

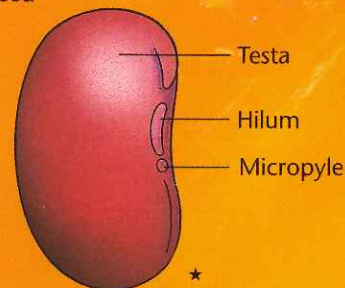
SEEDS AND FRUIT

Fertilization in flowering plants leads to the production of a **seed**. Each seed contains a new developing plant and a store of food. Seeds are kept in a part of the plant called a **fruit**. When the seeds are ready, they are scattered and can grow into new plants if conditions are right.

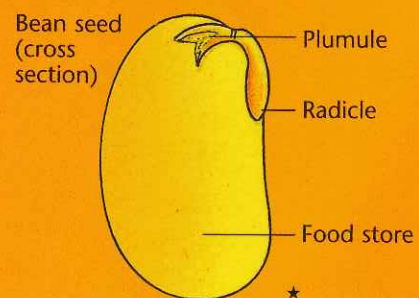
INSIDE A SEED

Seeds are protected by a tough coat called a **testa**. Each has a mark called a **hilum** on its surface, showing where the ovule* was joined to the ovary*. The tiny hole (micropyle) through which the pollen grain entered the ovule can also still be seen. It lets in water.

Bean seed



The developing plant inside a seed is known as an **embryo**. It has two parts: the **plumule**, which will develop into the first shoot, and the **radicle**, which will be the first root of the new plant.



This orange fruit protects the seeds of the orange tree. Its flesh is made up of tiny hairs, each one swollen with juice.

Orange seed (pip)

TYPES OF FRUITS

Fruits protect the seeds they carry and help them to spread to a place where they can grow. Most fruits develop from a plant's ovary*. These are known as **true fruit**. Some, such as strawberries, develop from the receptacle* and the ovary. They are **false fruit**. Fruits can also be described as succulent or dry.

SUCCULENT FRUIT

Fruit with thick, fleshy layers that is often tasty to eat is known as **succulent fruit**. There are various kinds.

Succulent fruits with a single, hard-cased seed in the middle are called **drupes**. Plums and cherries are drupes.



Succulent fruits that contain many seeds are called **berries**. Oranges are berries. Fruits with a thick, fleshy outer layer and a core, with the seeds contained in a capsule, are false fruits called **pomes**.

Apples are pomes.



Raspberries and blackberries are examples of **aggregate fruit** or **compound fruit**. They form from many ovaries in one flower. Each fruit is made up of fleshy beads called **drupelets**, each containing a single seed.



DRY FRUIT

Dry fruits are dry cases that hold the seeds until they are ripe. There are several types. The main ones are described below.

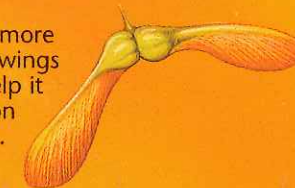
Nuts are dry fruits with only one seed surrounded by a hard shell. Acorns and walnuts are nuts.

This walnut seed is protected by a hard shell.

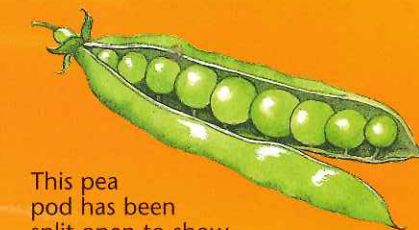


Achenes are small, dry fruits with only one seed. An achene with papery wings, for example an ash or sycamore fruit, is called a **samara** or **key fruit**. Some achenes, such as ash achenes, grow in bunches.

This sycamore fruit has wings which help it to float on the wind.



A dry fruit with seeds attached to its inside wall is known as a **legume** or **pod**. It splits along its length to open. The fruit of the pea plant are pods. The peas are the seeds.



This pea pod has been split open to show the seeds attached inside it.

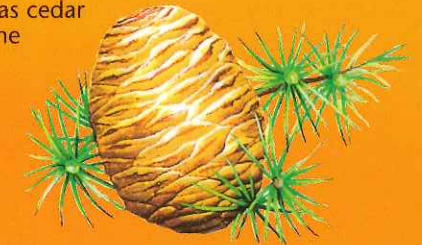
A **grain**, also called a **caryopsis** or a **kernel**, is a small dry fruit whose wall has fused with the seed coat. Wheat and barley are examples of plants with many grains.

The fruit of the wheat plant is called grain. Each stalk carries many grains.

CONES

The seeds of conifer trees are contained in **cones**, not fruit. These develop from the female flowers (conifers have male and female flowers). After pollination* the scales harden and close.

Atlas cedar cone



When the seeds are ripe and the weather is warm and dry, the scales of the cones open. The seeds flutter out on papery wings. Most cones stay on the tree for a year. Others take two years to ripen, and some remain long after the seeds have been dropped.

See for yourself

Look at as many different types of fruits as you can find. Notice whether they are succulent or dry fruits, and the number of seeds they contain. If you find a cone, you could make it open by placing it on a radiator. If you put it in a damp place, its scales will close up.

Internet links

Go to www.usborne-quicklinks.com for links to the following Web sites:

Web site 1 Different types of fruit and how to identify them.

Web site 2 More about fruit.

Web site 3 Photos and information about different types of nuts.

Web site 4 Lots of berry photographs.

Web site 5 Tropical fruit pictures and facts, including how the fruit is eaten.

Web site 6 A searchable fruit resource with lots of information and activities.