

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

## How do animals reproduce?

Most animals reproduce sexually. You have learned that for sexual reproduction to take place, two parents are needed. The male provides the male cells, or sperm, the female provides the female cells, or eggs. Sex cells are also called gametes.

In some animals, special organs of the body are needed for reproduction. male organs, called testes [TES-teez], produce sperm. Female organs, called ovaries [OH-vur-eez], produce eggs.

The process of reproduction starts when a sperm cell and an egg cell unite. Fertilization [fur-tul-i-ZAY-shun] is the union of one sperm cell and an egg.

In some animals, fertilization takes place outside the body. In other animals fertilization takes place inside the female's body.

Fertilization that takes place outside the body is called external fertilization. Goldfish and frogs are two animals that reproduce by external fertilization.

Fertilization that takes place inside the body is called internal fertilization. Birds, snakes, and dogs are some animals that reproduce by internal fertilization.

The fertilized egg is called a zygote [ZY-goht]. A zygote is the beginning of a new life. A zygote is a single cell. Soon after it forms, the zygote divides. It becomes two cells. Each of these cells then divides. The two cells become four cells. Then these cells divide again. Cell division continues over and over again. A young organism, or embryo, forms.

As the cells divide, they form tissue and organs. The embryo grows in size. When the embryo is completely developed, birth takes place. The offspring is now an organism on its own. It must carry out all the life functions by itself.

### EGG AND SPERM CELLS ARE DIFFERENT

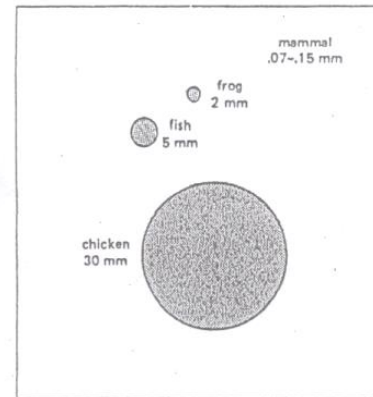


Figure A Egg cells and their sizes

An egg is round and large. Some eggs can be seen with the eye alone. An egg cannot move itself from place to place.

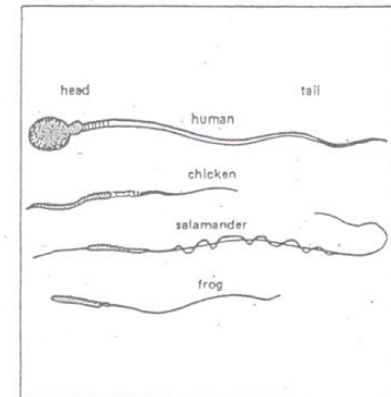


Figure B Sperm cells (greatly enlarged)

A sperm is free-swimming. A sperm has a "head" and a "tail." The tail lashes back and forth. This moves the sperm forward toward the egg.

### FERTILIZATION

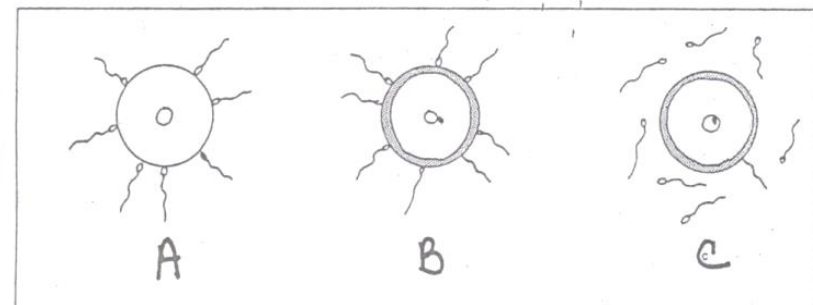


Figure C Fertilization of a human egg

During fertilization, the "head" of the sperm enters the egg. The "tail" is left outside. Only one sperm enters the egg during the fertilization process.

Study figure C. Then answer the questions.

1. Which is larger, a sperm or an egg? \_\_\_\_\_
2. A sperm is \_\_\_\_\_ smaller than an egg.  
Slightly, much
3. Which is the male gamete? \_\_\_\_\_
4. Which is the female gamete? \_\_\_\_\_
5. Which one is free-moving? \_\_\_\_\_
6. How many sperm swim toward an egg? \_\_\_\_\_  
only one, many
7. How many sperm enter the egg? \_\_\_\_\_  
only one, many
8. How many sperm fertilize the egg? \_\_\_\_\_  
only one, many
9. Which part of the sperm enters the egg? \_\_\_\_\_
10. Which part of the sperm is left behind? \_\_\_\_\_

### TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- \_\_\_\_\_ 1. Only animals reproduce sexually.
- \_\_\_\_\_ 2. All animals reproduce sexually.
- \_\_\_\_\_ 3. Sexual reproduction needs two parents.
- \_\_\_\_\_ 4. Females produce egg gametes.
- \_\_\_\_\_ 5. Males produce sperm gametes.
- \_\_\_\_\_ 6. Eggs are free-moving.
- \_\_\_\_\_ 7. Egg cells are larger than sperm.
- \_\_\_\_\_ 8. Many sperm cells fertilize one egg.
- \_\_\_\_\_ 9. A fertilized egg divides many, many times.
- \_\_\_\_\_ 10. An embryo is a full grown organism.

