Light, Light It's Bright!

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This curriculum unit is recommended for:
1st Grade

Keywords: Plants, light, photosynthesis

Teaching Standards: See Appendix1 for teaching standards addressed in this unit.

Synopsis: In this unit students will learn how light helps plants to grow. They learn science vocabulary words and explore photosynthesis. Students will learn how to grow a plant. They will write and draw about their observations. Students will learn about the importance of light while reading nonfiction stories. They will also learn nonfiction text features. The lessons will also include movement, music, gestures, and hands-on experiences. I am also writing this unit for students who are learning English as a second language and in the Dual Language Program. This unit will provide them with basic science vocabulary words by using visuals and gestures. This unit will integrate science, literacy, writing, and learning English as a second language.

I plan to teach this unit during the coming year to 48 students in a first grade Dual Language.

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Introduction

Rationale: I selected this unit because I have noticed that my students are interested in STEAM Science activities. They started asking questions about light. One day at recess they noticed the school garden. They started asking what happened to plants in the garden. I thought this would be a great idea to help students learn about light while teaching them about how plants use light. I think incorporating Science into literacy will allow students to the opportunity to learn about Science and nonfiction text features.

Demographics:
I work as a first grade Dual Language teacher at Huntingtowne Farms Elementary School in Charlotte, North Carolina. Huntingtowne Farms Elementary is in the Charlotte-Mecklenburg School (CMS) System. CMS is one of the largest school systems in North Carolina, serving approximately 146,000 students. Huntingtowne Farms Elementary, is located in the district's Southwest Learning Community. According to the NC Star Lighting the Path of Student Success (Indistar), Huntingtowne Farms serves approximately 824 students in grades Pre-K through Fifth. Approximately 60% Hispanic/Latino, 3% Asian, 29% Black or African American, 8% Caucasian or White. We have approximately 91% free/reduced lunch and 33% Limited English Proficient.

I currently teach first grade Dual Language with 48 students. I teach literacy in English to the students. The Dual Language program is a 50/50 program in English and Spanish. The students switch in the middle of the day for Math in Spanish. I also teach Science in English. Social Studies are taught in English and Spanish. There are 24 students in each of my classes. Huntingtowne Farms is also an International Baccalaureate Primary Years Programme (IB/PYP) School. I am in my seventeenth year at Huntingtowne Farms. This is my 5th year teaching Dual Language at my school. Spanish is the first language for 90% of my class. Most of the students are learning English. There are several novice English Spanish Learners. I am still learning Spanish however; my students help me translate in class and I use an online translating app. I use music, songs, movements, motion, and picture cards. I am also supported by my Spanish coach and Spanish co-teacher.

My students are excited to learn how to read in English. They are increasing their vocabulary by learning new words. I try to teach a motion or movement with vocabulary words if possible, to help them remember the word. My students love to help each other. The English-speaking students help their Spanish speaking classmates by translating for them. They love to dance, exercise, draw, read, and write. My students always try to motivate each other to try their best. They love to work in centers with a partner. Overall, they are learning to become a class family. My students are excited to participate with Science lessons and activities. They love to explore and problem-solve. I use Google slides to create visuals for students. The slides also include links for songs, videos, stories, and anchor charts. I try to incorporate stories that relate to

Science. I also teach them motions or movements to help them remember vocabulary words.
Objectives: This unit is integrated into literacy and Science. Standards are based on the North Carolina English Language Arts Standards and North Carolina Science Standards. This unit will teach students how plants use light. It will introduce them to light, science vocabulary words, and early science skills.

Content Research:

Teaching Science in Early Childhood Education

Young children are naturally curious. They are curious about the world around them. Science is an extension of their everyday world. Science encourages and teaches children how to wonder and discover the world around them. Scientific thinking and the ability to explore and investigate can be used in the classroom to help students learn science. Children have a natural tendency to enjoy experiences in nature. They become actively engaged in their environment to develop fundamental understandings of the phenomena they are observing and experiencing (Trundle, 2010). Young children also build essential scientific process skills such as observing, classifying, and sorting (Trundle, 2010). Engaging children in science experiences allows them to develop scientific thinking.

