Week 2

Challenge
Design and build a fort for yourself using materials you already have in your house! Not enough space? Try creating a fort for a younger sibling, stuffed animal, or your pet. Share your creations with us on Instagram or Facebook by using the hashtag #SOLACEchallenge and tagging @swanerpreserve. You can also send a photo of your completed challenge to swanerecocenter@usu.edu!

Kahoot Quiz
This week’s Kahoot quiz explores habitats found on the Swaner Preserve and in your neighborhood. Our Kahoot quizzes require reading, and are targeted toward 3rd-5th graders, but younger youth should be able to complete them with the help of an adult or an older sibling. Kahoot quizzes are intended to test your child’s knowledge, and to help them learn new information!

Kahoot is an online learning platform that allows educators to create quizzes, then engage with their students through their mobile device, tablet, or computer. Your child will need access to the internet for this activity. You can access the quiz here or download the Kahoot app then use the game pin 0581374.

Story Time
This week’s story is Who Lives Here? by Nicola Davies. Check out our recorded reading of this story here! Each week the story will be uploaded to YouTube to view anytime, anywhere.

This week’s activities include:
Craft
Design Challenge
Outdoor Activity
Adapt your own animal
Bug hotel
Habitat nature walk
Help your own home
Craft: Adapt Your Own Animal

From a chameleon’s ability to change color to camouflage, to the way opossums play dead to fool predators into thinking they’d make a disgusting meal, adaptations help animals to survive in their habitats. Adaptations may relate to how an animal behaves or something about its body that helps it have super survival skills! In this activity you’ll create your own animal that is specially adapted to survive in a habitat you choose!

Time Frame
30 minutes – 1 hour

Materials
- Paper
- Pencil/pen
- Adaptation worksheet
- Habitat photos
- Medium for creating your animal (clay or playdough, paper, cardboard, recyclable containers and cans, etc.)
- Items for decorating your animal (think creatively—you can use normal craft supplies like paint, crayons, markers, googly eyes, or pipe cleaners, if you have them, or objects found outside like pebbles, sticks, leaves, and seeds!) The items you need for decorating will depend on what materials you use to create your animal.

Procedure
1. Talk about a few adaptations that help animals to survive in their habitat. You can either look up some facts about one of your favorite animals, or think about animals that might live on the Swaner Preserve or in your neighborhood. Below are a few examples to get you started.
   - A duck’s webbed feet help it to swim fast
   - A red fox’s ears help it to hear its prey
   - A snail’s shell protects it from predators
2. Select a habitat you want to adapt an animal for. You can either use the habitat photos at the end of the activity guide as inspiration, or pick your own!
3. Complete the Adapt Your Animal worksheet. You can either print it and fill it out, or pull it up on a screen and write down your answers on a separate sheet of paper. As you create your animal, remember to use your imagination! Your animal can look silly or mixed up, and that’s okay! You can also create your own adaptations that don’t really exist, like breathing fire or the ability to turn into stone. The second page of the worksheet is a glossary to help with unfamiliar words.
4. Once you finish the Adapt Your Animal worksheet, it’s time to create! Draw, paint, sculpt, or build your animal with your available materials!
5. Once your animal is complete, tell someone about it! How do its different adaptations help it to survive in its habitat?
Guiding Questions
- Can you think of any adaptations that humans have?
- How do you think adaptations would be different for an animal in the arctic compared to an animal who lives in the desert or the rainforest?
- What are some characteristics of the habitat you chose for your animal? What is the weather and climate like? What kinds of food are available for your animal?

Extended Learning
- Write creatively about your animal! Try a few sentences, a short story, a poem, or even create a trading card that includes some cool facts about your creature!
- Take your adapted animal on a nature walk in your backyard or around your neighborhood. Would it be able to survive in this habitat? Why or why not?
Design Challenge: Bug Hotel

Often times, we all get a little grossed out by bugs. By understanding their importance to your own backyard and the greater ecosystem, you might turn your fear into fascination! This week’s design challenge is to design and build a bug hotel!

