The de Ferrers Trust

BIOLOGY– YEAR 11 – ECOLOGY

A	ADAPTATIONS AND INTERDEPENDANCE	
1	ECOSYSTEM	Interaction of a community of living organisms and the nonliving parts of the environment
2	COMPETITION	Plants; light and space, water and mineral ions
		Animals; compete with each other for food, mates and territory.
3	INTER-DEPENDENCE	Each species depends on others for food, shelter, pollination, seed dispersal etc.
		Removing one species can affect the whole community.
4	ABIOTIC	Non-living; E.g. light intensity / temperature / moisture / soil pH and mineral content / CO_2 levels for plants / O_2 levels for aquatic organisms
5	BIOTIC	Living; E.g. availability of food/ predators / pathogens / breeding partners
6	ADAPTATIONS	Features that enable organisms to survive in their normal living conditions. E.g. structural, behavioural, functional.

B	ORGANISATION	
1	PRODUCERS	Photosynthetic organisms. Start of a food chain / produce biomass. E.g. green plants and algae
2	FEEDING RELATIONSHIPS	Primary consumers eat producers. Secondary consumers eat primary consumers etc.
		Predator; consumer that kills and eats Prey; eaten by predators Predator-prey cycles rise and fall.
3	CYCLES	Materials in the living world are recycled. Microorganisms help to cycle materials through ecosystem.
		Carbon cycle; returns carbon from organisms to atmosphere as carbon dioxide.
		Water cycle; continual evaporation and precipitation.

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C BIODIVERSITY

1	BIODIVERSITY	Ensures stability of ecosystems Has been decreasing, but recent measures taken to stop this.
2	WASTE MANAGEMENT	Increase population —> increased waste and pollution —> decrease biodiversity Types of pollution; water / air / land
3	LAND USE	Increase land use for farming / building / quarrying / waste. Destruction of peat bogs; reduction in habitat / release of carbon dioxide into atmosphere.
4	DEFORESTATION GLOBAL WARMING	Deforestation in tropical areas for agriculture and biofuels. CO_2 and methane increasing —> global warming.
5	MAINTAINING BIODIVERSITY	Humans have positive and negative interactions with ecosystems. E.g. breeding programs / regeneration of habitats / field margins and hedgerows / recycling / Government initiatives

D FIELD INVESTIGATIONS

1	SAMPLING A POPULATION	SAMPLING; The numbers of organisms that are counted in a sample site.
		RANDOM; use of quadrats at random coordinates (random number generator) to gain an estimate.
		SYSTEMIC; ordered sampling e.g. along a transect line, to determine a trend or pattern across a habitat.
2	QUADRAT	A square frame (usually 1m x 1m) used to measure abundance / distribution of slow or non-moving organisms
3	TRANSECT LINE	A line created, e.g. using a tape measure, alogn which sampling occurs.
4	PERCENTAGE COVER	the percentage of the quadrat area that is covered by one species (eg grass). Used when counting individual organisms is difficult.
5	ESTIMATED POPULATION SIZE	$= \frac{\text{total area}}{\text{area sampled}}$ X no. of organisms counted