British Wildlife: Odd One Out

Invertebrates




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Created by the Primary Science Teaching Trust (PSTT) and The Nature Collection

All images taken by and © Susanna Ramsey.

The Nature Collection is an extraordinary collection of animal bones, skeletons, feathers, antlers, skins and photographs and was created by Susanna Ramsey.

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Guidance for using British Wildlife: Odd One Out

This resource is designed to encourage children to observe closely and to stimulate talk about the features of local invertebrates and their habitats.

There are five **Odd One Out** activities in this slideshow. Each activity has four images shown on one slide. They are a mixture of **invertebrates** (insects, spiders, worms, crustaceans, myriapods). All are commonly seen in the UK.

Each **Odd One Out** activity reflects a notable animal characteristic or behaviour (described in the slide notes). This may be useful when deciding which activity to use. We suggest that you share only one Odd One Out activity at any time. You can revisit the other activities another time.

Running the activity:

Choose a slide. Ask – **How are these animals similar? How are these animals different?**

Listen to children's suggestions. Encourage children to notice special features of each animal such as their different body parts, the colour (are they camouflaged?), how they move, where they might be found (different habitats).

Possible questions to prompt thinking & talking:

- What special body parts can you see? (wings, antennae, etc.)
- What colour is the animal? Is the animal easy to see? It is camouflaged?
- Where do you think the animal lives? (in a tree, on water, on land, in a web)
- How do you think the animal moves? (running, walking, crawling, flying, swimming) How do you know this?

Then ask everyone to decide which is the **Odd One Out** and WHY. Encourage a reason for every answer given. There is no wrong answer here!

Background science:

The slide notes below each slide provide detailed information about the characteristics of each of the invertebrates shown. This is intended to support teachers' subject knowledge. We are not suggesting that all children should be taught all these facts.

British Wildlife: Odd One Out

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chaser dragonfly

flesh fly

blue butterfly

wasp spider

Possible theme: Wings

The dragonfly has 4 wide, transparent wings. Fly has 2 smaller, transparent wings. Butterfly has 4 wide, colourful wings. (All wings have a network of tiny veins.) Spider has no wings and cannot fly.

Other possible reasons for being the Odd One Out:

Eyes: Dragonfly has 2 large, compound eyes and 3 small, simple eyes. Fly has 2 large, red compound eyes. Butterfly has 2 small compound eyes. Spider has 8 eyes!

Legs: Dragonfly, fly and butterfly have 6 jointed legs. Spider has 8 jointed legs.

Antennae: Dragonfly and fly have 2 short antennae. Butterfly has 2 longer antennae. Spider has no antennae. It has pedipalps instead.

Hairs: Dragonfly has short hairs on the thorax, the middle segment of the body. Fly is covered in hairs. Butterfly's body is covered in long, blue hairs. Spider is hairy on the body, too.

Diet: Dragonflies are predators, catching small, flying insects. Flies eat rotting food. Butterflies drink nectar. Spiders are predators, catching insects like flies, bees and butterflies.

Perch: The spider is perched on its web. The others are perched on a leaf or plant stem.

Mimicry: The spider is striped yellow and black to imitate a wasp. This scares off predators. The others do not mimic other insects.

earthworm

woodlouse

millipede

wolf spider

Possible theme: Legs

The worm has 0 legs. The millipede has 40 legs. The spider has 8 legs. The woodlouse has 14 legs.

Other possible reasons for being the Odd One Out:

Colour: The worm is pink. The others are brown/grey/black, camouflaged with soil.

Exo-skeleton: The worm has no exoskeleton. The others have a tough outer skeleton which they shed as they grow.

Antennae: Worm has no antennae. Woodlouse and millipede have short antennae. Spider has pedipalps.

Habitat: Worms live in the soil or under dead wood, in damp places. Woodlice and millipedes live in the soil or under dead wood, in damp places. Spiders live above ground.

Diet: Worms eat dead and rotting things such as plants, wood, dead animals and fungi. Woodlice eat dead and rotting things such as plants, wood and fungi. Millipedes eat dead and rotting things such as plants, wood, dead animals and fungi. They are all **detrivores**. Spiders are predators, eating insects and other invertebrates. They are **insectivores**. This spider chases down its prey and leaps on it, like a wolf. It does not build a web.

Background note:

None of these invertebrates are insects. Insects have 3 parts to the body,6 jointed legs and wings.

ladybird

bug

damselfly

dung beetle

Possible theme: Diet

The ladybird eats aphids like greenfly or blackfly. The damselfly eats small flying insects. The sloe bug eats berries, leaves and flowers. The dung beetle feeds on dung from rabbits or sheep.