Time Frame
45 minutes – 1 hour

Materials
- Wood box, crate, cinderblock, an old plant pot, or something similar to these items (Note: the frame for your insect hotel must be sturdy and weatherproof)
- Twigs/sticks
- Leaves
- Bark
- Rolled up newspaper
- Toilet paper/paper towel rolls
- Corrugated cardboard

Procedure
1. Brainstorm
   - It’s time to get creative! Remember that no idea is too wild when brainstorming. Here are some questions to think about:
     - What size do I want my bug hotel to be?
     - How do I want my bug hotel to stand? Will it be flat? Hang from a tree or fence?
     - What natural materials will attract bugs to my hotel?
     - What materials do I already have on hand or that I can easily collect?
     - How can I recreate the natural structure of a bug’s habitat?
   - Come up with 2-3 designs that you think will work best!

2. Design
   - Sketch out your designs a piece of paper. Be sure to make note of what materials will be used, where they will be placed, etc.
   - Talk through your designs with someone. Go through what you think will work best and where you might run into challenges.
   - Select your favorite design!

3. Collect Materials
   - The first thing you’ll need is a sturdy structure to be the frame of your bug hotel. You can make a box out of scrap wood, use an old crate, tip over a plant pot, stack a few cinderblocks, etc. The possibilities are endless. Just make sure the structure can withstand various weather elements.
   - Go in your backyard or on a walk around the neighborhood to collect natural materials. Anything is a go! Branches, logs, leaves, bark, rocks, etc. will all work
great. Make sure you don’t pick things that are still growing like flowers or grass, unless you get the go-ahead from an adult.

- Gather other various household materials you have that help break up the space in your hotel. Toilet paper and paper towel rolls work great for this part! Roll up old newspapers, magazines, etc.

4. **Build**

- Start adding materials that will help break up the space and create “compartments” in the structure of your hotel. Try tilting a plant pot over, use a big rock, or stack rolled up pieces of newspaper!
- Fill in your bug hotel with the natural materials you collected earlier. You might have to rearrange the materials a few times to find the best layout. Just remember, bugs aren’t picky!
- Once you have completed your bug hotel, find a place to put it! We suggest in your garden, by a woodpile, near a hollowed-out log, or someplace dark and damp.

5. **Observe**

- Once your bug hotel has been outside for a day or two, look to see if any visitors have “checked-in.”
- Enjoy the wonderous home you have created for a variety of bugs in your very own backyard!

**Guiding Questions**

- What are some of the benefits of building a bug hotel?
- How are you going to design your hotel?
- What materials are you going to collect to put in your hotel?
- What types of bugs do you expect to see in your hotel?
- Why is biodiversity important?
- How often will you check on your bug hotel?
- What are some ways you can continue to observe your bug hotel?

**Extended Learning**

- Once you have some buggy guests in your hotel, start a nature journal to record your observations! Some of our favorite ways to observe are to:
  - Draw pictures!
  - Write down what you notice about their behavior: are the bugs alone? Are they in groups? What are they eating? How do they move around?
  - Write down your wonders! What are you curious about? What do you want to know more about?
Outdoor Activity: Habitat Nature Walk

Habitats come in all shapes and sizes for the many animals that reside in your neighborhood! This nature walk encourages you to slow down and observe your surroundings. Can you locate the different components that make up an animal’s habitat? This outdoor activity will have you looking for shelter, food, and water sources for the animals you might commonly see in your own backyard.

Time Frame
30 – 45 minutes

Materials
- Habitat Nature Walk
- Pen/Pencil
- Binoculars (optional)
- Magnifying glass (optional)

Procedure
1. Print out the habitat nature walk, or pull it up on a mobile device. Grab a pen/pencil if using a paper copy.
2. Optional: grab tools to help you look more closely. This could be a set of binoculars or a magnifying glass.
3. Head outside for your walk! You can make it as short or as long as you want.
4. As you walk around, look for the habitat components of the animals listed on the nature walk. When you find something, cross it off! Remember, this will require you to look both high and low.

