

Healthy Living

Level 1 qualification, Award & Certificate Learning Outcomes 1

Term	Meaning
Health	the state of being free from physical or mental illness or injury.
Diet	The food and drink we consume
Unbalanced	A diet in which too much or too little of one or more food group is consumed.
Balanced	A diet in which just the right amount of each food group is consumed.
Carbohydrate	Found in starch, flour, rice, potatoes and sugar. Source of energy
protein	Found in meat, fish, eggs and beans. Used for growth and repair
fat	Found in oils, oily fish, animal products. Used by the body for energy, insulation and padding.
Vitamins	Trace chemicals of complex forms the body requires to function well. Eg, vitamin D is needed for bone formation.
Minerals	Simple chemicals, such as iron, calcium and magnesium that our body needs for proper functioning. Eg, iron is used to make blood.
Nutrients	Any material that can be eaten to provide energy, minerals, vitamins or water
Fibre	Found exclusively in plants. Indigestible cellulose that improves the passage of food through the gut and makes doing a poo more easy.
exercise	The act of moving enough to cause increased breathing rate and heart rate. Often results in sweating if done vigorously.
Lifestyle factor	Anything we do that changes our chances of being healthy. For example, going to bed early, or late is a lifestyle factor.
Obesity	The body condition where the body mass index of a person exceeds 30.
Deficiency disease	If a diet lacks particular nutrients then disease will develop. Scurvy is a deficiency of vitamin C. Rickets is a deficiency of vitamin D
energy	Energy is provided by fats and carbohydrates and our bodies require it to perform all functions.

Unit No: Y/505/5136

Know the lifestyle factors that affect the health of an individual.

What we eat and what we do both affect our health

Athletic lifestyles



Unhealthy lifestyles



1.1 Identify different life style factors that can affect the health of an individual

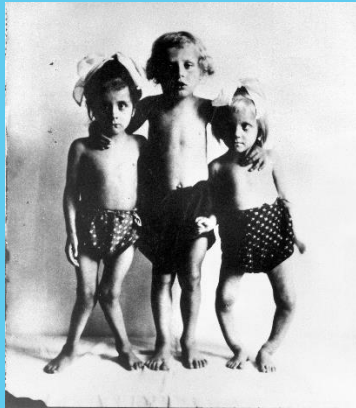
1.2.
Outline how lifestyle factors can affect major body systems.

Smoking caused mouth cancer in this person



2.2.
Identify effects of an unbalanced diet on the health and wellbeing of individuals.

These children have rickets, caused by a lack of vitamin D



2.1.
Identify components of a balanced diet, giving examples of each.

- 1 Carbohydrates give you energy, from rice, pasta, potatoes and sugar
- 2 Protein. From meat, fish, eggs and beans
- 3 Dairy products, including milk, butter and cheeses
- 4 Fruit and vegetables. ...contain vitamins & fibre
- 5 Fats from meat, fish and oils for cell membranes and energy.

3.1.
Identify the dietary needs of a selected individual

What would this pregnant female person need to have in her diet?



What would these very young people need in their diet to grow up healthy?



3.2.
Create a nutritional plan for a selected individual

Create a nutritional plan for a selected individual

- Athlete
- Adult male office worker
- Female police officer
- Pregnant female person
- Teenager
- Child
- Person recovering from a heart attack
- Diabetic person



Cells and their FUNCTIONS

Level 1 qualification, Award & Certificate

Learning Outcomes 1

Term	Meaning
Cell	The smallest possible unit of a living thing
organelle	A "small organ" inside a cell, eg nucleus, chloroplast
Nucleus	Contains DNA, found inside cells. Controls the cell
Membrane	Controls movement of materials into and out of the cell
cytoplasm	A living jelly in which other cell components are held. All cells have this.
chloroplast	A green coloured organelle inside plant cell that does photosynthesis
Chlorophyll	Green material found inside chloroplasts. Captures sunlight energy for photosynthesis
Photosynthesis	The food making process in plants Carbon dioxide + Water → Glucose + oxygen
Cell wall	Only found in plant cells. Maintains cell shape.
Specialised cell	Cells evolved to perform specific functions efficiently.
Endocrine system	A network of glands in the body that secrete chemical messengers called hormones
Homeostasis	The ability of our body to maintain a consistent internal environment in spite of changes to the environment inside and outside the body
diabetes	A disease where blood sugar levels are not controlled well.
Insulin	A hormone that controls blood sugar levels – mad in pancreas
Cellular respiration	Energy release process in all cells Glucose + oxygen → Carbon dioxide + Water

Unit No: K/505/5223

The Study of Living Systems

1.1.

