Lesson 2 · living-things

Food Chains, Webs and Interdependence

Lesson at a glance

Open with a robin pulling a worm and a fox at dusk, asking where all the energy in our wildlife begins. After teaching producers, consumers and the food-to-eater arrow, model grass→rabbit→fox on the IWB, then build an oak-leaf hedgerow chain together. Groups then build their own hedgerow web from printed card sets and string, draw it on their Drawing Record page, and finish with a display-only science-talk on what happens when one link is removed.

Learning objectives

- Build Irish food chains and webs that show the direction energy flows from the sun through plants to animals
- Predict the knock-on effects when one link is removed from a food web

Before the bell — prep

Print one hedgerow card set per group (grass, bramble, oak leaf, caterpillar, rabbit, mouse, blue tit, hedgehog, fox, owl, plus arrow cards) and have string ready — sketched cards eat into build time, so print ahead. Keep one five-card cut-down set (grass, rabbit, mouse, fox, owl) for any group who needs it. One Drawing Record page per pupil. Load the food-chain interactive on the IWB and check the sun arrow reads 'gives energy to'.

Materials

Item	Qty	Per	Source	Low-cost substitute
food-web nature cards (grass, bramble, oak leaf, caterpillar, rabbit, mouse, blue tit, hedgehog, fox, owl)	1	group	school kit	pupils sketch the same creatures on small pieces of paper (last resort only, as it eats into build and drawing time)
arrow cards	1	group	school kit	pupils draw arrows on scrap paper
string or wool	1	group	classroom	draw lines between the cards with a pencil instead of string
Drawing Record page	1	pupil	printable	a blank page in the Investigation Journal

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Safety watch-point

Mind scissors and string at the group tables — supervise cutting and keep string lengths short so it isn't wound round hands or necks.

Teaching moves

- **Energy Flows from the Sun:** Reveal the producer/consumer table first, let those two ideas settle, then bring up the food-web row only when they're clear — three terms at once is a lot. Say the fuller reasoning aloud since the on-screen cells are deliberately short. Land the big idea: the arrow points the way energy travels, food to eater, not the way the animal moves.
- **A Worked Irish Food Chain:** Think aloud through the static grass→rabbit→fox chain on the IWB before groups build their own. Voice each beat: where it begins (grass catches sun energy), why each arrow points to the eater. The display is static — talk about what the class sees, don't ask them to drag anything here.
- **Build the Chain Together:** In explore mode the class calls the order (oak leaf→caterpillar→blue tit→sparrowhawk) and you build it live. The sun card needs your voice: say aloud that this arrow means 'gives energy to', not 'is eaten by', as you place it — write that on the board beside it if it helps.
- **Build a Hedgerow Web:** Hand out card sets, string and one Drawing Record page each. Split the 20 minutes as ~12 building, ~8 drawing — call the transition aloud at 12 minutes: 'Stop building, now everyone draws what you have.' Walk the room watching for arrows pointing the wrong way; the food-to-eater direction is the thing to keep correcting. Five links is enough to draw.
- **Remove a Link:** Display-only science-talk on the groups' own paper webs. Call a creature to remove (rabbit, then caterpillar, then mouse); have groups say predictions aloud before they trace the arrows. Draw out that the fox now leans more on the mouse, and that one change ripples outward — that's interdependence.

What it should show

There's no single right web — that's the open beat. A good web shows shared food and shared predators: grass and bramble both feed the rabbit, the fox eats both rabbit and mouse, the owl eats the mouse. The recurring error is arrows reversed (fox→rabbit) because 'the fox goes to find the rabbit'; re-trace the energy direction. When a link is removed, expect pupils to spot that animals with a backup food cope better and the producer the prey ate may grow taller.

Misconceptions & interventions

- **Pupils draw the arrow from the fox to the rabbit, because 'the fox goes to find the rabbit'.** — At the IWB, trace the energy path with a finger from grass to rabbit to fox — the arrow shows where the energy travels, food to eater, not where the animal moves. Re-voice this as you walk the group webs.
- **Pupils treat the sun like food and draw an 'is eaten by' arrow into the oak leaf.** — When placing the sun card, say aloud that the sun gives energy to the plant but is not eaten — its arrow reads 'gives energy to'. Write that label on the board beside that one arrow.
- **Pupils think removing the rabbits only affects the fox, nothing else.** — On their paper web, trace every arrow touching the rabbit — the fox leans more on the mouse, the grass grows taller. Show that one change ripples to several links, that's interdependence.

Differentiation

Emerging	Developing	Proficient
• Give the group the smaller five-card set (grass, rabbit, mouse, fox, owl) so build time goes on the web, not on too many choices. • Place the producers (grass, bramble, oak leaf) on the page first so they start from a known beginning.	• Prompt 'which animal is eaten by more than one hunter?' to find the shared-predator links that make it a web. • Have them add a second removal (the mouse) and predict which animal is now in real trouble.	• Challenge them to add the sun with a 'gives energy to' arrow and an arrow to the soil where things decay. • Ask them to find the animal with the most backup foods and explain why it copes best when a link is removed.

Cross-curricular hook

Link to Geography — Irish hedgerows and field habitats, and how ecologists protect them by understanding the whole web, not just one species.