Year 10 Science: Decomposers, nutrient run-off and protecting waterways

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Name two kinds of microorganism that decompose dead material.

2. Why would plants in a forest eventually stop growing if all decomposers disappeared?

3. Explain why a lake can run out of oxygen after an algal bloom.

4. A farmer plants flax and native shrubs along a stream on her farm. Give two ways this helps the stream.

5. A survey finds many mayfly larvae at one site and almost none at another. What does this suggest about the two sites?

Fix the mistake

6. Correct this statement: "Worms are the main decomposers."

7. Correct this statement: "In eutrophication the algae use up all the oxygen in the lake."

8. Correct this statement: "Fertiliser run-off kills fish because it is poisonous."

9. Correct this statement: "Forests stop rain water from reaching rivers."

Answer key (for parents and tutors)

1. Name two kinds of microorganism that decompose dead material.
   Bacteria and fungi.
2. Why would plants in a forest eventually stop growing if all decomposers disappeared?
   Nutrients would stay locked in dead leaves and bodies instead of returning to the soil, so the soil would run out of nutrients.
3. Explain why a lake can run out of oxygen after an algal bloom.
   When the algae die, bacteria decompose them and use up dissolved oxygen as they respire.
4. A farmer plants flax and native shrubs along a stream on her farm. Give two ways this helps the stream.
   Any two: roots hold the banks and reduce erosion, plants trap sediment and take up nutrients from run-off, shade keeps the water cool, and it gives habitat.
5. A survey finds many mayfly larvae at one site and almost none at another. What does this suggest about the two sites?
   Mayfly larvae are sensitive to pollution and low oxygen, so the site with many is likely cleaner, and the site with almost none is likely polluted.
6. Correct this statement: "Worms are the main decomposers."
   Bacteria and fungi are the main decomposers; worms and slaters are detritivores that shred dead material so microorganisms can break it down faster.
7. Correct this statement: "In eutrophication the algae use up all the oxygen in the lake."
   Decomposer bacteria use up the oxygen as they respire while breaking down the dead algae; living algae release oxygen in daylight.
8. Correct this statement: "Fertiliser run-off kills fish because it is poisonous."
   The main harm is that the extra nutrients feed an algal bloom, and decomposing that bloom strips the dissolved oxygen fish need.
9. Correct this statement: "Forests stop rain water from reaching rivers."
   Forests slow the water so it soaks into the soil and reaches streams over days, which cuts floods and erosion, but the water still arrives.