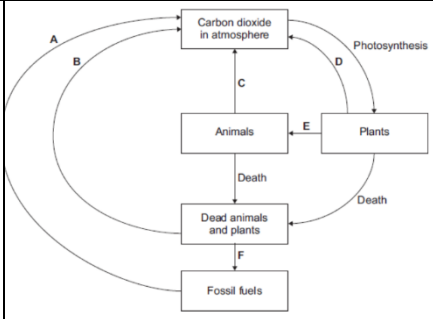
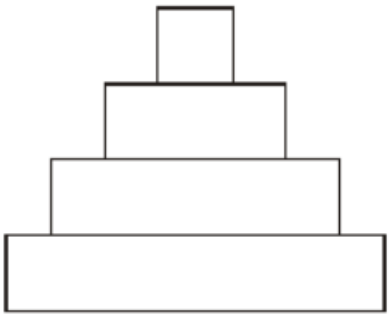
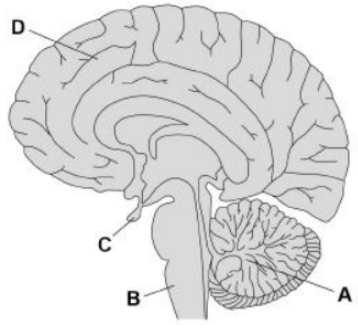
GCSE Biology Knowledge Organiser

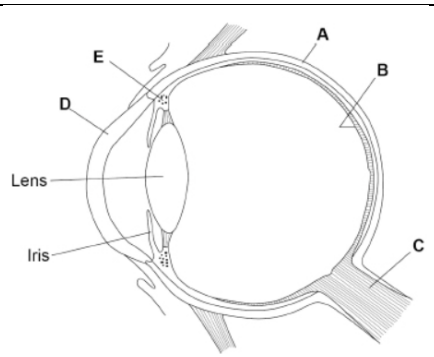
B9b Biodiversity

1	What is biodiversity?	The variety of all the different species of organisms on earth, or within an ecosystem
2	How do humans reduce biodiversity?	Changing land use, deforestation and peat bog destruction
3	Why do humans cut down trees?	To provide land for cattle and rice fields and to grow crops for biofuels
4	How do humans pollute water, air and land?	Water: sewage, fertiliser or toxic chemicals Air: smoke and acidic gases Land: landfill and from toxic chemicals
5	 Name the processes A-F in the carbon cycle	A. Combustion B. Decay C. Respiration D. Respiration E. Eating F. Incomplete decay
6	What are the effects of global warming?	Ice caps melt, sea levels rise, flooding, reduction in biodiversity
7	How can humans maintain biodiversity?	• breeding programmes • protection and regeneration of rare habitats reintroduction of field margins and hedgerows • reduction of deforestation and carbon dioxide emissions by some governments • recycling resources
8	TRIPLE ONLY What factors affect the rate of decay?	Temperature, water and availability of oxygen
9	TRIPLE ONLY What are tropic levels?	How many steps along a food chain an organism is
10	TRIPLE ONLY Draw a pyramid of biomass for: Lettuce plant → Slug → Frog → Heron	 Heron Frog Slug Lettuce plant
11	TRIPLE ONLY Why is biomass lost between each trophic level?	• not all the ingested material is absorbed, some is egested as faeces

		• some absorbed material is lost as waste, such as carbon dioxide and water in respiration and water and urea in urine
12	TRIPLE ONLY What is food security?	Having enough food to feed a population
13	TRIPLE ONLY What factors affect food security?	Increasing birth rate, changing diets, new pests and pathogens, environmental changes that affect food production, such as a drought, the cost of agricultural inputs, conflicts
14	TRIPLE ONLY How do we make fishing sustainable?	Control of net size and the introduction of fishing quotas
15	TRIPLE ONLY Why are animals fed high-protein food?	To increase growth
16	TRIPLE ONLY Give an example of how biotechnology is used in agriculture	GM crops could provide more food or food with an improved nutritional value such as golden rice

B5a Nerves

	Knowledge	Answer
1	What is homeostasis?	The regulation of the internal conditions of a cell or organism to maintain optimum conditions for enzymes/cell function
2	What things need to be constant in organisms?	Blood glucose concentration, body temperature, water levels
3	What is the CNS	The brain & spinal cord
4	How is information transmitted along neurones?	As electrical impulses
5	What is the order of a reflex arc?	Stimulus → receptor → sensory neurone → relay neurone/ synapse →coordinator → relay neurone/ synapse → motor neurone →effector → response
6	What is a reflex?	An automatic reaction that does not involve the brain
7	What happens at a synapse?	A neurotransmitter diffuses across the gap and attaches to the next neurone
8	TRIPLE ONLY Label the brain:  	A- Cerebellum (controls balance and movement) B- Medulla (controls heart rate and breathing rate) C- Hypothalamus (controls temperature and water) D- Cerebrum (controls intelligence and personality)
9	TRIPLE ONLY Label the eye:	A- Sclera- Tough white outer layer of the eye. It helps protect the eye from injury B- Retina- contains light receptors C- Optic nerve- carries impulses to the brain D- Cornea- refracts light as it enters the eye Suspensory ligament- contracts/relaxes to change the shape of the lens

		
10	1. TRIPLE ONLY How does the body respond to a high temperature?	1. Blood vessels dilate (vasodilation) and sweat is produced from the sweat glands