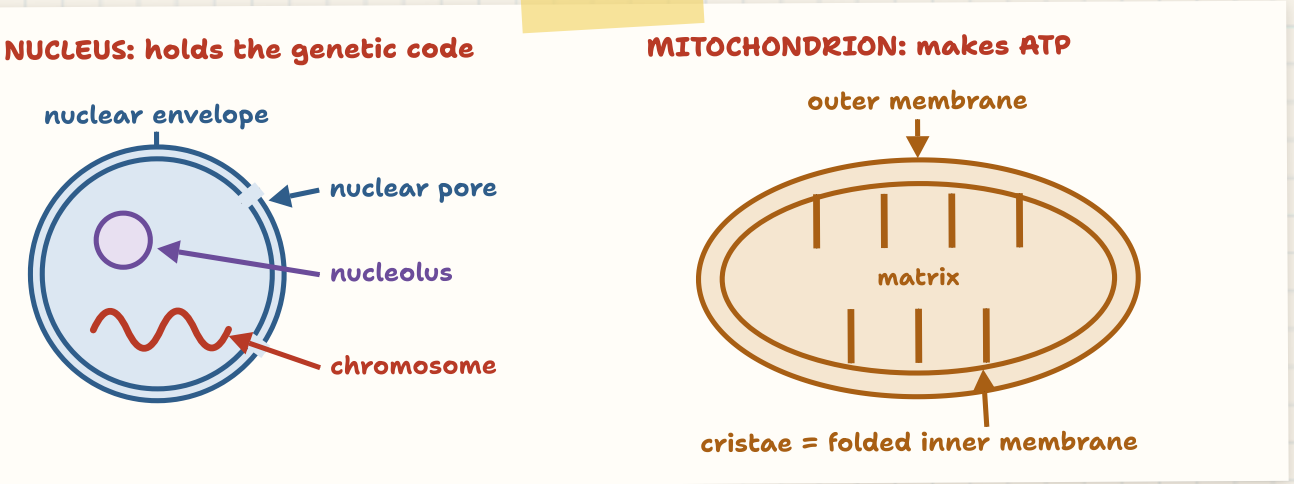
Nucleus, Mitochondria and Chloroplasts

The nucleus stores and uses the genetic code; the mitochondrion is where most ATP is made.



Key terms

cell theory	cells are the basic unit of life; all living things are made of cells and new cells only come from existing cells.
nuclear envelope	two membranes around the nucleus, with nuclear pores that let molecules such as messenger RNA leave to the cytoplasm.
chromosome	a linear molecule of DNA wound round proteins, carrying the genetic code for making proteins.
nucleolus	makes ribosomal RNA and uses it to assemble ribosomes.
cristae	the folds of the inner membrane of a mitochondrion, giving a large surface area for the enzymes that make ATP.
chloroplast	the site of photosynthesis in plants and algae; grana hold chlorophyll and sugars are made in the stroma.

I can...

- [ ] Cell theory as a unifying concept
- [ ] Structure and function of nucleus (chromosomes of protein-bound linear DNA, nucleoli)
- [ ] Mitochondria
- [ ] Chloroplasts in plants and algae
- [ ] Ribosomes

EXAM TRAP

Never say mitochondria make energy. They make ATP, using energy released in respiration. Always name the structure and its job: a function with no structure scores nothing.

4 marks: what earns them

1. Nuclear envelope has pores, so messenger RNA can leave the nucleus
   Not: pores let everything in and out
2. Chromosomes of protein-bound, linear DNA carry the genetic code / instructions for making proteins
   Not: circular DNA
3. Nucleolus makes ribosomal RNA and assembles ribosomes
   Not: nucleolus contains DNA / makes proteins
4. Inner membrane folded into cristae gives a large surface area for enzymes of aerobic respiration, making ATP
   Not: mitochondria make energy

Remember

Nucleus: pores, chromosomes, nucleolus.
Mitochondria: cristae, so more ATP.
Structure + job, every time.

Independent revision resource, not endorsed by AQA. Practice question is original.
© 2026 Medservatory, a project of ADMR Solutions Ltd. Free to print and share for personal study.