

簡易英語科技叢書

# 生物的繁殖



中 外 出 版 社

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## 出版說明

《簡易英語科技叢書》是爲初學英語的中國青年學生提供一套閱讀英語科技書籍資料的參考讀物。

本叢書包括十六個科學課題，分爲十六冊出版。每一課題構成一個完整的知識讀物。這十六個課題把目前國外學校教學中的基礎科學內容都包括進去了。

爲提高讀者科學知識和閱讀興趣，每一分冊均附有生動的彩色插圖，英語文字力求淺顯，使一般初學英語的中國青年學生都能接受。

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## INTRODUCTION

There are many living things in this world. Have you wondered how the young of these living things came into this world? Have you wondered how you were **born**? The way in which new living things are made is called **reproduction**. Kittens, puppies, chicks, calves and babies are the result of reproduction. In this book we shall learn all about how the young of animals are born.

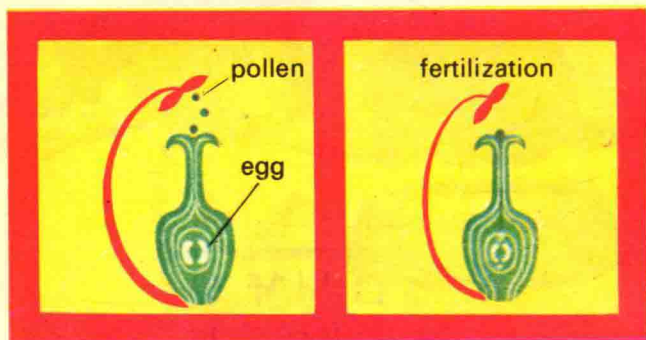


Puppies and their mother

## THE EGG AND THE SPERM

We have learned that two things are needed to make a new plant — the **egg** and the **pollen**. In animals too, two important things are needed for making a young animal. Like plants, animals produce eggs. Unlike plants, they do not have pollen. Instead animals have **sperms**. Eggs and sperms are therefore important for reproduction in animals.

We know that to have the young of most animals, there needs to be a **mother** and a **father**. The mother is known as the **female** and the father as the **male**. The female animal makes the eggs and the male animal the sperms.

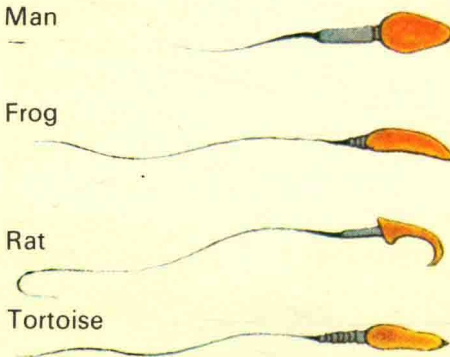


Reproduction in plants

fertilized  
egg



What are eggs and sperms? The egg made by many female animals is quite small, about the size of a pin head. But some eggs are quite large. Think of a hen's egg, or an ostrich egg!



**Different types of sperms**

a microscope

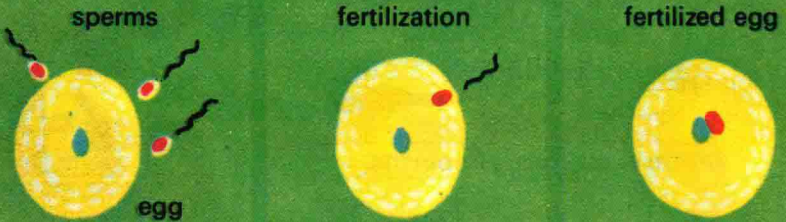


The sperm made by the male is very much smaller than the egg of the female. It can only be seen under a **microscope**. A microscope makes very, very small things look big. Sperms look like tiny tadpoles under the microscope. For every egg produced by the female, there are thousands of sperms produced by the male.

The sperms of different animals have different shapes. But all sperms usually have a large head and a long tail. Sperms can swim by moving their tails. They swim towards the eggs.

## HOW A YOUNG ANIMAL IS MADE

Out of the many sperms that swim towards the egg, only one goes into the egg. When the sperm gets into the egg, we say that the egg is **fertilized**. During **fertilization** the egg and sperm join together to form a single **cell**. All plants and animals are made up of millions of tiny parts called cells. It is from a cell that the young animal begins to grow. Many animals, even you, started life from this tiny cell!