Science Vocabulary

Young children usually find it fun to learn fancy new words, the purpose of vocabulary instruction is not just about teaching the definitions of technical terms that are used in science (Gotwals and Wright, 2017). Rather, what is important is that they are able to use vocabulary words as "tools" to speak, listen, read, and write about their science learning (Gotwals and Wright, 2017). It is essential that students learn science vocabulary words. Supporting students in using scientific vocabulary to explain science phenomena requires both explicit and implicit instruction from the teacher. Explicit instruction includes purposeful selection of vocabulary, providing child-friendly explanations of vocabulary words, and giving children opportunities to practice using words in meaningful contexts (Gotwals and Wright, 2017). Supporting students with implicit instruction includes ensuring a high-quality environment where children are exposed to sophisticated vocabulary across the school day. These strategies are also very helpful for English Language Learners (ELLs) who need opportunities to learn and use new vocabulary words in multiple contexts.

One way to support student children in creating a deeper science understanding while simultaneously learning to use new science vocabulary. There are five instructional strategies: Ask, Explore, Read, Write, and Discuss. When teachers use these strategies, children are significantly more likely to provide scientific explanations and use science vocabulary when responding to questions (Gotwals and Wright, 2017). Asking explicit questions is one way to structure instruction. Start the lesson with a driving question that is used to provide meaning for the lesson as well as to elicit a student's ideas. Sometimes driving questions can introduce new vocabulary as well as a way to gather formative assessment information about students' current understanding and related experiences (Gotwals and Wright, 2017). Allowing students to engage

in play and exploration also supports children's oral language and vocabulary as they use words to discuss ideas that are interesting and meaningful to them. Explorations also provides an opportunity to explicitly introduce vocabulary related to science practices, such as observe, record, data, and evidence. Interactive read-alouds of informational texts are excellent ways to explicitly introduce students to science vocabulary they may not hear in their everyday language. They provide students the opportunity to discuss a text and to use new vocabulary in classroom conversations. Writing is very important to students to participate in while learning a science context. Even if students are not able to write they can draw pictures. Writing down ideas, questions, drawing, labeling, and developing models about phenomena reinforces science learning and emergent writing skills and provides another opportunity for students to use vocabulary (Gotwals and Wright, 2017). Students will always discuss their ideas, however, teachers should also provide opportunities for students to synthesize evidence and information across activities and use vocabulary to explain their ideas. Science talk will allow students to make connections, make sense of multiple pieces of evidence and information. Science discussions also allow students the opportunity to use their new vocabulary and new learning to work through explanations (Gotwals and Wright, 2017).

Light

We use light daily and it all around us. It would very hard to live your life without light. Light is important to us. We use light even when we are not thinking about it. Light can be used in several forms. We use light from the moment it hits our eyes as we open them in the morning to the incoming call on our cell phone to the X-rays we get at the dentist (Arcand and Watzke, 2015). To many people "light" refers to what as humans can detect with our eyes. However, this is merely one small slice of the whole range of light the exists (Arcand and Watzke, 2015).

Arcand and Watzke (2015, 10), emphasizes that light including the human-detectable kind called visible light, is simply a form of energy. According to Arcand and Watzke (2015, 10), the light we see with our eyes is a tiny fraction of the available light in the Universe. There are many other types of light with less energy than visible light, and there are many forms of light with much more energy. We get our light from our nearest star, the Sun. According to Arcand and Watzke (2015, 10), in order to survive and thrive, life-forms on Earth had to evolve to take advantage of this energy source. Today, we understand that our Sun gives off radiation in virtually all the known types of light, including infrared, ultraviolet, X-ray, and more (Arcand and Watzke, 2015). The sun gives the most energy in visible light, which is why most life on Earth has evolved to be sensitive to that light and colors that are around it (Arcand and Watzke, 2015).

