

## **Enhancement Activities/Strategies for Gifted/High Ability Learners: Sample Science Learning Plan**

<b>Big Idea/ Topic</b>
Plants Throughout the Year

<b>Standard Alignment</b>
<p><b>S1L1.</b> Obtain, evaluate, and communicate information about the basic needs of plants and animals.</p> <ul style="list-style-type: none"> <li>a. Develop models to identify the parts of a plant -- root, stem, leaf, and flower.</li> <li>b. Ask questions to compare and contrast the basic needs of plants (air, water, light, and nutrients) and animals (air, water, food, and shelter).</li> <li>c. Design a solution to ensure that a plant or animal has all of its needs met.</li> </ul> <p><b>S1E1.</b> Obtain, evaluate, and communicate weather data to identify weather patterns.</p> <ul style="list-style-type: none"> <li>a. Represent data in tables and/or graphs to identify and describe different types of weather and the characteristics of each type.</li> <li>b. Ask questions to identify forms of precipitation such as rain, sleet, and hailstones as either solid (ice) or liquid (water).</li> <li>c. Plan and carry out investigations in current weather conditions by observing, measuring, with simple weather instruments (thermometer, wind vane, rain gauge), and recording weather data (temperature, precipitation, sky condition, and weather events) in a periodic journal, on a calendar, and graphically.</li> <li>d. Analyze data to identify seasonal patterns of change. (Clarification Statement: Examples could include temperature, rainfall/snowfall, and changes to the environment.)</li> </ul>

<b>Advanced Research</b>
Since 1 <sup>st</sup> grade students are not yet strong independent readers, there are many great videos that students can use for advanced research about the topics in this unit. Give students opportunities to share what they have learned with their classmates by setting aside class time for them to “be the teacher” or providing a digital place for students to share and respond to one another, such as

posting videos to a class online page. Some topics and activities that may interest students include:

- Research plant adaptations by watching plant videos. Challenge students to create a model of a current plant and develop an adaptation that could help that plant survive.
- Research the inside a flower to learn about its parts, then challenge students design a labeled 3-D model of a flower.
- Research carnivorous plants. Have students create a way to compare and contrast meat-eating plants with meat-eating animals.
- Research evergreen trees. Challenge students to find samples of evergreen trees in your area and create an evergreen guidebook or ask students to explain why evergreen trees are more likely to be used as Christmas trees than any other type of tree.
- Have students compare what they know about hibernation with how plants are adapted to survive the winter. You might view a video, etc. to provide helpful information to help kids explore “plant hibernation.”
- Locate online videos on trees and other plants to view.

Advanced students crave knowledge, so it is important for us to nurture that and provide as many opportunities as we can for them to absorb and explain the “fun facts” they learn.

- Young students often do realize that many of the foods they eat and fibers they wear come from plants. Have students find pictures of plants such as cotton, peanuts, peaches, potatoes, bananas, pecans, etc. to see what they look like and where they grow. This is also a great opportunity to introduce students to some of Georgia’s top agricultural products and discuss their growing seasons. Invite a farmer to be a guest speaker—even virtually—and have him or her explain how their plants are affected by weather patterns.

## Communication

- Play a version of a questioning game with your students. Challenge students to find something that comes from a plant and put it in a shoebox to bring to school or to your live virtual class. Have other students ask yes/no questions about the object in the box to determine what’s inside. This activity helps students learn to carefully phrase questions and develop logical thinking skills.
- Have students bring a sample of a seed to class or select a sample from a variety you bring to school. (If you are having face-to-face school, students can save seeds from their lunch as well.) Students will use their seeds to create a seed story that explains the journey the seed will take to become a plant. Students can chose to write their story in narrative form where the seed is personified as a character or write an informational book. Students might even enjoy creating a comic strip version of their Seed Story. If you have the space to do so, allow students to plant their seeds and take pictures at different stages of growth.
- Understanding the weather is important to help students know how to dress for school and special activities. Divide your students into teams who will be daily weather forecasters for your school’s morning news or morning announcements. On the day before their

presentation, have your students research the high and low temperatures and expected weather, then record a weather report that includes suggestions for what students should wear to school the next day.

### Critical Thinking and Critical Problem-Solving Skills

- Have students explore the cause and effect relationships in plant life cycles and what plants need to grow and thrive by growing their own digital garden. View the videos of your choice that discuss this.
- Help students understand that their diet includes many different parts of plants. Have students sort pictures of plants that we eat activity. Then, challenge students to go on scavenger hunts in their kitchens at home to find other plants their family eats. Remind students that we can also eat plants that have been frozen, canned, dehydrated, refrigerated, etc. so they can look for options at home besides fresh plants.
- If your school has the space, planning a school garden is a great way to practice many critical thinking skills. The planning and maintenance of a garden includes many critical thinking skills, such as problem solving, organization, visualization, inquiry, systems thinking, curiosity, personal responsibility, and interpersonal skills. If you do not have the outdoor space, an alternative is to plant a window garden in your classroom. The garden is a great vehicle for exploring and learning.
- Learning to compare and contrast information is an important critical thinking skill for young learners to practice. Have students complete a compare and contrast chart about what people need and what plants need. Another compare and contrast challenge is to have students compare and contrast different types of plants, such as fruit trees, wildflowers, house plants, vegetable plants, and grasses.
- Challenge students to think of a word that matches each letter of the alphabet for different categories of plants. You can also play the game as a whole class by giving students a time limit and multiple categories, spinning one letter of the alphabet, and challenging students to determine an answer to each clue that begins with the letter for that round.

### Creative Thinking and Creative Problem-Solving Skills

- Challenge students to build a 3-D model of a plant that can stand on its own. It should be a unique plant (tree, flower, etc.) that has never been discovered before! Student models should include roots, stems, leaves, and flowers. Provide materials such as straws, pipe cleaners, construction paper, plastic cups, string, paper plates, pom-poms, toothpicks, and Play-dough. Encourage students to label the parts of their plants and explain how they work. Have students determine a name for their newly-discovered plant and explain its unique characteristics.
- Use the guided technique to help students explore plants. Have students explain what they

see or feel when they view a certain plant growing, such as an oak tree, sunflower, carrot, or grass. Then have students think about that plant from the perspective of other living things, such as a bird, a worm, an ant, a dog, the Sun, etc. Have the students take “notes” on these ideas that can be used as writing plans for creative narratives.

- View a video about plants. Then, challenge students to create their own new product or invention inspired by a plant’s features.
- Students can explore weather patterns in a creative way by planning their special day. In this project, students must pick a date on the calendar, plan the weather temperature and forecast that would be ideal for their special day, pack a suitcase with any items they would need, and plan their daily itinerary. This activity gives students a chance to practice original thinking and gives you a chance to assess their understanding about weather patterns.

### Awareness of Self—Student’s Well-being

- As students conduct investigations during this unit, they may make mistakes that can lead to feelings of frustration. Gifted students are often perfectionists by nature, so it is important for us to help young students learn that if your best effort is given, it is okay if things aren’t perfect. Research an article that gives some tips teachers can use to help students see that making mistakes is a valuable part of the learning process.
- Gifted students are naturally very curious. Do what you can to help encourage and nurture that sense of wonder!