

ANIMAL ENGINEERS

Essential Questions:

- How do animals change their environment to meet their needs (NGSS)?
- How are animals engineers?
- How can we present science through art?
- How can we engineer a space that animals can change?

Student Work & Products:

- Becoming an engineer
- Interview an engineer
- Learn about design solutions
- build prototypes of animal homes
- critique throughout the building process
- Learn about the social dynamics of some animal builders
- engage in reflection and the creative writing process through poetry about the *building process* (?)
- Engineering/art journal filled with notes, poetry, and ideas for prototypes

Fieldwork & Experts

- San Diego Zoo
- Jack's Pond
- Hilary Kearney, Bee Keeper
- Engineer



Project Description:

Animal Engineers is a project that will have students investigating the ways that animals can be engineers in their environment. Students will learn about what it means to be an engineer and essentials of engineering and design practices. Students will go to the Zoo to record data on the way animals can change their environment to meet their needs, making connections to human engineers. To reflect on what we are noticing in nature, we will study poetry and ways to use descriptive words to create written art. Throughout this project, students will build on their knowledge from science to interpret how animals can be engineers in their environment, creating a habitat or purposeful space. We will be looking closely at how animals use materials around them to create their own homes.

Students will study bees, birds, ants, beavers, meerkats, and termites through field work, informational texts, and animal experts. We will investigate the materials used in each creation,



Connections across curriculum

Math:

- Students will learn about shapes and patterns
- Collect data on species that are engineers/builders
- Measuring materials during prototype construction

Writing:

- Students will learn about poetry
- Using descriptive language in

look for patterns, shapes, and elements that indicate a strong structure, and use our data to design and create animal home prototypes.

Throughout the animal investigation, we will be exploring poetry during reading and writing workshop. Students will notice literary elements in poetry and begin to construct their own short poems describing things in nature and around our classroom/school. A final poem will be written either from the perspective of an animal engineer/builder, or another engineering perspective.

Additional Learning Objectives:

- Design solutions in engineering
- Students will learn that the shape of an object serves a function. The shape and stability of a structure is related to their function.
- Using prose to share recounts of experiences and to clarify ideas, thoughts, and feelings

Lingering Questions:

- We are wondering how to connect both Kindergarten classes to create a final product?
- What final product makes sense for Kindergarteners in engineering - can it be something that is used by the whole school?
- Could a final product also be a letter to Amanda about building structures in our school modeled after animal homes?
- How can we display/present final product?

