

Food Chains and Food Webs

Chapter 12: How Nature Works in Harmony · Topic 2

Key Concept

Energy is lost at each step of a food chain, mainly as heat through the processes of life (like movement and respiration), so only about 10% of energy is passed from one trophic (feeding) level to the next — this is why food chains rarely extend beyond four or five levels, since there isn't enough energy left to support further levels. This energy loss also explains why there are usually many more producers than top predators in any given ecosystem, forming a pattern often shown as an energy pyramid.

Quick Revision Notes

- A food chain shows a linear flow of energy: producer → primary consumer → secondary consumer → etc.
- A food web is an interconnected network of multiple overlapping food chains.
- Only about 10% of energy transfers from one trophic level to the next.
- This energy loss explains why food chains rarely have more than 4-5 levels.

Practice Questions

- 1 Draw a simple food chain showing four trophic levels.
- 2 Explain why food chains rarely extend beyond four or five levels.
- 3 Why are there usually more producers than top predators in an ecosystem?