B1 REVISION – CHAPTER 1 – Keeping Healthy

Diet & Exercise

What does metabolic rate mean?

What is the proportion of fruit and vegetables that should be in a balanced diet?

Weight Problems

What health problems can obesity lead to?

It is also unhealthy to be very underweight. Why might they suffer from deficiency diseases?

Inheritance, exercise & Health

What factors can affect your metabolic rate?

What are the two types of cholesterol and what does each type do?

What can you do to lower your blood cholesterol levels?

Pathogens & Disease.

What is a pathogen and how do they make us ill?

How do viruses replicate?

Washing hands removes pathogens from them. Semmelweiss was the first doctor to realise this. What did he tell his staff to do?

Defence Mechanisms

What prevents pathogens entering the body?

White blood cells are part of the _____ what three things do they do to defend the body?

1.

2.

3.

Using Drugs to treat disease.

Who first discovered Penicillin and what is it?

Why are antibiotics unable to kill viruses?

KEY WORDS:

Malnourished
Metabolic rate
Obese
Pathogen
virus
bacteria
antibiotic

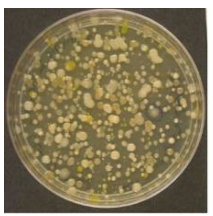
ASSESSMENT:

B1 REVISION – CHAPTER 1 cont. – Keeping Healthy

Growing & Investigating Bacteria

Pure cultures of safe (non-pathogenic) bacteria can be used for laboratory investigations.

What cultures need to grow	To keep the culture pure you must:



Changing Pathogens

If a pathogen changes by mutation the new strain may spread rapidly. Diseases that spread within a country result in an _____. Those that spread across countries result in a _____.

MRSA has evolved through natural selection, how?

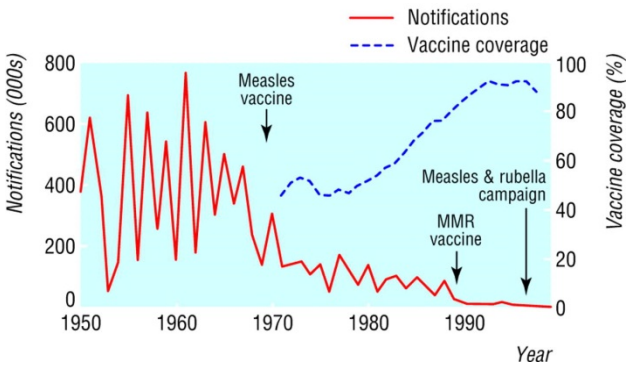
Immunity

What is used to make a vaccine?

What can vaccines protect against?

How do vaccines work?

How do we deal with disease?



You will need to be able to explain what a graph is showing you. Practice with this one.

Advantages of vaccination	Disadvantages of vaccination

Why is it necessary to continue to develop new vaccinations and medicines?

KEY WORDS:
Epidemic
Pandemic
Vaccination
Immunisation
Natural selection

ASSESSMENT:

B1 REVISION – CHAPTER 2 – Coordination and Control

Responding to change

The nervous system has receptors to detect stimuli.
List the sense organs and the stimuli they detect.

Neurons are nerve cells which are found in nerves, which carry electrical impulses.

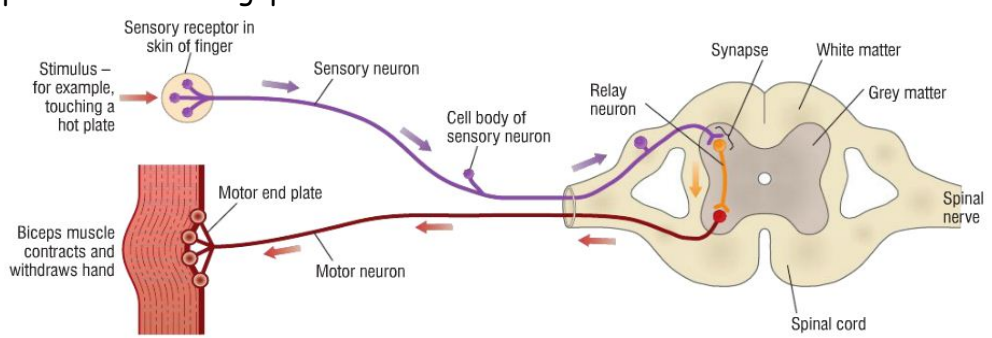
Hormones and the menstrual cycle.

Follicle stimulating hormone (FSH) is made by the pituitary gland and causes eggs to mature and oestrogen to be produced.
Oestrogen is produced by the ovaries and inhibits the further production of FSH.
Luteinising hormone (LH) also made by the pituitary gland and stimulates the mature egg to be released from the ovary (ovulation).

