Content Connection Videos 1 & 2  
Optional: Math Connection, Extensions, Linking Literacy  
By the end of this lesson students should be able to understand and explain key concepts about Communication.

| Specific Problems | EVALUATE: CER/Open-Ended Response/Multiple Choice | 1 day | Pick one of the assessment options AND complete the PEAT.  
Performance Expectation Assessment Task will be completed at the end of this unit. |

Engaging Scenario: Communicating with Waves: Students will plan and use different ways to send messages using both light and sound. For Part I, students will be presented with a problem in which they must communicate using flashlights and materials to shine shapes on a wall. For Part II, students will work in pairs to observe, communicate, and discuss the success of their communication techniques. For Part III, students are presented with a new problem in which they must communicate using sound to send messages. Students must use either a ruler or stick to communicate. For Part IV, students will work in pairs to use the tools and discuss the success of their communication technique.
Rubric for Engaging Scenario:

---

**Communicating with Waves**

**Part I: Conduct a Light Investigation (1-PS4-3)**
The student explains what happens when different materials are placed in front of the flashlight. The student describes how materials allow different amounts of light to pass through. The student identifies a material that allows all light to pass through, some light to pass through, and no light to pass through.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The steps described in the plan are not logical or feasible and neither are the materials.</td>
<td>The majority of the materials or steps described in the plan are neither feasible nor logical.</td>
<td>Some of the materials or steps described in the plan are neither feasible nor logical.</td>
<td>All of the materials and steps in the investigation plan are feasible and logical.</td>
</tr>
</tbody>
</table>

**Part II: Make Observations About Light (1-PS4-2)**
The student explains that the flashlight must be turned on and the shape placed in front of the light so that the shape appears in the dark. The student makes observations about the appearance of their shape. The student explains what would happen if the flashlight battery ran out.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student observations are not accurate and are not relevant to the purpose of the communication.</td>
<td>Student observations either lack accuracy or they are not relevant to the purpose of the communication.</td>
<td>Student observations are mostly accurate. They are mostly relevant to the purpose of the communication.</td>
<td>Student observations are highly accurate. They are very relevant to the purpose of the communication.</td>
</tr>
</tbody>
</table>
Communicating with Waves

Part III: Conduct a Sound Investigation (1-PS4-1)
The student plans to investigate how the sound tools can be made to vibrate to make sound. The student observes that different ways of vibrating produce various sounds. The student explains that the observable vibrations and sound are evidence that vibrations produce sound.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The plan is not a valid investigation for the intended purpose.</td>
<td>The plan is a somewhat valid investigation for the intended purpose.</td>
<td>The plan is mostly valid as an investigation for the intended purpose.</td>
<td>The plan is a highly valid investigation for the intended purpose.</td>
</tr>
</tbody>
</table>

Part IV: Use Tools to Make Sound (1-PS4-4)
The student describes the problem of needing to communicate using sound. The student explains that they can use the vibrations of the tools to create sound messages. The student develops a plan with a partner to create vibrations with the tool. The student explains how well their sound device solved the problem of communicating.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The tool selected is not appropriate for the task.</td>
<td>The tool selected is useable for the task, but not a good choice.</td>
<td>The tool selected is an appropriate tool for the task.</td>
<td>The student tool selected is the best tool for the task.</td>
</tr>
</tbody>
</table>
Unit 3: Life Science

Subject: Science
Grade: 1
Name of Unit: Life Science
Length of Unit: 57 days

Overview of Unit:
The Life Science Unit is divided into 6 Topics: Topic 1: Parts of Animals, Topic 2: Parts of Plants, Topic 3: Animal Survival, Topic 4: Plant Survival, Topic 5: Animal Trait Inheritance, and Topic 6: Plant Trait Inheritance. In Topics 1-4, students will use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. In Topic 5 and 6, students will make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

Materials to Prepare for the Unit:
- For Parts of Animals, teachers should gather a class set of toilet paper rolls for Do Activity 1.
- For Parts of Plants, teachers should gather a class set of paper towel rolls for Do Activity 3.
- For Plant Survival Unit, teacher should plant seeds approximately 1-2 weeks ahead of time to ensure small sprout growth for Do Activity 1. Teacher should plant enough seeds for each small group to have their own plant to observe.
- For Plant Trait Inheritance Hook, teacher will need to redeem the STEMscopes coupon for the “live material” two weeks prior to the implementation of the Hook Lesson.

