#### KEEPING HEALTHY

- Describe the components of a balanced diet and say why each is needed.
- Describe the effects of an unbalanced diet – eating too much or too little.
- Describe how exercise affects health.
- Explain metabolic rate and the affect of exercise on metabolic rate.
- State how inherited factors may affect metabolic rate or cholesterol.
- Define pathogen.
- Describe how viruses and bacteria make us ill.
- State some ways the body protects against pathogens.
- Describe the 3 ways white blood cells work.
- Describe how an individual may become immune to a pathogen.
- Describe how vaccinations can protect individuals and populations.
- Describe the work of Semmelweiss and explain its importance.
- State how some different types of medicines work.
- Explain why antibiotics don’t work on viral infections, and why treatment is difficult.
- Explain antibiotic resistance. **HIGHER**
- Give some of the problems with resistance strains of bacteria or viruses. **HIGHER**
- Write a method for culturing microorganisms in sterile conditions. **HIGHER**
- Explain differences in school & industrial conditions for growing microbes.

#### NERVES AND HORMONES

- State the role of the nervous system in responding to the environment.
- Link some examples of stimuli and receptor cells.
- State some of the features of light receptor cells.
- Describe the pathway of a simple reflex action.
- Explain how water, ions, temperature & blood sugar levels are controlled.
- Describe the general role of hormones in the body.
- Describe the role of hormones in controlling the menstrual cycle.
- Explain the use of hormones in controlling fertility.
- Describe how plants are sensitive to light, moisture and gravity.
- Explain how hormones can control growth in plants.
- Give some agricultural uses of hormones.

#### USE AND ABUSE OF DRUGS

- Describe the stages in developing and testing new medical drugs.
- State the use of statins.
- Describe the problems, and current use of, thalidomide.
- Describe what a ‘drug’ is and the problems with dependence and addiction.
- State some of the effects of misuse of legal and illegal recreational drugs.
- Describe some examples of performance enhancing drugs in sport.
**INTERDEPENDENCE AND ADAPTATION**
- Describe what animals compete
- Describe what plants compete for
- Explain how particular adaptations help animals to survive in their habitats
- Explain what extremophiles are
- Describe how distribution of organisms can change when the environment changes
- State some examples of changes in the environment
- Explain how lichens and invertebrates can be used as indicator species
- Describe how we can use equipment to measure oxygen levels, temperature and rainfall

**ENERGY AND BIOMASS IN FOOD CHAINS**
- State that the sun is the source of energy for living organisms
- Describe the energy transfer that takes place during photosynthesis
- Draw a pyramid of biomass for a food chain
- Explain why the energy and biomass decrease further up the pyramid

**WASTE MATERIALS FROM PLANTS AND ANIMALS**
- State that living things remove materials from the environment
- State that when organisms die and decay, materials are returned to the environment
- Define the term ‘decay’ & describe the conditions that microorganisms grow fastest in
- Explain why decay is important for plant growth
- Describe a stable community in terms of the materials being cycled within it
- State how carbon dioxide is removed from, and released into the atmosphere
- Describe the role of plants, animals and microorganisms in the carbon cycle
- Explain how combustion affects carbon dioxide levels

**GENETIC VARIATION AND ITS CONTROL**
- Define the term ‘gene’ & describe how genes are passed on from parents to offspring
- State that genes control characteristics
- Give reasons to describe why there may be differences in characteristics in organisms
- Describe what sexual reproduction is
- Describe what asexual reproduction is
- Explain if offspring will be identical or different to their parents based the type of
- Describe the process of taking cuttings & state some advantages of taking cuttings
- Describe the stages involved in tissue culture, embryo transplants and adult cell cloning
- Describe what genetic engineering is
- Define what GM (genetically modified) is
- Give examples of ways in which we could modify crops and evaluate GM crops

**EVOLUTION**
- Describe Darwin’s theory of evolution
- Give three reasons why the theory of natural selection was not accepted at first
- Describe the main stages of natural selection
- State that variation can occur due to mutation
- State the groups that living are classified into
- Interpret evolutionary trees
- Describe Lamarck’s theory of evolution

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