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# Seeds Charts, Botany, School Education

## Product Image



## Description

**Standard Size:** 58x90cms

**Language:** English

Laminated Paper Charts with Plastic Rollers. These Charts have technically accurate and

detailed description in vivid colours.

**Note:** Based on minimum order quantity conditions, Charts can be customized to your requirements in terms of CONTENT, LANGUAGE, SIZE, etc. Please write back to us for discussion.

### A. Charts, Photosynthesis

**Photosynthesis**  
Process of manufacturing food by green plants with the help of water, carbon dioxide, sunlight and chlorophyll is called photosynthesis. Oxygen is released in this process.

$$6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 + 6H_2O + 6O_2$$

Photosynthesis is an anabolic process taking place in two distinct phases:

- 1. Photochemical Phase (Light Reaction):**
  - Known as Hill Reaction.
  - Chlorophyll absorbs solar energy and liberates oxygen.
  - The chlorophyll molecule gets excited to emit electrons which travel through the electron transport chain in the chloroplast.
  - Thus, ATP is synthesized from ADP and inorganic phosphate.
  - Photolysis of water also takes place and oxygen is released.
$$H_2O \rightarrow 2H^+ + \frac{1}{2}O_2 + 2e^-$$
- 2. Biosynthetic Phase (Dark Reaction):**
  - Known as C<sub>3</sub> Pathway.
  - Occurs in stroma of the chloroplast using NADPH and ATP produced in the light reaction.
  - Here carbon dioxide enters into a cycle of reactions starting with ribulose biphosphate (RuBP).
  - At the end of the cycle carbohydrates is synthesized and RuBP regenerated.

**Requirements for Photosynthesis**

- 1. Light:**
  - Bestech a portion of leaf kept.
  - Use one leaf in the dark and another leaf in the light.
  - Decolorize the leaf by boiling it in alcohol.
  - The covered part does not turn blue-black with iodine solution showing absence of starch.
  - This shows that light is necessary for photosynthesis.
- 2. Carbon Dioxide:**
  - Place half of a leaf of a plant in a bottle containing KOH (KOH absorbs CO<sub>2</sub> present inside bottle).
  - Leave the setup for 3-4 days in light.
  - Test the leaf with iodine solution. The portion of leaf inside the bottle does not turn blue-black.
  - The other portion turns blue-black.
  - This shows that CO<sub>2</sub> is necessary for photosynthesis.

### B. Charts, Germination of Seed-

Bean & Pea

**Germination of Seed - Bean & Pea**

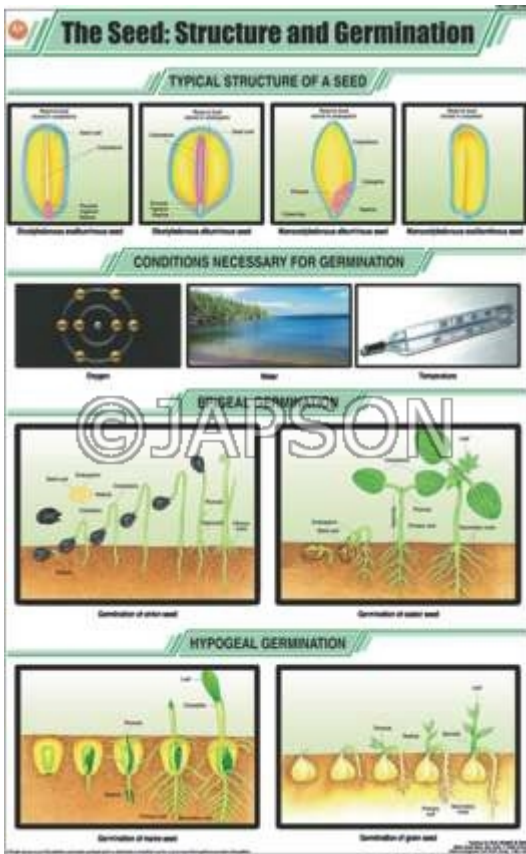
**Germination of Pea Seed (Hypogeal)**

1. Cotyledons do not come out of the soil surface.
2. The epicotyl elongates pushing the plumule out of the soil.
3. The plumule grows upward and the first leaves come out of the cotyledons.
4. The radicle forms the primary root which is soon replaced by many fibrous roots.

**Germination of Bean Seed (Epigeal)**

Cotyledons are brought above the ground due to the elongation of the hypocotyl.

### C. Charts, The Seed: Structure and Germination



## Disclaimer

The Products details given on this page are indicative in nature and JAPSON reserves the right to change them without prior notice. Buyer is also requested to re-check the specifications and other features of product at the time of order as product development is a continuous process and minor modifications may be made to design based on latest availability, process and design.