**Fertilization of an egg**

The cell soon begins to grow or **develop**. It divides into many small cells and looks like a very tiny ball. Finally these cells grow into a young animal with a head, a body, legs and arms. In some ways the young animal is like its mother and in others, like its father. This is because the cell is made up of parts which come from both the mother and father. Look at yourself in the mirror. Who do you look like?

Parents and their young look alike.



son

father

COW



calf

## THE YOUNG OF FISHES

Now we know about eggs and sperms and how young animals are made. Let us study about how the young of fishes are made.

**The eggs of some fishes float in the water.**



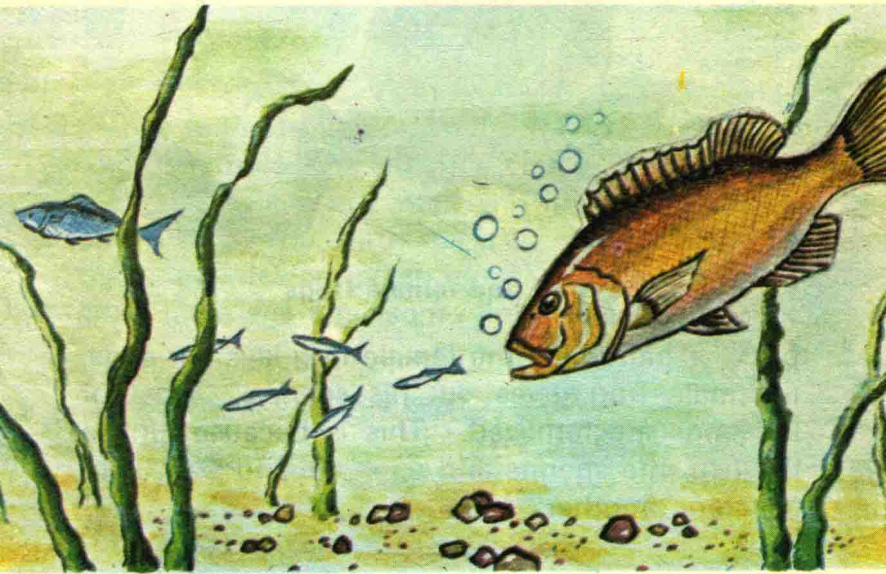
The female fish lays many eggs in the water. The eggs of the fish are tiny and may float in the water. The male fish also lays many sperms near the eggs. The sperms swim towards the eggs. Some of the eggs become fertilized by the sperms. The fertilized eggs grow into small

**Fertilized eggs grow into baby fishes.**



fishes. The little fishes look like their parents but are very much smaller. However, not all these little fishes grow into bigger fishes. Many of them are eaten by big fishes and water insects. Thus, out of the thousands of eggs laid, only a few hundreds get fertilized and grow into baby fishes.

**Big fishes eat many baby fishes.**



Now we know why so many eggs are laid by fishes. It is necessary that many eggs are laid by fishes. The large number helps at least a few to escape being eaten. What would happen if fishes laid a small number of eggs?

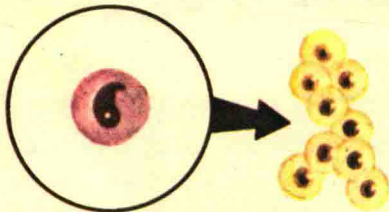
## THE YOUNG OF FROGS

Female frogs lay many eggs also, but not as many as fishes. They reproduce in a different way. The male frog sits on the female frog's



**Male and female frogs**

back. Then while the female frog lays her eggs, the male frog gives out his sperms. Most of the eggs are fertilized. This is because, unlike the fish, the sperms and eggs are laid very, very near one another.



**Fertilized eggs grow into tadpoles.**



**Young tadpoles**

The fertilized eggs grow into small **tadpoles**. These tadpoles are not like their parents. Each tadpole is black in colour and has an oval head and a tail. The tail helps it to swim. Many of these tadpoles are eaten by fishes. The tadpoles grow little legs after some time. They lose their

**Tadpoles grow little legs.**

