1st Grade Learns About Plants!

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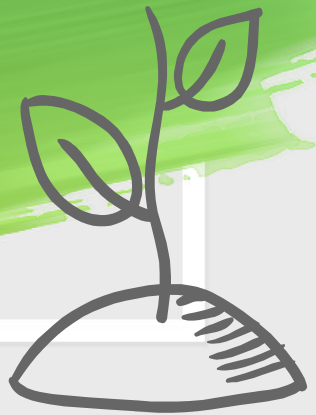
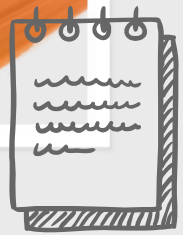


Driving Question

"How can we replicate protection strategies that we see in nature to protect gummy bears?"

Project Summary



- Students will investigate plant structure and how plants protect themselves
- Through the unit students will do self discovery through nature walks, discussions, and engaging with the design process

Standards (Science)

PE

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.

SEP

Use materials to design a device that solves a specific problem or a solution to a specific problem.

DCI

LS1.A: 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. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

CCC

Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.

The shape and stability of structures of natural and designed objects are related to their function(s).

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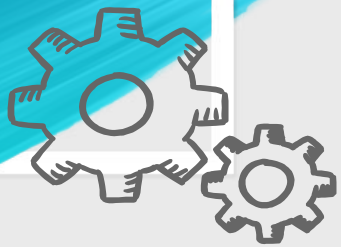
Standards (Math)

CCSS.1.G.A.2 compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

CCSS.MP3 construct viable arguments and critique the reasoning of others

CCSS.Math.Content.1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

Standards (Cont.)



Technology

Standard 11:
Students will develop the abilities to apply the design process

21st century skills

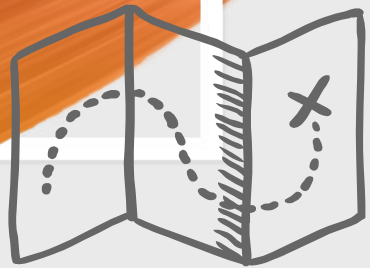
Critical thinking, collaboration, communication, creativity

ELA

CCSS.ELA-LITERACY.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.

CCSS.ELA-LITERACY.W.1.2
Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

Sequence of Learning (Week 1-3)



Week 1
(Launching the project)

- Introduce parts of plants with a song and dance. https://www.youtube.com/watch?v=RSBcMYYEwtM
- Observe plants from the classroom window. Discuss plants that they see in their neighborhood. Keep in mind the question: how do plants protect themselves from other species?

Week 2
(Moving the project forward)

- Go on a nature walk with science journals- taking notes and drawing pictures of what is observed.
- Having the students keep in mind the essential problem- how can we take something that the plants use to protect themselves and use that to protect gummy bears.
- Introduce problem and go on another nature walk to make more observations about how plants protect themselves.

Week 3
(Moving the project forward)

- During math we will discuss shapes that we saw on our walk. Students will be encouraged to use their science notebooks to recall what they saw
- Brainstorming day. The students will discuss with peers their ideas and collaborate about new ideas. Students will finish the day by writing out a plan of action for their project. This will include identifying the shapes that they plan on using.

Sequence of Learning (Week 4-6)

Week 4
(Moving the project forward)

- Students draw ‘blueprints in their science notebooks. Fill out what they included in their design why they included it and how their design will work.

Week 5
(Finalizing the product)

- Students have a day to build their design with their partner and discover what needs improvement or changes. Over the course of the week students work through the design process and test their contraptions and redesign.
- Students collaborate with their partner to decide what they want to say about their final product. They will fill out an organizer that states what their design includes, why they choose to use certain things and how it works.

Week 6
(Public Product)

- Students will present their final project to their peers. Each group will be applauded. Students’ hard work will be celebrated with a small handful of new gummy bears that have not been played with.
- After all presentations are given students will be given a self evaluation form. They will answer three questions- “What went well in your project?” and “What is one thing you would do differently?” and “What is one thing you have learned?”

Product

- Students will create a contraption that they will demonstrate to the class
- Students will have a presentation that goes along with the demonstration

Audience

- The students will be presenting their final products to their peers

Success Criteria

- Did they work collaboratively with a partner?
- Did they engage in the design process?
- Did they have a final product?
- Did they attempt to use the organizers?