



# SHAPE OF LIFE: TERRESTRIAL ARTHROPODS

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?

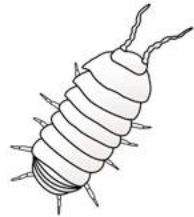
**Land arthropods developed mouthparts to taste, antennae to sense, pinchers to grasp, and wings to fly.**

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.**

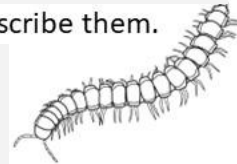


6. Aquatic arthropods typically breathe through gills. When arthropods came on land, the gills moved internally and adapted into a new respiratory structure. What is this new respiratory structure that is featured in a scorpion called?

**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?

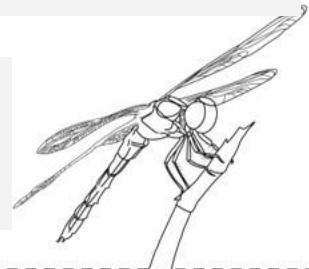
**The dragonfly larva hunts a newt beneath the surface of the water.**

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  $\frac{3}{4}$  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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### Myth or Fact Challenge Phylum Arthropoda

ARTHROPODA MYTH OR FACT #1  
• A tick is an insect. **Myth**

ARTHROPODA MYTH OR FACT #4  
• Antitropus has an exoskeleton that grows with them as they get larger. **Fact**

ARTHROPODA MYTH OR FACT #12  
• Insects see thousands of identical images with their compound eyes. **Myth**

ARTHROPODA MYTH OR FACT #17  
• Female bees cannot sting. **Myth**

20% of spiders are venomous. **Fact**

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