Reflection

Most of the time we think about a reflection as the term we use when we see the image in a mirror. According to Arcand and Watzke (2015, 78), reflection is one of the fundamental properties of light. Reflections consists of rays: an incoming ("incident") ray and an outgoing ("reflected") ray (Arcand and Watzke, 2015). All light follows what is known as the law of reflection, which says that the angle of the incoming ray will be the same as the angle of the outgoing ray (Arcand and Watzke, 2015). Reflections are complicated when we start to look at surfaces that are not smooth, which basically includes most things. Most of the objects do not

emit their own light. Instead, we see reflections because light from the Sun or another source is reflected off them and makes its way into our retinas (Arcand and Watzke, 2015). We see the colors of objects because of the light they reflect away. Arcand and Watzke (2015, 78), explains that if an object absorbs a particular color, then we don't see it. For example, plants are very good at absorbing red and blue light but reflect away most of the green wavelengths of visible light emitted by our Sun (Arcand and Watzke, 2015). This is why plants generally appear green to us when we see them. Figure 1 is an example of reflection (Arcand and Watzke, 2015).

Figure 1. We see reflection around us every day.

Photosynthesis

According to Arcand and Watzke (2015, 97), photosynthesis is a remarkable process, allowing plants, bacteria, and algae to convert light from the Sun into chemical energy, transforming carbon dioxide and water into carbohydrates and oxygen. All animals including humans, eat plants either directly or indirectly through other animals and use oxygen to breathe. Light is the fuel that allows us to exit. It takes the right kind of light for photosynthesis to occur. Arcand and Watzke (2015, 97) emphasizes that infrared radiation from the Sun is not energetic enough to fuel this process and ultraviolet light from our star can be too energetic, harming the chemical bonds within the plants. According to Arcand and Watzke (2015, 97), plants don't get "sunburned" like humans because they contain tiny filaments that are just the right size to channel ultraviolet light away from the plant's leaves. Infrared light is too weak and ultraviolet light is too strong, while visible light is just right for plants to create their own food from sunlight (Arcand and Watzke, 2015).

Instructional Implementation

Science Content

In this unit students will recognize that plants need air, water, light, space, and food to survive. They will be introduced to science vocabulary. Science vocabulary will include photosynthesis,

survive, light, energy, sun, stem, flower, seed, soil, roots, leaves, experiment, water, sunlight, petals, sprout, and air. All vocabulary cards will include a picture with a kid friendly definition. Students will learn about the scientific method using an anchor chart with visuals (1. Ask a question, 2. Make a hypothesis, 3. Experiment, 4. Record observations, 5. Answer the Question).

Teaching Strategies

I use several teaching strategies in my classroom. In this curriculum unit I highlight the most used strategies. Some of these strategies will be focusing on cooperative learning, visual arts, turn and talk, read alouds, anchor charts, inquiry-based instruction, technology, music and movement.

Cooperative learning allows students to demonstrate a learned skill to each other. Students can discover a new concept together and help each other learn. It promotes discussion and collaboration, creating an environment that supports the retention of newly learned skills.

Creative Arts engage student's minds, bodies, and senses. This unit will incorporate arts that will invite students to listen, observe, discuss, movement, dance, problem solving, and imagination using multiple modes of thought and self-expression.

Turn and talk is an instructional routine that allows students to use content knowledge during a brief conversation with their peers. Students are provided with a short prompt to discuss content or a skill. Students will turn to their predetermined partner to answer the prompt while the other student will listen.

Mentor Text/Read Alouds are used to model teaching standards and lessons. They are also used for explicit teaching.

Anchor Charts are used to support instruction. It is a poster created to record and display important points about the lesson. The anchor charts in my class also provide students with pictures that also relate to the lesson. The students are also involved in creating the charts which help them to understand the charts. This allows students to use charts as a reference. Anchor charts can also help to keep students accountable for their work.

Inquiry-based instruction will be used in the classroom. Students will be encouraged to explore, ask questions, and share ideas. Inquiry-based instruction is providing students with thought provoking questions which lead and inspire students to think for themselves and to become independent learners always wanting to know more. Students will also participate in hands-on activities, mini labs, and science demonstrations.