Topic 1: Parts of Animals

Suggested Length of Time: 9-10 days
Essential Questions (Student Wondering):
- Why don’t we have tails?
Enduring Understanding (Learning Objectives):
- The student is expected to use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Standards Addressed
Priority:
- 1-LS1.A.1 Structure and Function: All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air.

Supporting:
- 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Shape and Stability-The shape and stability of structures of natural and designed objects are related to their function(s).
- Specific Problems-Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.

**Detailed Description/Instructions:**

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-LS1.A.1: Structure and Function</td>
<td>ENGAGE Accessing Prior Knowledge &amp; Hook</td>
<td>1 day</td>
<td>2 Activities:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Observation of animal coverings-print out student journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Read “Little Red Riding Hood” and discuss the animal characteristics and how they help animals survive-independent small group research of other animal characteristics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>By the end of this lesson students should be able to identify animal characteristics and how they can be used to help animals survive.</em></td>
</tr>
<tr>
<td>1-LS1.A.1: Structure and Function</td>
<td>EXPLORE D1: Activity</td>
<td>2 days</td>
<td>Zoo Scavenger Hunt: Students identify external characteristics of animals and investigate how the feature is used for animal survival. Completed in small groups. Materials: Zoo Animal Picture Cards, Zoo Animal Information Card, Student Journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>By the end of this lesson students should be able to identify external characteristics of animals and how these characteristics are used to help animals survive.</em></td>
</tr>
<tr>
<td>1-LS1.A.1: Structure and Function</td>
<td>EXPLORE D2: Activity</td>
<td>1 day-40 minutes</td>
<td>Super Animal: Students visit 5 stations with a focus on different animal characteristics. Students design an animal to fit a habitat. Completed in small groups. Materials: Habitat Cards, Animal Parts Poster, Animal Parts Pieces, Student Journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>By the end of this lesson students should be able to create an animal that would survive in the chosen habitat.</em></td>
</tr>
<tr>
<td>1-LS1.A.1: Structure and Function</td>
<td>EXPLORE D3: Activity</td>
<td>1 day</td>
<td>Animal Inventions: Students look at how inventors and engineers have studied these</td>
</tr>
</tbody>
</table>
and Function

helpful animal parts and have figured out ways to help humans solve problems too.
Completed in small groups.
Materials: Human Invention Cards per group, Animal Cards per group, Animal Inspiration Cards, Student Journal

*By the end of this lesson, students should be able to look at how inventors and engineers have studied animal parts and how they figured out ways to help humans solve problems too.*

<table>
<thead>
<tr>
<th>Topic 2: Parts of Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suggested Length of Time:</strong> 9 days</td>
</tr>
<tr>
<td><strong>Essential Questions (Student Wondering):</strong></td>
</tr>
<tr>
<td>● What will happen if a plant had no roots?</td>
</tr>
<tr>
<td><strong>Enduring Understanding (Learning Objectives):</strong></td>
</tr>
<tr>
<td>● The student is expected to use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.</td>
</tr>
</tbody>
</table>
Standards Addressed

