

Discovering minibeasts: Make a pooter

Curriculum links: Key Stage 2 Science, year 6; working scientifically, living things and their habitats.

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Learning Outcomes:

In this activity pupils use simple scientific theories to explain things they observe in the natural world. They apply their knowledge and understanding of scientific ideas to predict where minibeasts live, before testing a hypothesis using specialist equipment and working with others to carry out systematic investigations. They talk about their work and its significance, and communicate ideas using scientific language.

- Have planned an enquiry and designed a suitable methodology to answer their questions, including producing appropriate scientific equipment
- Have recorded data with increasingly complex formats and referred to other sources of information to inform their understanding.
- Have described how living things can be split into subcategories based on observable characteristics.

Activity:

Introduce...

What? Living things can be classified into groups based on observable characteristics.

How? Building on their work from year 4 pupils should be introduced to the idea that broad groupings can be subdivided. They will use direct observation to classify commonly found invertebrates, thinking about what characteristics might be used to place living things in particular groups. At this stage it is important to re-cap previous knowledge, and to check vocabulary. Simple activities with taxonomical keys can be a good way of achieving this.

What you'll need:

For the pooter

- jam jar with lid
- 2 pieces of plastic tubing (approximately 20cm and 15cm long)
- piece of gauze or fine mesh
- elastic band
- 2 lumps of Plasticine or Blu-Tack

Tools

- hand drill
- drill bit (same diameter as the plastic tubing)
- hammer
- hole punch (make this from a handle with a nail in one end)
- clamp
- scrap wood



Demonstrate...

What? What a pooter is, why it is used and how it is used.

How? Think about a 'bug hunters' code'. Minibeasts are living creatures and while it's fine for us to disturb their lives occasionally we should be responsible about how we do so. The group should come up with a set of common sense rules that reflect this. Then show the class a pooter. Ask them why they think we use a pooter instead of picking up the minibeasts. In general they cause the minibeasts less stress, keep us safe from bites, stings or allergies, stop winged insects flying away and protect squishy creatures from damage. Sometimes salt on the skin of our hands can dry bugs out too, which is another reason for us to avoid touching them. **Explain...**

What? How to make a pooter.

How? Ask the class to identify the key design elements of the pooter. For example, it needs to be sealed (apart from the tubes) and there needs to be gauze or mesh to stop you sucking up the bug. Then demonstrate how the pooter is made – if you have all the tools to hand this will only take a few minutes. Make sure you cover important safety points, eg using a clamp instead of holding the jam jar lid and using the hole punch instead of holding a nail.

Apply...

What? Make your pooters.

How? The class can now make their own pooters. Either create an instruction sheet for them to follow or work through the stages together. The trickiest steps are punching and drilling the holes, so spare jam jar lids are useful to practice with. Remember that large or strangely-shaped holes can usually be sealed with Plasticine or Blu-Tack when the tubes are inserted.

Summarise...

What? Use your pooters.

How? Take the class in search of minibeasts. It is useful to set an appropriate hypothesis or question at this point, additionally pupils can design their experiment methodology. When completing the bug hunt pupils should record their findings (including where they find different species), they could then make use of classification systems and keys to identify minibeasts they have found in the immediate area.

Activity notes

A pooter is a device used to pick up minibeasts without harming them. The minibeast is temporarily trapped in a jam jar so it can be studied before being released back into the wild.

Making a pooter step-by-step



1. Clamp the jar lid

Place the jam jar lid on top of the scrap wood and clamp it to a suitable work table.

2. Mark the tube holes

Mark positions for two holes on opposite sides of the lid. Then punch a hole by holding the wooden handle with one hand, positioning the nail over the mark and hitting it with the hammer. This ensures that if you miss you won't hit your hand.

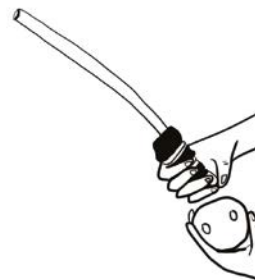


3. Drill the holes

Keeping the lid clamped, use the hand drill and bit to make the hole big enough to fit the tubes. Drill slowly to stop the drill bit from jamming.

4. Put YOUR POOTER TOGETHER

Use the elastic band to hold the gauze over the end of the shorter tube. Poke both tubes through the lid and screw it onto the jar, positioning the long tube close to the bottom of the jar, and the shorter one close to the top. Hold the tubes in place with Plasticine or Blu-Tack.



5. Test your pooter

Place the longer tube over a bug and suck on the shorter tube. The bug should be sucked through the long tube into the jar. A piece of net or gauze stops the bug being sucked into your mouth. If you're having problems, check that the Plasticine or Blu-Tack has formed an airtight seal.