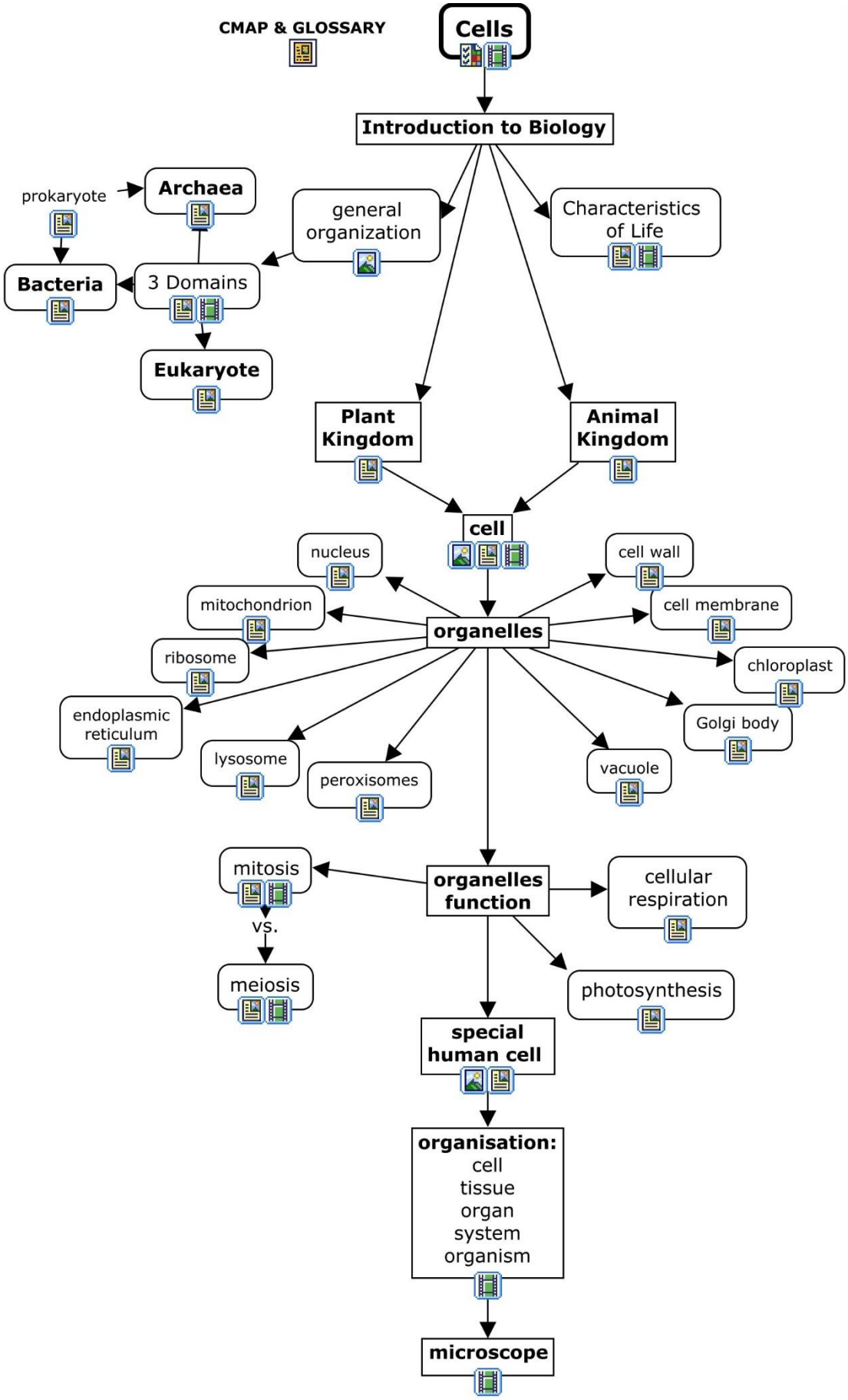
CMAP & GLOSSARY
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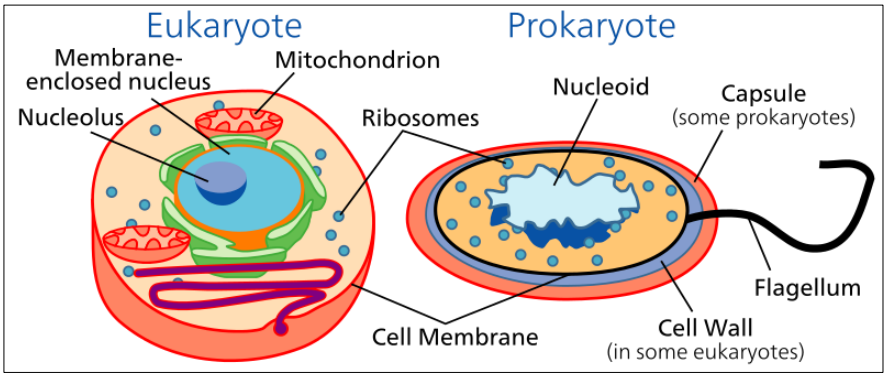
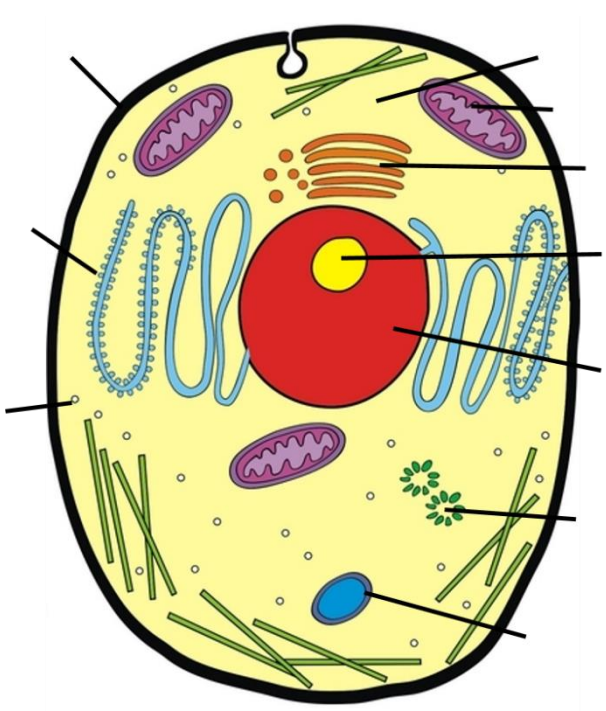
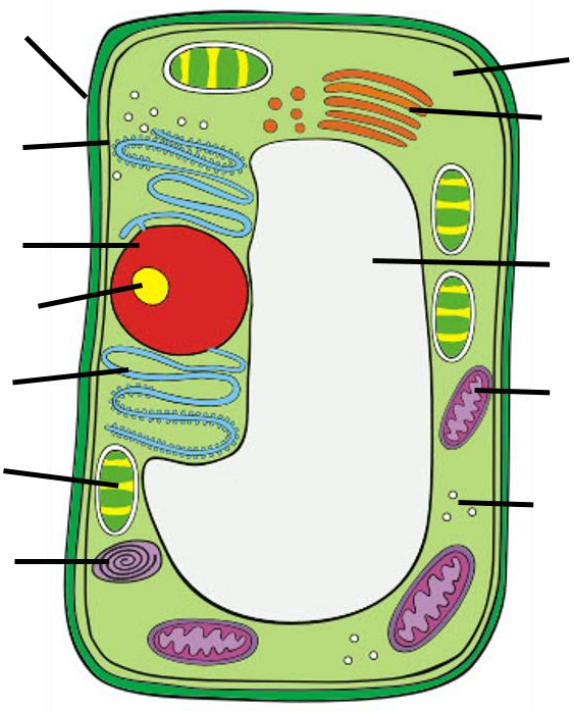
amyloplast	a starch-forming granule in plants
archaea	Any of a group of microorganisms that resemble bacteria but are different from them in certain aspects of their chemical structure, such as the composition of their cell walls. Archaea **usually live in extreme, often very hot or salty environments**, such as hot mineral springs or deep-sea hydrothermal vents, but some are also found in animal digestive systems.