Technology is used daily in the lessons. I use google slides daily to teach lessons. The slides include links, video, stories, music, and visuals. The students also have access to their iPads in the classroom.

Movement and music are incorporated in the class daily. The students use kid's yoga, stretching, mindful breathing, and relaxation exercises. Music is used for transitions, mediation, relaxing, and brain breaks.

Classroom Lessons/Activities

Begin with the End in Mind: Goals and Outcomes

While teaching this unit, students will

- Increase their Science vocabulary
- Read books and incorporate light, plants, and photosynthesis
- Use music to learn about science

After teaching this unit, students should be able to:

- Explain the importance of light on plants
- Explain the needs of plants
- Plant and observe plants to determine how light affects the growth of plants
- Explain that light is energy for plants
- Draw and write about their plants

Pre-Post Test

Before and after the unit, students will take a "Plants" Pre and Post Test.
The teacher will assess students to determine their knowledge of plants. Most of the time first graders will only know that plants are flowers. In addition, the teacher can use the pre-assessment to determine what words are needed to be taught though out the unit to increase student vocabulary.

Lesson Plans

These lesson plans can be taught daily for 20-30 minutes. You could also extend the time according to your schedule. However, if the teacher needed to teach lessons every other day it could also work. I plan to teach the lessons daily for 11 days. Due to my Dual Language schedule I will also use recess time to allow students to observe the plants. I will take pictures to share on the Promethean board. This will allow students to remember what they observers outside in our school garden. I will email the pictures and share them on Google slides.

Day One, Introduction to Unit

The teacher will have students complete the pre-test (see Appendix 2). Tell students that they will be learning about how important it is that plants receive light. Make an anchor chart with the title "Plants." Students will share what they know about plants after they complete the pre-assessment.

Lesson Plans

Day 1: Introduction to Unit **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: "Plants" Pre-Assessment (see appendix 2) Chart Paper: KWL "Plants" Anchor Chart (see appendix 2) Markers
Teaching Point: Today we are going to learn about how light affects plants. Ask students what they know about plants. The teacher will have students complete the plants pre-assessment (see Appendix 2). Teacher will explain to students that they will be learning about plants and why plants need light to survive. Teacher will explain to the students that plants are very important to us. All animals including humans, eat plants whether you them yourself or thought other animals, and use oxygen to breath, light is the fuel that allows us to be here on Earth.
Active Engagement: The students will complete the pre-assessment. **After assessment KWL:** The students will complete the "K" what they know about plants and the "W" what they want to learn. This chart will be used throughout the lessons. After all the lessons have been taught the students will share what they have learned. This will be the "L" on the chart.
Closing: Remember, today we learned about plants and how important they are to our life.

Day 2: Scientific Method **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Video:** BrainPopJr video, *The Scientific Method* **Book**: *I Know a Scientist* (on Epic) **Song:** *Think Like a Scientist* (on GoNoodle) **Anchor Chart:** Scientific Method with visuals for each part (1. Ask a question, 2. Make a hypothesis, 3. Experiment, 4. Record observations, 5. Answer the Question). **Science Vocabulary Cards:** question-What do you want to know?, experiment-Test to see if you guess is right?, hypothesis-What do you think will happen?, conclusion-Tell what you find out.
Teaching Point: Today we are going to learn about the scientific method. Teacher will explain to students that scientists use the scientific method to help solve problems. Teacher will create and explain the scientific method anchor chart. Use visuals for the chart. Suggested visuals (1. Ask a question-question marks, 2. Make a hypothesis-light bulb words: I think.., 3. Experiment-funnel, 4. Record observations-pencil, 5. Answer the Question- kid with a think bubble "Got it!"). Explain the science vocabulary cards: question, experiment, hypothesis, conclusion.
Active Engagement: Students will watch the BrainPopJr video, The Scientific Method. Second, option is read the story **Book**: *I Know a Scientist* (on Epic). The students can also

listen to one of these songs *Think Like a Scientist* (on GoNoodle) or the *Scientific Method* (Have Fun Teaching). This would be a fun way to help students learn about the scientific method. This song could be used throughout the lesson plans. It could also be used as a brain break video throughout the day.
Closing: Remember, today we learned about the scientific method.

