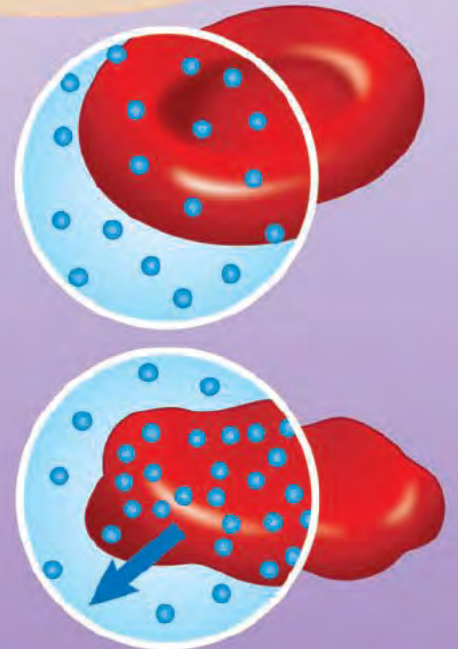
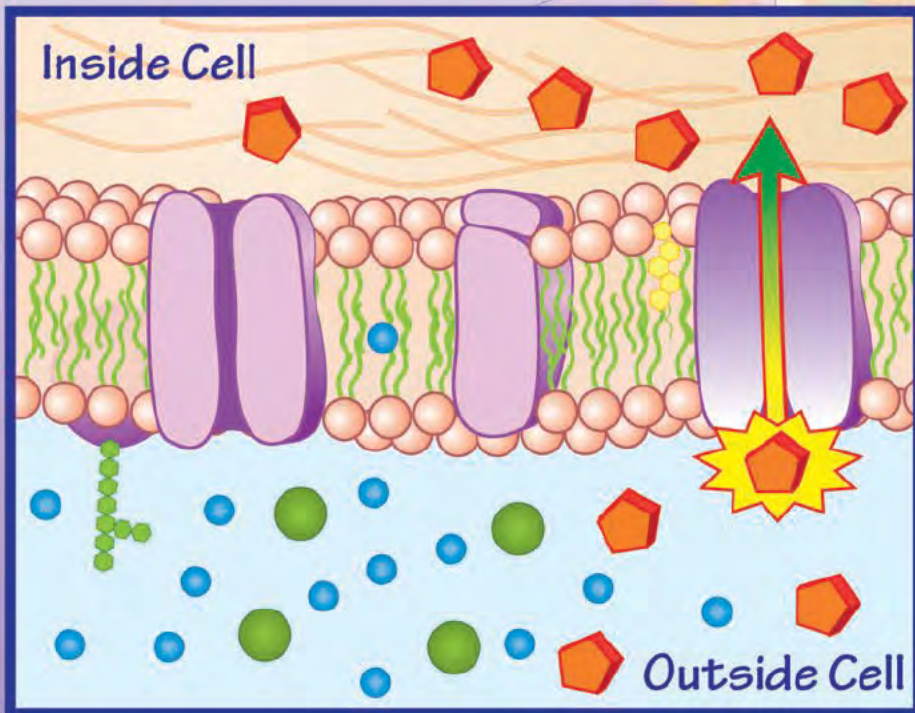
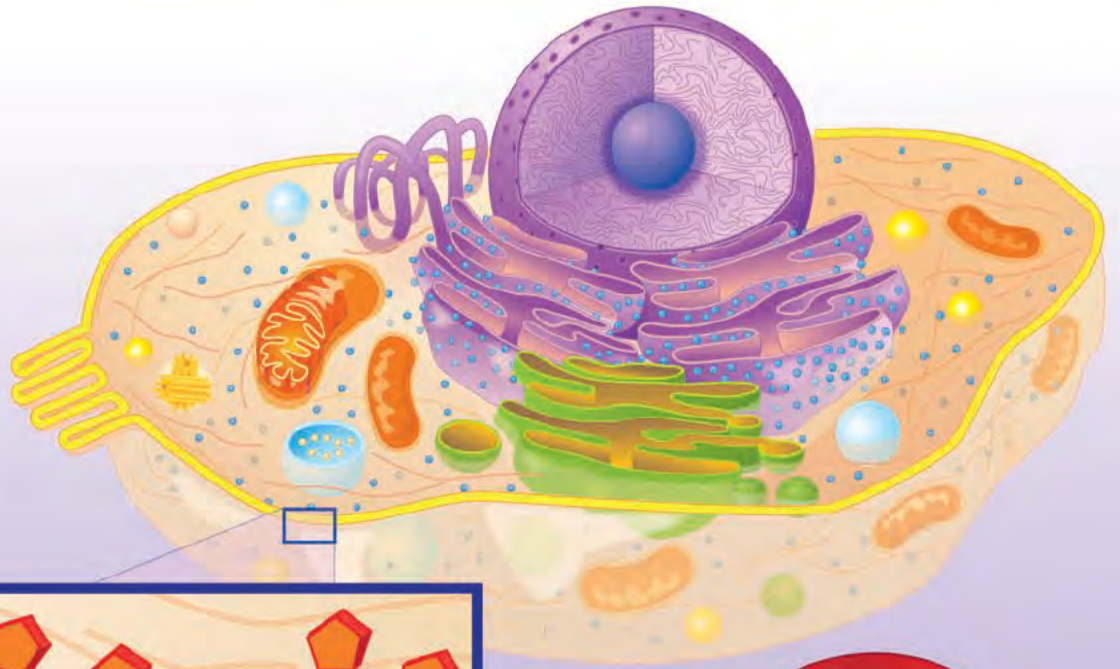


