



Butterfly Feeder Art Project

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Students will discover that butterflies play important roles in their ecosystems. Butterflies are pollinators which make them important players in the food chain. Students will create a butterfly feeder.

Pollination will be discussed and defined during this lesson. Examples of pollinators including bees, butterflies and moths will be introduced to students. Specifically students will examine how butterflies help with pollination. Current problems with pollinations in the world will be discussed as well as ways in which students can help solve the declining pollinator problem.

Grade Level: 2

Implementation Timeline: Annually, May

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Next Generation Science Standards Alignment

K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

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.

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.



Honeycomb Candle Art Project

Honeycomb Candle Art Project

Students will learn about the colonies in which honey bees live, and the role that workers, drones and queen bees play. In addition, students will discover how bees make honey and honeycomb and what they use it for. Students will create their own honeycomb candle while utilizing all five senses.

Students will receive an introduction to honey bees including the different types of bees (queen, worker and drone), and the roles each type of bee play within the colony. Students will explore the difference between wax and honey. Students will use honeycomb to create candles but also discover many facts about honey.

Grade Level: 3

Implementation Timeline: Annually, September

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Next Generation Science Standards Alignment

K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

3-LS2-1. Construct an argument that some animals form groups that help members survive.

MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

HS-LS2-8. Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.



Incredible Insects Art Project

Incredible Insects Art Project

This project increases student awareness of "bug life" as young entomologists learn to identify the major groupings and the similarities and differences between insects and other arthropods. Students will define arthropods and determine major groupings. Students will have an increased awareness of various insect life forms, and will learn what differentiates insects from other arthropods. Students will create a glowing firefly.

Students will learn what an arthropod is and be able to provide examples. Students will also learn the anatomy of insects and their sensory organs, and will be provided with insect habitats and habits. Students will discover the life cycles of arthropods. Students will discuss the importance of insects, and will be able to tell the difference between insects and other arthropods. Students will also learn all about fireflies and be able to discuss what makes them unique.

Grade Level: 2

Implementation Timeline: Annually, November

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Next Generation Science Standards Alignment

2-LS4-1:
Make observations of plants and animals to compare the diversity of life in different habitats.

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.

4-LS1-1:
Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-PS4-2:
Develop a model to describe that light reflected from objects and entering the eye allows objects to be seen.



Magnificent Metamorphosis Art Project

Magnificent Metamorphosis Art Project

Students will see a representation of each stage of the butterfly/moth life cycle. From a small egg on a leaf to a caterpillar; and then from a cocoon (which is real) to a beautiful butterfly or moth. Students will know which insects go through complete metamorphosis. Students will develop an understanding of the stages of metamorphosis by making a Metamorphosis Card, complete with a real cocoon. Students will identify the body parts of insects.

Students be introduced to many different types of insects and will learn that all types of insects transform through metamorphosis. Students will learn the four distinct stages of metamorphosis: egg, larva, pupa and adult. Students will also learn the body parts of insects.

Grade Level: 2

Implementation Timeline: Annually, May

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Next Generation Science Standards Alignment

1-LS3-1:

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

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.

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.

4-LS1-1:

Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

MS-LS4-4:

Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.



Tree-mendous Art Project

Tree-mendous Art Project

Students will learn to identify and explore a variety of different types of trees in your area. What do they look like? How do they grow? How old are they? How do leaves differ from one another and why? Why are we so dependent upon trees? Students will use all of the senses to increase awareness of diversity of trees. Students will study the life history of trees by reading tree ring clues. Students will identify leaves from different trees. Students will create an art project with a tree disc.

Students will be given an introduction to trees - learning what a tree is, the characteristics of trees and the parts of trees. Students will be provided an introduction to leaves. Students will also learn the importance of trees.

Grade Level: 3

Implementation Timeline: Annually, April

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Next Generation Science Standards Alignment

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

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.

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.

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

MS-LS1-5. Construct an explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multi-cellular organisms.



Here Comes the Sun Catcher Art Project

Here Comes the Sun Catcher Art Project

Students will be provided with an introduction to the sun. Students will learn about the importance of the sun as the center of our solar system and the driving force of life on Earth. Students will learn what makes up the sun as well as its many parts including: core, radiative zone, convective zone and atmosphere. Students will also learn the importance of the sun as well as its history. Students will assemble their own sun catcher, selecting from a beautiful assortment of pressed flowers.

Grade Level: 4

Implementation Timeline: Annually, December

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Next Generation Science Standards Alignment

3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

4-ESS3-1. Obtain and combine information that energy and fuels are derived from natural resources and their uses affect the environment.

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.

5-ESS1-1. Support an argument that apparent differences in the brightness of the sun compared to other stars is due to their relative distances from the Earth.

MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.

HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.