Insectarium Scavenger Hunt: Adaptations

Grades 3 - 5

Saint Louis Zoo
Animals Always®

Insectarium Scavenger Hunt: Adaptations (3rd – 5th Grades)

Teacher Version

Time Suggestion: 45 minutes

Age Group: 3rd-5th grades (8-11 years)

Areas of focus: Bayer Insectarium & Missouri Meadow

MO Learning Standards: 3.RA1.b., 4.RA1.a., 5.RA1.a., 4.LS1.A.1, 5., 3.LS3.B.1, 3.LS3.C.1.,LS1.A.1

Teacher suggestions: Prior to scavenger hunt: have a class discussion about adaptations animals may have (their coloring, features such as horns, etc.)

Directions: When you come out of The Living World (North Entrance), on the ground level, turn right and follow the path until two paths split. You will find the Bayer Insectarium in the middle with a giant beetle statue outside. You will go through and fill out the scavenger hunt as you explore the Insectarium.

***Suggested:** go over the scavenger hunt before you begin in order to make the most of your time while in the building.

Materials Needed: clipboard, paper, pencil, printouts

Pre-Activities: Discussion about adaptations (Animal Adaptation Guide can be used for this), KWL

After-Activities: Adaptations-Build-an-Invertebrate, view Saint Louis Zoo's Insectarium page:

Disclosure: Some animals may not be visible at all times. Encourage students to focus on what they can see (whether it be animals, habitats, signs, etc.).

Today we will be focusing on adaptations in invertebrates!

What is an invertebrate? An invertebrate is an animal without a backbone! (like a jellyfish or a butterfly!)

Here at the Saint Louis Zoo you will be able to visit our Insectarium, where you will find many invertebrate animals! The Zoo cares for animals, like invertebrates, here and in the wild.

Now, what is an adaptation? An adaptation is anything an animal has or does to help it survive in its habitat.

Think about why we have fingers. What do they help us with? Would we be able to write, drive, or hold things without them? And how is that helpful for us?

Animals have adaptations too! This allows them to protect themselves and survive in their habitat.

Another example of this would be the horns on a black rhino. How do you think this adaptation might help them survive in the wild?

To protect themselves from predators!

Come along as I take you through our Insectarium to search for different adaptations in our invertebrates. You will begin by filling out the "KWL" chart.

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Insectarium!

Let's focus on: Adaptations

K What do you **already know** about adaptations?	W What do you **wonder** about adaptations?	L What did you **learn** about adaptations?

Before we get started, be sure to fill out the **"K**- what you know and **W**- what you wonder" sections of the **KWL Chart** over Adaptations. This should be provided by your teacher.

As we go through, you will be answering questions that guide you around the Insectarium. Follow the hints closely to discover which animal the description fits. When you think you have the answer, put the answer where the directions state.

When you leave The Living World building you will turn right toward Discovery Corner. You will continue along the path until it splits into two. In front of Bayer Insectarium, you will see a large beetle statue greeting you!

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Go inside the building and get started on your invertebrate search!

Welcome to the Insectarium! It is home to many invertebrate species from all over the world!

Walk over to the area, "Bugs Everywhere!"

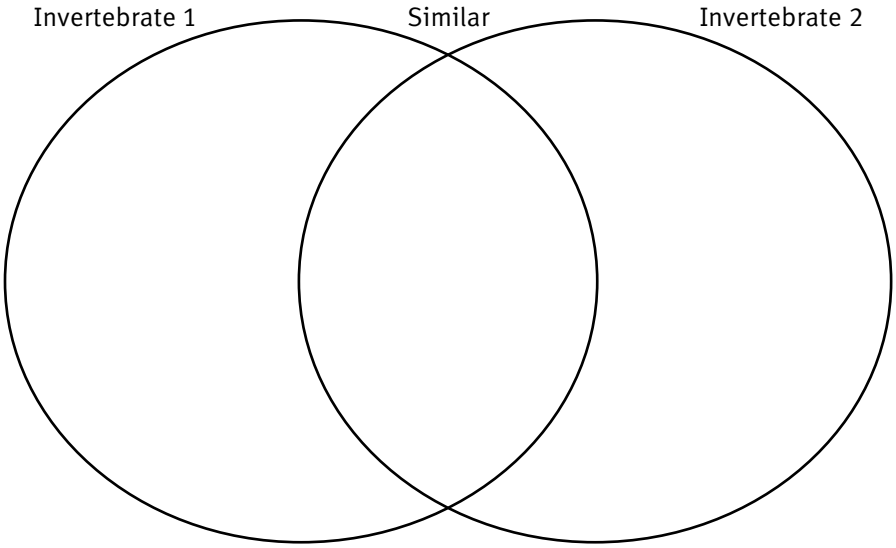
Here you are able to see a display of invertebrates who have adapted life in their climate. Think about what invertebrates might need to live somewhere hot and dry. What does their habitat look like? Where could they hide? What will they eat? When will they eat? Asking yourself these questions can help you discover what adaptations invertebrates might need to survive.