Osmosis & Diffusion Learning Guide



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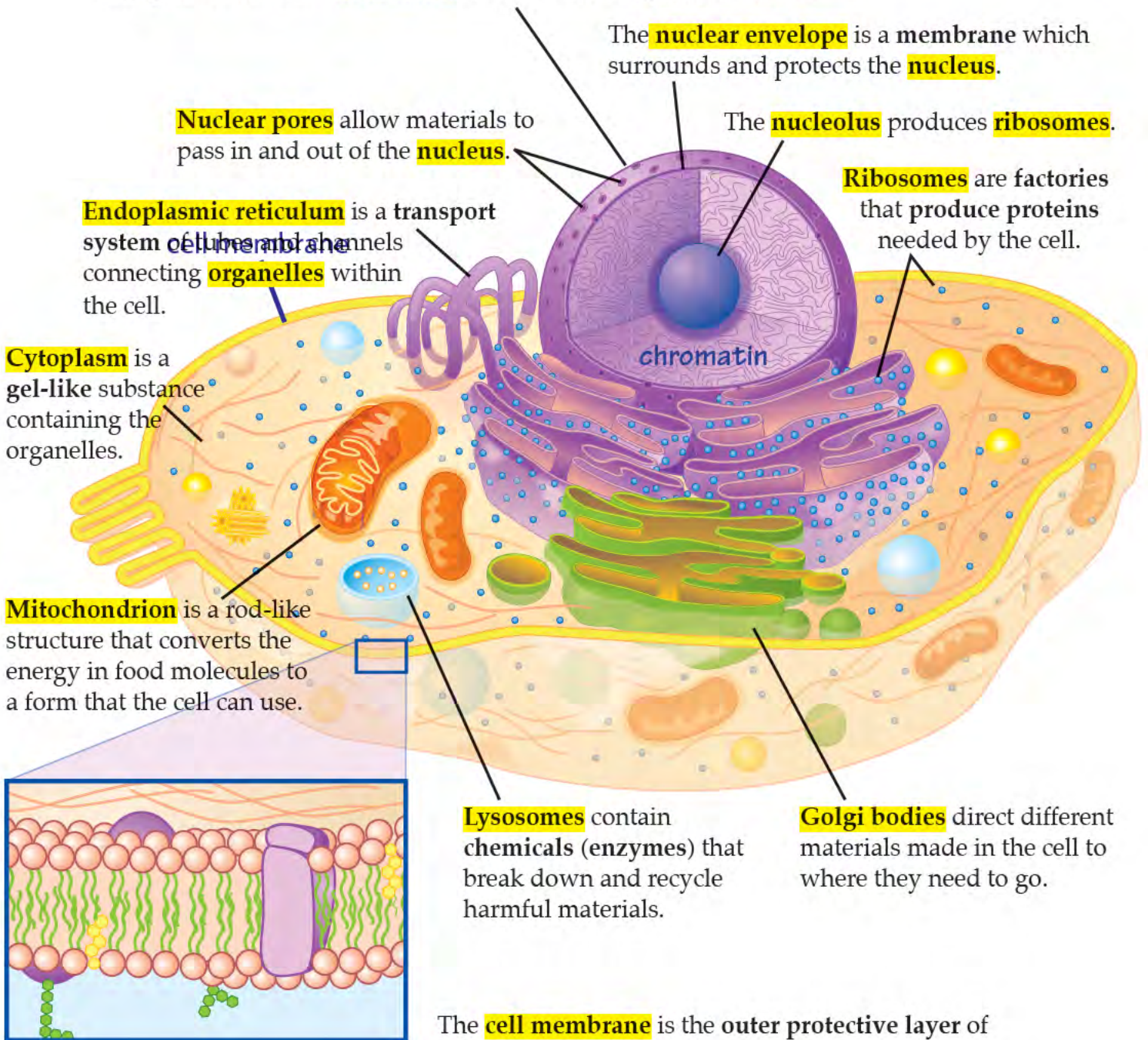
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ANIMAL & PLANT CELL STRUCTURE

The structures within the **cell** are known as **organelles** which carry out **specific functions**.

The **nucleus** is the **control center** of the cell. It houses the **nucleolus** and genetic material (**chromatin**) used for directing cell functions.



The **nuclear envelope** is a **membrane** which surrounds and protects the **nucleus**.

Nuclear pores allow materials to pass in and out of the **nucleus**.

The **nucleolus** produces **ribosomes**.

Ribosomes are factories that **produce proteins** needed by the cell.

