Ovary>>>>Fruit
Ovule>>>>Seed
Store of food develops to provide reserves for developing embryo
Embryo consists of plumule (Developing shoot), radical (Developing root) and cotyledons (One or two seed leaves)

# Process after Fertilisation in a Flowering Plant

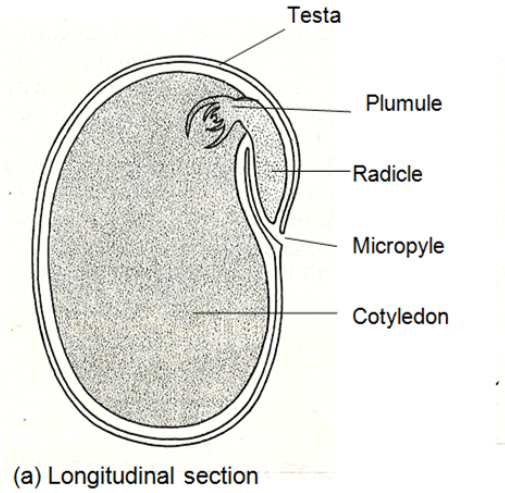
Flowering plants are divided into monocotyledons and dicotyledons.
Monocotyledons have only one cotyledon while dicotyledons have two cotyledons.
Monocotyledons are important as they include cereals while dicotyledons are plants such as broad beans.
In the broad bean the food store has been absorbed into the cotyledons but in cereals such as maize the food store surrounds the seed leaves. The maize is a fruit and not a seed.



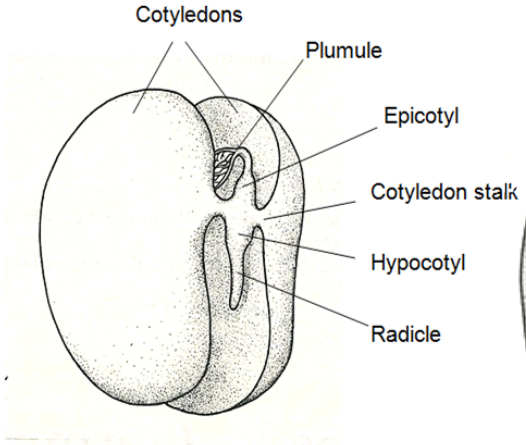
Germination
After a period of dormancy, when environmental factors are favourable stored food will be mobilised and the seed will germinate. Requirements;

- Suitable temperature- Optimum temperature is optimum for enzymes involved with germination
- Water- Needed for mobilised enzymes, vacuolation of cells and transport
- Oxygen- respiration makes energy, in form of ATP, available for metabolism and growth

Zygote diploid nucleus divides repeatedly by mitosis and eventually develops into an embryo plant. The embryo is contained within the fertilised ovule, now referred to as a seed.
Primary endosperm nucleus divides rapidly by mitosis forming a mass of tissue; endosperm which nourishes the developing embryo inside it.
Nucellus disappears as embryo grows but the integuments toughen and become the protective seed coat, the testa.
The style and stigma shrivel and the ovary becomes the fruit
The protection and dispersal of the seeds inside the fruit are aided by changes in the ovary wall- modified ovary wall now called a pericarp.

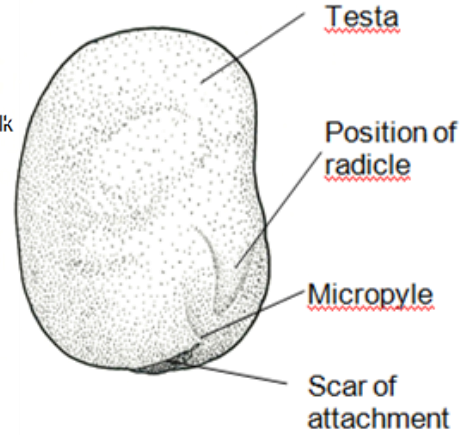


(a) Longitudinal section



(b) Diagram of seed structure

Fig.1 Seed structure of a dicotyledon



(a) External appearance