

Grade K – 45-minute Quiz: Ecosystems and Food Webs

Total time: 45 minutes. Total marks: 75. Read each question carefully. Write or draw in the space provided. For every claim you make, write one short observable reason that starts with "Because..." (this is your required evidence tied to what you can see or know). Use simple words or pictures. Work independently.

Special education accommodations and scaffolds (available as needed)

- Extra time: up to 60 minutes.
- Breaks allowed as needed.
- Read-aloud of questions by test proctor.
- Large-print or high-contrast paper.
- Provide simple picture cards for animals/plants mentioned.
- Allow pointing or drawing instead of full sentences.
- Provide sentence starters: "I think ___ because ___." and "Claim: ___ / Evidence: ___."
- Scribe allowed to write student's verbal answers.

Scoring notes for teacher (use to score student work)

- Each question shows points. Score each item by checking required elements: claim (answer), evidence ("Because..."), and any drawing/labels where asked.
 - If a student uses a picture as evidence, accept a clear observable description as the "Because..." statement.
 - Rubrics for multi-part items are in the answer key.
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Questions (exactly 15)

1. (5 marks) Draw a small pond ecosystem in the box below. Include:
 - Three living things (at least one plant and one animal). Label each (3 marks: 1 mark per correct label).
 - One non-living thing (water, rock, sun, etc.) and label it (1 mark).
 - Write one short sentence that starts with "Because..." that explains why one of your living things belongs in the pond (1 mark).
2. (6 marks) Look at this simple food chain written below:

- Grass -> Rabbit -> Fox
 - Part A (3 marks): For each arrow, write one short logic statement showing why the arrow is true (two arrows -> two short statements). Each statement must start with "Because..." and mention what one animal eats or uses.
 - Part B (3 marks): Draw one more thing that could join this chain (plant or animal), label it, and write one "Because..." sentence explaining where it fits.
3. (6 marks) Proof-style justification: A core idea (axiom) is: "Plants make their own food using sunlight." Use this idea to show, in two steps, why a rabbit needs plants. Step 1: State a simple fact from the axiom (2 marks). Step 2: Use that fact to explain why the rabbit needs plants (4 marks). Each step must include a "Because..." reason tied to something you can see or know.
 4. (4 marks) Circle the word that best names each living thing's role in a food web. Under each circle, write one "Because..." sentence.
 - A sunflower (Producer / Consumer / Decomposer) (2 marks)
 - A worm in the soil (Producer / Consumer / Decomposer) (2 marks)
 5. (4 marks) True or False. Read each sentence, circle True or False, and write one "Because..." reason.
 - a) "All animals eat only plants." True / False (2 marks)
 - b) "Decomposers help make soil." True / False (2 marks)
 6. (4 marks) Evidence log (list the evidence you use). The short story: "At a park I saw ducks swim, plants grow at the water edge, and bugs on the plants." Write two evidence lines (one sentence each starting with "I saw..." or "I know...") that support two different claims about the park ecosystem. Then write the claim each evidence supports (e.g., Claim: Ducks use water). (2 evidence lines = 2 marks; matching claims = 2 marks)
 7. (5 marks) Analyze an assumption. Statement to analyze: "If there are more foxes, there will always be more rabbits." Circle whether this is TRUE or FALSE and explain in one sentence starting with "Because...". Then give one small counterexample (a short sentence: "But if ____, then ____") that shows the statement can be wrong. (2 marks for correct TRUE/FALSE with reason, 3 marks for a clear counterexample)
 8. (6 marks) Comparative critique. Read the two student ideas:
 - Sam: "Rabbits are bad because they eat plants."
 - Lee: "Rabbits are part of the pond's life because they help animals that eat rabbits."
 For each idea:
 - Write one sentence saying what is right or wrong (2 marks each).
 - Then write one corrected sentence that combines the good parts of both ideas and

includes one "Because..." reason (2 marks).

9. (6 marks) Multi-step derivation beginning with a principle:

- Principle: "Energy from the sun goes into plants." (Step A) Write one short sentence explaining this principle in your own words and an example you can see (2 marks).
- Step B: Show two steps that connect this principle to a real-world application: "How a farmer helps plants grow to feed animals." Write Step 1 and Step 2 as short sentences, each with a "Because..." reason (2 marks each).

10. (4 marks) Bias audit (simple). A poster shows only big animals (deer and wolves) and no small animals or plants. Write two short sentences:

- One sentence saying what is missing from the poster (1 mark).
- One sentence explaining why leaving out small animals or plants might give the wrong idea about the ecosystem (3 marks; include a "Because..." reason).

11. (6 marks) Evidence-mapping boxes: For the claim "Plants help animals," fill three short boxes (one line each):

- Claim (write the claim in one short sentence) (2 marks)
- Warrant (write one reason that links the claim to evidence; start "Because...") (2 marks)
- Backing (write one observable example from nature that supports the warrant) (2 marks)

12. (4 marks) Find the mistake and fix it. A child draws a food web that shows: Sun -> Grass -> Cow -> Grass (arrows going back to grass). Circle the mistake (1 mark). Explain in one short sentence why it is a mistake (2 marks). Draw or write one correct arrow to fix the web (1 mark).

13. (4 marks) Reflective checklist. Choose one previous answer you wrote (write its question number). For that answer, check three boxes below and write one short sentence showing how your answer meets each checked item. Each checked item and sentence = 1 mark (3 marks). The three items:

- I gave a clear claim (answer).
- I wrote an evidence sentence that starts with "Because..."
- I used something I can see or know (an observable example).

14. (4 marks) Reconstruct a short food web. Write three living things that belong together in a backyard (e.g., grass, snail, bird) in order from producer to top consumer. Put arrows (->) between them to show who eats whom. Underneath, write one "Because..." sentence that explains one of the arrows. (3 marks for correct order and arrows, 1 mark for the "Because...")

15. (7 marks) Open-response synthesis and recommendation (final task).

- Scenario (read): A small garden has plants and some insects. The gardener wants to keep the garden healthy without using harmful sprays. Choose two living helpers to add to the garden (one plant or animal and one small animal or insect). Write:
 - Your two choices and a short claim for each (2 marks).
 - For each choice, write one short evidence sentence that starts “Because...” explaining how it helps (2 marks).
 - One short bias check sentence: say who might disagree with your choices or what you might not know yet (1 mark).
 - One final recommendation sentence that combines your evidence and says what the gardener should do next (1 mark).
 - One sentence at the end explaining how your answer satisfies each success criterion: (a) uses observable evidence, (b) fixes a garden problem, (c) is kind to living things. (1 mark)
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Answer Key with scoring guidance and model responses

General scoring rule: For each student claim, require one evidence sentence that begins with "Because..." and refers to an observable fact or simple knowledge. Accept drawings as evidence if the student includes an explanatory "Because..." line.

1. (5 marks) Model:

- Three living things: frog (animal), duck (animal), cattail (plant). Labels correct = 3 marks (1 each).
- Non-living thing: water (label = 1 mark).
- Evidence sentence example: "Because the frog swims in the water and eats insects near the plants." (1 mark)
Scoring: 1 mark per correctly labeled living thing (plant must be present), 1 mark for non-living label, 1 mark for a "Because..." justification referring to observable pond relationships. Accept simple drawings that clearly match labels.

2. (6 marks) Model answer:

- Part A (3 marks): Two logic statements (1.5 marks per arrow approximately).
 - Grass -> Rabbit: "Because rabbits eat grass to get energy." (1.5 marks)
 - Rabbit -> Fox: "Because foxes eat rabbits to get energy." (1.5 marks)
- Part B (3 marks): Add "Hawk" (or "Snake" or "Decomposer").
 - Example: Add Hawk and sentence: "Hawk -> Because hawks may eat foxes or rabbits" or place Hawk above Fox if predator (1.5 marks for label, 1.5 marks for clear "Because..." explanation).
Scoring: Give credit for correct simple food relationships. Each "Because..." must name who eats whom or what role the added organism plays.

3. (6 marks) Model:

- Step 1 (2 marks): Fact from axiom: "Plants use sunlight to make food." (2 marks)
- Step 2 (4 marks): Use fact to explain rabbit need: "Because plants make food, rabbits eat the plants to get energy to move and grow." (4 marks)
Scoring: Step 1 must restate the axiom simply. Step 2 must link plant food to rabbit survival with "Because..." Accept short phrasing.

4. (4 marks) Model:

- Sunflower: Producer circled; Because: "Because it uses sunlight to make food." (1 mark for correct circle + 1 mark for "Because...")

- Worm: Decomposer circled; Because: "Because it breaks down dead leaves into soil." (1 mark + 1 mark)
Scoring: 1 mark for correct role, 1 mark for a short "Because..." tied to observable action.

5. (4 marks) Model:

- a) "All animals eat only plants." – False. Because: "Some animals eat other animals (like foxes), and some eat plants (like rabbits)." (2 marks)
- b) "Decomposers help make soil." – True. Because: "Worms and fungi turn dead things into soil." (2 marks)
Scoring: 1 mark for correct True/False, 1 mark for a simple correct "Because..." explanation per item.

6. (4 marks) Model:

- Evidence line 1: "I saw ducks swim in the water." Claim it supports: "Ducks use water for home and food." (1 mark evidence + 1 mark claim)
- Evidence line 2: "I saw plants at the water's edge." Claim: "Plants grow there and provide food or shelter." (1 mark + 1 mark)
Scoring: Accept "I saw..." or "I know..." lines plus a matching claim. Each pair = 2 marks.

7. (5 marks) Model:

- Correct answer: FALSE. Because: "If there are more foxes they might eat more rabbits, which can make rabbits fewer." (2 marks)
- Counterexample: "But if food for rabbits increases (more plants), rabbits could grow even if foxes increase." (3 marks)
Scoring: 2 marks for correct Truth value with reason. Counterexample must show a scenario that changes outcome; award 3 marks if clear.

8. (6 marks) Model:

- Sam: "Rabbits are bad because they eat plants." – Critique (2 marks): Partly wrong because eating plants is normal; better: "Rabbits eat plants, but that is part of nature." (give 2 marks if they state what is wrong/right)
- Lee: "Rabbits are part... because they help animals that eat rabbits." – Critique (2 marks): Lee is correct that rabbits are part of the food web, but incomplete; rabbits also affect plants.
- Combined corrected sentence (2 marks): "Rabbits eat plants and are food for other animals, so they have both good and bad effects because they help feed predators and change plant sizes." Must include "Because...".
Scoring: 2 marks per critique if student identifies right/wrong element. 2 marks for a corrected combined sentence with a "Because..." justification.

9. (6 marks) Model:

- Step A (2 marks): "Energy from the sun goes into plants; example: grass gets sunlight and grows." (2 marks)
 - Step B Step 1 (2 marks): "Farmers give water and sun to plants because plants need both to grow big enough to feed animals." (2 marks)
 - Step B Step 2 (2 marks): "Then animals eat these plants on the farm so people or other animals can have food because plants made energy from the sun." (2 marks)
- Scoring: 2 marks for a simple explanation and example of the principle, 2 marks for each clear step connecting principle to farmer action and to feeding animals, each with "Because..." ties.

10. (4 marks) Model:

- Missing: "Small animals and plants are missing." (1 mark)
 - Why wrong: "Because small animals and plants are important food and shelter, leaving them out makes the poster look like the ecosystem has only big animals." (3 marks)
- Scoring: 1 mark for naming missing groups, 3 marks for explanation with observable reason.

11. (6 marks) Model:

- Claim: "Plants help animals by giving them food and shelter." (2 marks)
 - Warrant: "Because plants make food and give places to hide." (2 marks)
 - Backing: "Example: leaves give caterpillars food and bushes give birds a nest place." (2 marks)
- Scoring: 2 marks each for clear short sentences that follow Claim -> Warrant ("Because...") -> Backing (observable example).

12. (4 marks) Model:

- Mistake circled: Arrow from Cow -> Grass (1 mark).
 - Why it is a mistake: "Because cows eat grass, arrows should go from grass to cow, not the other way." (2 marks)
 - Correct arrow: Draw or write "Grass -> Cow" (1 mark)
- Scoring: 1 mark for identifying mistake, 2 marks for explanation, 1 mark for correct fixed arrow.

13. (4 marks) Model:

- Student chooses Q2 for reflection.
- Check & sentences (1 mark each):
 - I gave a clear claim: "I wrote Grass -> Rabbit -> Fox as my chain." (1 mark)
 - I wrote an evidence sentence that starts with "Because...": "Because rabbits eat grass and foxes eat rabbits." (1 mark)

- I used something I can see or know: "I know rabbits eat grass because I have seen rabbits in a yard." (1 mark)

Scoring: 1 mark per checked item with a short sentence showing the student met it.

14. (4 marks) Model:

- Correct order: Grass -> Snail -> Bird (3 marks: 1 for producer, 1 for consumer, 1 for top consumer and arrows)
 - Because sentence: "Because snails eat plants and birds eat snails." (1 mark)
- Scoring: 3 marks for correct order with arrows, 1 mark for a "Because..." explanation.

15. (7 marks) Model:

- Two choices and claims (2 marks): "Add ladybugs (insect) and marigold plants. Claim: Ladybugs eat pests; marigolds keep pests away." (2 marks)
 - Evidence for each (2 marks): "Because ladybugs eat aphids I see on leaves. Because marigolds smell that bugs don't like." (2 marks)
 - Bias check (1 mark): "Some people might want only big animals, or I might not know all garden pests." (1 mark)
 - Final recommendation (1 mark): "I recommend planting marigolds and releasing ladybugs to help the garden without spray." (1 mark)
 - Satisfies criteria sentence (1 mark): "This uses evidence I can see, helps the garden problem, and is gentle to animals because it uses living helpers." (1 mark)
- Scoring: Full credit for two choices with claims (2), two "Because..." evidence lines (2), one bias check (1), one recommendation (1), one short sentence linking to success criteria (1).

End of quiz content and answer key.