Day 3: Introduction of Experience **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: 2 Buckets (The Home Depot 5 gallon bucket) 3 Flower Pots Plant Seeds (Suggestion: Use radish seeds, watermelon seeds, or bean seeds because these germinate very quickly.) Measuring Cup: Use this cup give the plants the same amount of water. **Student Journal: Day 1** "My Plant Journal" (see Appendix 2) **Vocabulary Cards:** experiment- Test to see if you guess is right?
Teacher Note: Teacher will plant the seeds in the buckets. The students will check on the seeds daily once they are planted. The students will take care of the seeds once they are planted. They will water and observe the plants. Bucket 1: Plant will have a bucket over the flower pot to represent no light. Bucket 2: Teacher will poke holes in the bottom of the bucket to represent little light. Flower Pot 3: This flower pot will not be covered. You may want to select students to be "plant helpers." They would be responsible for watering the plants.
Teaching Point: Today we are going to use the scientific method. I have a question for you! How does the amount of sunlight affect plant growth? Allow students to share their thoughts. Teacher will create a brainstorm list of this thoughts.
Active Engagement: Students will write a hypothesis. Sentence starter: I think…They will write their hypothesis in their Science Journal. They will also draw a picture in their journal.
Closing: Remember, today we learned about how to use the scientific method.

Day 4: Photosynthesis **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 2** "My Plant Journal" **Song/Video:** Photosynthesis "Blinded by the Light" This video allows students explore misconceptions about matter and energy in photosynthesis and strategies for eliciting student's ideas to address or build on them. **Vocabulary Card:** photosynthesis
Teaching Point: Today we are going to learn out photosynthesis. The teachers will explain that photosynthesis is a process that plants use to breathe and to make food. Ask students "What do you do when you get hungry?" When you get hungry, you might grab a snack from your refrigerator or pantry. But what can plants do when they get hungry? What do you think plants do to get food? Plants need sunlight, water and a home (like soil) to grow. They make

their own food! Explain that plants are called autotrophs because they can use energy from light to synthesize, or make, their own food. Photosynthesis Diagram
Active Engagement: Students will watch the photosynthesis video. Photosynthesis "Blinded by the Light" .
Closing: Remember, today we learned about photosynthesis.

Day 5: Photosynthesis Lab **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 3** "My Plant Journal" **Lab: Photosynthesis Lab** This is an online lab explains photosynthesis to students. **Video:** *The Dr. Bincos: Photosynthesis* (on Epic) **Vocabulary Card:** photosynthesis
Teaching Point: Today we are going to learn more about photosynthesis by looking at an online lab. The teachers will review photosynthesis. Explain to the students that the lab will teach them about photosynthesis.
Active Engagement: Students will watch the photosynthesis lab. **Lab: Photosynthesis Lab** After the video allow the students to discuss the lab. Teacher may also show the video *The Dr. Bincos: Photosynthesis* (on Epic). Allow student to observe the plants. They will draw and write what they see with the plants. They will write their observations in their "My Plant Journal."
Closing: Remember, today we learned about photosynthesis.

Day 6: Parts of a Plant **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 4** "My Plant Journal" **Book:** National Geographic Reader: Seed to Plant (on Epic) **Video:** *Parts of a Plant* **Vocabulary Cards:** Add a picture to all vocabulary cards to allow students to see a picture of each vocabulary word. **plant**- a living organism that has roots and can't not move **roots**-the part of the plant that grows into the ground. **leaves**-the flat usually green part of a plant that grows from the stem **stem**-the part of the plant where leaves grow
Teaching Point: Today we are going to learn about parts of a plant. Teacher will explain the parts using the book *Parts of a Plant* (page 8-9). Explain to the students that this is a nonfiction text. We don't have to read it in order. Explain that on pages 8-9 the pictures have labels.
Active Engagement: Students will draw and label a plant. Students will observe the three plants. They will draw and write what they see with the plants. They will write their observations in their "My Plant Journal."
Closing: Remember, today we learned about the parts of the plant.