Reflex Actions

The main six stages of a reflex action are:
1.
2.
3.
4.
5.
6.

At the junction between two neurons is a synapse, chemicals transmit the impulse across this gap.



The artificial control of fertility

Contraceptive pills contain _____and/or _____ to inhibit FSH. FSH can also be used to help a woman produce _____.
Fertility treatment can be used to prevent pregnancy (e.g. the contraceptive pill), or increase chance of pregnancy (e.g. IVF)

Issues involved in fertility treatment.

Advantages	Disadvantages

KEY WORDS:
Progesterone
Reflex
Synapse
Oestrogen
Pituitary gland
Receptor
Neuron

ASSESSMENT:

B1 REVISION – CHAPTER 2 continued – Coordination and control

Controlling Conditions

The body carefully controls its internal environment. What are 4 of the internal conditions that are controlled?

Why must we keep our temperature constant?

What organ controls the level of sugar in our blood?

Using Hormones in Women

Many use the contraceptive pill to prevent unwanted pregnancies, and also to plan when they have a baby. Hormones can also be used to help women get pregnant.
Older women can use hormone treatment to allow them to have babies later in life.

Side effects are possible in some women if they take hormones for a long time.

What ethical concerns are there about using fertility drugs?

Using Hormones in Plants

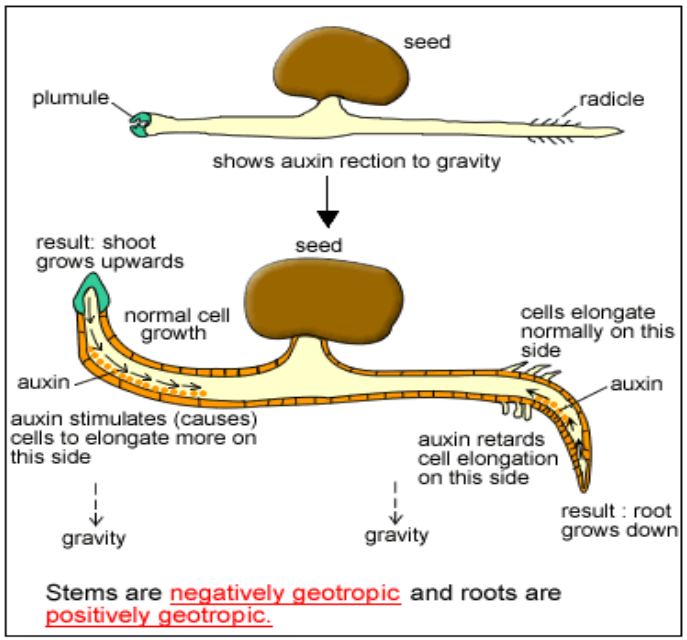
Plant hormones can be used by farmers and gardeners.

Weedkillers can be used, rooting powder to encourage roots on cuttings, and some hormones are used to help some fruit to ripen.

What damage to the environment can the use of plant hormones cause?

Hormones and the control of plant growth

Plants are sensitive to light gravity and moisture.
Plant shoots grow towards light. This response is _____.
Roots grow down towards gravity. This response is _____.
Roots also grow towards water.
Auxin is the hormone which controls phototropism and gravitropism.



KEY WORDS:
Gravitropism (geotropism)
Auxin
Phototropism
Enzyme
Pancreas

ASSESSMENT:

B1 REVISION – CHAPTER 3 – Medicine and Drugs

Developing New Medicines

Why are drugs tested ?

What is a placebo?

What is a double-blind trial?

Thalidomide was developed as a sleeping drug but not tested for preventing morning sickness, so some babies were born with birth defects.

How effective are medicines?

Statins are drugs which lower blood cholesterol levels. They have reduced the incidences of cardiovascular disease in the population by over 40%.

Some people prefer to use herbal medicines how will you know if they actually work?

Drugs

Drugs may be_____ or _____.

They may also be _____ or _____.

Recreational drugs are for pleasure and affect the brain and the nervous system. They may also have adverse affects on the _____ and _____ system.

Nicotine and caffeine are two examples of legal drugs that are used recreationally.

Heroine and cocaine are two examples of addictive illegal drugs.

Does Cannabis lead to hard drugs?

Cannabis is an illegal drug which must be bought from drug dealers. This may put the person in contact with hard drugs. However not all cannabis users go on to use hard drugs.

What problems can using cannabis lead to?

Drugs in Sport

Which drugs may build up muscle mass?
Why is it unethical to take drugs to enhance performance?

