Marine Biology – Unit 3

An organism is a living thing

Animal cells have a cell membrane (controls what goes in and out), Nucleus (Stores DNA and is used for photosynthesis), Mitochondria (where respiration happens) and a cytoplasm (cell growth and structure).

Plant cells have a cell wall (structure and protection), chloroplasts (photosynthesis) and a vacuole (storing substances)

Bacterial Cells have DNA, Cell membrane, cytoplasm and cell wall.

One bacterium is single celled (prokaryotic cells)

The cell wall helps strengthen and support the plant cell. It is made of a material called cellulose.

Chloroplasts contain chlorophyll to absorb sunlight and help them produce glucose (food) in photosynthesis.

The Vacuole is permanent in plant cells. They are filled with sap. They keep the cell's water balance healthy and help keep the plant turgid.

Asexual reproduction is the process where a single organism produces an offspring genetically identical to itself

3 types: Budding, fragmentation and fission

Budding – grows outside of the parent (eg. Coral)

Fragmentation – parent splits into 2 to grow into a new organism (eg Starfish)

Fission – parent splits into 2 or more parts to grow into a new organism (eg Sea slug)

Sexual reproduction is the process where two organisms reproduce to produce an offspring

Gamete (egg + sperm) > Fuses (fertilisation) > Zygote > Embryo > Birth

Internal fertilisation – Inside the female

External fertilisation – happens in the water

The Binomial system of naming species is an internationally agreed system used to name and classify species. The scientific name of a species is made up of two parts, the genus and the species. For example, the scientific name of the killer whale is orcinus orca.

The 3 Domains – Bacteria, Archaea and eukarya

Bacteria and archaea are the 2 domains of prokaryotes, while eukarya is the domain or eukaryotes.

Prokaryotic domain has no nucleus (bacteria) and the eukaryotic domain has a nucleus.