Name: KEY

SHAPE OF LIFE: TERRESTRIAL ARTHROPODS

Shape of Life

1. While you watch the video, record 5 land arthropods that are featured throughout the video.

Land arthropods featured included pill bugs, scorpions, millipedes, centipedes, dragonflies, damselflies, and spiders.

2. What skill do some land arthropods have that has allowed them to spread across the Earth?

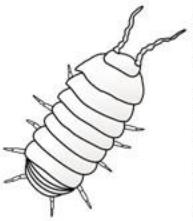
Many land arthropods can fly.

3. What are some tools that arthropods developed in order to leave the sea and survive on land?

Land arthropods developed mouthparts to taste, antennae to sense, pinchers to grasp, and wings to fly.

4. Which arthropod that lives on Earth today did the first land arthropods resemble?

The first land arthropods resembled a pill bug.



5. What is an advantage to living on land for arthropods?

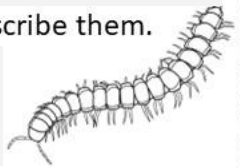
There is more oxygen in the air on land than there is dissolved in water.

6. Aquatic arthropods typically breathe through gills. When arthropods came on land, the gills moved internally and adapted into a new respiratory structure. What is this new respiratory structure that is featured in a scorpion called?

Scorpions developed book lungs for respiration.

7. Millipedes do not have book lungs. What respiratory structures did they develop? Describe them.

The exoskeleton of a millipede developed internally into a series of tubes called trachea that are open to the outside air. These tubes draw oxygen into the body.



8. Plants are more difficult to digest than algae. What source of food did arthropods seek out instead?

Millipedes and other arthropods sought out detritus (dead plants and animals).

9. Which arthropod featured in the video adapted to be a predator and to seek out prey?

Spiders have a predatory lifestyle.

10. Which freshwater arthropod hunts beneath the surface of water? What is its prey?

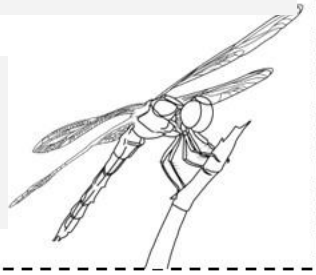
The dragonfly larva hunts a newt beneath the surface of the water.

11. The dragonfly larva will not remain in that body form forever. What process does it go through to dramatically change into an adult that can live on land?

The dragonfly larva undergoes metamorphosis.

12. Describe how the wings of the dragonfly move as it soars through the sky.

The wings do not continuously flap; rather, they flap for short periods of time and then the dragonfly coasts without moving their wings.



13. Describe dragonfly mating.

Dragonflies actually mate while flying! The male dragonfly fertilizes the eggs of the female dragonfly, which she then deposits into the water to develop.

14. What fraction of animal species are flying insects? **More than ¾ of animals are flying insects**

15. What adaptation do spiders have to capture prey?

Spiders use webs to capture prey.

16. What are two ways that arthropods benefit us?

Arthropods recycle dead matter, such as a dead mouse, allowing the nutrients to be reused by other living things. Arthropods also serve as pollinators, allowing flowering plants to reproduce.

17. True or False: Without insects, some human foods would disappear. **True**

18. What three habitats have arthropods conquered?

Arthropods have conquered land, air, and sea.

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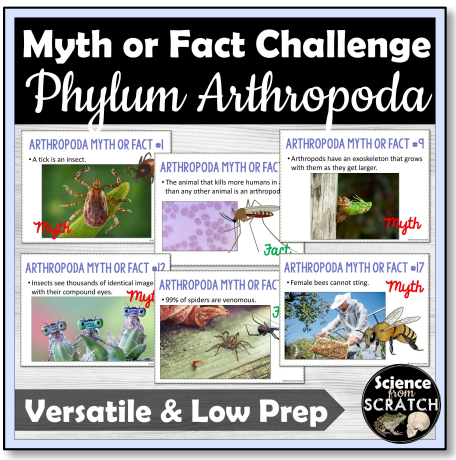

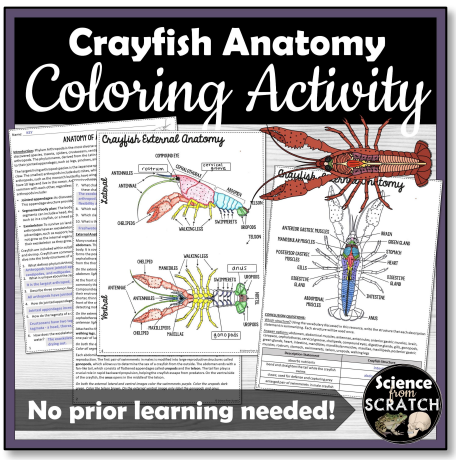

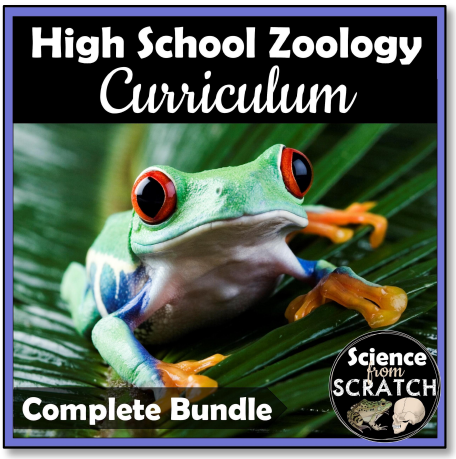

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