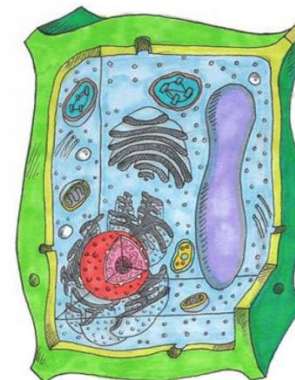
Identify the structure of a cell.

Identify plant cells vs animal cells, the nucleus, cell membrane, cytoplasm and if present chloroplasts, cell wall and vacuole.

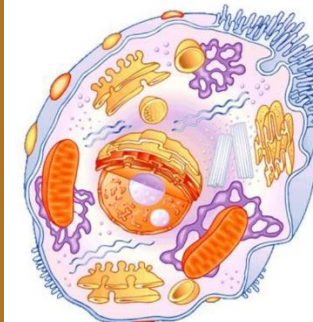
This is a single cell organism called Paramecium. It is found in a pond.



Plant Cell



Animal Cell

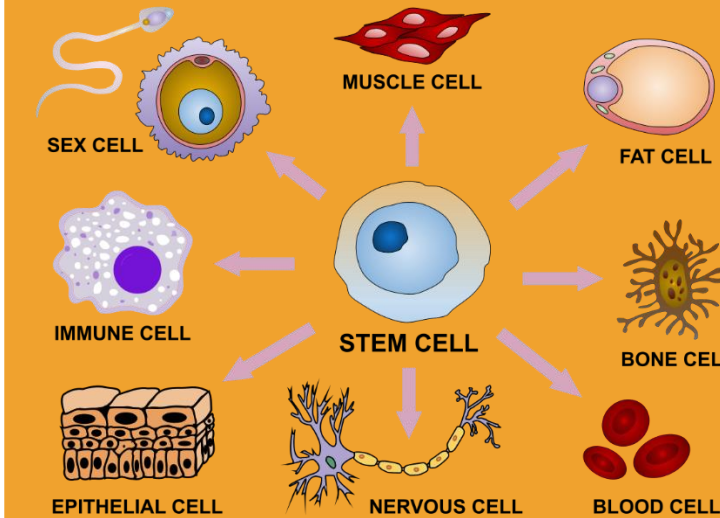


Make sure you can draw and label simplified versions of these cells.

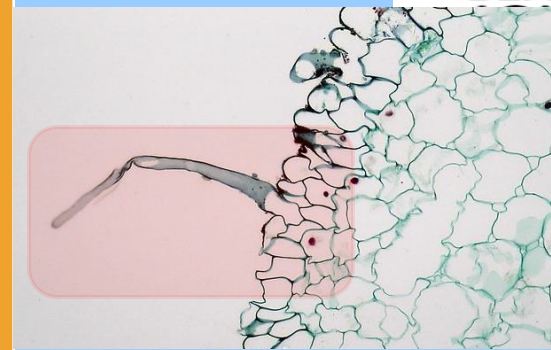
1.2. Identify the functions of different cells and link their structure to their function (in plants and animals)

- ❖ Example 1 The sperm cell has a tail to swim towards the egg.
- ❖ Example 2 The egg cell contains yolk to feed the zygote
- ❖ Example 3 Red blood cell contains lots of space for haemoglobin to carry oxygen
- ❖ Example 4 The nerve cell is very long so it can transmit messages long distances in the body
- ❖ Example 5 The root hair cell has a long hair that increases the surface area of the root. This allows the root to absorb more water
- ❖ Example 6 The palisade cell is found in leaves. It makes the plants food by photosynthesis. It is long and thin and contains many chloroplasts. This way it gathers more light and can make more food.

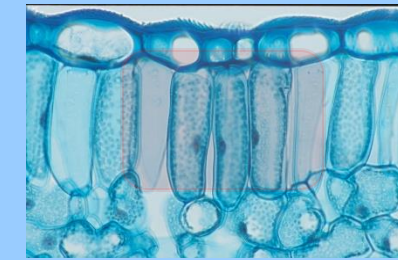
Specialised cells have specific jobs and are adapted to carry out those jobs really well.



Root hair cell in a plant root



Palisade cell



1.3. Describe homeostasis and its role in the nervous and endocrine systems.

Goosebumps

Traps still air between hairs and reduces the speed of heat loss when we are cold.

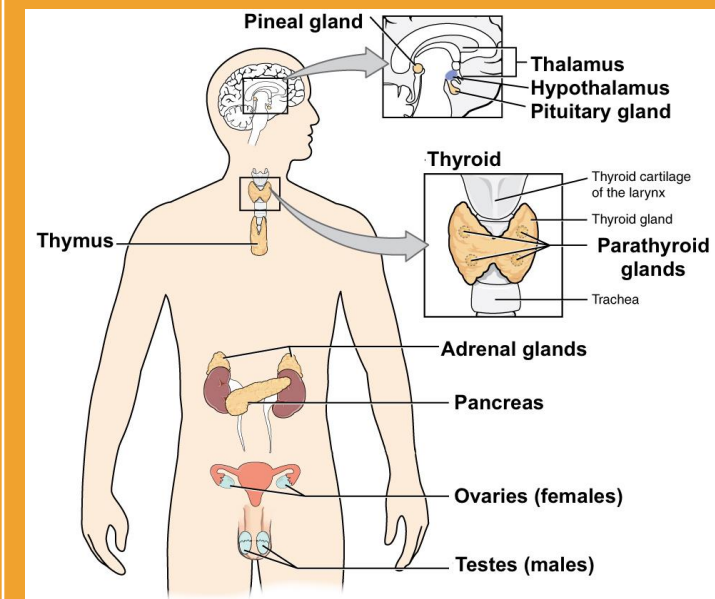


Sweating

When we are too hot, sweating allows heat to escape the body when the sweat evaporates



Along with the **nervous system**, the **endocrine system** coordinates the **body's** functions to **maintain** homeostasis during rest and exercise. The **nervous and endocrine systems** also **work together**



Ecosystems: Level 1 qualification, Award & Certificate

Ecosystems: Learning Outcomes 1

Term	Meaning
Ecosystem	A place where living things interact with each other and also with the environment
Habitats	A <i>habitat</i> is a home environment for plants and animals or other organisms.
Organism	A living thing . Plant, animal, fungus, microorganism
Community	A community is two or more populations of organisms
Adaptation	A change in a species physical form or behaviour that makes the species better able to survive to sexual maturity
Biodiversity	A measure of how many species live in an ecosystem. Many species means high biodiversity.
Interdependence	If the population of one organism rises or falls, then this can affect the rest of the ecosystem. This means that all the organisms in an ecosystem are dependent upon each other.
Population	The number of individuals of a particular species in an ecosystem
Species	A group of organisms with the same characteristics that can produce offspring of similar organisms
Biotic factor	Conditions caused by living things such as predators, prey and disease.
Abiotic factor	Conditions caused by non living things, for example streams, mountains, shade, light

2.1 Describe the components of an ecosystem.

2.1a Recall 5 of the different ecosystems
 Ocean, Forest, Grassland, Arctic, Marine (sea), Littoral (Shore), Desert, Jungle, Urban

The desert ecosystem is very hot and very dry. It is also full of sand. There is very little food, Any organisms living here must be able to survive extreme heat as well as long periods of time without water. They also need to be adapted to very cold nights.



2.2 Adaptations

2.2 Describe the adaptations of organisms in an ecosystem.

Thompson's Gazelle have big ears so they can radiate excess body heat into the air more easily. This animal is prey for cheetahs, leopards and hyenas. The Gazelle has earth coloured camouflage so it is difficult for a predator to see from a distance. Thompson's gazelles have very strong hind legs that allow them to leap up to 3 meters high, which confuses predators and gives the gazelle a chance to escape getting eaten.



2.2a

Demonstrate that you can describe the adaptations of two other species. Here are two examples you could try to describe.

Narwhal



Venus Fly Trap



2.3: Human activities affect on the world

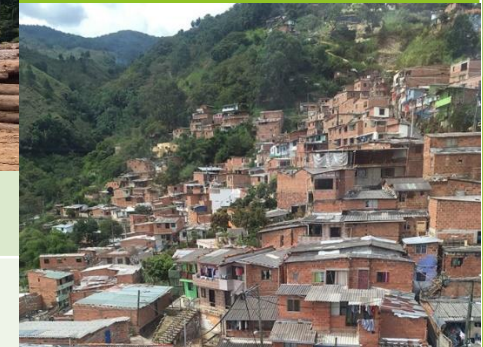
Deforestation:

A process where forests are cut down for fuel or to make way for farms or towns



Urbanisation

A process where wild places are turned into cities and towns



Climate Change

A process where the temperature patterns of the earth are affected by human activity and increased carbon dioxide emissions.



Know the role of genes in inheritance and variation.

Level 1 qualification, Award & Certificate

Learning Outcomes 3

Term	Meaning
Gene	the basic unit of heredity. A biological code written in DNA
Allele	Different versions of the gene for a particular feature, eg eye colour
Inheritance	Characteristics you receive from parents
Phenotype	The physical expression of inherited characteristics
Genotype	The combination of genes for any characteristic
Characteristic	Eye colour, hair colour, height, skin colour etc
Zygote	The fertilised egg
Gamete	Female gamete = egg / ovule, Male gamete = sperm / pollen
Homozygous	Genes from both parents are the same
heterozygous	Genes from both parents are the different
Dominant	In the heterozygote, the gene that is expressed.
Recessive	In the heterozygote, the gene that is not expressed.
chromosome	A long chain of genes, made from DNA. Contained in the nucleus.

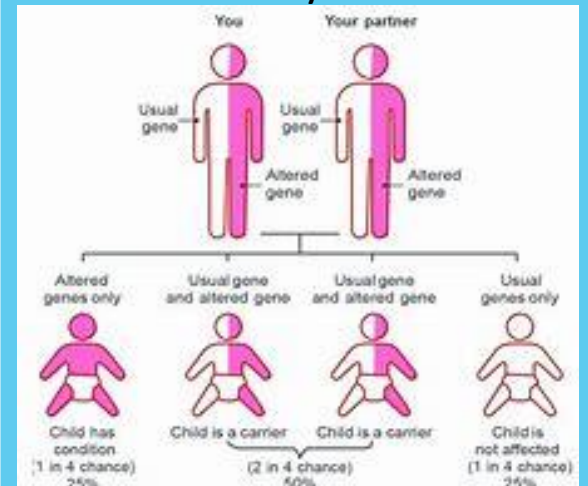
Unit No: K/505/5223

The Study of Living Systems

3.1.
Describe the role of genes in inheritance.

Genes provide **instructions** for making proteins, and **proteins** determine the structure and function of each cell in the body, it follows that genes are responsible for all the characteristics you **inherit**.

DNA



3.2.
Describe the role of genes in variation.

Genetic variation refers to differences in the genetic makeup of individuals in a population.
Genetic variation is necessary in **natural selection**. In natural selection, organisms with environmentally selected traits are better able to adapt to the environment and pass on their genes.

Genetic variation



3.3.
Identify phenotypic features caused by genetic variation.

Here are some examples of inherited variation in humans:
eye colour
hair colour
skin colour
lobed or lobeless ears
ability to roll your tongue



3.4.
Identify phenotypic features caused by environmental variation

Environmental causes of variation

Characteristics of animal and plant species can be affected by factors such as:
climate
diet
accidents
culture
lifestyle
language

Environmental causes of variation

It is not just genes that determine a person's characteristics. What else has an effect on what you are like?



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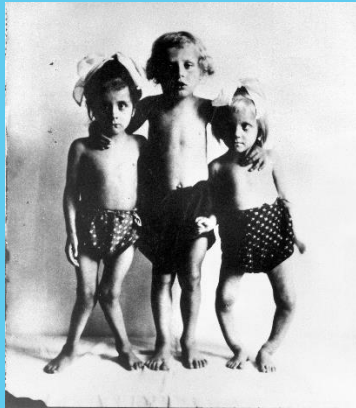
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