

Survey our school ecosystem

Lesson at a glance

Open by asking where an ecologist would start on the school grounds. Name habitat and quadrat on the board, then take quick group predictions of finds and damp/dry or sunny/shady before writing a class list. Outside, each group places a hoop or string square, tallies living things with ID cards, and circles conditions on a clipboard sheet. Back in, transfer notes to the Investigation Journal, pool counts on the data-recorder bar chart, and close with a display-only talk on ecosystem links.

Learning objectives

- Survey a real school habitat using a simple quadrat method and record living things found
- Note conditions such as damp or dry and sunny or shady, and what each living thing seems to need
- Explain that living things in one place depend on each other and on the conditions

Before the bell: prep

Day before: print one ID-card set per group and clip a sheet of plain paper to each group's clipboard for its tally sheet; make one ~50 cm hoop or string square per group (four rulers also work); clipboards ready. Check weather, outdoor boundaries and a second adult. Wet-day fallback: photograph one quadrat for indoor tally.

Materials

Item	Qty	Per	Source	Low-cost substitute
quadrat (plastic hoop, or string looped into a square about 50 cm on each side; about 2.5 m of string including knot allowance)	1	group	school kit	four rulers or sticks laid as a square on the ground
school-grounds living-thing ID cards (worm, woodlouse, spider, snail, ant, beetle, daisy, grass, clover, moss)	1	group	provided printable	one shared class set on a clipboard rotated between groups
outdoor tally sheet: a sheet of plain paper per group, headed by the group before going out (living things in the hoop; damp or dry, sunny or shady; what two living things need)	1	group	classroom	the back of any scrap sheet
hand magnifier	1	group	school kit	look closely without a magnifier
clipboard	1	group	classroom	stiff cardboard and a bulldog clip
gardening gloves or disposable gloves	1	pupil	supermarket	shared gloves wiped between pupils, or look-only rule with no bare-hand soil contact
Investigation Journal page	1	pupil	provided printable	ruled page with headings: found, conditions, needs

Safety watch-point

Mind nettles and brambles; no tasting anything found. Return living things gently; wash hands on return before pencils.

Teaching moves

- **How we survey a habitat:** Project only habitat and quadrat on the board; keep survey as plain 'careful look and record'. Hold ecosystem until Step 7. Head off 'only big animals count' by naming worms, woodlice, moss and grass as living things that belong on the record.
- **What might we find?:** Name the shared class patch clearly so every group works the same habitat type. Run a short think-pair-share, then write a class prediction list of expected finds and damp/dry, sunny/shady on the board before you leave: that list is what you compare evidence against later.
- **Survey our patch:** Model the full sequence at the door once: walk together, place the quadrat gently, look only inside, tally with ID cards, circle conditions, write two needs, return living things, wash hands. Protect the 13–14 minutes at the hoop; if the walk is long, cut indoor prediction feedback, not hoop time. Check every group has circled conditions before packing up.
- **Record in the Investigation Journal:** Hands washed before pencils. Transfer outdoor tally marks into the four journal headings now: this write-up is in-lesson and required, not homework. Put sentence starters on the board: We found...; The ground felt...; I think the ... needs ... because...
- **Pool our tallies:** Drive the data recorder yourself. Runners first call new species names so you open each row once, then round again for counts; add real reported numbers only. Leave the finished chart up for the next talk.
- **Make sense of our survey:** Introduce ecosystem now with the chart and journals in front of them. Ask one question at a time (who eats whose leftovers, who hides under which plant, who needs damp or shade) and insist every claim points at a named bar or journal line. Guard the journals for the food-chain work that follows.

What it should show

Expect common finds matching the patch: grass, daisy, clover on sunny lawn; moss, woodlice, worms, snails under damp log or hedge edge. Tallest bars usually match the dominant cover plant. A group with almost nothing often stamped the ground before placing the hoop, or looked outside the rim: re-drop gently and look only inside.

Misconceptions & interventions

- **Only big animals like birds or mammals 'count' as living things on the survey.** Point at the ID cards and any moss or grass in a hoop: worms, woodlice, spiders, plants and moss are living things and must go on the tally.
- **Nothing depends on moss or worms: they just sit there.** Link a named bar to a need: worms loosen soil and break down dead leaves; moss holds water and shelters tiny creatures. Ask who might use that shelter or food.
- **A quick glance near the door tells us about the whole school grounds.** Return to the Getting Started question: a fair survey needs a chosen same-sized patch and a written record, which is why every group uses a quadrat.

**Differentiation**

Emerging	Developing	Proficient
• Pair with the teacher table or an adult runner; use board sentence starters (We found...; The ground felt...) and tick ID-card names rather than free writing. • Wet day or staying indoors: tally from a photograph of one quadrat, or act as indoor recorder for a paired outdoor group.	• After the main tally, add one extra 'why?' line linking a find to damp/dry or sun/shade on the journal page. • Compare their group's conditions circle with the tallest class bars and say whether the match makes sense.	• Sketch the quadrat layout showing sunny edge vs leaf-litter finds. • Fair-method critique: suggest what the class should keep the same if they resurveyed after heavy rain.

Cross-curricular hook

Tie to the Maths Data strand: pupils read the class bar chart for the mode (tallest bar) and compare group totals.