**Priority:**
- **1-LS1-1** Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

**Supporting:**
- **Shape and Stability** The shape and stability of structures of natural and designed objects are related to their function(s).
- **Specific Problems** Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.
- **1-LS1.A.2 Structure and Function** Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-LS1.A.2 Structure and Function:</td>
<td>ENGAGE Accessing Prior Knowledge &amp; Hook</td>
<td>1 Day</td>
<td>2 Activities Parts of Plants- Divide students into small groups and assign plant part. Within groups, students draw part of plant and describe plant part’s purpose in student journal. Flowers, Stems, Leaves and Roots- Display a picture of a flower with roots. Discuss different parts of plant. Sing parts of plant to the tune of “head, shoulders, knees and toes” <em>By the end of this lesson students should be able to identify plant parts and justify their purpose. Students will also be able to sing a song about plant parts.</em></td>
</tr>
<tr>
<td>1-LS1.A.2 Structure and Function:</td>
<td>EXPLORE D1 Activity</td>
<td>1 Day</td>
<td>Plan Ahead: Gather fresh fruits and vegetables. Notify parents for allergies and volunteering consumables. Students observe various vegetables, seeds, and fruits, and identify and describe their different parts. Materials: student journal and fresh produce, chart labeled “What Part is Edible”, notecards labeled roots, stem, flower, seeds <em>By the end of this lesson students should be able to observe various vegetables, seeds,</em></td>
</tr>
<tr>
<td>Task</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLORE D2 Activity</td>
<td>Plan Ahead: Print off Human Invention Cards for small groups. Students look at how inventors and engineers have studied these helpful plant parts and have figured out ways to help humans solve problems. Materials: Human Invention Cards, student journal page, CER page. <em>By the end of this lesson students should be able to investigate plant parts like engineers, helping them to solve human problems.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLORE D3 Activity Engineering Solutions</td>
<td>Using what they have learned about plant and animal parts, students design an item that will help people. Students present inventions. Materials: Student Journal Page, CER. <em>By the end of this lesson students should be able to design an everyday item that will help people.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN Stemscopedia and Picture Vocabulary and other activity</td>
<td>Pick 2 - 3 activities to extend concept, consider adding voice and choice for students. <em>(Consider completing as stations)</em> <strong>Must Do Stemscopedia &amp; Picture Vocabulary (Whole Group)</strong> <strong>Recommended:</strong> Content Connection Video 1 &amp; 2 <strong>Optional:</strong> Math Connection, Career Connection, Science Today, Science Rock. <em>By the end of this lesson students should be able to understand and describe plant parts.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVALUATE Assess: CER/Open-Ended Response/Multiple</td>
<td>Pick one of the assessment options AND complete the PEAT. CER- formative assessment idea to be recorded in science notebook. <em>Performance Expectation Assessment Task will be completed at the end of this unit.</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Topic 3: Animal Survival

Suggested Length of Time: 11-12 days

Essential Questions (Student Wondering):
- What do a skunk’s spray, a tiger’s claws, and a butterfly’s wings have in common?

Enduring Understanding (Learning Objectives):
- The student is expected to use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Standards Addressed

Priority:
- 1-LS1.D.1 Information Processing: Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive.

Supporting:
- 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Shape and Stability: The shape and stability of structures of natural and designed objects are related to their function(s).
- Specific Problems: Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.

Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-LS1.D.1 Information</td>
<td>ENGAGE Accessing Prior</td>
<td>1 day</td>
<td>2 Activities:</td>
</tr>
<tr>
<td>Processing</td>
<td>Knowledge &amp; Hook</td>
<td></td>
<td>- Class Discussion on AnimalSurvival and use of Senses-Students may record answers in Student Journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Questions: Have animals observe the world around them? How do animals use their body parts to find food? How do animals use their body parts to help them become aware of danger? Questions: Why do humans need their senses? Do animals need their senses? What parts of our bodies are associated with our senses and what is the function of each body part? What would happen if we didn’t have our senses? Animals may hear the sound of a predator or they may hear</td>
</tr>
</tbody>
</table>
their family members, which allows them to find one another. How else might animals use their sense of sound and hearing?

