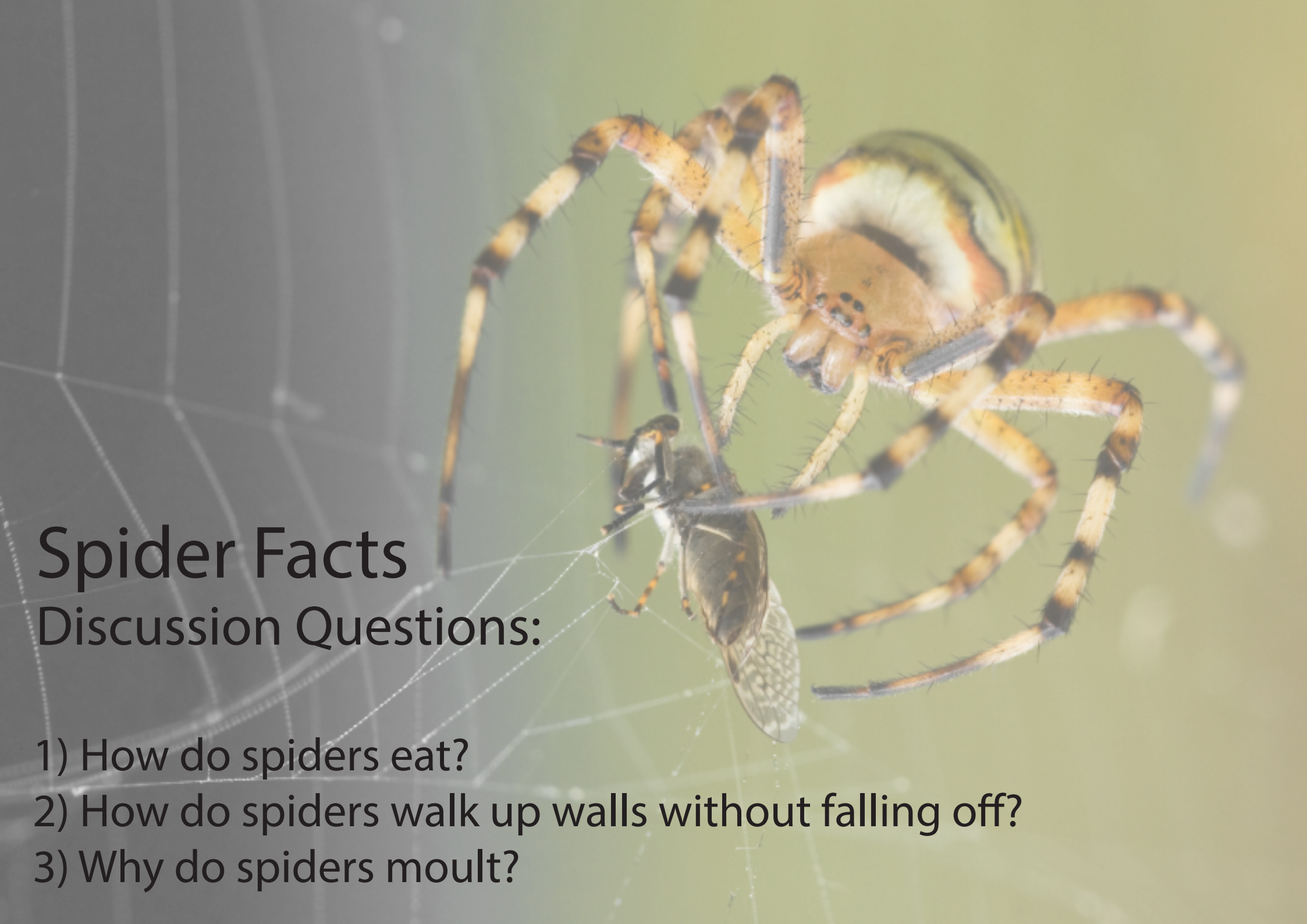


Spider Facts

Discussion Questions:

1) How do spiders eat?
2) How do spiders walk up walls without falling off?
3) Why do spiders moult?

How do spiders eat?

Spiders can only drink in liquids. They cannot chew the tissue of their prey. So how do spiders eat their prey?

