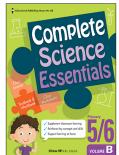






	Chapter Overview	Suggested duration
5.1a	Characteristics of an environment	45 min
5.1b	Living factors	1 h
	Review 🃸	15 min
5.2	Dependence of living things on one another	1 h
	Review 🏖	15 min
5.3a	Non-living factors: physical characteristics of the environment	45 min
5.3b	Types of soil	45 min
5.4	Concept map	45 min
J.4		

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COMPLETE SCIENCE ESSENTIALS Primary 6

Scan the QR code for the Answer Sheet.



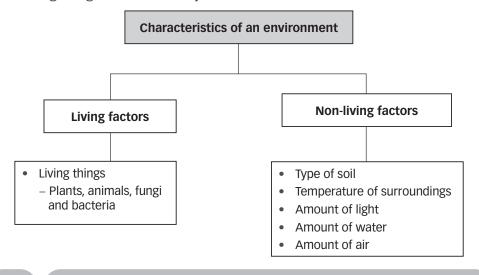






5.1a Characteristics of an environment

• All living things are affected by their environment.



5.1b Living factors

- Organisms: all living things
- Include plants, animals, fungi and bacteria

Community

- A group of living things (organisms) living in the same habitat make up a community. The organisms interact with one another. The various types of interactions will be discussed in 5.2.
- Habitat is a place where an organism lives in.

Examples of communities (natural)

Community	Habitat	Organisms
Pond community	Pond (wet and bright)	Frogs and tadpoles, fishes, mosquito larvae, water spiders Water plants







Community	Habitat	Organisms
Rotting log community	Rotting log (dark and damp)	Beetles, bugs, woodlice, millipedes, centipedes, earthworms Ferns
Leaf litter community	Leaf litter (dark and damp)	Beetles, bugs, woodlice, millipedes, centipedes, earthworms Dead leaves Fungi
Garden community	Garden (bright and sunny)	Butterflies and caterpillars, snails, earthworms, grasshoppers, birds Trees and plants
Seashore community	Seashore (wet and bright)	Crabs, clams, oysters, sea urchins, mudskippers Algae, palm trees and coconut trees
Mangrove community	Mangrove swamp (wet and fairly bright)	Fishes, crabs, water snakes Mangrove trees







Community	Habitat	Organisms
Rainforest community	Forest (dark at forest floor) (bright at the top)	Birds, monkeys, bears, wolves Trees, ferns, shrubs
Tree community	Tree	Birds and their nests, caterpillars and butterflies Flowers and fruits

Examples of communities (man-made)

• In these two communities, plants play an important role as they provide oxygen for the other living things when they photosynthesise. Hence, it is important to put them near a light source.

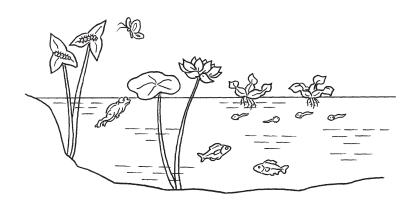
Community	Habitat	Organisms
Aquarium	Glass tank/container	Plants, fishes, tadpoles, tubifex worms
Terrarium		Plants, caterpillars, worms, beetles, bugs



Population

- A group of living things (two or more) of the **same kind** living together in a particular habitat.
- The young and adult are considered a population.

Example: In a pond community



Animal populations (three)

- 1. Frogs and tadpoles
- 2. Butterflies and caterpillars
- 3. Fish

Plant populations (three)

- 1. Arrowhead
- 2. Lotus
- 3. Water hyacinth

Review 2

1. Match the following organisms to the community they are from.

Organism	Community
Duckweed	Forest
Centipede	Rotting log
Crab	Pond
Fungus	Leaf litter
Monkey	Sea shore



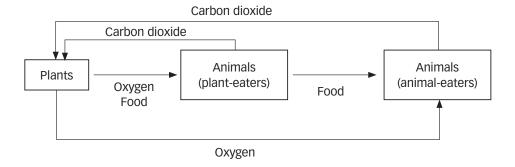




- 2. State if the following is a population, community, habitat or environment.
 - (a) Water spiders, water hyacinth, tadpoles
 (b) Leaf litter
 (c) Centipedes, millipedes, rotting log, fungi
 (d) Hibiscus, trees, garden soil, birds, butterflies
 (e) Mosquitoes, mosquito larvae, mosquito eggs

