

# Habitats

## A STEAM Challenge



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**Shy Wolf Sanctuary**  
**Education and Experience**  
**Center**  
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# Habitats

## Standards

### MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

### MS-ETS1-2

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

## GOALS:

**Students will define habitat and list what is required in a habitat for animal survival**

**Students will investigate and research the habitat of a selected animal**

**Students will design and create a model of a habitat for their animal**

In this design challenge students will be introduced to habitats, investigate what an animal needs to survive in its habitat, design a habitat and finally create a model of that habitat.

## Included Resources:

Video link: <https://youtu.be/er7FDSuDvfEs>

Teacher instructions and presentation

Vocabulary

Resource and Work Pages, Rubric

## Differentiation:

This STEAM activity can be easily differentiated depending on your students' ages, academic abilities, and your time frame. Ways to differentiate include:

- Have students simply draw their habitat
- Vary the assignment by group size. This could be an individual project or a small group project.
- Make this a Summative Assessment for a unit on Ecosystems and have student bring in supplies from home.
- Review the concepts one day and have students complete a timed STEAM challenge activity on the next.

## Resources Needed:

Supplies for building a habitat which might include many household items. Suggested items are: cardboard boxes (to use as base), tape, glue, construction paper, popsicle sticks, toothpicks, cotton balls, pieces of plants.

Time Required: 45 minutes concept presentation

45 min – 3 hours habitat research and design  
(Depending on how you choose to use this lesson)

## Topics for further discussion:

Habitat destruction, the effects of people on

***“TO HEAL HEARTS AND MINDS THROUGH RESCUE, SANCTUARY, AND EDUCATION.”***



<b>Engage</b>	Begin by asking students what they could not live without in their homes. Encourage discussion. Vote on top three.
<b>Explore</b>	Use links in presentation to watch video on habitats. Discuss what animals need
<b>Explain</b>	Use presentation to introduce habitat terms and key concepts
<b>Expand</b>	Using the information they have learned students will choose an animal that lives at Shy Wolf Sanctuary and research their animal's habitat
<b>Evaluate</b>	Students check their understanding through researching habitat components

### Procedure Summary

#### Using presentation:

introduce habitats. Discuss what students cannot possibly do without in their own habitat.

Review vocabulary concepts and what an animal needs to survive.

Show Shy Wolf Video on Habitats (Link in Presentation)

Reinforce the basic components of a habitat. Discuss and answer questions.

Talk about the needs of Shy Wolf Sanctuary's enclosures

#### Introduce Habitat Design Challenge -

Have students select an animal from Shy Wolf's list of animals

If your students have internet they should research their animal and its habitat using the Research Sheet and its prompts

Students should complete the Design Challenge Sheet as they consider all the things that should be included in their habitats.

Students then draw a to scale draft of their habitat including all the features of their Design Sheet.

Finally Students should begin Construction of their habitat model.

## Student Resource Pages

### Concepts:

**Habitat** - A place where an organism lives, providing food, water, shelter or cover, and space suitable to its needs

**Niche** -The role of an organism in a community especially in regards to food consumption.

**Native** - Refers to animals or plants that naturally occur in an area.

**Environment** - The air, water, minerals, organisms, and all other external factors surrounding and affecting a given organism at any time.

**What does an animal need to survive?** – food, water, shelter, air, and a way to raise their young

**Community** -all of the populations that live together in the same place. Example: in a forest, it would be made up of trees, squirrels, worms, rabbits, and hawks. A molecule containing the genetic information that makes up the chromosomes.

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List five items in your house that you could not live without.

Item	Reason defending your need for this item

## Design Challenge Sheet

Use the space below to list your research or brainstorm about the needs of your animal in its habitat

**YOUR ANIMAL CHOICE:** \_\_\_\_\_

<p><b>What are the needs of the Animal?</b></p> <p><b>NEEDS</b> Food Water Shelter Temperature range for life Enrichment Safety</p> <p><b>WANTS</b> Enough Room Friends - Packmate Features (water, trees, etc.) Exercise/ Noise is low, Nothing scary</p>	
<p><b>What are the Needs of the Volunteers and Staff?</b></p> <p><b>NEEDS</b> Safety of animal and staff Keep animals from escaping</p> <p><b>WANTS</b> A place to greet and interact with the animal Move the animal in and out Easily feed Easily clean the habitat</p>	
<p><b>What are the Desires of The Needs of Visitors?</b></p> <p><b>NEEDS</b> Safety Temperature</p> <p><b>WANTS</b> Easily see animal A place to interact with animal Animals appear to be happy</p>	

Use this space to draw your habitat. Label each component and describe the scale and placement.

**Write a paragraph that describes the elements in your habitat and explains what the importance of each element is for survival. Did you design any elements that are purely for the animal's enjoyment enrichment?**

Review your Design Challenge information. Now use this space to list everything you need to include in your habitat. Be sure to consider all the information in your design challenge.

## Design Challenge Rubric

Use the space below to list your research or brainstorm about the needs of your animal in its habitat

**Name:** \_\_\_\_\_

**Animal choice:** \_\_\_\_\_

Requirements	5 points	17 points	25 points
Well prepared research and drawing	No research or preparation complete	Some research & preparation complete	Good research and drawing are evident
Addresses Needs of Staff & Visitors	Does not address needs	Addresses some of the needs	Needs are addressed completely and creatively
Addresses Needs of Animals	Does not address needs	Addresses some of the needs	Needs are addressed completely and creatively
Creativity Project includes something unexpected/ shows effort in meeting challenges	Project is not creative	Project is somewhat creative	Project is exceptionally creative