*By the end of this lesson students should discuss with a partner the senses that are required for an animal’s survival.*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPLORE D1: Activity</td>
<td>1 day-40 minutes</td>
<td>Students use their sense of smell to identify substances that remind them of food versus smells that are unpleasant or dangerous. Completed in small groups or pairs. Materials: 10-12 Plastic Containers, Sharpie, Cotton Balls, Foil, Rubber Bands, Reference STEMscopes for list of Food and Non-Food Smells, Student Journal. <em>By the end of this lesson students should be able to identify food smells versus harmful smells.</em></td>
</tr>
<tr>
<td>EXPLORE D2: PBL</td>
<td>4-5 days</td>
<td>Students design a bed for an animal that provides comfort and safety. The students create a model of the bed using materials that can be found in the animals’ habitat. Each student will be assigned a role within the group: Team Leader, Zoologist, Botanist, and Builder. Groups will then present their findings to the class. Reference STEMscope Website for detailed material list. <em>By the end of this lesson students should be able to design and create a bed for a dog using items in their habitat.</em></td>
</tr>
<tr>
<td>EXPLAIN</td>
<td>2-3 days</td>
<td>Pick 2-3 activities to extend concept, consider adding voice and choice for students. <em>Must Do Stemscopedia &amp; Picture Vocabulary (Whole Group) &amp; Reading Science Recommended: Content Connection Video 1 &amp; 2</em></td>
</tr>
</tbody>
</table>

1-LS1.D.1 Information Processing
EVALUATE
Assess: CER/Open-Ended Response/Multiple
1 day
Pick one of the assessment options AND complete the PEAT.
CER-formative assessment idea to be recorded in science notebook.
Performance Expectation Assessment Task will be completed at the end of this unit.

Topic 4: Plant Survival

Suggested Length of Time: 9 days
Essential Questions (Student Wondering):
• Why do the leaves of a maple tree look so different from the leaves of a Mesquite tree?

Enduring Understanding (Learning Objectives):
• The student is expected to use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Standards Addressed
Priority:
• 1-LS1-1- Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
• 1-LS1.D.2- Information Processing: Plants also respond to some external inputs.

Supporting:
• Shape and Stability: The shape and stability of structures of natural and designed objects are related to their function(s).
• Specific Problems- Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.

Detailed Description/Instructions:

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-LS1.D.1 Information Processing</td>
<td>ENGAGE Assessing Prior Knowledge and Hook</td>
<td>1 Day</td>
<td>Plan Ahead: Print and cut Plant Picture Cards 2 Activities -Plant Survival: In this activity, students...</td>
</tr>
</tbody>
</table>
form groups and go through a list of questions that discuss plant adaptations.
-Plant Characteristics: In this activity, the students observe how a plant's characteristics can help it survive.
Materials: Print off a copy of Plant Survival

*By the end of this lesson students should be able to identify plants and how they are able to adapt and how the characteristics of each plant help it survive.*

| 1-LS1.D.1 Information Processing | EXPLORE D1: Science Investigation Activity | 2 Days (continue observations for 1-2 weeks) | Plan Ahead: Plant seeds ahead of time to insure small sprout. In this investigation, students observe how a plant grows toward the Sun. Students make observations every 2 days. Teacher should allow time for students to make observations for the next 1-2 weeks within their science journal. Materials: Plants, water, science journals, safe place to store plants outside

*By the end of this lesson students should be able to explain why a plant grows towards the sun.*

| 1-LS1.D.1 Information Processing | EXPLORE D2: Engineering Solutions Activity | 2 days | Solar Energy: Students within groups, design a solution that helps maximize the collection of solar energy for a building using solar panels. Groups will present their findings to the class. Presentation Prompts: What do plants do when they are not facing the sun? How did this help you solve the problem? Are there any possible problems with your solution? Materials-Student Journals for recording concepts

*By the end of this lesson students should be able to design a solution that helps maximize the collection of solar energy for a building using solar panels.*

| 1-LS1.D.1 Information ELABORATE | EXPLAIN & ELABORATE | 2-3 Days | Pick 2 - 3 activities to extend concept, consider adding voice and choice for

25
Processing
Shape and
Stability

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-LS1.D.1 Information Processing EVALUATE Assess: CER/Open-Ended Response/Multiple 1 day</td>
<td>Pick one of the assessment options AND complete the PEAT. CER- formative assessment idea to be recorded in science notebook. Performance Expectation Assessment Task will be completed at the end of this unit.</td>
</tr>
</tbody>
</table>

### Topic 5: Animal Trait Inheritance and Variation

**Suggested Length of Time:** 8 days

**Essential Questions (Student Wondering):**

- Why do some puppies have different colored fur than their parents?

