

# The Spider and its Amazing Web

A spider's web was hanging from the roof in one corner of the room. When Razia's Mum saw it, she quickly got a broom and took it down.

We take down spiders' webs when we find them in our house, to keep our home clean. It is of course the right thing to do; however, the story of the spider's web is fascinating.

There are thousands of species of spiders in the world. The smallest are tiny, and can barely be seen. The largest is the Goliath Bird-Eater, a large and heavy spider. [It prefers to eat insects rather than birds!]

The spiders we sometimes see in our homes are among the smaller species. Their webs are small too. Yet, despite their small size and delicate look, these webs are stronger than other objects of their own size and fragile appearance. They can carry the weight of the spider, and its prey which get imprisoned in the web. If the web is outdoors, dewdrops that fall on it at night are trapped in it, and shine in the early sunshine; but despite the extra weight of the water, the web shows no sign of sagging.

The spider has many uses for its web. It is, first of all, a home that the spider builds for itself. Inside its lower body the spider has organs called spinnerets. These spin protein silk, which then comes out of the spider's body. Liquid at first, it dries at once in the air outside the spider's body, and becomes the silk thread that the spider spins to make her web. The part of the web in which the spider lives, is dry; but another part of the

web is sticky. The colour of the web is such that flies and other small insects, like ants, do not see it. They fly into the web and are trapped in the sticky part of the web. The spider then eats them whenever she wants to.

Before she lays eggs the spider also makes thick silk, with which she creates pouches to keep her eggs safe from predators such as wasps. When the eggs hatch, the little spiders leave the pouches.

Spiders of some species eat up their own webs. When their web becomes old, or is damaged, they eat it, instead of making an entirely new web. Fresh protein is added to its silk when it is digested in the spider's stomach, making the old web as good as new. Making a completely new web would have needed a lot more energy, and tired out and weakened the spider. Turning the old silk of the web into new is called recycling of the silk.

Not only is the web the home of the spider, it is also its hunting ground, a nursery for its eggs, and a storeroom for its food. (Unlike a bird or a wolf, the spider does not have to eat her food as soon as she catches it). She gets everything she needs without stirring out of her web, much as nowadays home delivery saves us the need to make trips to the shops!

If the web is in your garden, the spider may also use it as a bridge to go from one plant to another.

Scientists claim that spider webs are stronger than steel. The webs of bigger spiders are much stronger than those of smaller species. They are

so strong that they can stop a bullet, like a bullet proof vest. Scientists also say that a Golden Orb, member of the largest species of spiders, can even stop a 747 jet! The threads of the Golden Orb are as thick as a pencil. Nowadays scientists are trying to produce spiders' webs in the laboratory. These man-made webs would be very useful in medicine and engineering. If scientists are successful in making them with organic substances, they would be beneficial in another way. Organic matter, when discarded, disintegrates, and can be made into compost which provides excellent food for plants.

On the other hand, inorganic matter takes far longer to disintegrate. For example, plastic, which is an inorganic material can take hundreds of years to disintegrate. Meanwhile it can break into small pieces. When these tiny pieces are eaten by fish or cattle, they can find their way into the bodies of human beings, where they become the cause of diseases such as cancer.

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**Organic:** organic matter is made from living things, and has carbon in it.

Examples: Sugar is made from plants, i.e., sugar cane, beetroot.

Paper: is made from wood; Silk: is produced by silkworms.

On the other hand, inorganic matter, not made from living things takes far longer to disintegrate. For example, plastic, which is an inorganic substance may not disintegrate for many hundred years.

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**Principal reference: National Geographic**

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