

## K-5th Elementary STEAM

Lesson Name	Standard Alignment
Welcome to Gardyn Unit Overview	<p>3-LS3-1: Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.</p> <p>5-PS3-1: Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.</p> <p>CCSS.MATH.CONTENT.3.MD.A.2: Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters.</p> <p>Art Anchor Standard 1: Generate and conceptualize artistic ideas and work. VA .1.1: Engage collaboratively in exploration and imaginative play with materials.</p> <p>Art Anchor Standard 2: Organize and develop artistic ideas and work. VA .1.1: Explore uses of materials and tools to create works of art or design.</p> <p>Art Anchor Standard 10: Synthesize and relate knowledge and personal experiences to make art. VA .1.2: Create works of art about events in home, school, or community life.</p>
Plant Development, Health, Nutrition, and Supply Chain Challenges	<p>National Standards</p> <ul style="list-style-type: none"> <li>• 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</li> <li>• 3-LS4-4: Make a claim about the merit of a solution to a problem caused when the environment changes and impacts organisms.</li> </ul>

	<p>Common Core State Standards (CCSS) – Mathematics: CCSS.MATH.CONTENT.3.MD.A.2: Measure and estimate liquid volumes and masses of objects.</p> <p>National Core Arts Standards (NCAS): VA 2.3: Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art-making process.</p> <p>National Health Education Standards (NHES): Standard 1: Students will comprehend concepts related to health promotion and disease prevention.</p> <p>National Agricultural Literacy Outcomes (NALOs): Theme 3.4: Describe the journey of agricultural products from farm to table.</p>
Exploring Nature and Art with Gardyn 4.0 Home Kit and Georgia O'Keeffe	<p>Next Generation Science Standards (NGSS): 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>Common Core State Standards (CCSS) for Mathematics: 3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.</p> <p>National Core Arts Standards (NCAS): VA .2.3a: Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art-making process.</p>
Observing and Painting Plants	<p>NGSS 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>CCSS.MATH.CONTENT.3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.</p> <p>National Core Arts Standards VA .1.3: Elaborate on an imaginative idea.</p> <p>National Core Arts Standards VA .1.3: Create art using materials, tools, and processes.</p> <p>ISTE Standards for Students 1.4: Innovative Designer - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.</p>

Observe and Paint the Background	<p>NGSS 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>Visual Arts: Anchor Standard 1: Generate and conceptualize artistic ideas and work.</p> <p>ELA-Literacy W.3.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p>
Observe and Painting the Plants	<p>NGSS 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>CCSS.ELA-LITERACY.SL.3.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.</p> <p>Visual Arts Standards: VA .2.3a - Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art-making process.</p> <p>Mathematics Standards: CCSS.MATH.CONTENT.3.MD.B.4 - Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.</p>
Finishing Touches and Sharing Insights	<p>NGSS: 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p> <p>CCSS.ELA-LITERACY.SL.3.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.</p> <p>National Core Arts Standards (Visual Arts):</p> <ul style="list-style-type: none"> <li>• VA .2.3: Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art-making process.</li> <li>• VA .1.3: Create artwork using a variety of artistic processes and materials.</li> <li>• VA .1.3: Evaluate an artwork based on given criteria.</li> </ul>

<p>Critiquing Gardyn Paintings</p>	<p>NGSS (Next Generation Science Standards):</p> <ul style="list-style-type: none"> <li>• 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</li> <li>• 3-PS2-2: Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.</li> </ul> <p>Common Core State Standards (CCSS) for ELA:</p> <ul style="list-style-type: none"> <li>• W.3.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</li> <li>• SL.3.1: Engage effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts.</li> </ul> <p>National Core Arts Standards:</p> <ul style="list-style-type: none"> <li>• VA .1.3: Refine and complete artistic work.</li> <li>• VA .1.3: Evaluate an artwork based on given criteria.</li> </ul>
<p>Final Lesson</p>	<p>Science (Next Generation Science Standards - NGSS)</p> <ul style="list-style-type: none"> <li>• 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</li> <li>• 3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. By planning for the next garden and ordering new plants, students can reflect on which plants thrived and which did not.</li> </ul> <p>Technology (International Society for Technology in Education - ISTE)</p> <ul style="list-style-type: none"> <li>• ISTE Standard 1.6 Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals.</li> </ul>

- ISTE Standard 1.7 Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Engineering (NGSS): 3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.(Cleaning the hydroponic system and planning for the next garden involves defining problems and considering constraints.)

Art (National Core Arts Standards - NCAS)

- Anchor Standard 1: Generate and conceptualize artistic ideas and work.Creating an art night or an interactive display involves generating and presenting artistic work.
- Anchor Standard 2: Organize and develop artistic ideas and work.Planning and organizing the final presentation falls under this standard.
- Anchor Standard 6: Convey meaning through the presentation of artistic work. Students will present their experiences and reflections through various media.

Mathematics (Common Core State Standards - CCSS)

- CCSS.MATH.CONTENT.3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. Measuring the growth of the plants and plotting this data aligns with this standard.
- CCSS.MATH.PRACTICE.MP4: Model with mathematics.
  - Planning the next garden and possibly budgeting for new plants involves mathematical modeling.