

Biology Review

1. What is the difference between sexual and asexual reproduction?

Asexual: single parent, same genetic material as parent thus identical to parent

Sexual: two parents, each parent contributes half the genetic material thus genetically different from parents

2. Name and explain 4 kinds of asexual reproduction.

Vegetative propagation: reproduction of a plant from its roots

Spores: spores released into the air. Can travel to a new favorable environment

Binary fission: cell splits into two daughter cells with identical DNA

Budding: formation of a small outgrowth from the parent cell that eventually breaks away

3. List some pros and cons of asexual reproduction.

Pros: one parent means can reproduce anytime, can reproduce quickly

Cons: genetically identical means they are all susceptible to disease if one is

4. List some pros and cons of sexual reproduction.

Pros: genetically diverse offspring

Cons: takes a long time from birth to being able to reproduce

5. DNA

- a. Describe the shape of the DNA molecule. Where is DNA located?

Double helix (twisted ladder). Located in chromosomes in the nucleus of a cell

- b. What is the function of DNA?

Stores genetic information

- c. Describe the specific arrangement of DNA base pairs.

Adenine pairs with thymine

Guanine pairs with cytosine

- d. What is a chromosome?

Genetic material that is a condensed form of DNA

- e. What is a chromatid?

One copy of a newly copied chromosome

- f. How many chromosomes do humans have?

46 (23 pairs)

- g. What are genes?

A sequence of DNA that codes for a specific function or trait

- h. Where are they located?

On one of the chromosomes

- i. What are their functions?

To code for specific traits (eye color) or more specifically to code for how to make certain proteins

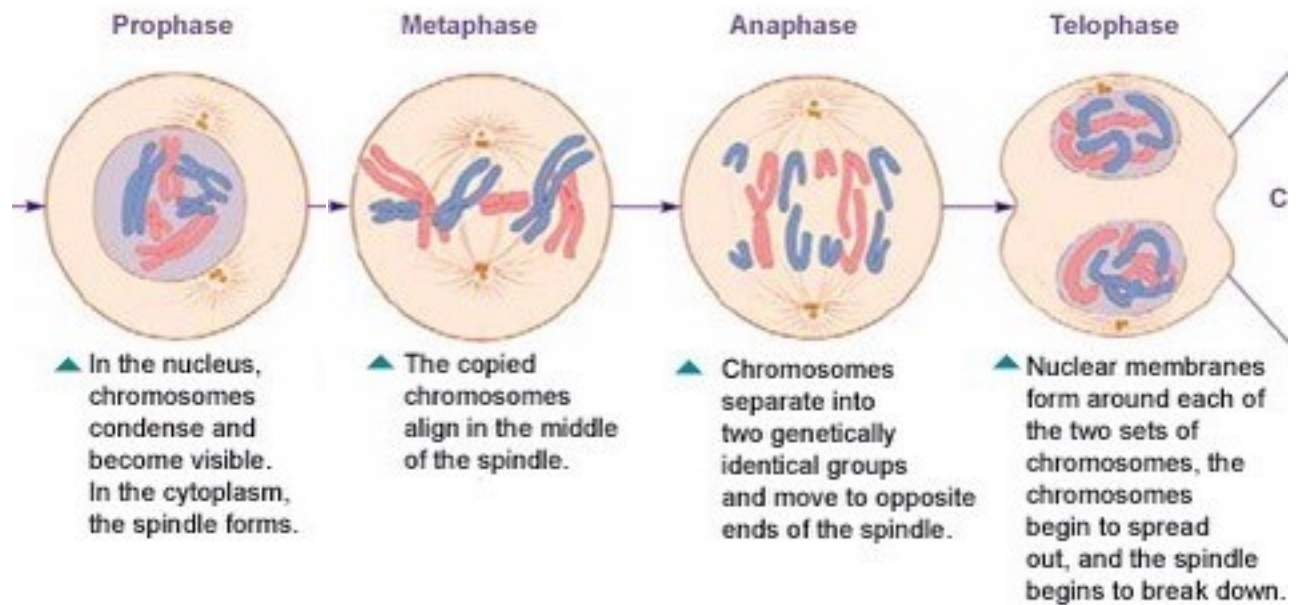
6. Name the three stages of the cell cycle in order. What happens during each phase?