**Enduring Understanding (Learning Objectives):**

- The student is expected to make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

**Standards Addressed**

**Priority:**

- 1. LS3.A.1-Inheritance of Traits: Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.
- 1. LS3.B.1-Variation of Traits: Individuals of the same kind of animal are recognizable as similar but can also vary in many ways.

**Supporting:**

- 1-LS3-1-Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- Patterns in the World-Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
- Make Observations-Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
**Detailed Description/Instructions:**

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1.LS3.A.11 Inheritance of Traits  
1.LS3.B.1 Variation of Traits | ENGAGE Accessing Prior Knowledge & Hook | 1 day | 2 Activities:  
- Students match family picture cards together based on their traits and characteristics.*You can use staff member photos or the ones provided by STEMscopes. Questions: In what ways are family members similar? different?  
*By the end of this lesson students should be able to answer and discuss a series of questions on why baby animals look like their parents.* |
| 1.LS3.A.11 Inheritance of Traits  
1.LS3.B.1 Variation of Traits | EXPLORE D1: Activity *View Glyph prior to activity | 2 days | Bugs-Students create and observe how offspring differ by incorporating various traits from both mother and father bugs. Completed in table groups. You will need a class trait anchor chart. See STEMscopes for material list.  
*By the end of this lesson students should be able to* |
| 1.LS3.A.11 Inheritance of Traits  
1.LS3.B.1 Variation of Traits | EXPLORE D2: Activity | 1 day | Are You My Parents?-Students match animal babies to their parents based on their traits. Materials: 1 set of Animal Parent and Baby Cards per student, Student Journal CER- formative assessment idea to be recorded in science notebook.  
*By the end of this lesson students should be able to observe how offspring differ by incorporating various traits from both* |
| 1.LS3.A.11 Inheritance of Traits | EXPLAIN & ELABORATE STEMscopedia & Picture Vocabulary | 2-3 days | Pick 2 - 3 activities to extend concept, consider adding voice and choice for students. |
| 1.LS3.B.1 Variation of Traits | | | Must Do STEMscopedia & Picture Vocabulary (Whole Group) Recommended: Content Connection Video 1 & 2 Optional: Math Connection, Career Connection, Science Today, Science Rock |
| 1.LS3.A.11 Inheritance of Traits | EVALUATE CER/Open-Ended Response/Multiple | 1 day | Pick one of the assessment options AND complete the PEAT. |
| 1.LS3.B.1 Variation of Traits | | | CER- formative assessment idea to be recorded in science notebook. |
| | | | Performance Expectation Assessment Task will be completed at the end of this unit. |

### Topic 6: Plant Trait Inheritance and Variation

**Suggested Length of Time:** 8-9 days

**Essential Questions (Student Wondering):**
- Why do plants look so much like their parent plants?

**Enduring Understanding (Learning Objectives):**
- The student is expected to make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

**Standards Addressed**

**Priority:**
- 1-LS3.A.2-Inheritance of Traits: Plants are also very, much but not exactly, like their parents.
- 1-LS3.B.2-Variation of Traits: Individuals of the same kind of plant are recognizable as similar but can also vary in many ways.

