

Post-Field Trip Activity: Insect Engineering



Overview

Prototyping Your Own Arthropod Inspired Invention

Time: 30 or 60 minutes

Number of Students: Up to 30

Materials:

- Pencils & scrap paper
- Assorted recyclable materials

Advance Preparation: Collect assorted recyclable materials from home and arrange for students to bring some in as well.

Lesson Steps

Purpose:

During the Insect Engineering field trip students were asked to make an exoskeleton to protect a raw egg that was inspired by a millipede. This time around they are coming up with their own invention inspired by an arthropod of their choosing. The goal of this activity is to allow students the opportunity to transfer the skills they developed during the field trip to a project where they have the freedom to create the invention themselves.

Lesson Steps: Brainstorming

- Break the students into the teams they were in during the field trip. If they don't remember it is fine for you to assign them into teams of your choosing.
- Just like during the field trips where they had different engineering challenges, they have a new engineering challenge now:
"Brainstorm an idea for an invention that both 1) solves a problem in your life or community and 2) is inspired by an arthropod."
- Have teams work together to come up with an invention that meets those criteria. They should sketch pictures of what it would look like and document in their notes how it works and in what ways it is inspired by an arthropod.

Lesson Steps: Prototyping

- Once the teams have a good design down on paper they can start to create a prototype out of assorted recycled materials.
- This process is similar to the process of building an exoskeleton that they did during the field trip.
- Once the prototypes are complete have the teams pitch their inventions to the class; introducing their invention to the class, explaining how it works, the problem it solves and what arthropod inspired it.

Note

It is possible to do this activity without actually building a physical prototype model. If time or materials are in short supply have the students just focus on their brainstorming and sketch out pictures and diagrams of their invention rather than building a physical model.