

Biology 11: "The Arthropod Story"

This presentation provides an excellent overview of the Phylum Arthropoda while incorporating ideas we've learned previously (adaptive traits, natural selection, other animal phyla etc).

WHAT TO DO:

1. Access this website by googling "The Arthropod Story".
2. Proceed through the presentation (it takes about 30 minutes).
3. Answer the questions below.

1. Introducing the Arthropods:

A. _____% of all animals are arthropods!

Sheer Numbers

B. Copepods are: _____

Habitat and Distribution (click on the magnifying glasses)

C. Some examples of arthropod variety include:

Ecological Niches (click on the Help Wanted ads)

D. Leafcutters live on _____ farms.

2. What is an Arthropod?

E. Draw the five branches of the arthropod tree:

Inherited Characteristics

F. The characteristics shared by arthropods are:

Complete this chart with the help of the slides:

	Bilateral	Segmented	Exoskeleton	Jointed Legs	Many Limbs
Scorpion					
Moth					
Onychophoran					
Mouse					
Millipede					
Jelly					

G. Based on the data, which of the animals are arthropods?

H. Give three examples of each arthropod group:

Insects

Chelicerates

Crustaceans

Myriapods

3. Cambrian Critters:

I. Where do each of the Cambrian Critters end up on the arthropod evolutionary tree?

Sanctacaris

Opabinia

Pikaia (why is this one important!?)

Hallucigenia

Naraoia

4. Tools For Success: The Exoskeleton and the Jointed Limb

J. How do each of the following contribute to arthropod success:

a. exoskeleton?

b. jointed limbs?

K. Match the 6 examples of limb specialization in other arthropods.

Leaf Blower

Rake

Crowbar

Hammer

Oar

Vice

5. An Evolutionary Constraint: Small Size

L. Why are terrestrial arthropods small?

M. Why are these constraints of Exoskeletons and jointed appendages?

Molting:

What would happen to a large animal when it molts? Why?

Exoskeleton Strength:

What happens to volume when you double length?

Respiration:

What happens if you have long tubes for respiration (think about you breathing through a straw).

6. Conclusion: Evolution and the Arthropod:

M. Identify some other adaptations of arthropods.