Why do some athletes risk taking performance enhancing drugs?

KEY WORDS:
Placebo
Thalidomide
Statin
Withdrawal system
Steroid
Double-blind trial
Depression

ASSESSMENT:

B1 REVISION – CHAPTER 4 – Adaptation for survival

Adapt & Survive

What does adaptation mean?

What is an extremophiles?

Measuring environmental change

Name 3 non-living factors:

Name 3 living factors:

Name an indicator species for both land and water.

Why are these indicator species?

Competition

	Animals	Plants
Give some examples of how animals and plants compete with each other.		

Adaptation in Animals & Plants

	Animals	Plants
Cold areas	Thick fur & blubber to keep warm Usually large with a small surface area: volume ratio	
Hot dry areas	May hunt or feed at night May have large surface area: volume ratio	Reduce the surface area of leaves, tissues that store water & extensive root system.
	Coat colour may change in different seasons giving year round camouflage	Plants develop thorns etc to put animals off. Loose water through holes in the leaves called stomata.

Impact of Change

What may happen if birds fly further North if the climate gets warmer?

The distribution of living organisms is affected by changes in what two factors?

The data on the effect of environmental change is not always easy to interpret.

KEY WORDS:

Adaptation
Herbivore
Carnivore
Extremophile
Denature
Stomata
Competition

ASSESSMENT:

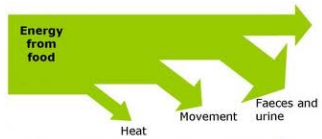
B1 REVISION – CHAPTER 5 – Energy in Biomass

Pyramids of biomass

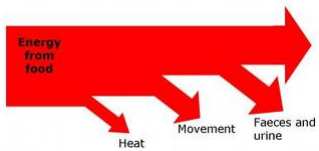
Biomass is the mass of living material in _____ and _____.

Don't confuse with pyramid of number which can look similar!

Energy Transfers



Herbivore



Carnivore

There is less biomass and energy available at each stage in a food chain.
What differences can you see in the two Sankey diagrams?

Decay Processes

What is needed for decay to happen?

Bacteria and fungi are microorganisms. Some bacteria and fungi cause decay. what do we call these?

Name two ways humans can recycle waste.

Under what conditions is decay quicker?

Recycling organic waste

Why is it necessary to recycle organic kitchen and garden waste?

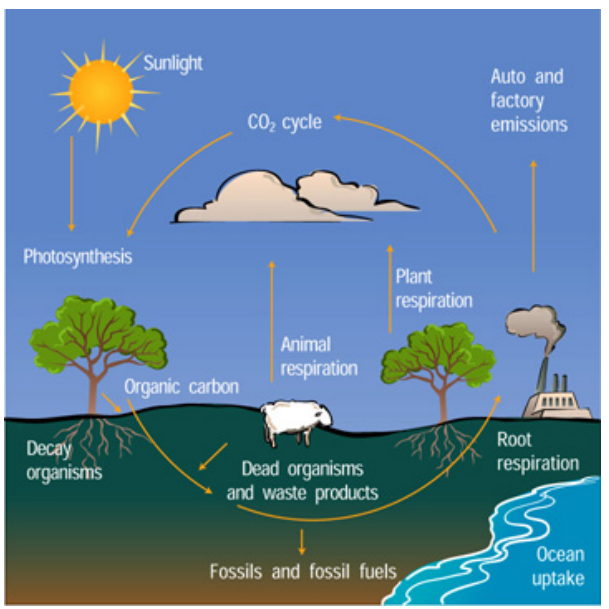
Why might gardeners add worms and layers of garden soil to composters?

Why might councils shred garden waste before putting it into big bins?

The Carbon Cycle

The recycling of carbon involves both photosynthesis and respiration.
What does photosynthesis remove from the atmosphere?

When is CO_2 released back into the atmosphere?



KEY WORDS:
Biomass
Detritus feeder
Decomposer
Sewage
Combustion
Organic waste

ASSESSMENT:

B1 REVISION – CHAPTER 6 – Variation, reproduction & new technology

Inheritance

What does the nucleus of a cell contain that are thread like?

What do they carry?

When is genetic information from the parents passed to offspring?

In most body cells the chromosomes are in pairs. One set from the female gamete and one from the male gamete.

What do genes control?

Types of Reproduction

Asexual reproduction	
Sexual Reproduction	

How are clones produced?

What are they?

What leads to variety in offspring?

Genetic & Environmental Differences

Name two factors that may result in differences between individuals.

What is the most important factor in controlling appearance?

What may affect plants even though they have the same genes?