Interphase: cell grows and organelles increase

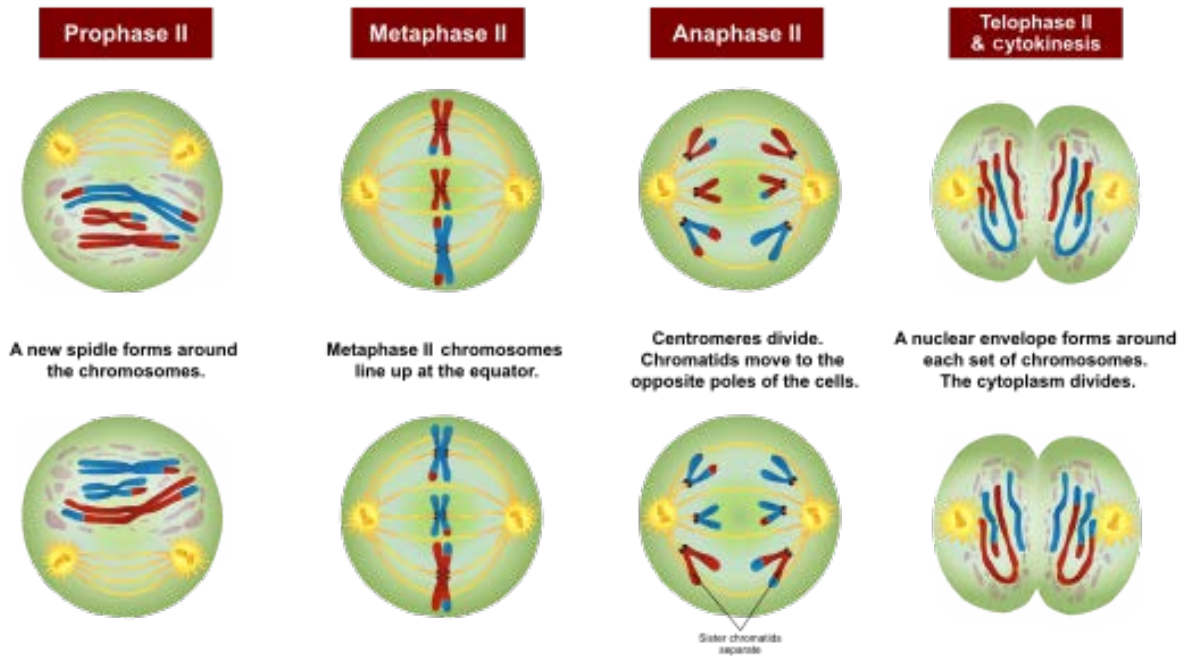
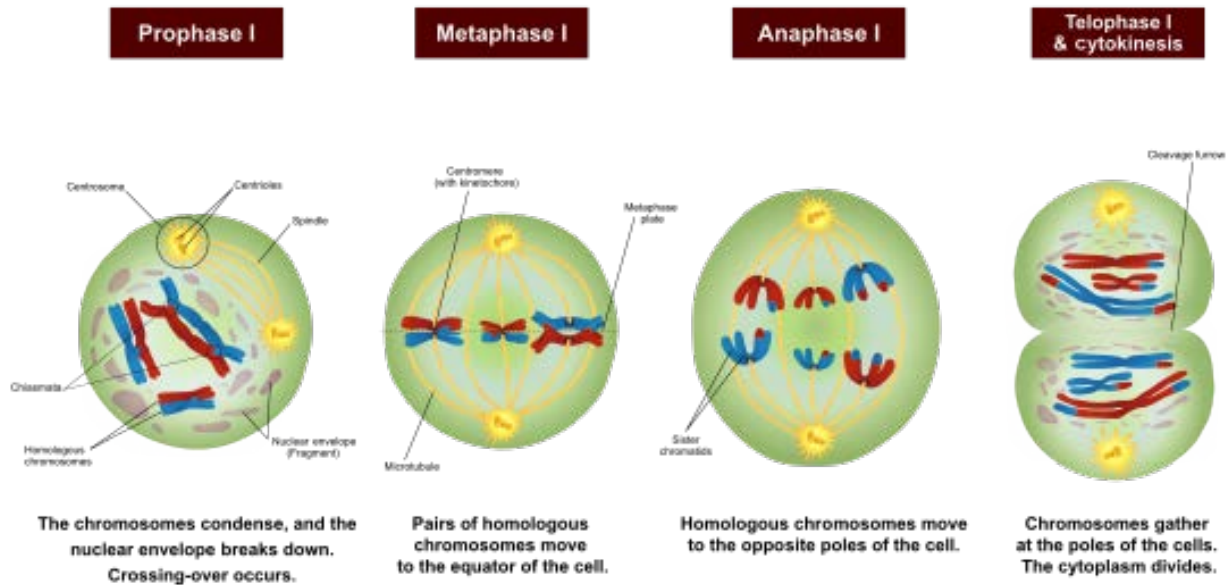
Mitosis: cell divides

Cytokinesis: two separate cells form

7. Draw the 4 phases of mitosis. What is happening in each phase?



8. List the phases of meiosis. What is happening in each phase?



9. Which phases of meiosis are similar to mitosis?

Prophase of mitosis is similar to prophase II of meiosis

Metaphase of mitosis is similar to metaphase II of meiosis, etc

10. What are homologous chromosomes?

Pairs of chromosomes that carry similar genetic information: one from the father and one from the mother

11. How many daughter cells are formed from mitosis? How do they compare to the parent cell?

Two cells that are genetically identical to the parent and to each other

12. How many daughter cells are formed from meiosis? How do they compare to the parent cell?

Four cells that are genetically different from the parent cell and from each other

13. What are gametes? Which cell division is used to form gametes?

Sex cells. Meiosis.