



POSITIVE PARASITES

Overview

Book: *Peeps* by Scott Westerfield

Grades 9-12

Say the word “parasite” and the words creepy, evil, blood-sucker, and gross all tend to come to mind. But various ecosystems greatly benefit from the much maligned parasite. In this PBL, students first research the value of parasites. Secondly, they will create their own parasite and determine the impact of introducing it into an ecosystem.

Standards

RI.9-12.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly, as well as inferences drawn from text.
RST.9-12.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions
WHST.9-12.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
WHST 9-12.9	Draw evidence from informational texts to support analysis, reflection, and research.
W.9-12.1	Produce clear and coherent writing in which the development, organization, and style appropriate to task, purpose, and audience.

HS-LS2-6	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem
Fine Arts VA:Cr1.1.I	Use multiple approaches to begin creative endeavors.

Objectives

Students will research various parasites that have a positive impact on the ecosystem.

Students will write a “science magazine” article describing the benefits of a minimum of three parasites.

Students will develop a new parasite and determine its unique abilities.

Students will create a flow chart showing the parasite’s function in the ecosystem.

Students will create a 3-D model of the parasite.

Materials Required

Access to internet or library

Paper and pencil

Drawing paper

Colored pencils, markers, or crayons

Poster board

Scissors

Glue

Various crafting materials: Styrofoam, cardboard, foil, chenille stems, craft sticks, duct tape, fabric scraps, yarn, felt, recycled plastic items, or cardboard paper towel tubes.

Vocabulary

Parasite-an organism that lives in or on another organism (its host) and benefits by deriving nutrients at the host's expense.

Ecosystem - a biological community of interacting organisms and their physical environment

Procedure

1. Reread some of the parasite descriptions from the book, *Peeps* by Scott Westerfield.
2. Tell students that some parasites are very beneficial to an ecosystem. Cite several examples such as, mistletoe, red velvet mite, parasitoid wasp, gall wasp, medicine ant, chochineal or wolbachia.
3. Have students spend time researching the beneficial parasites. At least two sources should be cited. They will need to know about a minimum of three such parasites.
4. Have students write a science magazine style article describing the beneficial parasites.
5. Use peer review to help students revise and edit the articles.
6. Tell students that they now get to create a totally unique parasite. This can be a plant or animal parasite. They will need to determine the function of their parasite in an existing ecosystem.
7. Students should make a sketch of how the parasite looks.
8. Students should determine the function of their parasite in an existing ecosystem. Have students share their ideas in small groups to help them refine the look and function of the parasite.
9. Students will then create a flow chart on posterboard to show how the parasite is beneficial to the ecosystem.
10. Students should then use the craft materials to create a 3-D model of the parasite they have created.

Extensions

1. Have students meet in groups of three. Have students discuss what would happen to the ecosystem if all three of their new parasites were introduced together.
2. Ask students to create a Top Ten list of sci-fi movies or TV episodes that are based on or include a parasite premise.

Rubric

RUBRIC	Exceeds (3)	Meets (2)	Partially Meets (1)	Does Not Meet (0)
Research	Student is able to cite 3 or more resources	Student is able to cite 2 resources	Student is able to cite 1 resource	Student did not research
Article	Article describes 4 or more parasites and is clear and coherent in which the development, organization, and style are appropriate to task, purpose, and audience.	Article describes 3 parasites and is clear and coherent in which the development, organization, and style are appropriate to task, purpose, and audience.	Article describes 3 parasites but is poorly organized and not developed to give the appropriate information for the task.	Article describes 2 or fewer parasites and is poorly organized and not developed to give the appropriate information for the task.
Flow chart	Flow chart is very well drawn, clearly labeled, and follows a logical sequence with complex ecosystem relationships.	Flow chart is well drawn, clearly labeled, and follows a logical sequence with simple ecosystem relationships.	Flow chart is missing some labels and the sequence does not make sense with no clear ecosystem relationships.	Flow chart is only partially drawn, labels are missing, sequence does not make sense with no clear ecosystem relationships.
Model	Model is extremely detailed and constructed to clearly match the function portrayed in the	Model is well constructed and basically matches the function portrayed in the flow chart.	Model is poorly constructed and vaguely matches the function portrayed in	Model is partially constructed and does not match the function portrayed in the flow chart.

	flow chart		the flow chart	
Total N/12				

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