What might affect human development in the uterus?

Genes may determine if someone has potential to be a good athlete, but what will also help?

KEY WORDS:

Clone
Chromosome
Gene
Gamete
Sexual reproduction
Asexual reproduction

ASSESSMENT:

B1 REVISION – CHAPTER 6 cont. – Variation, reproduction & new technology

Cloning

How can you clone a plant?

What is used to clone an animal?

What type of reproduction is used for cloning?

Tissue culture is more expensive but can be used to reproduce large numbers of a rare or top quality plant. Sometimes animals or plants are genetically modified to reproduce substances before being cloned.

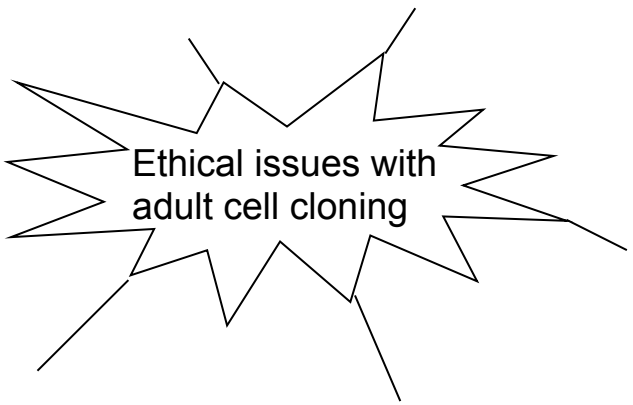
Genetic Engineering

What does genetic engineering change?

What is used to cut a gene out of the chromosome?

What might GM crops be resistant to?

Adult cell cloning



In adult cell cloning the nucleus of an adult cell e.g. a skin cell, replaces the nucleus of an egg cell.

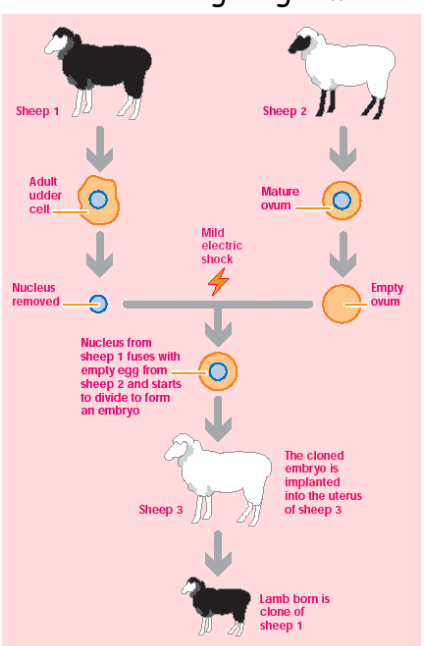
The nucleus of an adult cell is transplanted into an 'empty' egg cell. When the animal develops it has the genetic material of the original adult cell.

Making choices about technology

Advantages	Disadvantages

For cloning & genetic engineering

Adult cell cloning diagram



KEY WORDS:
Tissue culture
Genetically modified
Genetic engineering
Adult cell cloning

ASSESSMENT:

B1 REVISION – CHAPTER 7 – Evolution

Theories for Evolution

Jean-Baptiste Lamarck	Charles Darwin

Natural Selection

In natural selection which organisms are more likely to survive?

If an organism survives what will this enable them to do?

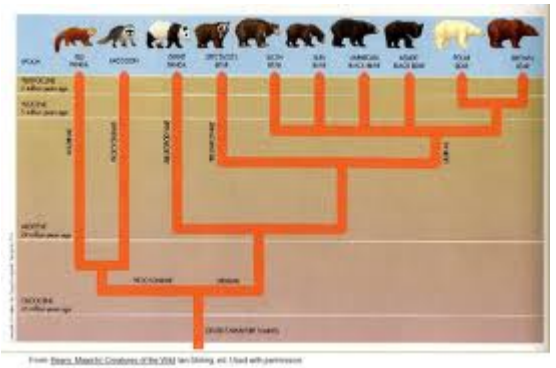
What is a mutation?

How might a mutation help an individual to survive?

Darwin's theory of evolution was only gradually accepted, why was this?

How did the mockingbird species of the Galapagos help Darwin come up with his theory?

Classification and Evolution



This is an example of an evolutionary tree. What can it tell us?

What is group of organisms that can all interbreed called?

Name the three main kingdoms of Eukaryotes.

Biologists study the similarities and differences between organisms in order to classify them. What is this branch of biology called?

KEY WORDS:

Evolution
Mutation
Species
Kingdom
Evolutionary
Natural classification system

ASSESSMENT: