Caring for Our Pet Plant

TK/Kindergarten Unit for Distance Teaching

Teacher Guide

Next Steps for Teachers	For this unit, these are the materials for the teacher to have on hand: ● Mystery Box - A "Mystery Box" is simply a shoebox or other opaque box with a lid that says "Mystery Box!" on the outside. ● About 3 pieces of plants to put in the Mystery Box. These could include some sticks and leaves, for example. ● About 3 non-plant items to put in the Mystery Box. These could include a toy car or a stapler, for example. ● Chart paper and markers, or some other way for students to see you recording some of their key ideas ● 1 Pick the Plant handout and Pet Plant Album to use during instruction ● Pencils or crayons in at least 2 different colors ● Computer with all lesson links (below) pre-loaded and strong internet connection ● A fruit or vegetable that is ready to eat during the final class For this unit, these are the materials students will need at home: ● Pick the Plant handouts ● Pet Plant Albums ● Pencils or crayons in at least 2 different colors ● Computer with strong internet connection ● A fruit or vegetable that is ready to eat during the final, virtual class: You can send something home to students from the school garden, or invite them each to bring a fruit or vegetable to their final class. *If you are guiding students in planting their own seeds at home:* ● *1 small sandwich bag filled with organic seed-starting mix*

This outlines a virtual adaptation for part of Life Lab's Kindergarten Next Gen Science in the Garden unit, "What Plants Need." This was made possible with tremendous support from kindergarten teacher reviewers Meg Finn (Gault Elementary), Mandy Rubin (Gault Elementary), Ailish Johnson (Santa Cruz Gardens Elementary), and Elizabeth Lindsley (Alternative Family Education). This work was done as part of the Santa Cruz County Office of Education's Teacher Leader Institute 2020.

	• *1 container in which to plant - This can be a 3" pot from a nursery, or a clean yogurt or other small container with holes drilled in the bottom* • *A seed packet with seasonal seeds to sow; or a small baggie with just a few seasonal seeds to sow. Good seeds to sow in containers with TK/K include: beans, peas, sunflowers, popcorn, or radishes.* • *1 bowl into which to set their plant, to collect draining water*

Guiding Question	*What do plants need to grow and thrive?*

Supports Content Standards	• NGSS Disciplinary Core Idea *LS1.C*
	• NGSS Science and Engineering Practices:
	  ○ Asking Questions
	  ○ Constructing Explanations
	  ○ Obtaining and Communicating Information
	• NGSS Crosscutting Concepts: Cause and Effect, Stability and Change

Students will be able to:	• *At the end of this unit, students will be able to articulate why plants are important to humans and other animals, and that plants need water and sunlight to live and grow, and will be able to explain how they know this to be true.* • *Teachers will know what students know about plants because students will submit videos of themselves describing why plants are important to us. They will also explain what plants need to live and grow, and how they know that.*

Social and Emotional Learning support	• Spending time outdoors or with natural objects to reduce stress

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	• Taking a deep breath in and out • Connecting to and caring for a plant • Collaborative sense-making conversations with classmates

REAL Student Survey and teacher feedback survey	For teachers/parents: One of the goals for the lessons is to increase student connection to and understanding of nature, the environment, and science. This information will help us to know more about the impacts of science and environmental education across Santa Cruz County. • Please have parents help administer this **Student Survey - K-2 (survey en español)** with your students **after the unit** in order to measure students' environmental and stewardship attitudes. Thank you! • Teachers--please submit this **teacher feedback survey** **after teaching the lesson sequence**! Your input is very important.

Week 0: Engage **Pick the Plant** **Time ≈ 30 minutes (can be broken up and shared in shorter segments)** **Activities can be done:** ☑ **Classroom** ☑ **At home** ☑ **Outdoors**	• Pick the Plant Mystery Box game (Synchronous) • *Optional:* Students go and find plants and non-plants and discuss how they knew which objects were plants • Circle and count plants on Pick the Plant handout • Watch Life Lab Let's Grow a Radish: Week 0 Video, featuring a radish seed being planted. • Assignment: Pg 2 of Pet Plant Album - Make predictions **Click here to view the Week 0 Lesson.**

Week 1: Explore/Explain **How Plants Grow**	• Venn diagram comparing what plants need with what animals need

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Time ≈ 30 minutes (can be broken up and shared in shorter segments) **Activities can be done:** ☑ **Classroom** ☑ **At home** ☑ **Outdoors**	• *Optional: Guide students in planting their own seeds in containers* • Watch Life Lab Let's Grow a Radish: Week 1 Video. • Assignment: Pgs 3, 4 and 5 of Pet Plant Album - Check on seed sprouting, count leaves, measure height **Click here to view the Week 1 Lesson.**

Week 2: Explore/Explain Sunlight and Plants **Time ≈ 30 minutes (can be broken up and shared in shorter segments)** **Activities can be done:** ☑ **Classroom** ☑ **At home** ☑ **Outdoors**	• Watch: Video of Plant Growing With and Without Sunlight • Synchronous Class Discussion • Watch Life Lab Let's Grow a Radish: Week 2 Video. • Assignment: Pgs 3, 4 and 6 of Pet Plant Album. Check on seed sprouting, count leaves, measure height. **Click here to view Week 2 Lesson.**