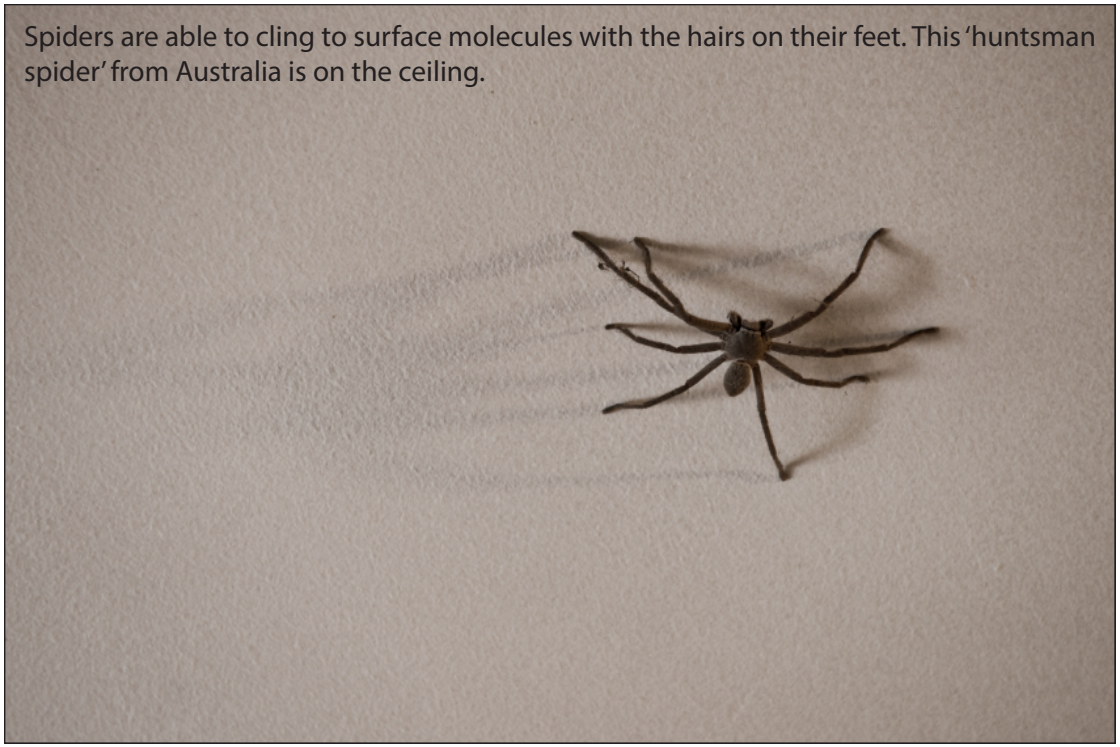
They begin the eating process by biting and injecting venom into their prey. The venom paralyses the prey so it can't get away. Sometimes the spider may wrap silk around the prey to stop them moving.

Next they vomit digestive juices all over their prey. The juices make the tissues break down into liquid. Spiders also use venom to break down the body tissue of their prey so that it can be 'drunk' by the spider. Only the hardest parts of the prey remain not eaten.

Spiders also eat their silk. They eat the silk that they wrap their prey in as well as damaged parts of their webs and used egg sacs.

How do spiders walk on glass and ceilings without falling off?

Spiders have tiny hairs on their legs that help them make multiple contact points on a surface. Even the smoothest surface, like glass, actually has rough points if you look at its molecules. The spider's hairs grip onto these rough points. The spider's legs are able to apply a force that is about 3 to 4 times its body weight so it is able to hold on quite easily.



Spiders are able to cling to surface molecules with the hairs on their feet. This 'huntsman spider' from Australia is on the ceiling.

How do some spiders walk on water?

Molecules of water hold together very strongly at the surface. (This is called surface tension.) Some spiders are able to walk on water without breaking its surface tension. Tiny hairs on their feet trap air and oily coatings on their skin make them water repellent. When they step on the water their feet bend the surface. When they step off, the water molecules bounce back like a trampoline, moving the spider forward.

The 'raft spider' of Britain (or 'fishing spider' as it is known in Europe) can walk on water.

Why do spiders molt?

Spiders have an exoskeleton, which means that they have a hard outer skin that holds their body together. Spiders need to grow a bigger skin to allow their bodies to grow. A spider will molt numerous times until they reach their full adult size.

Spiders begin the process by growing a new skin underneath the old one. When it is time to shed the old skin, the spider releases fluid to help the old skin separate from the new skin underneath. Then they crack a hole in the cephalothorax by directing a flow of blood to this region of their body. The spider then slowly crawls out of its old skin. The new skin is soft and white and changes color as it hardens in the air.

Some spiders take less than half an hour to crawl out of their old skins. Others can take a full day to complete the molt.

You may have noticed the outer skin of spiders that have moted in your garden.

They look like dead spiders at first but they are hollow.

Spiders molt many times until they reach their full adult size.