Day 7: Parts of a Flower Activity
Standard/Objective: 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.

Materials:
Student Journal: Day 5 "My Plant Journal"
Book: National Geographic Reader: Seed to Plant (on Epic)
Video: *Parts of a Plant*
Vocabulary Cards: Add a picture to all vocabulary cards to allow students to see a picture of each vocabulary word.
plant- a living organism that has roots and can't not move
roots-the part of the plant that grows into the ground.
leaves-the flat usually green part of a plant that grows from the stem
stem-the part of the plant where leaves grow

Teaching Point: Today we are going to review the parts of a plant.
Teacher Questions: What are the parts of a plant? What are roots?
Teacher may choice to finish reading the story *Parts of a Plant* . Explain to the students that this is a nonfiction text. We don't have to read it on order. Explain that on pages 8-9 the pictures have labels. Labels help the reader know what they are looking at.

Active Engagement: Students will create and label a plant picture.
Parts of a Plant Activity:
Materials:
-tissue paper (in desired color for the flower)
-green foam or green construction paper (stem)
-green constructions paper (leaves)
-brown pipe cleaners (roots)
-markers
-blue construction paper (background)
Steps:

1. Make a flower using the tissue paper (example: rose or sunflower)
2. Cut the brown pipe cleaner into pieces to look like roots, a stem from the green foam and leaves from the green construction paper.
3. Finally, use word cards to make the labels for the appropriated parts of the flower.

Students will observe the three plants. They will draw and write what they see with the plants. They will write their observations in their "My Plant Journal."

Closing: Remember, today we learned about the parts of the plant.

Day 8: What Plants Need to Survive?
Standard/Objective: 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.

Materials:
Student Journal: Day 6 "My Plant Journal"
Book: National Geographic Reader: Seed to Plant (on Epic)
Video: *Parts of a Plant*

Vocabulary Cards: Add a picture to all vocabulary cards to allow students to see a picture of each vocabulary word. **soil**- the upper layer of the Earth that may be dug or plowed and in which plants grow **air**-the gas in our atmosphere
Teaching Point: Today we are going to learn about what plants need to survive. Teacher will explain what plants need to survive using the book *Parts of a Plant* (page 14-15). Plants need air, water, space, sunlight, soil, and food. Explain to the students that this is a nonfiction text. We don't have to read it on order. Explain that on pages 14-15 the pictures have labels. Labels help the reader know what they are looking at. If you have time read the entire book.
Active Engagement: Students will draw and write what plants need to survive. They will label. The students will observe the three plants. They will write their observations in their "My Plant Journal."
Closing: Remember, today we learned about what plants need to survive.

Day 9: Sunlight **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 7** "My Plant Journal" **Book:** Plants Need Sunlight (on Epic) **Video:** Super Fab Lab! Growth Sid the Science Kids (This video will allow student to see a plant experiment. **Vocabulary Cards:** Add a picture to all vocabulary cards to allow students to see a picture of each vocabulary word. **Sun-**largest star in our solar system
Teaching Point: Today we are going to learn the importance of sunlight for plants. Explain that sunlight is needed for plants to survive. Teacher will read the story Plants Need Sunlight (on Epic). If there is not enough time to read the entire book, read pages 11-21. Explain to the students that this is a nonfiction text. We don't have to read it in order. Explain that on pages the pictures have captions. Explain that a caption is a word, phrase, or sentence underneath or near an image that gives more information about the picture.
Active Engagement: Students will draw and write that plants need sun to survive. They will write a caption for their plant pictures. The students will observe the three plants. They will write their observations in their "My Plant Journal."
Closing: Remember, today we learned about what plants need to survive.

Day 10: Review the Scientific Method **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 8** "My Plant Journal" **Book:** Cece Loves Science: This book is about a little girl name Cece who loves science. Student will learn all about the scientific method with Cece. **Vocabulary Cards:** Review the scientific method cards or anchor chart.