Week 3: Explore/Explain Plants and Water **Time ≈ 30 minutes (can be broken up and shared in shorter segments)** **Activities can be done:** ☑ **Classroom** ☑ **At home** ☑ **Outdoors**	• Watch: Video of Plant Growing With and Without Water • Synchronous Class Discussion • Watch Life Lab Let's Grow a Radish: Week 3 Video: Check on seed sprouting, count leaves, measure height. • Assignment: Pgs 3, 4 and 7 of Pet Plant Album **Click here to view Week 3 Lesson.**

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Week 4: **Elaborate/Evaluate** **What Do Plants Need to Live and Grow?** **Time ≈ 30 minutes (can be broken up and shared in shorter segments)** **Activities can be done:** **☑ Classroom ☑ At home** **☑ Outdoors**	• Watch: Time Lapse Video of Plant Growing • Read aloud: *How a Seed Grows*, by Helene J. Jordan • Plant Growing Song and Skit • Watch Life Lab Let's Grow a Radish: Week 4 Video • Assignment: Pages 3, 4 and 8 of Pet Plant Album. **Click here to view Week 4 Lesson**.

Week 5: **Elaborate/Evaluate** **Why are Plants Important to Humans?** **What Do Plants Need to Live and Grow?** **Time ≈ 30 minutes (can be broken up and shared in shorter segments)** **Activities can be done:** **☑ Classroom ☑ At home** **☑ Outdoors**	• Find and share a fruit or vegetable • Discuss why plants are important to humans • Assignment: Share videos explaining what plants need and why they are important to humans **Click here to view Week 5 Lesson.**

Links from Hyperdoc	**Please find all the links shared in the document below:**

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	Week 0: ● Pick the Plant Handout: https://drive.google.com/drive/folders/1xLk8kr2xazK8ZY55u7gqPV9I4XrB4m87 ● Life Lab Let's Grow a Radish: Week 0 Video: https://www.youtube.com/watch?v=cEUrCQWEaXs&feature=youtu.be ● Pet Plant Album: https://drive.google.com/drive/folders/1xLk8kr2xazK8ZY55u7gqPV9I4XrB4m87 **Week 1:** ● Time Lapse of Bean Plant Growing: https://www.youtube.com/watch?v=w77zPAtVTuI ● Life Lab Let's Grow a Radish: Week 1 Video: https://www.youtube.com/watch?v=roZX1kd3IFQ&feature=youtu.be ● Life Lab Video: *How a Seed Grows*, by Helene J. Jordan: https://www.youtube.com/watch?v=RlbMhBc5L9Q ● "Sun Soil Water and Air" Song by the Banana Slug String Band: https://www.youtube.com/watch?v=vEYhs8m_q04 **Week 2:** ● Video of Plant Growing With and Without Sunlight: https://www.youtube.com/watch?v=FZvAspm5fMo ● Life Lab Let's Grow a Radish: Week 2 Video: Checking on Our Pet Plant: https://www.youtube.com/watch?v=_LMzAfEOl4s&feature=youtu.be **Week 3:** ● Video of Plant Growing With and Without Water: https://www.youtube.com/watch?v=Ai-UoMfldsU

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	• Life Lab Let's Grow a Radish: Week 3 Video: https://www.youtube.com/watch?v=NYU1NuUx-NQ&feature=youtu.be **Week 4:** • Life Lab Let's Grow a Radish: Week 4 Video: https://www.youtube.com/watch?v=xiPcHBoh2zU • Life Lab Video: Plant Growing Song: https://www.youtube.com/watch?v=vi6fkgNESpg **Playlist of All Life Lab Videos for this Unit:** https://www.youtube.com/playlist?list=PLgAUn5p3lPTi-__1ZVEoIl-x555F86zLG **Student Post-lesson Survey: Student Survey - K-2 (survey en español)**
Notes for Adaptations	• When one part of one of these lessons says "Synchronous," then that portion can only work in a Synchronous format. The remaining portions of these lessons could work in either Synchronous or Asynchronous formats, with appropriate support. • If you have the ability to send home to students planting containers, seed starting mix, and seeds, then you could have them follow along with the videos to plant their own seeds at home. If not, then they can adopt the plant in the video as their "Class Pet." These lessons were written assuming they are *not* following along with materials at home, but that would be a feasible extension if they had the materials.
Additional Resources	For suggested children's literature books related to gardening, visit:

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	https://static1.squarespace.com/static/5556a39be4b0741e9be3f1e4/t/5d09313504d44f000134ae8e/1560883544052/cityblossoms_librarylist_2019.pdf

Unit Feedback	One of the goals for these lessons is to increase student connection to and understanding of nature, the environment, and science. This information will help us to know more about the impacts of science and environmental education across Santa Cruz County. 1. Please have students (parents may help) this **Student Survey (survey en español)** with your students **after the unit**. 2. Teachers--please submit this **teacher feedback survey** **after teaching the lesson sequence to** help us improve the materials and also assess our impact on science and environmental education in our county.! Your input is extremely important. **English Version of Student Survey** REAL Science Student Survey - K-2 **Spanish Version of Student Survey** Grados K-2 - Acción ambiental relevante y aprendizaje para las ciencias

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