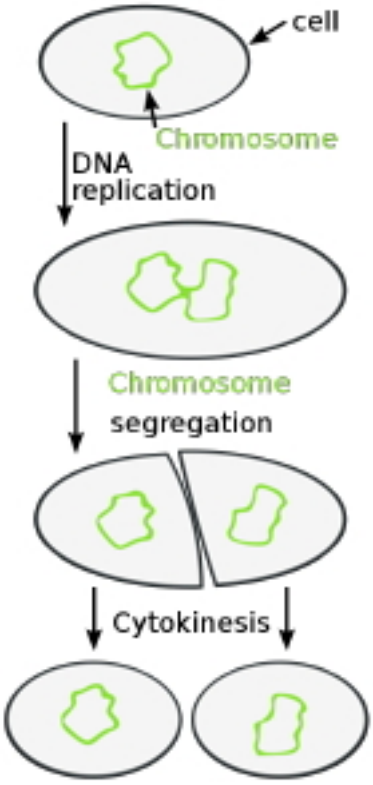
Asexual Reproduction in Animals

Asexual reproduction is a form of reproduction in which a single parent creates offspring that are genetically identical to itself. This is the primary form of reproduction for single-celled organisms, such as bacteria. Many fungi reproduce asexually as well.

The remaining sections of this lesson describe the methods of asexual reproduction used by a variety of organisms.

Binary Fission

Binary fission is a form of asexual reproduction used by single-celled organisms that do not have a nucleus (their DNA is contained on a single chromosome that floats freely in the cytoplasm of the cell), such as bacteria.



In this form of reproduction, a parent cell divides so that each new cell contains a single chromosome carrying a complete set of DNA identical to that of the parent. The diagram to the right illustrates this process.

Mitosis and binary fission are not the same. Because organisms that undergo binary fission do not have a nucleus, binary fission cannot be divided into prophase, metaphase, anaphase, and telophase.

Mitosis

Single-celled organisms that have a nucleus, such as the amoeba, reproduce by mitotic cell division. Mitosis in these organisms results in the formation of two identical offspring.

Fragmentation

Molds, yeast, and mushrooms are members of the Fungi kingdom. **Fragmentation** is one of three methods of asexual reproduction used by fungi. In this method, the parent organism is split into several pieces, or fragments. Each of these fragments develops into a mature, fully grown individual that is genetically identical to the original organism.

The splitting may or may not be intentional. It may occur due to man made or natural damage by the environment or predators.

Fragmentation is a method of reproduction used by many organisms other than fungi. Examples include sponges, flatworms, and sea stars.

Budding

Budding is a form of asexual reproduction in which a new organism grows on the original one. The new organism remains attached as it grows, separating from the parent organism only when it is mature.

Since budding is asexual, the newly created organism is genetically identical to the parent organism.

Spores

Many multi-celled organisms produce spores during their life cycle. A **spore** is a reproductive cell that can grow into a new individual through mitotic cell division.

As with other forms of asexual reproduction, spores result in offspring that are genetically identical to the parent.

Worksheet

Read section 1.4 (p. 29 to 35) in your textbook and answer the following questions.

1. What is asexual reproduction? _____

2. (a) What is a bacteria? (b) Name the method used by bacteria to reproduce asexually? (c) On the back of this page, draw a sketch of this method. _____

3. What is a protist? How do protists reproduce asexually? _____

4. What three types of organisms are members of the Fungi kingdom? _____

5. Name and describe three methods used by fungi to reproduce asexually. _____

6. Identify three animals that can reproduce asexually, and the method they use. _____