bacteria	One-celled organisms, spherical, spiral, or rod-shaped and appearing singly or in chains. Various species of bacteria are involved in fermentation, putrefaction, infectious diseases, or nitrogen fixation.
capsule	The outer layer of viscous polysaccharide or polypeptide slime with which some bacteria cover their cell walls. Capsules provide defense against phagocytes and prevent the bacteria from drying out.
cell	a usually microscopic structure containing nuclear and cytoplasmic material enclosed by a semipermeable membrane and, in plants, a cell wall; the basic structural unit of all organisms
cell membrane	a very thin membrane, composed of lipids and protein, that surrounds the cytoplasm of a cell and **controls the passage of substances into and out of the cell**
cell wall	boundary or wall that is part of the outer structure of certain cells, as a plant cell.
centriole	a small, cylindrical cell organelle, seen near the nucleus in the cytoplasm of most eukaryotic cells, that divides during mitosis,
chlorophyll	the **green colouring matter of leaves** and plants, essential to the production of carbohydrates by photosynthesis, and occurring in a bluish-black form (chlorophyll a) and a dark-green form (chlorophyll b)
chloroplast	A plastid in the cells of green plants and green algae that contains chlorophylls and **creates glucose through photosynthesis**.
chromosome	any of several threadlike bodies, consisting of chromatin, that **carry the genes**
cytoplasm	the cell substance between the cell membrane and the nucleus, containing the cytosol, organelles, cytoskeleton, and various particles.
cytoskeleton	found throughout the cell cytoplasm, composed of microtubules, microfilaments, and larger filaments, functioning as a **structural support and transport mechanism.**
cytosol	fluid that contains organelles
diploid	Having **paired sets of chromosomes** in a cell or cell nucleus. In diploid organisms that reproduce sexually, one set of chromosomes is inherited from each parent. The somatic cells of most animals are diploid.
DNA	Deoxyribonucleic acid; a nucleic acid that consists of two long chains of nucleotides twisted together into a double helix and joined by hydrogen bonds between complementary bases adenine and thymine or cytosine and guanine; it carries the cell's genetic information and hereditary characteristics via its nucleotides and their sequence and is capable of self-replication and RNA synthesis.
endoplasmic reticulum	a network of tubular membranes within the cytoplasm of the cell, occurring either with a smooth surface (smooth endoplasmic reticulum) or studded with ribosomes (rough endoplasmic reticulum) involved in **the transport of materials.**
Eukaryote	any organism having as its fundamental structural unit a cell type that contains specialized organelles in the cytoplasm, a **membrane-bound nucleus** enclosing genetic material organized into chromosomes, and an elaborate system of division by mitosis or meiosis, characteristic of all life forms except bacteria, blue-green algae, and other primitive microorganisms.
flagellum	a long, lashlike appendage serving as an organ of locomotion in protozoa, sperm cells, etc.
gametes	a **mature sexual reproductive cell**, as a sperm or egg, that unites with another cell to form a new organism
Golgi body	An organelle in eukaryotic cells that stores and modifies proteins for specific functions and prepares them for transport to other parts of the cell. aka golgi apparatus
hand lens	a magnifying glass designed to be held in the hand
haploid	Having a **single set of each chromosome** in a cell or cell nucleus. In most animals, only the **gametes** (reproductive cells) are haploid.
lysosome	a cell **organelle containing enzymes** that digest particles and that disintegrate the cell after its death
meiosis	a type of cell division in which a nucleus divides into four daughter nuclei, each containing **half the chromosome number** of the parent nucleus: occurs in all sexually reproducing organisms in which haploid gametes or spores are produced
microtubules	a hollow cylindrical structure in the cytoplasm of most cells, involved in intracellular shape and transport.