Endoplasmic reticulum is a **transport system** of **channels** connecting **organelles** within the cell.

Cytoplasm is a **gel-like substance** containing the **organelles**.

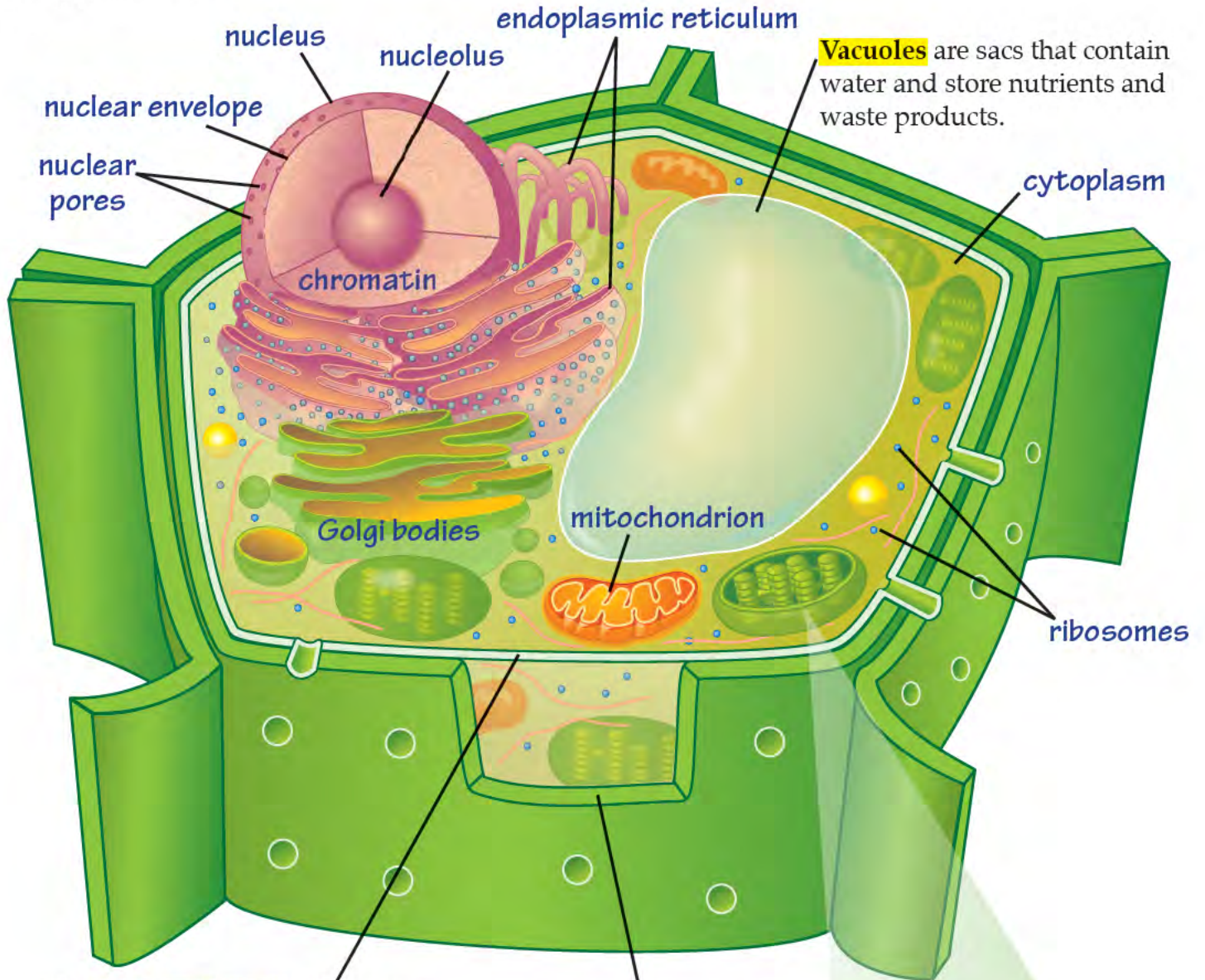
Mitochondrion is a **rod-like structure** that converts the energy in food molecules to a form that the cell can use.

Lysosomes contain **chemicals (enzymes)** that break down and recycle harmful materials.

Golgi bodies direct different materials made in the cell to where they need to go.

The **cell membrane** is the **outer protective layer** of all animal cells. It consists of two layers composed of **proteins and lipids**. A **cell membrane** is known as a **semipermeable membrane** since it only allows certain substances to move into and out of the cell.

Plant cells have many of the same **organelles** as animal cells. They serve the same functions in plant cells. Plant cells also have specialized **organelles** that allow them to convert the Sun's energy into food.



Vacuoles are sacs that contain water and store nutrients and waste products.

The **cell membrane** is the layer inside the **cell wall** of plants that regulates which substances enter and leave the cell.

The **cell wall** is a rigid outer layer of plant cells that provides support.

Chloroplasts contain chlorophyll which captures energy from the Sun and uses it to produce food for the plant in a process known as photosynthesis.

