

Section 2.2 Sexual Reproduction in Animals

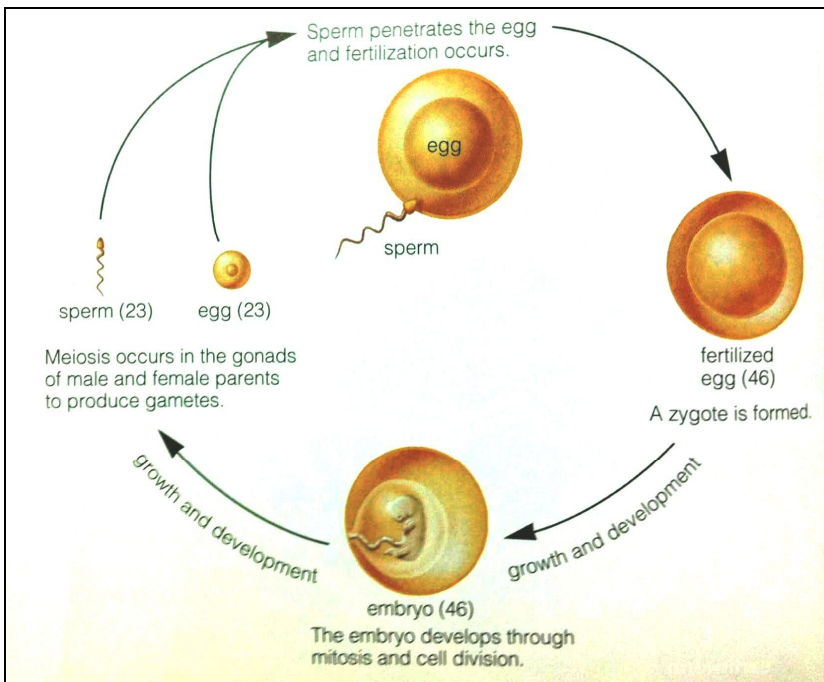
Read pages 51-59

1) What are the four fundamental processes that allow animals to reproduce sexually?

- i) meiosis produces gametes
- ii) A male gamete (sperm) combines with a female gamete (egg)
- iii) A zygote is produced and develops into an embryo
- iv) The embryo develops through mitosis

2) What can happen once the offspring matures? **When the offspring matures, it is able to produce its own gametes (sex cells).**

3) Copy Figure 2.7



4) Which cells in the diagram are haploid? **The sperm and the egg are haploid.**

5) Which cells in the diagram are diploid? **The fertilized egg and the embryo are diploid.**

6) What requirements must be met in order for sexual reproduction to be successful?

i) **both male and female gametes must arrive at the same place at the same time for fertilization.**

- ii) **The zygote must receive adequate food, moisture, warmth, and protection to develop.**
- 7) Define the process of mating. **Mating is the process by which two members of a species come together to combine their gametes for fertilization.**
- 8) Why do some animals have a specific time of year in which they mate? **It is timed so that when the offspring are born, the environment will be better for them to grow and develop.**
- 9) What are the two main patterns of fertilization in animals? **There is external fertilization and internal fertilization.**
- 10) Define both patterns of fertilization in number 9.

**External fertilization is when the sperm and the egg meet outside the bodies of both parents.**

**Internal fertilization is when the sperm travels from the male's body into the female's body to meet the egg.**

- 11) How do most water-dwelling animals reproduce? **Most animals that live in the water reproduce through external fertilization.**
- 12) How do adult anemones reproduce? **They reproduce sexually by releasing their eggs and sperm directly into the water.**
- 13) What does this method rely on? **This method relies on water current to bring them together.**
- 14) Define the process of spawning. **Spawning is when the male releases sperm directly into a cluster of eggs.**
- 15) What do anemones do to increase their chances that their gametes will meet? **They increase their chances by releasing their eggs and sperm at the same time.**
- 16) How do most animals on land reproduce? **Most animals that live on land reproduce through internal fertilization.**
- 17) How do all mammals fertilize their eggs? **All mammals fertilize their eggs internally.**
- 18) The mother retains and **nourishes** the **embryo** within her **body**.
- 19) What is the benefit of this process? **The benefit is that the embryo can safely develop.**

20) What do the reproductive cycle of mammals require from both parents? **It requires a lot of energy from one or both parents.**

21) What does this mean for the number of offspring for mammals? **This means that mammals produce fewer babies per cycle than most other animals.**