

1-2 C1 and C3 Binary and Budding

January 5, 2023 10:20 AM

Science 9 – Chemistry Topic 1.2 – Concept 1&3: Types of Asexual Reproduction Binary Fission and Budding

Asexual reproduction:

- involves only one parent
- produces offspring that are identical (clones) to the parent.

Types of Asexual Reproduction:

1. <u>Binary Fission</u>	2. <u>Budding</u>	3. <u>Spore Formation</u>	4. <u>Vegetative Propagation</u>
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Binary Fission (Concept 1 in textbook)

- A parent cell splits into two individual, identical cells (daughter cells) by cell division
- Daughter cells have identical genetic information (DNA)

Example Organisms:

Single-Celled organism

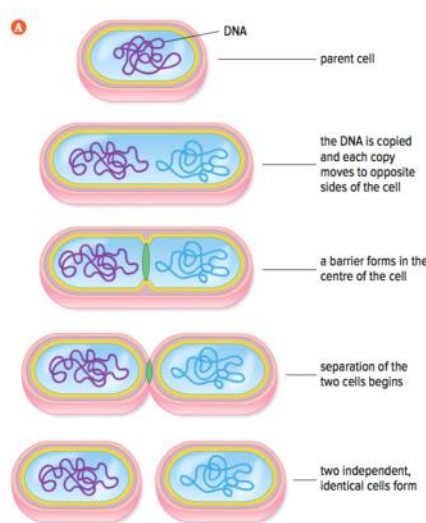
- Bacteria, amoebas, and algae

Advantages?

- Very quick = rapid population growth under ideal conditions ie, Bacteria can double their population every 20 minutes
- Rapid pace allows for fast mutation (e.x. antibiotic resistance in bacteria)

Interesting facts

- A type of algae, dinoflagellate, take advantage of good conditions in the ocean. The resulting population explosion produces toxins that can kill fish, as well as humans. This is commonly known as a "Red tide".



Budding (Concept 3 in textbook)

- offspring begins as a small growth on the parent, called a bud. The bud continues to undergo cell division and grow in size before breaking off from the parent
- New cell is smaller than original cell at first. Eventually grows to the same size as parent cell

Example Organisms:

- Single-celled organism: (e.x. Yeast - Commonly used to make dough, bread, pretzels, soy sauce, cheese, vinegar) and
- multicellular organisms (e.x. hydra)

Advantages?

Good for organisms that need to form a colony in one area or do not move (ex. Sponges)

Interesting facts

- Hydras are related to jellyfish & anemones.
- Hydras are biologically Immortal "O"!!, they don't show signs of aging!
- Buds sometimes stay attached

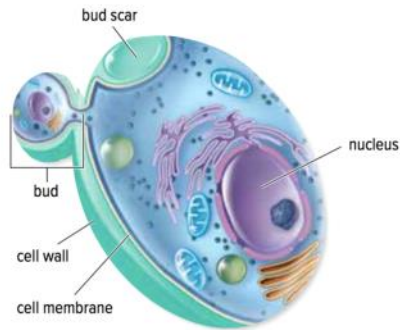


Figure 1.11: Yeasts reproduce asexually by budding.