Teaching Point: Today we are going to review what we have learned about the scientific method. Use visuals for the chart. Suggested visuals (1. Ask a question-question marks, 2. Make a hypothesis-light bulb words: I think.., 3. Experiment-funnel, 4. Record observations-pencil, 5. Answer the Question- kid with a think bubble "Got it!"). Review the science vocabulary cards: question, experiment, hypothesis, conclusion.
Active Engagement: The students will observe the three plants. They will write their observations in their "My Plant Journal."
Closing: Remember, today we reflected on what we know about the scientific method.

Day 11: Scientific Method (Conclusion) **Standard/Objective:** 1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
Materials: **Student Journal: Day 8** "My Plant Journal" **Vocabulary Cards:** Review the scientific method cards or anchor chart.
Teaching Point: Today we are going to review what we have learned about the scientific method. Use visuals for the chart. Suggested visuals (1. Ask a question-question marks, 2. Make a hypothesis-light bulb words: I think.., 3. Experiment-funnel, 4. Record observations-pencil, 5. Answer the Question- kid with a think bubble "Got it!"). Review the science vocabulary cards: question, experiment, hypothesis, conclusion. Today we are going answer the question. This is also called a conclusion. Teacher will have students observe the plants for last time to determine the conclusion. **How does the amount of sunlight affect plant growth?** Teacher will write the students' answers as they share their conclusions.
Active Engagement: Students will draw and write their answer to the conclusion in their "My Plant Journal." They will also share what they learned about plants by completing the "L" (What did the students learn?) on the KWL chart.
Closing: Remember, today we learned about our conclusion of our experiment.

Appendix 1 Implementing Teaching Standards

NC RI.1.1 Ask and answer questions about key detail in the text.
NC RI.1.2 Identify the main topic and retell key details of the text.
NC RI.1.4 Ask and answer questions to help determine or clarify the meaning of words and phrases in a text
NC RI.1.5 Know and use various text features to locate key facts or information in a text.
NC RI.1.7 Use illustrations and details in a text to describe its key ideas.
NC SL.1.1 Participate in collaborative conservation with diverse partners about grade 1 topics and texts with peers and adults in small and large groups.
NC W.1.6 With guidance and support from adults, recall information from experience information from provided sources to answer a question.
SL 1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups

Science Standard

1.L. 1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.

Appendix 2 Implementing the Unit
Day 1 Pre-Assessment and Day 8 Post-Assessment

Name _____ **Date** _____

Plants

Students will draw and write what they know about plants.

Plants

Day 1 Anchor Chart KWL "Plants"

Here is an example of a KWL chart that can be created on large chart paper.

K	W	L

Day 3 Lesson Student Journal: "My Plant Journal" This paper can be copied to create the students journal. **Day 1 Observation**

Name _____ **Date** _____

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 1

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ Date _____

Day 2

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 3

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ Date _____

Day 4

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 5

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 6

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 7

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 8

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 9

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Name _____ **Date** _____

Day 10

My Plant Journal

Students will draw and write their observations of the plants.

Plants

Appendix 3: Annotated Teacher Resources

Epic (Text available for free to educators on Epic! Online Library)
getepic.com Books:
I Know a Scientist
Junior Scientists: Experiment With Plants
Plants Need Sunlight

Plants Need Sunlight

Plants Are Alive!

Epic Video (Free online stories and videos.)
The Dr. Bincos Show: Parts of a Plant
Parts of a Plant
Plant Structures
The Dr. Bincos: Photosynthesis
Gonoodle (Free online songs and videos.)
gonoodle.com
Song: *Think Like a Scientist* This video will teach students about the scientific method. It also describes being a scientist.
Gizmos (Free online interactive science virtual labs.)
https://gz.explorelearning.com/
Photosynthesis Lab
Other Free Songs
Scientific Method (Have Fun Teaching).
Materials to buy:
2 buckets (The Home Depot 5 gallon bucket)

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