



Food-chain change investigation

Autumn 1 · Week 7 · Lesson B · 40 minutes

Learning objective

Build two food-chain models, repair arrow errors and make qualified predictions about a reduced plant food source.

Evidence to look for

Record the pupil decision or explanation and the support used. Accept pointing, signing, adult scribing or directing the model. A photograph alone does not establish understanding; no photography or public sharing is required.

Source lesson timing

Elapsed minutes	Source stage	Minutes
0–32	Independent Work	32
32–36	Lundy Loop	4
36–40	Exit Ticket	4

Split slide times are added within their original source stages. Printed tasks and adaptations replace activity within these timings; they do not add extra lesson time.

Equipment and preparation

- Monday chain cards plus leaves/caterpillar/robin labels
- Two sets of arrow strips, producer/consumer labels and feeding clues
- Opaque paper cover and pupil record; adult scribing option



TEACHING SEQUENCE

Guide the lesson

Use the source stage times; choose prompts appropriate to the pupil.

Slide 1: Food-chain change investigation · 0 minutes

Wednesday P2, 10:10-10:50. Reference screen only; start the 32-minute workshop immediately. No additional starter or lesson time.

Slide 2: Retrieve a chain and read one arrow · 4 minutes

Four-minute source preparation. Grass → rabbit → fox. Explain food/energy passes to eater. Choose card mover, pointer, adult director or recorder. Keep models on table; no real organism collection.

Slide 3: Build the grass chain from evidence · 5 minutes

First five minutes of source 20-minute investigation. Correct grass → rabbit → fox; grass producer, animals consumers. Every pupil uses evidence rather than simply remembering sequence. Alternative adult moves cards under pupil direction.

Slide 4: Build the second chain · 5 minutes

Next five minutes. Leaves → caterpillar → robin. Leaves represent part of a green producer plant. Consumer labels apply caterpillar/robin. Diagram shows selected links only. Printed labels are original and remain usable without any online animation.

Slide 5: Make an error, then repair it · 5 minutes

Next five minutes. Example wrong robin → caterpillar would pass food from robin to caterpillar, conflicting with supplied clue robin eats caterpillar. Correct leaves → caterpillar → robin. No requirement to generate a novel biological counterexample.



TEACHING SEQUENCE / CONTINUED

Guide the lesson - continued

Keep the source stage times; pause and check understanding as needed.

Slide 6: Cover the plant and predict · 5 minutes

Final five minutes of source 20-minute phase. Reduced plant resource may affect direct consumer, and indirectly later consumer. Model cannot predict exact survival/population counts; real organisms may use other food sources. Paper cover represents hypothetical reduced availability, not experimental data.

Slide 7: Pause and test your explanation · 2 minutes

Source two-minute check. Adult/partner optional; independent checking valid. A prediction should link food availability through a stated chain, not merely “everything dies”. Real food webs, conditions and time add uncertainty.

Slide 8: Improve, save and clear the model · 6 minutes

Source final six-minute phase includes tidy. Record first and revised reasoning. A qualified conclusion can be “less grass may mean less food for rabbits; that could affect foxes, but they may eat other foods.” No pupil measurements or real ecological experiment claimed.

Slide 9: Your voice can change the lesson · 4 minutes

Four minutes within the source lesson. Receive an actual observation or access request; do not force a peer audience. Name what can change now, make the change where possible and check whether it helped. The adult receives and names back the science shown as well as access feedback.

Slide 10: Read the evidence behind the chain · 4 minutes

Supported can read grass → rabbit as grass is eaten by rabbit. Standard fox may be affected by grass via rabbits despite not directly eating the grass. Stretch model omits other foods, conditions, behaviour and time, so exact numbers unsupported. Adult receives explanation and records next step. Separate Week 8 enrichment/checkpoint remains outside this W3-7 pack.

**TEACHER ANSWERS**

Worked answers and expected evidence

Use after an attempt. Accept equivalent correct explanations; record support given.

1. Build two chains

A grass → rabbit → fox. B leaves → caterpillar → robin. Producer is green plant/leaf-bearing plant; animals consumers. Each chain selects possible links, not exclusive diets.

2. Diagnose and repair an arrow

A valid repair uses food-to-eater convention consistent with a supplied feeding clue. e.g. robin → caterpillar reversed to caterpillar → robin because robin eats caterpillar.

3. Predict a model change

Less grass may reduce rabbit food and could affect fox food availability; fewer leaves may reduce caterpillar food and could affect robin food. Other foods and conditions mean outcomes/exact numbers uncertain. This is a hypothetical paper model, not field observations.

4. Improve your explanation

Improved explanation should use correct arrows and an indirect food link with uncertainty. Accept qualified prediction via herbivore prey. Model cannot establish exact numbers, all food links, time or conditions. Adult records actual understanding, not just assembled cards.

Misconceptions and corrections

- A fox is independent of plants because it does not eat them directly: links can be indirect.
- Removing a paper plant proves all animals will die: model supports a qualified prediction only.
- One chain is a full food web: other links and conditions are omitted.



Teach safely; keep the evidence

The source record identifies this conversion; it is not a claim of publication.

Safety

- Use paper models; do not collect/feed plants or animals.
- Adult reads or cuts; pupil can direct without handling equipment.
- Clearly label model predictions; do not claim ecological measurements or certain outcomes.

Access and offline alternatives

- Build/direct both chains with an adult reader, repair one arrow and choose a prediction.
- Label both chains, justify arrow repair and explain one possible indirect effect.
- Compare both changes and explain why the model cannot predict exact animal numbers.
- Adult receives one real pupil observation or access request, acts on a feasible change and explains limits. A learner can pass privately.

Close and continue

Finish at 40 minutes: workshop 32, pupil feedback 4, exit 4. Record one next teaching step based on the actual response.

Source and revision

Repository: MattRoper1977/Lessons

Source path: Science_Teesside/Build/SCI_B_W7_Where_Food_Comes_From.html

Source file Git blob: 3d5eb9032e658d14ac5911d9031b5bc5fe6fa393

Current source link (mutable): https://github.com/MattRoper1977/Lessons/blob/main/Science_Teesside/Build/SCI_B_W7_Where_Food_Comes_From.html

Document revision: 2026-09-06

Uploaded supporting sources

- White Rose Education, Year 3 Autumn Block 3 (2024), step 5 Animal diets, enriches producer/consumer discussion from the current website. Original food-chain models supply the current curriculum content; publisher media and worksheets are not copied.

Recorded conversion changes

- Original editable classroom text, scientific diagrams and pupil tasks follow the current weekly HTML, not the older retained A/B teaching version.
- White Rose uploads inform concepts and task choices; no publisher-owned slide, photograph, worksheet page or video is redistributed in these public files.
- Website animations and drag-and-drop controls become teacher-led reveals, movable paper labels and accessible spoken/drawn responses. No internet connection or video is needed.
- Autumn 1 Weeks 1-2 were baseline assessment. This is a Weeks 3-7 teaching pack, not a claim that baseline assessments or the separate Week 8 enrichment are included.