

Section 3.1 Notes - Animal Classification

- VERTEBRATES** have a backbone made of bone or cartilage, while **INVERTEBRATES** have no backbone.
- All vertebrate organisms are in the phylum **CHORDATA**. Invertebrates, which make up about **95%** (or more) of the animal kingdom, are divided into over **30** different phyla.

Think About It – Vertebrate or Invertebrate?
Click to reveal the answers

1. Snail 3. Human 5. Whale 7. Spider 9. Wasp
2. Frog 4. Crab 6. Earthworm 8. Wolf 10. Snake
- See next slide



Section 3.13-3.14 - Arthropods

- How many different species of arthropods have been identified?
5 MILLION
- What does the term "arthropoda" mean? **JOINTED FEET**
- What are the 3 body segments of an arthropod?
HEAD, THORAX, & ABDOMEN
Head + Thorax = **CEPHALATHORAX** ← Add to notes
- What is molting? **THE SHEDDING OF AN EXOSKELETON IN ORDER TO GROW LARGER**
- What is hemolymph? **A BLOOD-LIKE FLUID**



★6. Complete as you watch the *Marine Arthropods* video.

- Why are jointed limbs significant for Arthropods?
Provide stability, act as shock absorbers, give them more flexibility
- How does an exoskeleton help an Arthropod?
It acts as an armor to protect the inner organs
- Soft shell crabs are delicacies in some restaurants. Where do soft shell crabs come from?
They have a "soft" shell for about 2 days after they molt.
- What aspect of horseshoe crabs' behavior gives clues to why Arthropods first left the ocean?
They find their mates in the water, but leave the sea to lay their eggs on the beach where they develop.

Glue the worksheet on page 9 (FAF – sideways).



Click the movie reel to watch the **Terrestrial Arthropods** video.

Answer #1-9 as you watch the video.

1. What was one of the first animals on land? **PILLBUGS**
2. What does the scorpion use to get oxygen? **BOOK LUNGS**
3. How does a millipede get oxygen to all of its body?
TRACHEA (TUBES) ALONG ITS BELLY
4. What is detritus? **DEAD AND DECAYING PLANT AND ANIMAL MATTER**
5. What do we call things that eat detritus? **DETRITIVORES**

What other consumers have you heard about?

Carnivores Herbivores Omnivores
Planktivores Insectivores

6. What is one arthropod that lives in water part of its life?
DRAGONFLY or DAMSELFLY NYMPH (NOT A LARVA)
7. What is metamorphosis? **LIFE CYCLE OF AN INSECT**
8. What fraction of all the world's animals are flying insects? **3/4**
9. How are insects important to us? **NATURE'S RECYCLERS, POLLINATORS, FOOD**

NOTE: We will finish the rest on Tuesday!

Part B: Vocabulary

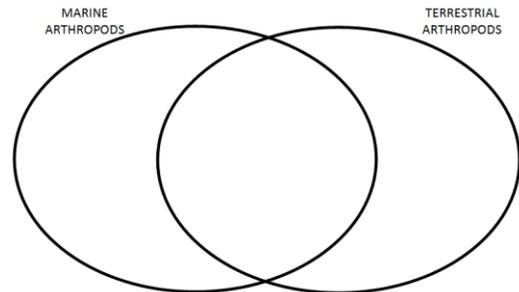
10. Define these vocabulary words in your own words.

Marine: **Organisms that live in water**

Terrestrial: **Organisms that live on land**

Pollinator: **Organisms that transfer pollen from one plant to another**

Part C: Pair & Share - Work **QUIETLY** with one other person to fill in the Venn Diagram to compare and contrast marine and terrestrial arthropods.



Check with a classmate to see what we discussed and noted on this part.

Section 3.15 Notes - Crustaceans

1. How many species of crustaceans are known to exist? **52,000**
2. To which class of crustaceans do barnacles belong?
MAXILLOPODA
3. To which class do crabs, lobsters, and shrimp belong?
MALACOSTRACA
4. What is one example of a crustacean that lives on land (terrestrial)?

