Science 9

Biology IV

Name:
Date:
Block:

1. **Sexual Reproduction**
2. **Gametes and Fertilization**

Sexual Reproduction

What is sexual reproduction?
Sexual reproduction occurs when _____ is produced by _____ _____. The offspring will be _____ _____ due to the combination of genes between the two parents.

- Parent one will contribute _____ of its _____ to the offspring while parent two will contribute half of its DNA to the offspring.

Advantages of sexual reproduction:

- _____ _____
    - Genetic variation allows some individuals in a population to _____ if there is a _____ in the _____
        - Example: If the environment changes…
            - Some individuals will be less successful at living and reproducing.
            - Other individuals may have certain features (due to genetic differences) that allow them to live and reproduce in the new conditions more easily.

Disadvantages of sexual reproduction:

- It takes _____ as individuals have to find a _____
    - As the individual is searching for a mate, it may expose them to _____, _____, or _____ environmental _____
- _____ _____ are produced which means that it takes longer for a population to grow
- Offspring take _____ to reach _____ and therefore, reproduce
- Offspring require _____ and _____ to _____ until they are independent from their parents

Gametes and Fertilization

What are gametes?
In sexual reproduction, _____ _____ and their genetic material _____ to produce one cell that develops into an offspring. The cells which combine their genetic material together are called _____ _____ or _____.

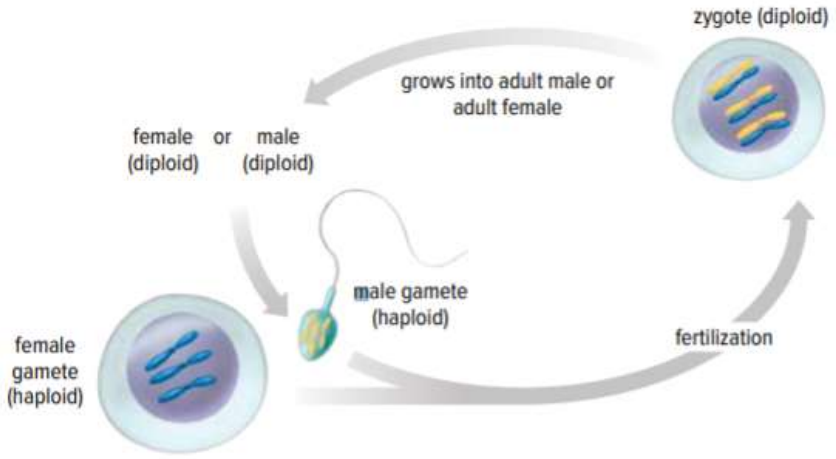
- The _____ parent will contribute one gamete called the _____ cell
    - These are produced in the _____
- The _____ parent will contribute one gamete called the _____ or _____ cell
    - These are produced in the _____

Gametes carry _____ the number of _____ when compared to other body cells

- Example: In a regular body cell, humans have 46 chromosomes (23 pairs). Chromosomes that are paired together are called homologous chromosomes. In human gametes, the gametes will contain only 23 chromosomes.

Organism	Number of Chromosomes in Gametes	Number of Chromosomes in Body Cells
Humans		46
Cat		38
Dog	39	

_____ are considered to be _____ cells because they contain half the normal number of chromosomes whereas regular _____ cells are _____ cells (they have the full number of chromosomes)



Fertilization:
When male and female gametes combine together, this is a process called _____. The _____ of the gametes will _____ together and form one singular cell called a _____. This will be the first cell that will eventually develop into a new organism. The _____ will be considered a _____ cell.

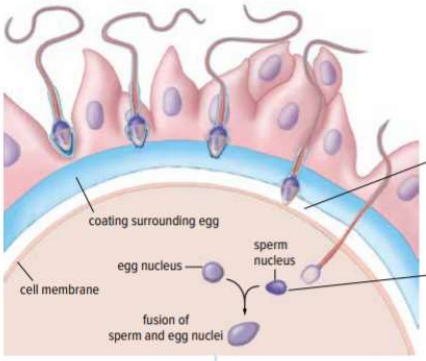


Figure 1.17 When a sperm cell fertilizes an egg cell, the two nuclei fuse and a zygote forms.

Sperm cells reach a jelly-like coating surrounding the egg cell and release substances that digest a path through the coating. This helps sperm cells get closer to the cell membrane of the egg.

The head of one sperm cell eventually enters the egg cell, where the sperm nucleus fuses with the egg nucleus.