Chapter 11, Lesson 2, page 438

**Asexual Reproduction**

What is asexual reproduction? Asexual production is when a single parent produces offspring without \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and without \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Mitosis is a kind of asexual reproduction because only one cell is required for it. So, even though you are a product of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, you have grown over time because your cells reproduced \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Whenever an organism or cell reproduced asexually, the offspring are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the parent (yes, parent is singular!).

**Types of Asexual Reproduction**

* Fission
	+ Bacteria reproduce through a process called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fission. Bacteria only have one, circular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some bacteria can divide every half hour. How many hours would it take for a single cell to divide into at least 1,000 cells?



* Mitotic Cell Division
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have their DNA in a nucleus. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the division of the nucleus before the rest of the cell divides in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some eukaryotes only reproduce asexually with mitosis, while others can reproduce both sexually and asexually.



* Budding
	+ Budding is when a new organism grows by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and it is still attached to its parent. At some point in the future it may or may not break away and live independently.
* Animal Regeneration
	+ Some organisms don’t die when you cut them in half or break off their body parts. Instead, a whole new organism \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! An old story says that mussel fishermen used to try to kill sea stars by chopping off their arms and throwing them back in the ocean…
* Vegetative Reproduction
	+ Some plants have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which are like long horizontal stems. When they touch the ground a new plant can start growing.
* Cloning
	+ Cloning is a new type of asexual reproduction invented by humans. In cloning, an unfertilized \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is removed from an animal. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is removed too, which contained the animal’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Finally, a new nucleus is inserted into the ovum, and the cell will begin to divide and grow into a new animal. This new animal is a clone of the animal that donated the nucleus.

**Advantages and Disadvantages**

The advantages and disadvantages of asexual reproduction mirror sexual reproduction. Usually, what counts as an advantage for one is a disadvantage of the other.