**WOODLICE OR
WOOD LOUSE
(AKA PILL BUG)**



<http://i.hellovibe.com/wordpress/wp-content/uploads/2015/03/550x360/pillbug.jpg>

5. What do we call the thick back shield that forms a protective space?
CARAPACE
6. How is the gastric mill used?
USED TO GRIND FOOD BEFORE IT GOES TO THE DIGESTIVE GLANDS (SIMILAR TO GIZZARDS IN BIRDS)
7. What makes up a crustacean's brain?
GANGLIA - A MASS OF NERVE CELLS
8. Why do crustaceans shed their exoskeleton?
SINCE THE EXOSKELETON DOESN'T GROW WITH THE CRUSTACEAN, THEY MUST SHED IT TO GROW LARGER.
9. What type of reproduction do crustaceans have?
SEXUAL REPRODUCTION WITH EGGS AND SPERM

Section 3.16 Notes – Centipedes & Millipedes

CHILO = 1000

1. Tell the class for each:

Centipedes = **CHILOPODA**

Millipedes = **DIPLOPODA**

DIPLO = DOUBLE



2. Complete each statement:

A. Centipedes are fast, predatory **CARNIVORES**, and venomous. They have **1** pair of legs per body segment.

B. Millipedes feed on leaf **LITTER** and organic **MATERIAL**. They have **2** pairs of legs per body segment & are not **POISONOUS** (usually)

★3. Watch the [animation](#) listed in the Practice section. Explain how millipedes draw air into their bodies.

They use breathing tubes (TRACHEA) on the underside of their bodies to draw oxygen into their bodies.



Section 3.17 Notes – Arachnids

1. How many species of arachnids have been named? **100,000**

2. How many pairs of legs does an arachnid have? **4 Pairs (8 Total)**

3. List the functions/purposes for each type of arachnid appendage.

Chelicerae - **Used for feeding and defense**

Pedipalps - **Used for feeding, moving, and reproduction**

4. What is the arachnid body called? **Cephalothorax & abdomen**

5. What does it mean if a spider is nocturnal or diurnal? Explain.

Nocturnal spiders are active at night & usually brown in color, while diurnal species are active during the day and often colored with yellow, green, and black.

★6. Complete this section as you watch the video.

6.1. How do spiders differ from insects?

Spiders have 2 body segments and 4 pairs of legs.

6.2. What are some of the uses of their silk?

The webs are used to catch food, protects their eggs, and provides shelter.

6.3. How do spiders keep from becoming stuck in their own webs?

Special claws on their legs help them hook onto the silk and move around. They also make silk that is not sticky.

6.4. What role do spiders play in their ecosystem?

Help control insect populations and they provide food for other creatures.



Bug Blitz #1 - Work with your tablemates to identify the bugs for your set of cards.

Plan A: Online Guides

Go to mrstomm.com

→ Science Spot Kid Zone

→ Insects

→ InsectIdentification.org

Identification Guides
Know Your Insects Key
InsectIdentification.org
Key to Adult Insects
Femilab Insect Database
ZOOM Insect Classification



Plan B: Check out the printed ID guides and picture pages on the front table.

Plan C: Search Google to compare images with the ones that were taken during class.

When you know the correct ID, write it on the index card and give to the teacher.

TURN IN ALL CARDS AT THE END OF CLASS!



Arthropod Records by _____

Use online resources to find record-breaking **ARTHROPODS** (arachnids, crustaceans, chilopoda, diplopoda, & insects). Complete the chart to show the award you would give to the critter along with details.

Name of Arthropod	Name of Award	Reason
Goliath Spider	Biggest Arachnid	Can grow to over 12" in diameter

Turn in by next Tuesday!

What are some award ideas?

1. Largest Spiders (World & US)
2. Deadliest Spiders (World & US)
3. Largest Millipedes/Centipedes (World & US)
4. Weirdest/Cooolest Crustacean
5. Largest Insects (World & US)
6. Deadliest Insects (World & US)
7. Fastest Arthropods (World & US)
8. Most Colorful Arthropods (World & US)

After the quiz,

- (1) Get a copy of the note worksheet from the front table and complete sections 3.18 - 3.19 for tomorrow.
- (2) Finish the Arthropod Awards worksheet and turn it in! Don't forget to include a fact (reason) to support your award!