



Minds in Motion

Create an Insect

Activity Rundown:

Today we will be investigating all of the different types of insects that we have in the world. We will take a look at all of their amazing and sometimes creepy features that make them special. What helps them eat their prey efficiently? What helps them survive? Once we have taken a look at all of those different characteristics, we are going to build our very own super insect.



You will need:

- + Paper and a writing utensil
- + Any crafting material you have access to!

Let's do it!

- 1) Let's start with some fun trivia questions that you may or may not know the answers to (you can ask these questions to everyone in your household and see if they know the answers too):

Q. 1: What do we call the study of insects?

A: Entomology

- Greek *entomon*: insect and *lógia*: study

Q. 2: What do we call the study of spiders?



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A: Arachnology

- Greek *arachné*: spider and *Lógia*: study

Q. 3: What do we call the study of humans?

A: Anthropology

- Greek *ánthrōpos*: human and *lógos*: study

Q. 4: What is your favourite/least favourite insect?



Here's one of our favourite and LEAST favourite insects.

Left: Spike the stag beetle! He had a twitter account and made beautiful art.

Right: Blood sucking mosquito... no explanation needed really. YUCK.

- 2) Now that we have some inspiration let's learn about the parts that make up insects to better understand their anatomy: [Inspect An Insect](#)
- 3) Now that we know the defining features of an insect, it's time to design your own!
- 4) Take a piece of paper and sketch out what you would like your insect to look like. For inspiration, head over to google and search for images of insects from all over the world! Remember that you're not replicating one that already exists, you should be making one that's uniquely yours.
 - a) On your sketch, make sure to label the following parts: exoskeleton, head, thorax, abdomen, and number of legs.
 - b) Does your insect have wings, venomous fangs, or even a dangerous stinger? Make sure to label those as well!
- 5) Once you have your insect all planned out, use the crafting supplies available to you to make your idea come "alive"!



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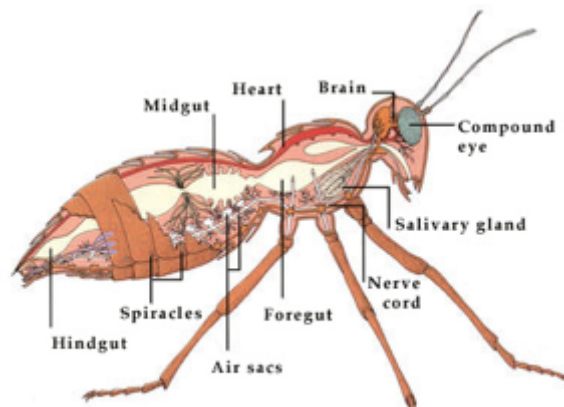
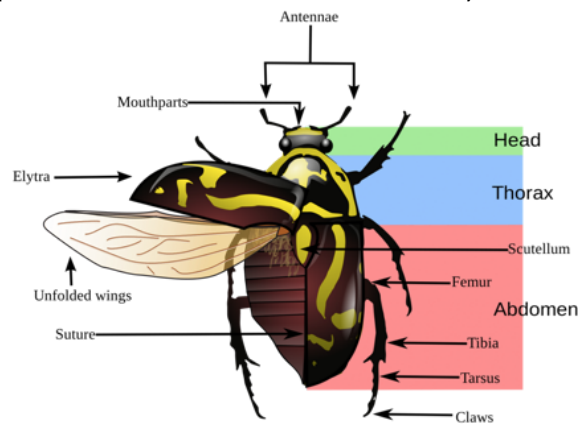


Background

Anatomy:

Insects:

- Insects have a total of six legs, three body parts (the head, thorax, and abdomen), two wings (for some), two eyes, two antennae, and skeleton on the outside (otherwise known as an exoskeleton).

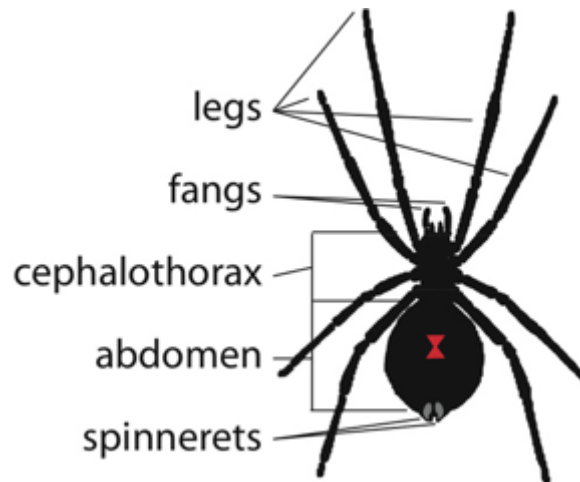
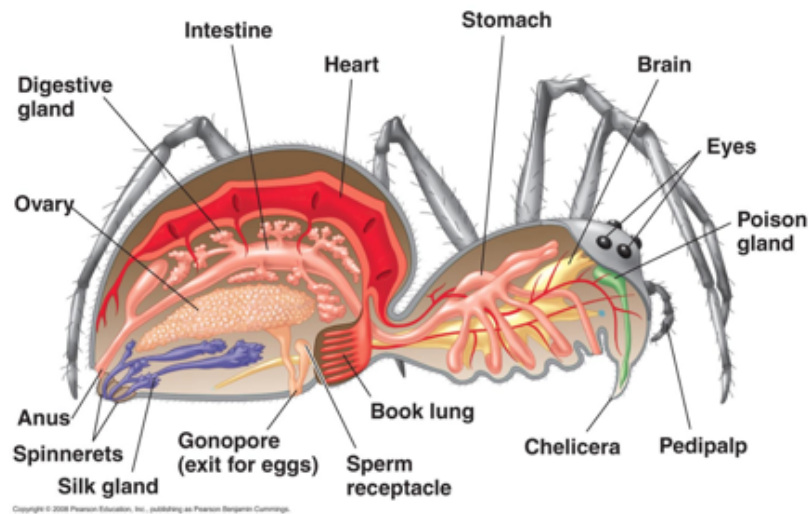


Spiders:

- Spiders on the other hand have 8 legs (growing from cephalothorax) and only 2 body parts: abdomen and cephalothorax (head and thorax are bonded together)
- Spiders also have 8 eyes and 2 pedipalps (leg-like body parts that touch and tastes) instead of antennae
- Spiders are NOT insects. But both are invertebrates: animals without a backbone or skeleton.



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Common frequently asked questions about insects:

Q: What's the most poisonous insect?

A: According to the University of Florida's *Book of Insect Records*, the most poisonous insects are in the order Hymenoptera (wasp, bees, and ants) and the ones with the most toxic venom are certain harvester ants.

Q: What's the fastest insect?

A: Sphinx moths, or hawk moths, have been measured at 53 km/h. However, a horsefly (*Hybomitra hinei wrighti*) was recently clocked at 145 km/h!



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Q: Who discovered insects and where did the word "insect" come from?

A: We're not sure anyone "discovered" insects, in the same way we think about discovering electricity or magnetic fields. But Plato was aware of insects, way back in the ancient Greek era. The 18th century Swedish scientist, Linnaeus, started to catalog all the insects he could find. As for the name "insect," it is from Latin; the name was originally given to certain small animals, whose bodies appear cut in, or almost divided.

Q: What insect lives the longest?

A: A queen termite has been known to live 50 years and there are, of course, the 17-year locusts. Most bugs live less than a year and are seasonal. However, some wood beetles can emerge from wood where they live after as long as 40 years! In one recorded case, some wood beetles came out of wood that had long ago been cut down and made into a bookshelf!

Q: What is the smallest insect?

A: The smallest insect eggs belong to a member of the family Tachinidae, a group of parasitic flies. These eggs are usually only 0.02 to 0.2 mm long.

Q: Do all insects bite?