### WHERE DO EMBRYOS DEVELOP?

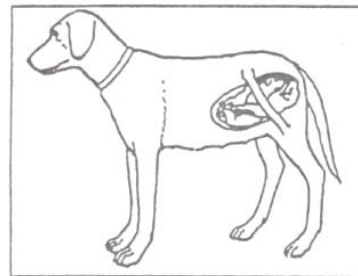


Figure D

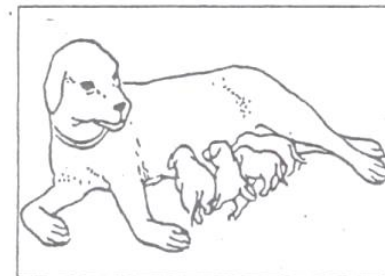


Figure E

Animals like dogs, cats, horses, and whales are mammals. Humans are mammals, too. Mammal eggs are fertilized internally. The embryos develop internally too. When an embryo is fully developed, it is born. Female mammals produce milk to feed the newborn.

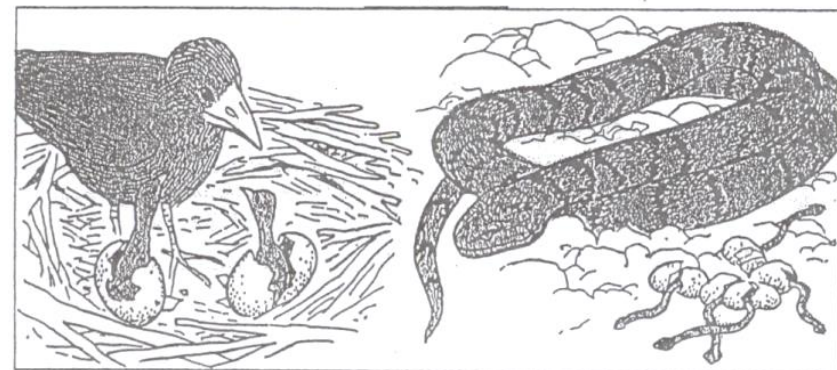


Figure F

Animals like birds and snakes are not mammals. The eggs of birds and snakes are fertilized internally. However, the female lays the fertilized eggs. The embryos then develop outside of the female's body. When the embryos are fully developed, they "hatch".

### COMPLETE THE CHART

Answer the questions by putting a "YES" or "NO" in the space provided.

	Mammals	Birds	Snakes
1. Is fertilization internal?			
2. Is development internal?			
3. Do females produce milk?			
4. Do embryos hatch?			
5. Is fertilization external?			

## SOME INTERESTING FACTS ABOUT MAMMAL REPRODUCTION

The time between fertilization and birth is call the gestation [jes-TAY-shun] time.  
Gestation time varies greatly with different animals.

Animal (mammal)	Gestation time (approximate)
Hamster	16 ½ days
House mouse	21 days
Rabbit	30 day
Dog or cat	63 days
Lion	108 days
Chimpanzee	237 days
Human	267 days
Cow	281 days
Horse	336 days
Elephant	660 days

### **Usually...**

1. The smaller the animal, the \_\_\_\_\_ the gestation time  
longer, shorter
2. The larger the animal, the \_\_\_\_\_ the gestation time  
longer, shorter
3. Which animal on the chart has the longest gestation time? \_\_\_\_\_
4. Which animal on the chart has the shortest gestation time? \_\_\_\_\_
5. Which has a longer gestation time, a human or a chimpanzee?  
\_\_\_\_\_

## REACHING OUT

How many offspring mammals do usually produce at one time? It depends upon the animal. For example, a horse produces 1 offspring. An elephant also produces 1 offspring; so does a human. Cats produce about 4 or 5 kittens and dogs produce from 1 to 12 puppies at a time. Lions produce 3 to 5 cubs. A mouse has 4 to 7 offspring.

What does the number of offspring tell us about the number of eggs fertilized?

\_\_\_\_\_

How many eggs does a human female usually produce at one time? \_\_\_\_\_

How do you know? \_\_\_\_\_

TERMS: Use this packet to find the definition of the following words.

1. Fertilization: \_\_\_\_\_

\_\_\_\_\_

2. Gametes: \_\_\_\_\_

\_\_\_\_\_

3. Egg: \_\_\_\_\_

\_\_\_\_\_

4. Sperm: \_\_\_\_\_

\_\_\_\_\_

5. Gestation time: \_\_\_\_\_

\_\_\_\_\_

6. Internal development: \_\_\_\_\_

\_\_\_\_\_

7. External development: \_\_\_\_\_

\_\_\_\_\_

8. Zygote: \_\_\_\_\_

\_\_\_\_\_

9. Embryo: \_\_\_\_\_

\_\_\_\_\_

10. External fertilization: \_\_\_\_\_

\_\_\_\_\_

11. Internal fertilization: \_\_\_\_\_

\_\_\_\_\_