Search for the invertebrate that lives in the **temperate climate**. This animal has the largest shell of its kind. The shell is used to protect this invertebrate and to hide from predators. They can be found in Eastern North America. If the weather is dry, this animal creates a mucus to coat itself in so it does not dry out.

Draw or write the name of the invertebrate:

Challenge!

Using the venn diagram below, observe two different invertebrates to compare and contrast adaptations. Think about the features these animals have to help guide you. When you are finished, share with a friend!



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Walk over to "Dune Buggies"

These animals often live in habitats with extreme climates. Think about what you would need to survive in the desert.

- _____
- _____
- _____

Possible answers: water, sunhat, food, shoes, clothes, a map

Many animals here need to preserve their energy to withstand the climates. So when they move around to leave their resting place, they often need to act quickly!

Think about which animal uses its tail to strike its prey. This adaptation is to help defend the animal against predators by striking them and pinning them so they're unable to move. They also have large front pincers that help securing their prey in order to easily tear apart. The name of this invertebrate could be because of the HOT, but humid, climate you can find them in. When this animal buries themselves in the ground, their coloring helps them blend in.

Draw or write the animal: *devil stripe-tailed scorpion*

You will now enter the area: "Blink, Buzz, Chirp, Hiss, Sniff"

Brainstorm why this area might be named, "Blink, Buzz, Chirp, Hiss, Sniff." Write your answers in the cloud below:

Possible answers: noises they make, adaptations

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This invertebrate has an adaptation on their body to make sound louder so it can be heard by predators up to 12 feet away! You can see the bumps on the animal's back. These are used to make a, "hissing" sound when they feel threatened (hint: named for the sound it makes).

Think of one animal that would also benefit from this adaptation and list it below:

Example: A goat

Explain your thinking to a friend.

Example: A goat could use the hissing noise to scare off wolves.

The next invertebrate has an adaptation so cool you may miss it! (or not see it). To find this invertebrate, think about which adaptations an animal could use to live in the place of the image on the right.

Think & ask yourself:

This invertebrate might walk away before you even notice! They can be found in Papua New Guinea.

What color might it be? _____

What might the outer covering of the invertebrate be?

_____

_____

How does this animal move? _____

Can it fly? _____

What and how does it eat?_____

_____

Which invertebrate is it? *Giant Spiny Stick*

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Find the sign that says, "Invaluable Corals"

(Hint: It is on a water tank)

Climate change has affected many habitats for animals, sometimes making it difficult to survive. In this animal's case, it is quite the opposite. They face overpopulation. When there are too many of a certain animal in a habitat, it takes away the balance in the ecosystem, making it difficult for other animals to survive. It was believed that these animal's growth could be controlled by splitting them in half. However, this animal just forms into two! You may see this spiky animal munching on kelp.

If you look closely you should be able to find this animal by identifying its adaptation for protection. You will be able to see the spikes that cover this animal. The spikes move with the shadows of the ocean floor so a predator can't sneak up!

Draw in the space below or write what this animal is: *Sea urchin*

Ways to Reduce Climate Change!

Reduce Pollution!

- Use reusable cups
- Use paper straws or not at all
- Pick up trash

Know what's on your Plate!

You can help our oceans by eating sustainable seafoods. Download this app to help monitor what you eat: stlzoo.org/sustainableseafood

Plant a tree!

Trees absorb carbon dioxide. By having less carbon dioxide in the air, it will cool off oceans and help keep them stable.

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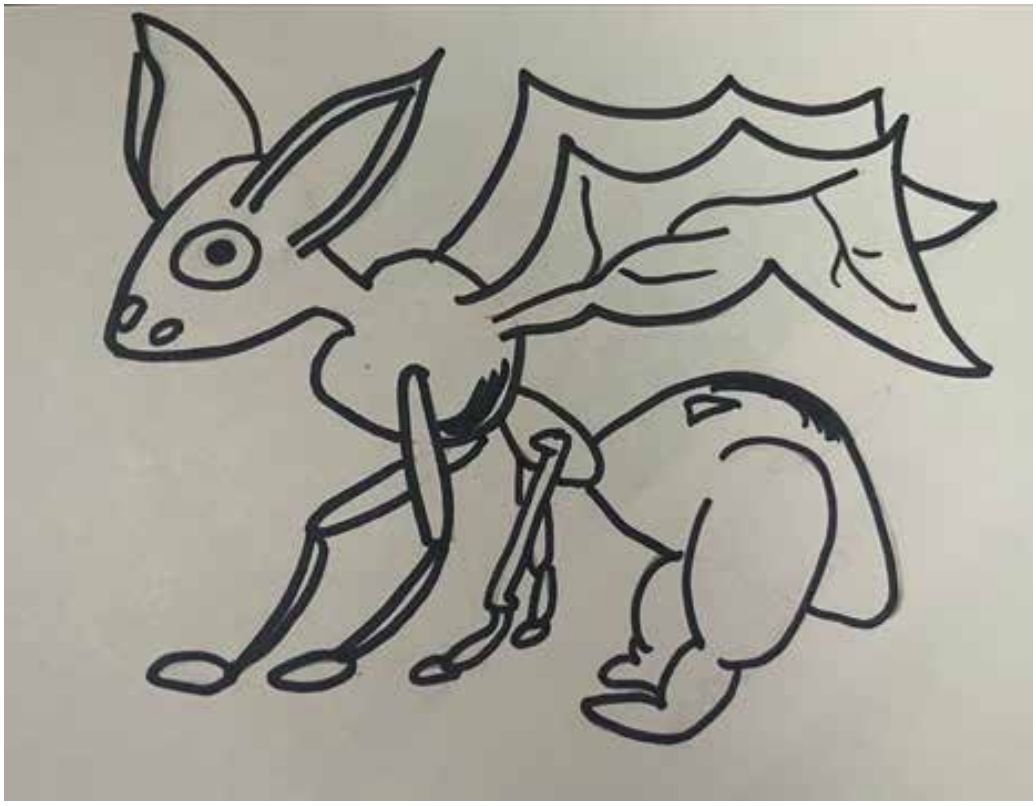
Congratulations! You have made it to the end of the Insectarium Scavenger Hunt!

We hope you had fun learning about our different invertebrates and their adaptations. There is one final part to this scavenger hunt below:

Now that you have seen different adaptations of invertebrates, it is your turn to come up with your very own! You can create any invertebrate with any adaptation to be able to live in a rainforest.

Remember: Invertebrates don't have backbones, rainforests are wet, have many plants, and other animals living there, etc.

Invertebrate *Example*



This ant was given several adaptations

Wings: for flying far distances

Ears: To hear prey and signals from the colony

Large back legs: To jump far, crushing materials for food/nesting

Insectarium Scavenger Hunt: Adaptations (3rd – 5th Grades)

Come discover with Saint Louis Zoo as we identify adaptations on invertebrates!

Go through the slides to view different invertebrates and how they use their adaptations to survive!

Be sure to check out Saint Louis Zoo's, Insectarium Scavenger Hunt as an extension activity.

Extension Activity for: Saint Louis Zoo's, Insectarium Scavenger Hunt

Red-Kneed Tarantula

- Lives in the desert of Mexico
- Powerful legs
- What adaptations did you observe?

_____

_____

_____

_____

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Giant Spiny Stick

- Can be found in Papua New Guinea
- They live in the forest
- An odor is released to repel predators
- What adaptations did you observe?

_____

_____

_____

_____

Devil stripe-tailed scorpion

- Can be found in the desert, shrubland, or grassland
- Their prey are insects
- There is venom in their tail
- How do these adaptations help the scorpion survive?

_____

_____

_____

_____

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As a class: Think of **one** invertebrate you can find outside in the yard.
Then, fill in the blanks to identify the adaptations of the animal.

Invertebrate Name: _____

Adaptation: _____

Adaptation: _____

Adaptation: _____

Adaptation: _____

Adaptation: _____

Leech

- Have "anticoagulant" in their saliva to thin the blood they drink
- Fish and frogs are prey
- Live in water
- What adaptations do leeches have to help them survive? Support your answer with examples."

_____

_____

_____

_____

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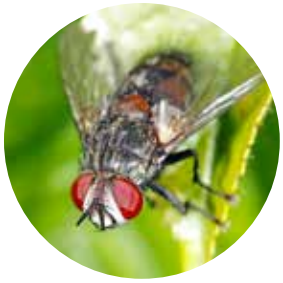
Pollinators

Did you know that every 1 out of 3 bites you eat is from the works of a pollinator? Pollinators help crops grow as well as creating biodiversity in an environment. They are SO important. The Saint Louis Zoo works globally with the Center for Native Pollinator Conservation to help sustain the pollinators. Your next invertebrate is also a pollinator! This invertebrate's adaptation is the stinger which it uses.



Draw in the space below or write the name of the animal: *Any Bee: Encourage students to explore the different species of bee*

Three ways to help keep our pollinators safe:

- Plant native flowers to attract pollinators! Read to learn more:
- Help educate others! Share what you have learned so we can help our pollinators
- See how the Saint Louis Zoo is participating in protecting pollinators: