

How is the magnification of a light microscope calculated?

Cell Structures

Respiration

Photosynthesis

Total magnification is calculated by multiplying the magnification of the eyepiece lens by the magnification of the objective lens.

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What term is used to describe the shape of a **DNA** molecule?

What Happens in Cells A DNA molecule forms the shape of a double helix.

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What is the word equation for aerobic respiration?

glucose + oxygen → carbon dioxide + water (+ energy released)

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What are the products of photosynthesis?

The products of photosynthesis are glucose and oxygen.

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What is the process by which water molecules move across a partially permeable membrane from a dilute solution to a more concentrated one?

Supplying the Cell

Osmosis is the movement of water molecules from a dilute to a more concentrated solution across a partially permeable membrane.



Exchange surfaces allow efficient transport of materials. What are the three main features of an efficient exchange system?

The Challenges of Size

An efficient exchange system should have: (1) a large surface-area-to-volume ratio; (2) thin membranes so the diffusion distance is short; (3) a good supply of transport medium (e.g. blood, air, etc.).

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What are the three types of blood vessel?

The Heart and

The three types of blood vessel are arteries, capillaries and veins.

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What is translocation?

Plants, Water and

Translocation is the movement of glucose from the leaf (where it is produced) to other parts of the plant (where it is needed) via the phloem.

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The **nervous system** is composed of two parts. What are they?

Coordination and

The nervous system is composed of the central nervous system (the brain and the spinal cord) and the peripheral nervous system (all the other nerve cells that connect to the central nervous system).

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In the eye, what two structures control the shape of the lens, allowing light to be focused?

The Eye and the Brain

The ciliary body and suspensory ligaments control the shape of the lens.

Water and the Kidneys



Hormones are chemical messengers produced by **glands**. How do they reach their target organ?

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The Endocrine System

Hormones are released directly into the blood, which transports them to their target organ.

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What two hormones are combined in most contraceptive pills?

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Hormones and Their Uses

Most contraceptive pills contain oestrogen and progesterone.

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What hormone causes **phototropism** in a plant shoot?

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Plant Hormones

Auxin causes **phototropism** in a plant shoot.

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What triggers the pancreas to produce insulin?

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Maintaining Internal Environments

High blood sugar levels cause the pancreas to produce insulin.

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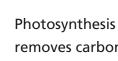
The kidney is made up of many filtering units called **nephrons**. Where in the nephron does **selective reabsorption** take place?

Water and the

Selective reabsorption takes place in the tubules of the nephron.

Decomposition and

Biomass and Energy



removes carbon dioxide from the atmosphere. What two processes release carbon dioxide to the atmosphere?

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Respiration (animal, plant and microbial) and combustion release carbon dioxide to the atmosphere.

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GCSE OCR Revision • Biology What is the name of the relationship between two organisms where both depend on each other and both benefit?

Decomposition and Interdependence

Mutualism. In a mutualistic relationship, both organisms depend on each other and both benefit.

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GCSE OCR Revision • Biology A pyramid of biomass shows that

energy is lost at each trophic level of a food chain. Why is this?

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Biomass and Energy

Energy is lost from the food chain as organisms move and respire, produce heat and excrete waste. Some energy may be used to produce inedible body parts, such as shells or feathers.

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The allele for brown eyes is dominant to the allele for blue eyes. What will be the phenotype of a person who is heterozygous for eye colour?

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The person will have brown eyes.

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What type of cell division produces gametes?

Genetics and

Meiosis produces gametes.

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For evolution to occur, there must be genetic variation in a population. How might genetic variation arise?

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Natural Selection and

Variation can arise through mutations in genes.

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What piece of equipment is used to sample the number of plant species in a field?

A quadrat is used to sample the number of plant species in a field.

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In an investigation, how would you make sure your measurements are reliable and identify any that might be anomalous?

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Investigations

All measurements should be repeated. If a single reading is very different to the others (anomalous), this might indicate that an error has been made in measuring.

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What is food security?

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Feeding the

Food security is ensuring that all people have access to sufficient, safe and nutritious food.

Monitoring and

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What are the four main human defences to stop microorganisms entering the body?

Microorganisms are prevented from entering the body by the skin (a physical barrier), platelets that help the blood to clot and seal wounds, mucous in the lungs that traps microorganisms and acid in the stomach that destroys microorganisms.



Why wouldn't you use antibiotics to treat a cold caused by a virus?

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Prevention and Treatment of Disease

Antibiotics are used for bacterial infections. They have no effect on viruses, which are found inside the cell.

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What three options can be used to treat cardiovascular disease?

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Non-Communicable

Cardiovascular disease can be treated with lifestyle changes (healthy eating and exercise, stopping smoking), surgery (heart transplants or stents) and medications (statins or aspirin).

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