Investigation 1.B: Weave Your Own Food Web Answer Key

Answers to Analysis Questions

1. Your answer should add up to 100% to be correct.

2. Your answer should reflect the following equations:
% of Sun's energy from 1st trophic level = (% of energy from producers in kJ)(0.02)(0.10) = A
% of Sun's energy from 2nd trophic level =
(% of energy from primary consumers) (0.02)(0.10)(0.10) = B
% of Sun's energy from 3rd trophic level =
(% of energy from secondary consumers) (0.02)(0.10)(0.10)(0.10) = C
% of Sun's energy from 4th trophic level =
(% of energy from tertiary consumers) (0.02)(0.10)(0.10)(0.10)(0.10) =D
Total % of Sun's energy = A + B + C + D
Final answers should be given as a percentage.
(Note: Your answer may also include decomposers in your food chain.)

3. Students who assimilated the largest percentage of the Sun's energy will have consumed most of their food from the first trophic level. Students who assimilated the lowest percentage of the Sun's energy will have consumed most of their food from higher trophic levels.

4. The longest food chains will probably have four or five trophic levels. You would assimilate more of the Sun's energy if your food chains were shorter, not longer.

Answer to Extension Question

5. A vegetarian diet would allow more people to be fed while using less land and water resources.

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