

Introducing Ecosystems

Key Word Cards

Ecosystem	A network of living and non-living things interacting together
Biome	A large geographical area of specialised plant and animal groups
Food Web	A system of food chains joined together in different ways
Food Chain	A series of living things that use each other as sources of food
Primary Producer	An organism (such as a plant) that converts solar energy into physical structure
Primary Consumer	An organism that gains energy by eating a plant
Secondary Consumer	An organism that gains energy by eating a primary consumer

Decomposer	An organism that breaks dead plants and animals down into nutrient matter
Herbivore	An organism that only feeds on plants (vegetation)
Carnivore	An organism that only feeds on meat (animals)
Omnivore	An organism that eats both plants and animals
Tropic Level	The position an organism occupies in a food chain
Biotic	Living things within an ecosystem
Abiotic	Non-living things in an ecosystem

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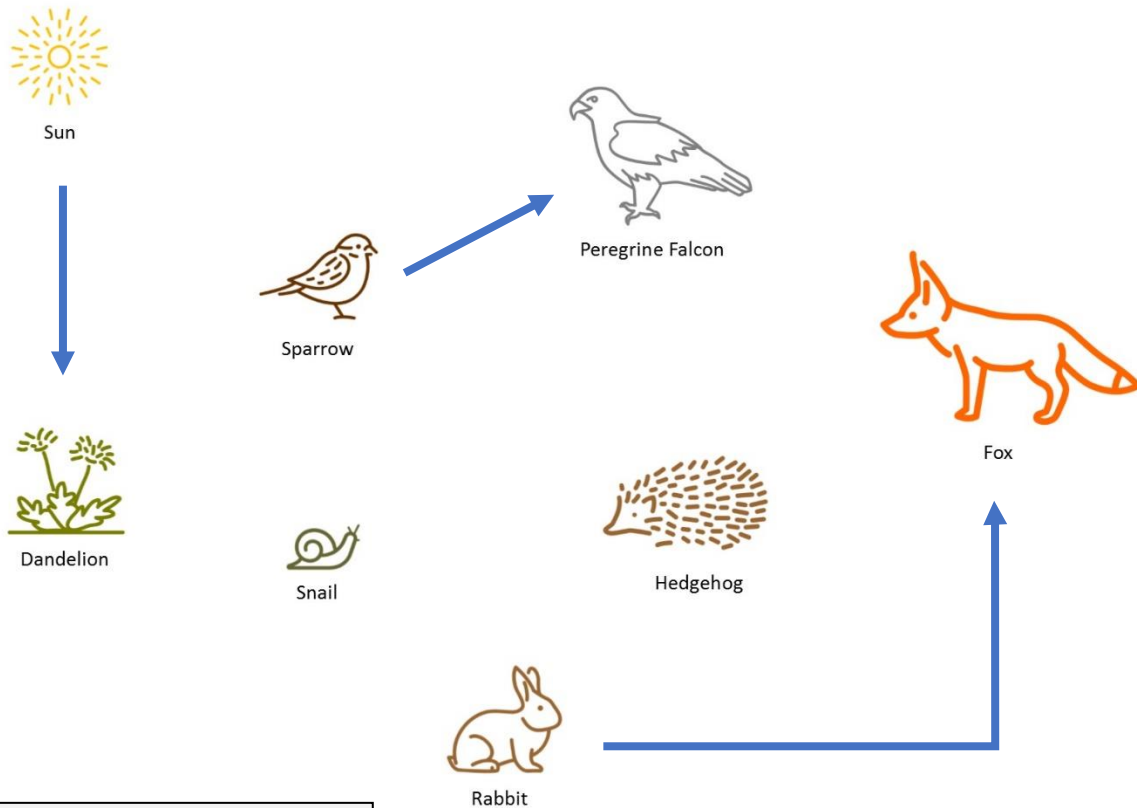
Key Definitions

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Energy Flows

- On the woodland food web below, draw arrows to show the direction of energy movement through the ecosystem. Some arrows have been added to get you started.



Biomass is the mass of living organisms in a given area.

- Assign the biomass values below to the organisms missing data in the table (right).

Remember: the relative biomass for any stage in a food chain is always less than the that for the stage before it.

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- How many dandelions might a rabbit eat a day? Compare this to the number of rabbits that a fox might eat.

“As the trophic level increases, the level of consumption for an animal _____.”

Organism	Relative Biomass Value per unit area*
Dandelion	
Snail	40
Sparrow	
Rabbit	10
Hedgehog	6
Fox	
Peregrine Falcon	1

* Using Peregrine Falcon as a standard unit value of 1

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Gersmehl's Model

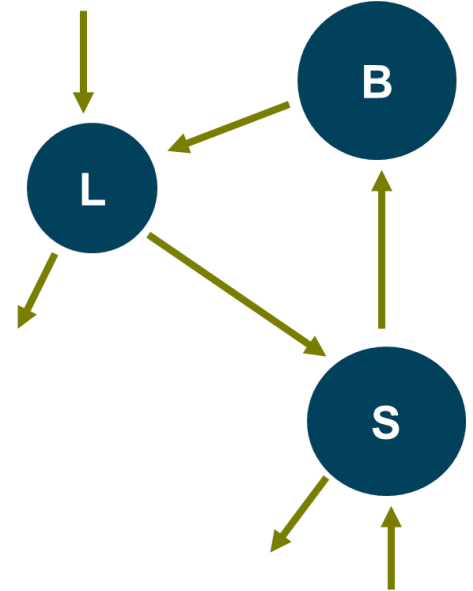
One way of representing ecosystems on paper is through **Gersmehl's Model**. This model shows the amount of nutrients that are flowing around an ecosystem as well as the sizes of different stores.

The flows of nutrients are represented by arrows.

The stores of nutrients are represented by circles. Gersmehl's Model refers to three types of store:

- The living biomass (B)
- Organic matter found in leaf litter (L)
- The soil (S)

The size of the arrow or circle is proportional to the amount of nutrients flowing or being stored.



1. Examine the Gersmehl Model below. Which arrow represents...

- | | |
|---------------------------------|--------------------------------|
| a. Leaf fall or death: 2 or 5 ? | e. Take up by plants: 4 or 5 ? |
| b. Surface run off: 3 or 6 ? | f. Decomposition: 4 or 7 ? |
| c. Weathering: 1 or 7 ? | g. Rainfall: 1 or 3 ? |
| d. Leaching: 2 or 6 ? | |

2. In this example of a Gersmehl Model, which is greater? Circle the right answer in each pair.

Nutrients gained by the soil through weathering	Nutrients gained by the soil through decomposition
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Nutrients lost from the biomass through leaf loss	Nutrients gained by the biomass through take up from the soil
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Nutrients stored in trees	Nutrients stored in the soil
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