Guiding Questions
- What is a habitat? What are the essential resources of a habitat?
- What types of animals do you expect to see on your nature walk?
- What things do you see that would help an animal build a shelter?
- What things do you see that would be a source of food to an animal?
- Where do animals get their source of water from?

Extended Learning
Create your own habitat nature walk based off different animals you see around your neighborhood or on a local hike! We provided a blank habitat nature walk template for you to draw and write on, but you can also create your own on a separate sheet of paper.
Outdoor Activity: Help Your Own Home
As you spend time at home and in your neighborhood, you might start to notice different ways you can help your own community, whether it’s your family, your neighbors, your pet, or even nature! In this activity, we challenge you to find a way to better your home or neighborhood.

Time Frame
30 minutes – 1 hour

Procedure
1. Brainstorm together some activities to help around the house, your neighborhood, or your community. Below are some ideas we came up with. You can use one of these or come up with your own! Make sure to get your idea approved by an adult.
   • Trash pick up—if you choose to do this, be sure to wear work gloves and wash your hands thoroughly afterward!
   • Draw with chalk on the sidewalk to create beautiful art for everyone walking outside
   • Complete a chore you usually don’t help with
   • Create cards or pictures for neighbors, then leave them outside on their doorstep for them to enjoy later
   • Weed in the garden or flower beds – make sure that you know which plants are weeds and which are not!
   • Create a simple bird feeder and hang it outside for your neighborhood birds. Here are some suggestions from the Cornell Lab of Ornithology on how to create a few different types of feeders.
2. Gather the supplies that you need for your project.
3. Complete your project. Make sure to take time to notice how it makes you feel to help others!

Guiding Questions
• Are there any things you’ve noticed at home, in our neighborhood, or on the trails that we could help improve?
• What supplies are needed to complete the project you came up with? Do we have those things at home already?
• How did completing your act of service make you feel?
# Adapt Your Animal

Instructions: Circle one trait in each category. This sheet is to help guide you as you plan your animal, but be creative! Feel free to add your own adaptations, like the ability to teleport or having two heads! The second page of this worksheet includes explanations of the adaptations listed below for your reference.

<table>
<thead>
<tr>
<th>Skin Coverings</th>
<th>Sensory Organs</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>1. fur or hair</td>
<td>1. nose</td>
<td>1. brightly colored</td>
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<tr>
<td>2. scales</td>
<td>2. Jacobson's organ</td>
<td>2. camouflaged</td>
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<td>3. feathers</td>
<td>3. echolocation</td>
<td>3. biomimicry</td>
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<td>4. exoskeleton</td>
<td>4. eyes</td>
<td>4. changes color</td>
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<td>5. distinct pattern</td>
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<td>6. shell</td>
<td>6. ears</td>
<td>6. your choice</td>
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<th>Behavior</th>
<th>External Structures</th>
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</thead>
<tbody>
<tr>
<td>1. sharp teeth</td>
<td>1. migrate</td>
<td>1. antlers or horns</td>
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<tr>
<td>2. flat teeth</td>
<td>2. hibernate</td>
<td>2. sharp claws</td>
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<td>3. beak</td>
<td>3. lives in herds</td>
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<td>4. expandable jaw</td>
<td>4. lives alone</td>
<td>4. webbed feet</td>
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<td>5. proboscis</td>
<td>5. caches food</td>
<td>5. wings</td>
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<tr>
<td>6. sucker/suction cup</td>
<td>6. plays dead</td>
<td>6. tail</td>
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*Utah State University*
Adapt Your Animal Glossary

Skin Coverings
1. fur or hair: mammals are the only animals with hair or fur. Fur helps to keep animals warm during changing temperatures.
2. scales: fish and reptiles both have scales. Scales serve a variety of functions, including providing protection, helping with movement, preventing dehydration, and more.
3. feathers: birds are the only animals on Earth with feathers. Feathers help to provide insulation and also allow birds to fly.
4. exoskeleton: an exoskeleton not only provides protection, but also is a animal's skeletal system (they don't have bones in their body). Animals like insects and arachnids have exoskeletons!
5. moist/wet skin: amphibians wet skin helps them to breathe under water, because they can absorb dissolved oxygen through their skin.
6. shell: a hard external shell helps to protect animals from predators.

