SciGirls

Home Sweet Home

DESIGN AND BUILD AN ANIMAL HABITAT

A habitat is the natural home or environment of a plant, an animal, or other organism. A habitat provides an animal with food, water, and a place to live. Sometimes animals cannot live in their natural habitats, and humans must build habitats for them. To meet the animals' needs, people try to mimic their natural habitats as much as possible.

SMART START:

★ If you don't have access to research materials, prepare information cards about various animals. Include a photo and data about the animal's size, eating habits, habitat, family structure, and typical behaviors in the wild.

HERE'S HOW:

1. Introduce animal habitat design. Have girls get into small groups[1] and talk about animals that they live with at home (dogs, cats, fish, lizards, chickens, hamsters). What do they do to entertain their animals or keep them safe and healthy? Introduce the idea that zoos, aquariums, animal rehabilitation centers, and wildlife sanctuaries also provide entertainment, shelter, and food for their animals. Habitat designers try to create the best environments not only for the animals, but for the caretakers and the visitors as well.

You'll need:

2+ hours

For each group:

- scissors
- measuring tape
- glue
- tape
- cardboard
- markers
- cardboard tubes
- construction paper
- graph paper
- various other building materials
  (egg cartons, plastic netting, pipe cleaners, fabric scraps, miniature fake plants and trees, skewers, popsicle sticks, string, cotton balls, felt pieces)
- paper board
  (cereal boxes, tissues boxes, etc.)
- optional:
  hot glue gun, small plastic animals, books and other resources about animals

POINTER: If possible, visit your local zoo, aquarium, or animal shelter and have the girls look for design elements geared towards caretakers, visitors, and animals.

2. Plan. As a large group, make a list of things a habitat designer should consider to meet the needs of animals, caretakers, and visitors. The girls will use this list to create their design plan. Introduce the **SciGirls Challenge:** Design and create a habitat model that takes into account the needs of animals, caretakers, and visitors.

Visit scigirlsconnect.org for access to videos and national standards.

[1-7] See **SciGirls Seven** strategies

3. Brainstorm. As a large group, make a list of things the girls will need to know about their animals before designing their habitats.

- What is the animal's natural habitat? (average temperature, type of climate, etc.)
- What type of food does it eat and how does it get food?
- What are typical behaviors of this animal? (climbing, running, digging, etc.)
- Does the animal have any natural enemies?
- How big is the animal, and how much space does it need?
- What is the animal's family structure? (solitary, family group, herd)
- Where will the habitat be constructed?
- Are there weather concerns?

4. Research. Each small group should choose a different animal[2]. Using books or searching online, the girls will learn about the animal they selected and begin planning the animal habitat.

Watch SciGirls learn about the needs of chickens and their caretakers in **Gallenas de Ciudad | City Chickens. (Data Collection).**

5. Design. Each group should create a drawing of their design, including dimensions and labels. The drawing should be to scale with the scale written on the drawing.

POINTER: Using graph paper to create a scale drawing can help those girls who struggle with measuring using a ruler.

6. Get feedback. Ask groups to present their designs, explaining how certain features of the habitat address the different needs of the animals, caretakers, and visitors. The rest of the groups should respond to the presentation with one thing they liked and one question or suggestion[5].

7. Create. Have groups use the provided materials to create a 3D model of their habitat. Encourage girls to problem solve if they are having difficulty making some of their designs come to life[4].

8. Discuss. Once all the groups have finished creating their models, talk about the process.[6] What worked well? What didn't? What difficulties would they expect in creating the full-scale design? As a whole group, discuss scale models and their advantages (cheap, quick to make) and drawbacks (can only test some things, materials have different characteristics).

9. Share. Display each group's final 3D model as part of a gallery walk. Encourage discussion between groups and invite parents/families to the event.

Mentor Moment

Violeta Garcia is an ecologist and teacher. Her quests into how ecosystems recover from human damage led her to study biology and education. She wants girls to know that if you want to follow a STEM career, you can do it!

Introduce your girls to inspiring role models, like Violeta Garcia, by watching **Role Model Profiles** on the *SciGirls* website![7]

Produced By: tpt TWIN CITIES PBS

Made Possible By: NSF

Additional Funding Provided By: PPG, The Cargill Foundation, The Donaldson Foundation

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