mitochondrion	A structure in the cytoplasm of all cells except bacteria in which food molecules (**sugars, fatty acids, and amino acids) are broken down in the presence of oxygen and converted to energy in the form of ATP**.
mitosis	a method of cell division, in which the nucleus divides into diploid daughter nuclei, each **containing the same number of chromosomes** as the parent nucleus - compare: meiosis
nucleoid	the central region in a prokaryotic cell, as a bacterium, that contains the chromosomes and that has no surrounding membrane.
nucleolus	a small rounded body within a resting nucleus that contains RNA and proteins and is **involved in the production of ribosomes**
nucleus	(in the cells of eukaryotes) a large compartment, bounded by a double membrane, that contains the chromosomes and associated molecules and **controls the characteristics and growth of the cell**
organ	A distinct part of an organism that **performs one or more specialized functions**. Examples of organs are the eyes, ears, lungs, and heart of an animal, and the roots, stems, and leaves of a plant.
organelle	A structure or part that is enclosed within its own membrane inside a cell and has a particular function. Organelles are **found only in eukaryotic cells** and are absent from the cells of prokaryotes such as bacteria.
organisation	cell – tissue – organ – system - organism
organism	An individual form of life that is **capable of growing, metabolizing nutrients, and usually reproducing**. Organisms can be unicellular or multicellular. They are scientifically divided into five different groups (called kingdoms) that include prokaryotes, protists, fungi, plants, and animals.
peroxisomes	Peroxisomes are similar to lysosomes in that they are spherical organelles that contain digestive enzymes. However, unlike lysosomes (which primarily break down proteins), peroxisomes degrade fatty acids. This is a major source of metabolic energy for the cell, which can be used to fuel other cellular processes.
photosynthesis	carbon dioxide + water + energy (sunlight) → glucose + oxygen
pili	short curled hairlike processes on the surface of certain bacteria that are involved in conjugation and the attachment of the bacteria to other cells
plasmid	a small circle of bacterial DNA that is independent of the main bacterial chromosome. Plasmids often contain genes for drug resistances and can be transmitted between bacteria of the same and different species: used in genetic engineering
plastid	any of various **small particles in the cytoplasm** of the cells of plants and some animals that contain pigments, starch, oil, protein, etc
prokaryote	any cellular organism that has **no nuclear membrane, no organelles in the cytoplasm except ribosomes**, and has its genetic material in the form of single continuous strands forming coils or loops, characteristic of all organisms in the kingdom Monera, as the bacteria and blue-green algae.
protists	Any of a large variety of usually **one-celled organisms** belonging to the kingdom Protista (or Protoctista). Protists are eukaryotes and live in water or in watery tissues of organisms. Some protists resemble plants in that they produce their own food by photosynthesis, while others resemble animals in consuming organic matter for food.
respiration (cellular)	glucose + oxygen → carbon dioxide + water + energy (ATP)
ribosome	any of numerous minute particles in the cytoplasm of cells, either free or attached to the endoplasmic reticulum, that contain RNA and protein and are the site of **protein synthesis**
somatic cells	any of the cells of a plant or animal **except** the reproductive cells
specimen	a sample of a substance or material for examination or study
system	A group of bodily organs that have similar structures or work together to perform some function, such as the **digestive system, nervous system, and respiratory system.**
tissue	a part of an organism consisting of a large number of **cells having a similar structure and function**: connective tissue, nerve tissue
vacuole	A **cavity within the cytoplasm of a cell**, surrounded by a single membrane and **containing fluid, food, or metabolic waste.**



Label the diagrams





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