Virginia 4-H
MAKING the Future

*18 U.S.C. 707

The Science of Seeds

The Science Behind it . . .

What is a seed?

A seed contains a young plant that is resting inside a protective coating until the conditions are right for it to grow into a plant.

What do seeds need to grow?

Like all living things, plants need food, water, and air to grow. When seeds begin to grow, or germinate, they develop roots to help them develop into plants.

Food – A plant makes its own food through a process called photosynthesis. In photosynthesis, a plant uses the energy from sunlight to change carbon dioxide (from the air) and water (from the soil) into sugars called glucose. Glucose is a sugar that plants use for energy.

Water - A plant's roots take water from the soil and use it to transport food to all parts of the plant. Plants are made of up to 95% water; when it doesn't have enough water it becomes weak and wilts.

Air – All living things need carbon; air provides a source of carbon dioxide for plants.

What are the benefits of growing your own fruits and vegetables?

- Fresh fruits and vegetables are higher in nutrients than those in a grocery store because they can be picked when they are ripe, instead of being shipped before they are ripe.
- Growing your own fruits and vegetables encourages healthier eating of more fruits and vegetables.
- Growing your own fruits and vegetables saves money.
- Gardening increases physical activity.

Materials

⇒ Vegetable or Flower Seeds (1 per youth)
⇒ Toilet Paper (single ply; 6-12"per youth)
⇒ Toothpicks or small paint brushes (to share)
⇒ Flour (approx. 1 T per youth)
⇒ Water (approx. 1/2 T per youth)
⇒ Rulers (to share)
⇒ Pens/Markers (to share)

Making and Exploring Further

Make activities encourage problem solving through trial and error, allowing for individual creativity and experimentation. Youth will ignite their curiosity and expand their critical thinking skills as they move from the planned and guided activity to an open exploration of different materials and methods.

⇒ Encourage youth to substitute 'tape' using recycled paper, printer paper, or paper towels.
⇒ Encourage youth to substitute 'glue' using corn starch or Elmer's glue.
⇒ Encourage youth to use a variety of sizes and types of seeds.

Sources

⇒ Arizona State University - *Ask a Biologist*: http://askabiologist.asu.edu/recipe-plant-growth
⇒ Virginia 4-H – *Stems and Stamens*: www.pubs.ext.vt.edu/380/380-021/380-021_pdf.pdfCooperativ
⇒ eExtension: http://articles.extension.org/pages/27731/benefits-of-growing-your-own-fruits-and-vegetables

www.ext.vt.edu/topics/4h-youth/makers

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