A: There are lots of insects that don't bite people but do bite plants or other insects! Insects have different kinds of mouthparts. There are mouthparts for biting/chewing, straw like mouthparts for sucking, and razor-sharp mouthparts for biting people. The vast majority of insects, however, do not bite people. They are content to eat plants, nectar, or other insects.

Q: How many insects are in the world?

A: If you are talking about the number of different kinds of insects in the world, Erik J. van Nieuwerkerken has made a scientific estimate that there are 1,017,018 species of insects in the world. Wow! That means you could spend your whole life looking at different kinds of insects and probably never see them all.

Q: Why do insects like light?

A: No one really knows. Most scientists think that bright lights confuse the insects' guidance systems so they can't fly straight any more.

Q: Why do insects have six legs instead of five or seven?

A: One can get around efficiently on six legs. It is harder if you use five, because that's an odd number. You would have one leg stuck in the air while the others are running, or going down all by itself. If you have a chance, watch an insect walking and



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pay attention to how it uses its legs. Put another way, think how much more difficult it would be for you to walk if you had three legs!

Q: Why do insects have three parts to their bodies?

A: That's a difficult question to answer. Maybe we can turn it around and ask, why don't you have three parts to your body? Or why don't you have a hard shell instead of soft skin? The answer is, no one knows. That is the way things have happened. We call animals with certain characteristics (like three main body parts, antennae, spiracles, etc.) "insects." If they had eight legs and two main body parts, we would call them "spiders."

Q: Do insects have blood and do they bleed when they are hurt?

A: Insects have blood, but it's not like our blood. Our blood is red because it has hemoglobin, which is used to carry oxygen to where it is needed in the body. Insects get oxygen from a complex system of air tubes that connect to the outside through openings called spiracles. So instead of carrying oxygen, their blood carries nutrients from one part of the body to another. They do bleed when they are hurt, and their blood can clot so they can recover from minor wounds.

Q: Why do insects drown in water?

A: Not all insects drown in water. In fact, quite a few live there for at least part of their lives. Insects breathe through holes in the sides of their bodies. If they can't get air in through the holes, they will suffocate. That's why insects that are not specialized for living in water will die in water. But dragonfly nymphs, mosquito larvae, and water beetles all live in water quite happily!

Q: How do insects eat?

A: Insects eat by either chewing their food (like grasshoppers and caterpillars), or sucking it up (like aphids, stink bugs and mosquitoes). Take a close look at the mouthparts of an insect next time you have the chance.

Resources:

<https://www.scholastic.com/teachers/lesson-plans/teaching-content/inventing-insects-creative-lesson-plan/>

<https://s-media-cache-ak0.pinimg.com/originals/1b/5e/be/1b5ebeb7c608346c49142a242fab0d86.jpg>

<https://s-media-cache-ak0.pinimg.com/originals/1f/f7/fd/1ff7fd0e9907f8c79bcb5ab1ab466ae4.jpg>

https://gridclub.com/subscribers/info/fact_gadget_2009/1001/nature/insects_and_spiders/238.html



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http://entomology.unl.edu/scilit/2000px-Fiddler_beetle_morphology_diagram.svg.png

https://www.google.ca/search?q=termite+queen&source=lnms&tbm=isch&sa=X&ved=0ahUKewitu_am85XUAhXks1QKHZRtB8cQ_AUIBigB&biw=1199&bih=615#imgrc=6y5mtAThPye3XM

<https://www.natgeocreative.com/comp/05/706/532862.jpg>

Reach out!

We would love to hear from you about all the amazing STEM projects you are doing at home! Show us your finished products on any of the following social media platforms by tagging us or by using the following hashtags. We hope these projects have brought some excitement to your day during these difficult times.

Let us know how we did! Please [click here](#) to fill out a short survey on how well we did and what you would like to see more of in the future. Thank you!

Twitter: **@MyMindsInMotion**

Facebook: **@mindsinmotion2014 & @uactiveliving**

Instagram: **@ucalgaryactive**

Please use the following hashtags!

#ucalgarycamps #ucalgarytogether