1 Ecosystems and energy flow – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
ecosystem			
Producers			
Consumers			
food chains			
food web			
trophic level			

Recall

You already know how living things depend on each other and their surroundings:

- Plants make food from sunlight; animals eat plants or other animals.
- A food chain shows who eats whom.
- Energy flows through nature and is gradually lost.

This sheet lines up how ecosystems move energy. Each idea has a short worked example.

New ideas

■ 1 Ecosystems

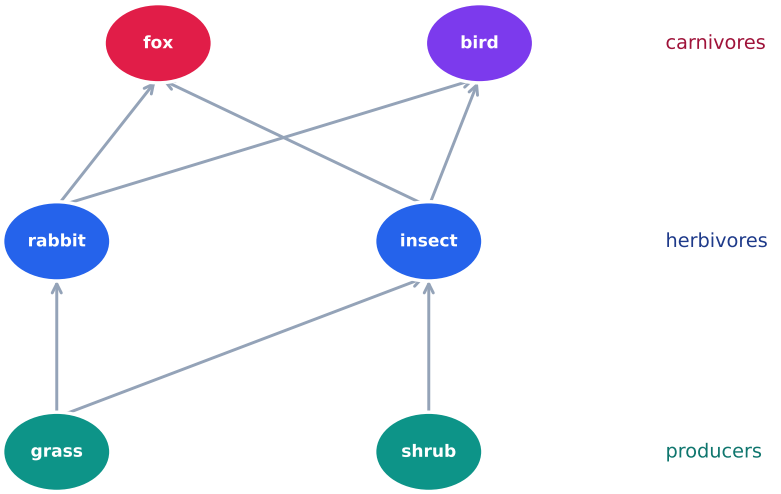
An **ecosystem** is all the living things in an area together with their non-living surroundings (water, soil, air). Energy enters as sunlight and flows through the living parts.

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2 Producers and consumers

- **Producers** (plants) capture sunlight to make food.
- **Consumers** eat producers or other consumers.

They form **food chains** and, joined together, a **food web** .

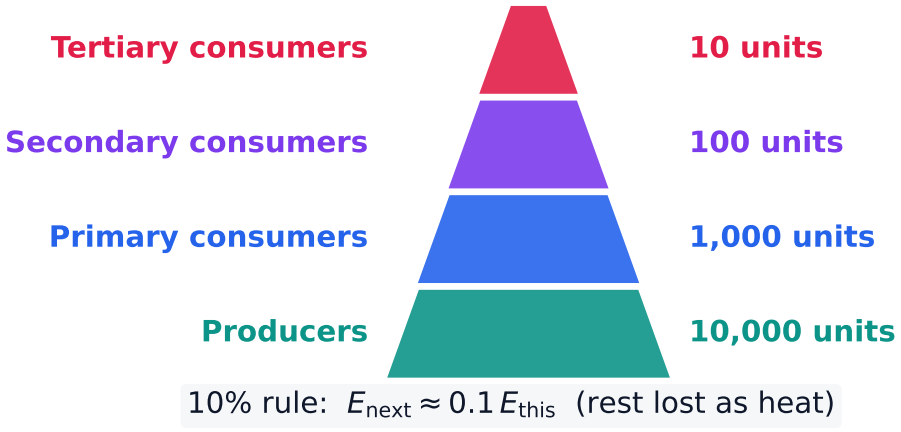


3 Trophic levels

Each feeding step is a **trophic level** : producers, then primary, secondary, and tertiary consumers.

4 The 10% rule

Only about **10%** of the energy passes from one trophic level to the next; the rest is lost as heat.



Worked example. If producers hold 10,000 units of energy, the next level gets about 1,000, then 100 – which is why top predators are few.

> **Watch out:** so much energy is lost at each step (about 90%) that food chains rarely have more than four or five levels – there is not enough energy left to support another.

Practice

Try these in order. The methods are all above.

2.1 State what an ecosystem includes, both living and non-living. [2]

2.2 State the difference between a producer and a consumer. [2]

2.3 About what percentage of energy passes to the next trophic level? [1]

2.4 A producer level holds 5,000 units of energy. Estimate the energy at the next two levels. [2]

2.5 Explain why food chains are usually short (only a few levels). [2]

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