5.2 Dependence of living things on one another

- No organism can live alone. All organisms are dependent on one another. We call them **interactions**.
 - 1. Plants photosynthesise and produce oxygen for all living things.
 - 2. Plants are food for animals (plant-eaters).
 - 3. Animals produce carbon dioxide during respiration. This carbon dioxide is used by the plants for photosynthesis.
 - 4. Animals (plant-eaters) are food for other animals (animal-eaters).

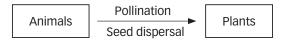




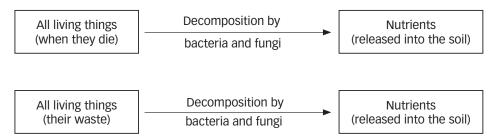




- 5. Animals (birds and insects) pollinate the flowers of plants.
- 6. Animals (birds, insects, fruit-eating animals) help to disperse the seeds after eating the fruits.



7. All living things (when they die) and their droppings and waste depend on bacteria and fungi for decomposition into nutrients (mineral salts).

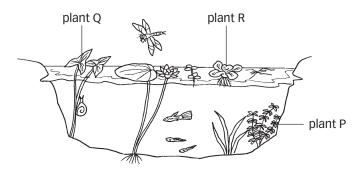


8. After decomposition, their bodies will become nutrients which are released into the soil to be absorbed by the plants for healthy growth.



Review 2

1. A diagram of a pond is shown below.



(a) Which plant is the most important to the fishes?

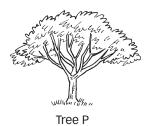






(b)	State two reasons why the plant in (a) is important to the fishes.

2. A certain species of birds built its nest in one of these two trees.





(a)	Which tree do you think the bird will build its nest in?		
(b)	Give a reason for your answer in (a).		





5.3a

Non-living factors: physical characteristics of the environment

Physical characteristic	What it affects	Organisms most affected by it
Type of soil	 Particle size of soil affects amount of water and air in the soil The amount of water that the soil can retain will affect the amount of water absorbed by the plants. The amount of air will affect the roots of the plants and the organisms living in the soil. 	Plants Organisms living in the soil (Earthworms)
Temperature of surroundings	 Living things are affected by temperature of surroundings. If it is too hot or cold, the temperature will affect their life processes. Living things live in environments that are suitable for them and they will have the adaptations to help them cope. Temperature of surroundings will affect the amount of water available. Higher temperature of surroundings will result in higher rates of evaporation of water, resulting in less water available. 	All living things
Amount of light	 Plants are the most affected because they need light to photosynthesise. Animals need light to move around and to hunt. 	Plants and animals
Water	 All living things need water for life processes. Animals that can live in very dry places have special adaptations in their body to survive. The amount of salt in the water also affects the survival of fishes. Some fishes can live in the pond but not in the sea. The amount of pollutants/soil in the water also affects the rate of photosynthesis of plants and hence the amount of dissolved oxygen. The more pollutants, the less sunlight can pass through. Plants receive less light and photosynthesise slower, producing less dissolved oxygen for the fishes. 	All living things, including fungi and bacteria
Air	 All living things need air (oxygen) for life processes (respiration to produce energy) and produce carbon dioxide during respiration. Dissolved oxygen is especially important for organisms that live in the water. Plants provide the dissolved oxygen through photosynthesis. 	









Types of soil

	Sand	Mud	Garden
Particle size and space between	Large	Small	Just right
particles			88686 88686
Amount of air available in the soil	A lot	Very little	Just right
Amount of water retained by soil	Very little	A lot	Just right
Amount of water seeped through	A lot	Very little	
Presence of decaying matter	Very little	Very little	A lot
Type(s) of plants	Cactus	Rice/Mangrove	All types of plants





light

photosynthesis

Soil

temperature

carbon dioxide

community

water

oxygen

plants

air spaces

Use the given words to complete the following concept map.

Concept map

5.4



Primary 6 Science