Other possible reasons for being the Odd One Out:

Predators: The ladybird and damselfly are predators. They are all **prey** and may be eaten by birds.

Colour: The beetle is all black. The others have some red: Ladybird is red with black spots. Damselfly is red with black stripes. Sloe bug has red wings with gold markings, which lie flat over its back.

Body: The damselfly has a very long, thin body. The others are wider and shorter.

Antennae: Beetle has fringed antennae. Sloe bug has long, striped antennae. The other 2 have short, thin antennae. Antennae are like feelers which help the insects find food, find a mate and find a place to lay eggs. They also sense movements in the air which may be a predator.

Eyes: The damselfly has 2 huge, compound eyes. The others have smaller eyes.

Wings: All these insects have wings and can fly. The damselfly has 2 pairs of long, thin, transparent wings. The ladybird and beetle have 1 pair of delicate wings, tucked under the wing cases. The bug has 1 pair of transparent wings tucked under the top pair of red/gold, leathery wings.

Habitat: Damselfly lives near water. Beetle lives on sandy grassland or heathland where there are rabbits or sheep. Ladybird and sloe bug live on shrubs and plants in gardens, hedges, parks or woodland.

Hibernation: Ladybird and sloe bug hibernate. Beetle spends the winter underground in a burrow. Adult damselflies die out by autumn; their young pass the winter underwater, as nymphs.

moth

butterfly

honey bee

grasshopper

Possible theme: Pollinators

The butterfly, moth and bee are pollinators, visiting flowers to collect nectar and pollen. The grasshopper is not a pollinator. It does not move from one flower to the next but jumps around in the grass.

Other possible reasons for being the Odd One Out:

Nocturnal: The moth is nocturnal. The others are diurnal.

Wings: They all have wings, even the grasshopper! This grasshopper has very short wings and rarely flies. Butterfly and moth have large, wide, patterned wings, covered in coloured scales. Bee has transparent wings. Grasshopper has small, transparent, pale green wings, which lie along its back when not in use. It rarely flies.

Camouflage: Moth is pale brown and well camouflaged to match the autumn leaves. Grasshopper is green, to match the grass. Bees are black and yellow with clear wings. Butterfly is white and grey.

Legs: They all have 6 legs and claws. Grasshopper has very long, back legs for jumping. The back legs are the same length as the other legs, for the other insects.

Antennae: They all have 2 antennae and 2 large, compound eyes.

Diet: Grasshopper eats grass. The others drink nectar. See the butterfly's long, tube-like tongue. They are all **herbivores**.

Predators: None are predators. They do not eat other animals.

Life Cycle: They all lay eggs. Tiny grasshoppers hatch out of their eggs. Grasshoppers do not have a stage as a larva or pupa. For the other insects, larvae hatch out of their eggs, which metamorphose into the adult.

honey bee

bumble bee

wasp

hoverfly

Possible theme: Live in a colony

Bees and wasps live in a colony. Bees live in a hive with worker bees and a queen bee. Wasps live in a nest with worker wasps and their queen. In summer, there are also male drones. Hoverflies do not live in a colony. (Some species of bees and wasps are solitary, meaning they live on their own, like the leaf cutter bee and mining bees.)

Other possible reasons for being the Odd One Out:

Mimic: They all have yellow and black stripes on the body. The hoverfly imitates the others so that predators will keep away, thinking it can sting.

Sting: Bees and wasps can sting. Hoverflies cannot.

Wings: Bees and wasp have 4 wings. Hoverfly, which is a type of fly, only has 2 wings. The wings are all transparent with black veins.

Legs: They all have 6 legs. Hoverfly and wasp have yellow legs! The others are black.

Eyes: Hoverfly has 2 huge, black compound eyes. The others have smaller, compound eyes.

Hairs: Hoverfly does not have a hairy body. The others are very hairy, especially the bumble bee.

Pollinators: They are all pollinators.

Buzz: The bees and wasp make a buzzing sound. Some hoverflies can also buzz.

Hover: Hoverfly can hover in the air, staying still in one place. The bees and wasp cannot do this. They have to keep moving forward as they fly through the air.

Diet: Wasps drink sweet juices from rotting fruits and nectar. They feed insects to their young. Bees and hoverfly drink nectar and eat pollen.

Tongue: Wasp has powerful jaws and a short tongue. Bees and hoverfly have a long tongue for sucking up nectar.

Hairs: Bees and wasps, especially bumble bees, have long, thick hairs on their body. Hoverflies have much shorter, thinner hairs which are hard to see.

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