**Supporting:**
- 1-LS3-1-Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- **Patterns in the World**-Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
- **Make Observations**-Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
**Detailed Description/Instructions:**

<table>
<thead>
<tr>
<th>Standard</th>
<th>5 E’s</th>
<th>Suggested # of Days</th>
<th>Notes</th>
</tr>
</thead>
</table>
|                                 | ENGAGE Accessing Prior Knowledge & Hook | 1 day              | 2 Activities:  
  - Students observe different plants and discuss. Students will need their journal. *Don’t forget to redeem your coupon. See top for details. Discussion Questions: How do I know this is a plant? How are these plants different from each other? How are all these plants similar?  
*By the end of this lesson students should be able to observe and describe different plant attributes.* |
| 1-LS3.A.2                      | EXPLORE D1: Activity          | 1 day              | Plan Ahead: Print and cut Plant Sort Picture Cards  
Plant Sort- Students sort picture cards of plants into different categories. Discuss plant similarities and differences.  
Materials: Plant Sort Cards, Student journal *By the end of this lesson students should be able to sort plants by various plant attributes.* |
| 1-LS3.B.2                      | EXPLORE D2: Scientific Investigation | 1 day-40 minutes  | Plant Babies-Students make a model showing traits that can appear in offspring. This lesson is completed in pairs.  
Materials: Set of Plant Parts Templates- You will need 15 of each plant part, brown paper bags labeled, white construction paper per student, chart paper  
Students will record findings in Student |
Journal as well as CER answers.  
*By the end of this lesson students should be able to create a model showing possible plant traits that can appear in offspring.*

| 1-LS3.A.2  
1.LS3.B.2  
Patterns in the World | EXPLORE  
D3: Activity | 1 day | Plan Ahead: Print and cut Parent and Offspring Picture Cards  
Who Are My Parents?-Students observe images of plants and match offspring with parents. Students discuss how they knew which plants were parents and which were offspring.  
Materials: Plant Cards, Offspring Cards, Student Journal, CER  
*By the end of this lesson students should be able to match plant parents to their plant offspring.*

| 1-LS3.A.2  
1.LS3.B.2  
Patterns in the World | EXPLAIN &  
ELABORATE  
Stemscopedia & Picture Vocabulary | 2-3 days | Pick 2 - 3 activities to extend concept, consider adding voice and choice for students.  
**Must Do Stemscopedia & Picture Vocabulary (Whole Group)**  
**Recommended:**  
Content Connection Video 1 & 2  
*By the end of this lesson students should be able to understand and describe plant traits and inheritance.*

| 1-LS3.A.2  
1.LS3.B.2  
Patterns in the World  
Make | EVALUATE  
CER/Open-Ended Response/Multiple | 1 day | Pick one of the assessment options AND complete the PEAT.  
CER- formative assessment idea to be recorded in science notebook.  
*Performance Expectation Assessment Task will be completed at the end of THIS topic.*
**Engaging Scenario:** Parents and Their Offspring: Students will explain that the offspring of orangutans look similar to their parents. Please note that Part I of the Performance Expectation Assessment Task will not be included within this Engaging Scenario. Only Part II will be assessed. For Part II, students will circle the baby orangutan that goes with its mother as well as explain (verbally or written) two reasons why they go together. Prior to the Engaging Scenario, the teacher needs to find both texts and visual aids about Orangutan Mother Baby Relationship. Students will record answers in Student Journals.

**Rubric for Engaging Scenario:**

### Parents and Their Offspring

**Part I: Caring for the Young**
The student draws or writes two ways the orangutan mother helps her baby survive.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student observations</td>
<td>Student observations are not accurate and are not relevant to the purpose of the communication.</td>
<td>Student observations are mostly accurate. They are mostly relevant to the purpose of the communication.</td>
<td>Student observations are highly accurate. They are very relevant to the purpose of the communication.</td>
<td></td>
</tr>
</tbody>
</table>

**Part II: Mom and Baby**
The student matches the orangutan parent and orangutan baby. The student writes or draws two logical reasons for selecting the orangutan baby.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>The resources do not provide accurate/valid information. The information is not relevant to the purpose of the communication.</td>
<td>The resources lack either accuracy/validity or they are not relevant to the purpose of communication.</td>
<td>The resources are mostly accurate and valid. They are mostly relevant to the purpose of the communication.</td>
<td>The resources are highly accurate and valid. They are very relevant to the purpose of the communication.</td>
<td></td>
</tr>
</tbody>
</table>