Sensory Organs
1. nose: a keen sense of smell can help animals find food, avoid predators, detect intruders, and more.
2. Jacobson's organ: commonly found in snakes, the Jacobson's organ is similar to a nose. Animals will stick out their tongues and catch particles, then touch their tongue on the top of their mouth to decode what is happening around them.
3. echolocation: some animals, like bats, use sound waves to detect where and how far away objects are around them. This helps them to navigate and find food!
4. eyes: sharp eyes help animals to hide from danger, find their prey, and more. Some animals have eyes that are adapted to see well at night, or even to detect tiny movements from their prey.
5. sense vibrations: some animals can sense vibrations through the ground. This can help them to avoid predators and know when to hide, or find their prey as it moves unseen.
6. ears: good hearing is an important adaptation for many animals. Animals use their sense of hearing to find food, avoid predators, and communicate with their species.

Color
1. brightly colored: some animals are brightly colored to attract mates. Other animals use their bright color to communicate that they are poisonous. Bright colors are found commonly in rain forests and other tropical areas.
2. camouflage: many animals blend in with their surroundings. This can benefit in a variety of ways, including helping while stalking prey and hiding from predators.
3. biomimicry: some animals imitate the way that other animals look--this is called biomimicry. Animals that use biomimicry may look like animals that are dangerous (such as venomous snakes) to scare away predators.
4. change color: some animals can change their color. This may help them communicate with their species and blend in with their habitat.
5. distinct pattern: animals with distinct patterns are often easily recognized. These animals often use their memorable patterns to ward off predators.
6. your choice: choose any of the traits listed above!

Mouth
1. sharp teeth: animals with sharp teeth often eat meat, or meat and plants.
2. flat teeth: flat teeth are useful for grinding up plant materials. Animals with flat teeth are typically herbivores.
3. beak: some animals with beaks may use their beak to pierce things or crack open their food. Beaks are used in many different ways, including spearing fish, collecting berries, and more.
4. expandable jaw: some animals have a soft jaw that can stretch to fit their food in. This is typically beneficial to animals that do not have strong teeth and need to eat their prey whole.
5. proboscis: butterflies have a proboscis—a small tube that rolls out and allows them to drink nectar from flowers and other food sources.
6. sucker/suction cup: some animals can suction on to their food, like leeches and catfish.

Behavior
1. migrate: some animals change where they live throughout the year. Animals may migrate from a warm climate to a cooler one, or they may move from high in the mountains to a lower elevation to find food, shelter, and a mate.
2. hibernate: some animals sleep through the cold months to conserve energy and avoid needing to find food.
3. live in herds: animals in groups are often better protected and help to take care of one another.
4. live alone: solitary animals often have large territories they protect.
5. cache food: some animals store food to eat later. This may mean during the winter months, or just a few days later, depending on the animal.
6. plays dead: in order to protect themselves, some animals play dead. Many predators do not like to eat animals that have already died, and playing dead may help to send a predator on its way, so that the animal may then escape.

External Stuctures
1. antlers or horns: antlers can be used in defense, to attract mates, etc.
2. sharp claws: claws can help animals to dig, climb trees, and protect themselves.
3. heat sensing facial pits: some animals use this adaptation, similar to heat vision, to find their prey, even if they have poor eyesight or are most active in the night.
4. webbed feet: aquatic animals or animals that spend time around the water often benefit from having webbed feet for improved swimming and mobility in the water.
5. wings: many animals with wings can fly!
6. tail: tails have adapted in many ways--some animals can drop their tail if a predator grabs them (and run away with it!), some animals can use their tail like a hand (this is called a prehensile tail), and some animals use their tails to attract mates.
Habitat Examples
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<th>Animal</th>
<th>Food</th>
<th>Water</th>
<th>Shelter</th>
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<td><img src="image3" alt="Water" /></td>
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Create Your Own!

Habitat Nature Walk

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