Performance Based Assessment Plan

Date: September 29, 2023

Assessment Title: Photosynthesis

Author: Stephanie Patterson

Grade Level: 4th

Subject Areas: Science with Art

Time Allotted for Assessment: 90

Description: Students will take part in an individual art project. Students will create a 3d diagram of a plant and they will label all the parts of the plant correctly. Students will also create a drawing of how photosynthesis works in four steps. The purpose of this assignment is for students to demonstrate their knowledge of plants and the various parts and to show their knowledge of how photosynthesis takes place. Once the art project is complete the student's art models will be displayed around the classroom.

FOCUS

Standards Assessed:

Science

4.2The student will investigate and understand that plants and animals have structures that distinguish them from one another and play vital roles in their ability to survive. Key idea includes

a) the survival of plants and animals depends on photosynthesis;

c) plants and animals have different structures and processes for creating offspring.

Art

4.1 The student will apply creative thinking to artmaking.

a) Apply imaginative and expressive ideas.

b) Develop ideas individually and collaboratively.

Rationale: This assessment allows the students to show their knowledge of the parts of a plant. Students will work to create a model of a plant. With the knowledge that they have obtained they will label the different parts of the plant.

Instructional Objectives:

- Students will describe how photosynthesis works.
- Students will be able to correctly label the parts of a plant.

Enduring Understandings:

- Green plants produce their own food through the process of photosynthesis. They use the green pigment, chlorophyll, along with carbon dioxide, water and sunlight to produce food (sugar). The leaf is the primary food-producing part of these plants. Oxygen is released during photosynthesis (4.2 a,b).

- Photosynthesis enables plants to trap energy from the sun and convert it into sugar that can be used by organisms (4.2 a).

- For a population to thrive, its members must be able to reproduce (4.2 c).

Essential Questions:

- What makes up a plant?

- What happens during photosynthesis?

ASSESSMENT PROCEDURES & PLANNING

Context and Scenario (GRASPS)

GOAL: You have to create a 3d poster of a plant model and draw out the process of photosynthesis to show at the local science museum.

ROLE: In your role as the artist.

AUDIENCE: Your audience will be visitors of the museum.

SITUATION: The process of photosynthesis and plant models.

PRODUCT/PERFORMANCE: 3D Model and diagram drawing.

STANDARDS: Students are to accurately label a plant model and accurately draw the process of photosynthesis.

Performance Objectives

TASK/SITUATION: The students will be working to create their own art project that consists of a labeled 3D flower model and a drawing of the steps of photosynthesis.

CONDITION/RESOURCES: The students will be provided various art materials that include: poster board, markers, crayons, coloring paper/cardstock, glue, pipe cleaners, tissue paper, and buttons

LEARNING: The students will demonstrate their understanding of plants and photosynthesis

BEHAVIOR: The students will be working independently to create a 3d model and diagram pictures that will be displayed in the classroom. The students will show their knowledge of what a plant is made up of.

PERFORMANCE LEVEL/ CRITERIA for SUCCESS: The students will have to create a 3D model and a drawing that shows the four different stages of photosynthesis. In order to be successful, they have to accurately label both diagrams.

Student Product: The student's product will be a piece of artwork that will go on display in their local science museum. For their museum artwork they are to use art materials to create a 3D diagram of a plant model. They will label the parts of the plant correctly. They will also work to create a drawing of the 4 steps of photosynthesis. These two products will help asses if the student has an understanding of plants and photosynthesis. By labeling the parts it helps to gauge if the student was able to understand the different parts of a plant and the different steps of photosynthesis.

ASSESSMENT COMPONENTS

Student Instructions with Introductory Letter:

Photosynthesis Art Project

Dear Students,

In this unit we have been learning about the process of photosynthesis and the different parts that make up a plant. It is now time for us to show off our art skills and knowledge of plants. Using the knowledge you have obtained on photosynthesis and the different parts of a plant, you will take on the role of an artist. The local science museum is looking to explain the process of photosynthesis and teach people about what the different parts of a plant are but in order to do that they will need a diagram. Thats where you will step in. You will work to create a 3d model of a plant and label the correct parts of a plant to show on display in the museum. You will also work to create a drawing of the process of photosynthesis. Through your artwork you will help visitors of the museum learn more about plant processes.

Directions:

1. You will work independently to create a 3d model of a plant. You will use different art materials in the creation of the plant and then you will label the plant parts after you are finished creating.
2. You will use markers or crayons to draw the cycle of photosynthesis.

Have fun creating!!

Student
Checklist

Student Checklist

3D Plant Model

__I have created a 3D model that is easy to identify
___I have correctly labeled the parts of a plant
___I have properly gave my diagram a heading

Photosynthesis Drawing

___I have correctly identified the steps of photosynthesis in four images
___All steps are labeled correctly
___I have created a drawing that is easy to follow

Materials

- Poster Board
- Crayons/Markers/pencils
- Card Stock/Construction Paper (various colors)
- White paper
- Pipe Cleaner
- Paper
- Glue
- Various art accessories

Assessment/Evaluation

Criteria (Identify each instructional Goal)	% Pts	Identify each Performance Goal			
		Exemplary 4	**Proficient 3**	**Basic 2**	**Needs Attention 1**
The student applied creative thinking to artmaking and apply expressive ideas. Va Art 4.1a		The student was able to apply creative thinking and apply expressive ideas.	Most of the time the student was able to apply creative thinking and apply expressive ideas.	Some of the time the student was able to apply creative thinking and apply expressive ideas.	The student was not able to apply creative thinking to artmaking or express ideas.
The student understands that the survival of plants is dependent on photosynthesis. Va Science 4.2a		The student was able to understand that the survival of plants is dependent on photosynthesis.	Most of the time the student was able to understand that the survival of plants and is dependent on photosynthesis.	Some of the time the student was able to understand that the survival of plants is dependent on photosynthesis.	The student was not able to understand that the survival of plants is dependent on photosynthesis.
The student is able to develop their own ideas Va Art 4.1b		The student was able to develop their own ideas.	Most of the time the student was able to develop their own ideas.	Some of the time the student was able to develop their own ideas.	The student was not able to develop their own ideas.
The student understand that plants have their own structures Va Science 4.2c		The student was able to understand that plants have their own structures.	Most of the time the student was able to understand that plants have their own structures.	Some of the time the student was able to understand that plants have their own structure.	The student was not able to understand that plants have their own structures.