

NGSS Unit Planning with UbD

Teacher Name: 4th Grade Team

Date: 1-19-16

School Site: Curran

Unit: Environment: Plant and Animal Structures and Survival

Module: 1st Lesson: Plant Structures and Survival

NGSS Covered:

LS1.1 Structure and Function: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.

Crosscutting Concept: A system can be described in terms of its components and their interactions.

Disciplinary Core Idea (DCI): Structure and Function

CCSS ELA Covered:

RI. 4.6 Compare and contrast a firsthand and secondhand account of the same event or topic, describe the difference in focus and the information provided.

RI 4.7 Interpret information presented visually, orally, or quantitatively (e.g. in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears

RI 4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably

W.4.8 Research to Build and Present Knowledge

Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources.

W. 4.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

Apply grade 4 Reading standards to literature (e.g., “Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character’s thoughts, words, or actions].”).

Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

SL 4.3 Comprehension and Collaboration

Identify the reasons and evidence a speaker or media source provides to support particular points.

CCSS Mathematics Covered:

4. G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded across the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

4. MD.1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Note: This module will take about 4 or 5 days.

Understanding by Design NGSS Unit Plan

Stage 1: Desired Results

Understand

Students will understand that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Essential Question(s)

How does the structure of a plant help it to survive?
Do animals use their structures to survive?

Stage 2: Evidence/Assess

Know

Students will gain an understanding of how the structure of a plant helps it to adapt and survive in its particular environment.

Vocabulary:

Structure (internal and external), stem, roots, thorns, leaves, petals, environment

Do

Students will follow STEMscopes Do 2 Plant Guts to observe how a plant's structure helps it to survive. Students will use the CER form to document their claim, evidence, and reasoning as well as keep track in chart form in their science notebook.

Stage 3: Learning Plan

How

Engage: Show the video on Discovery Ed on plant structures called How Plants Grow. Put students in groups of 4 or 5. Give them the chart of plant and animal structures and have groups talk about how those structures are used. Give them time to discuss. Then have a whole class discussion on what was discovered.

Explore: Have students write the essential questions in their notebooks. Give time for groups to discuss and answer. This will be revisited later. Follow the Do 2 in STEMscopes under Plant Guts. Have groups set up the celery stalk first as this will have to be observed over a few days and document in chart the traveling of the food coloring up the stalk. Let them draw what they feel will happen in their notebooks. Let groups work on the activity using a planted plant, an apple and a tomato or orange. They can discuss the differences and similarities of the structures of the fruit. Suggestion: Have groups complete a double bubble. Suggestion: Have groups discuss symmetry and how it applies to the fruit when it is cut open. Is it symmetrical and why? This all can be done over three or four days. During these days students can read and research about plant and animal adaptations and structures. STEMscopes provides many short passages that groups can read.

Explain: Have groups work on the CER form to help answer the essential questions and their claims. When the dye has reached the leaves have groups discuss the essential questions and see if they would like to revise their original answers and why. Have groups discuss the idea of plant structures as a system and how those systems interact to aid in survival.

Elaborate: After all data has been collected, have groups create a poster documenting the process and explaining the role of structures for the survival of plants. Parts of the poster should be labeled and in sequential steps. Groups can be creative on how they would like to do their poster. But it should be able to explain how plant structures help with survival. Groups should also have some form of a chart, diagram, or graph on the poster showing their data.

Evaluate: Groups will exchange posters with other groups for evaluation. Groups can use stickies to add feedback, questions, and things they like. Encourage students to start with I noticed or I wonder statements when adding feedback or suggestions. Have a talk with the class before hand about what critiquing work means and how to do it positively. Then have groups switch posters back and give time for groups to revise their poster. Posters can then be displayed. This is a great way to formally assess the learning.

Stage 4: Transfer

Knowledge Transfer: Crosscutting Concept- Systems and System Models: A system can be described in terms of its components and their interactions.

The crosscutting concept of systems and system model is represented throughout this module. Challenge students to look for other examples of systems and system models in other subjects like math.