

Plants to Dye For

*Planting the Seed:
Gardens, Growing, and Agriculture in Art*



Objective:

By the end of this lesson, students will:

- Learn about ancient Egyptian methods for coloring clothing.
- Understand that fruits and vegetables can be used to make dye.
- Gain a respect for organic materials and an increased awareness regarding our need to support and protect our world around us.

Core Curriculum Ties:

- **K-6 Social Studies Core Benchmarks:**
Humans originated in Africa and migrated across the Earth, creating ancient civilizations in nearly every region that could support life. Modern civilizations can trace their foundations to these ancient civilizations. Their cultures and histories can teach us much about ourselves and the modern world in which we live.
- **K-6 Visual Art Core Benchmarks:**
Explore a variety of art materials while learning new techniques and processes. Students demonstrate how history, culture and the visual arts can influence each other in making and studying works of art.

Materials:

- Brightly colored vegetables, fruits, and/or flowers
- Sharp knife
- Measuring bowls (enough for each individual plant)
- Sharp knife
- Measuring cups
- Strainer
- Large stewpots
- Water
- Apple cider vinegar
- Salt
- 100% natural fiber clothing: muslin, silk, cotton, wool, natural-fiber denim

Time:

- 60-90 minutes with prior preparation of fabric and dye by the teacher.

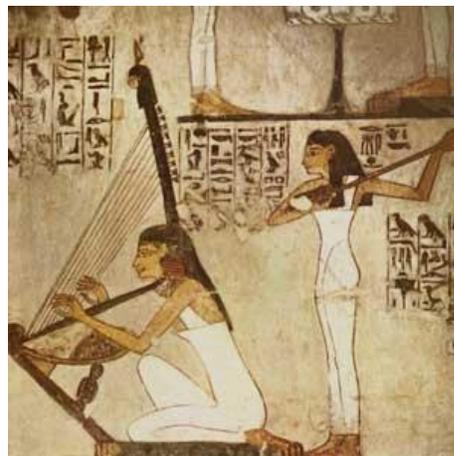


From Apples to Apples:

Apples, strawberries, raspberries, kiwis, and pineapples, to name a few, like most fruits, are delicious snacks that are good for our bodies. Vegetables such as beets, red onions or carrots are very tasty for dinner. Far from being just decorative or edible, these plants can also be used as a type of pigment or paint. In fact, the Egyptians dyed their clothes with the fruits and flowers that surrounded the Nile. In addition to being historically fascinating and educational, natural dyes can still be made today and are eco-friendly!

Historical Background:

- Scholars believe that the idea to dye one's clothing may have come from stains that plants and even animals left on the cloth.
- The ancient Egyptians were known for their dyed fabrics.
- Clothing that was brightly colored meant that you were wealthy enough to afford the extra process it took to make it. Colored dresses would have belonged only to high-class women, possibly even only royal women.
- According to Egyptologist Page Strong, "While dresses have been noted to use the red and yellow colors, even combinations of the two, the blue dye was not commonly used." This was because it was difficult to find bluish plants.
- The ancient Egyptians often used a plant called madder, red ochre, or a mixture of Henna to make red dye.
- Yellow dye was made with safflower or iron buff.
- Blue was more difficult to make and was the rarest and was not used that often.
- The binding agent, for the ancient Egyptians, was called alum, a crystal that was only found in the oases of the Libyan desert. Because they had only one source to get alum, dying clothing was very expensive.
- A binding agent is something used in the dying process that helps the color to bond to the fabric and not wash out.
- Historically, plants gave color to our clothing and it wasn't until 1856 that William Henry Perkin invented the types of clothing dyes that are often used today.



Additional Resources:

NON-FICTION

- Kristin Butcher, *Pharaohs and Foot Soldiers: One Hundred Ancient Egyptian Jobs You Might Have Desired or Dreaded (Jobs in History)*, 2009
- Carmella Van Vleet, *Explore Ancient Egypt!: 25 Great Projects, Activities, Experiments (Explore Your World series)*, 2009
- Mary Houston, *Ancient Egyptian, Mesopotamian & Persian Costume*, 2002
- Gail Gibbons, *The Vegetables We Eat*, 2008

WEBSITES

- Ancient Egypt: Coloring Fabrics and other Materials
<http://www.reshafim.org.il/ad/egypt/trades/dyeing.htm>
- The Mummy's Wrap
<http://mummywrap.com/2009/12/09/ancient-egyptian-clothing-part-2-%e2%80%93-womens-clothing/comment-page-1/#comment-1390>
- List of Plants & the colors they make in the dyeing process
<http://www.pioneerthinking.com/crafts/crafts-basics/naturaldyes.html>

Conversations:

Look around. What color clothing does everyone have on? How did your clothing get to be that color?

Think about your senses and describe a fruit, a flower and a vegetable. How does it taste, touch, look, smell? What do we use plants for? How can these be used differently?

What do we need to do for our environment and the world around us to protect such useful plants?



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Activity: Making a Plant Dye

Gather your plant materials. The best natural dyes come from ripe berries and brightly colored root vegetables. Divide the plant material by color and type, placing each group into separate bowls. Pick a color group, and place the plant material on a cutting board. Cut everything up into very small pieces with a sharp knife.



Place the plant material in a measuring cup and determine how much you have. Add the same amount of plant material as water to make a 1:1 ratio. Drop the plant material and water into the pot, and bring it to a boil on the stove top. Simmer afterwards for **one hour**.

Allow the pot of dye to cool. Then, strain the remaining large non-liquefied plant material from the boiled water by placing a strainer over a second large pot and pouring the contents of the first pot through the strainer. The colored liquid in the bottom of the second pot is your cotton dye. Now your dye is ready. Do not pour the dye into the second pot until it has completely cooled or you risk burning yourself.



Before you are ready to dye, you must prepare your fabric! Prepare the cotton fabric for dying by soaking it in a dye fixative. Create a fixative by pouring 8 cups of cold water and ½ cup of salt in a large pot to make a berry dye fixative or 4 parts cold water and 1 part vinegar in the pot for a plant dye fixative.

Place the pot on a stove top, add the cotton fabric to the fixative and simmer for **one hour**. Allow the pot of fixative to cool, remove the fabric and rinse the fabric until the water runs clear.

Now you're ready to dye your fabric! Ring out the fabric, removing as much liquid as possible and place it in the pot of dye. Simmer the dye and cotton fabric together until the fabric reaches the desired shade.

Remove the pot from the flame to cool. Lift the cotton fabric from the dye and ring it out well over the pot. Launder the dyed cotton fabric in cold water on a gentle setting. Hang to dry.

Credits: Lesson plans were adapted from instructions written by eHow contributor Eleanor Jewell. Egyptologist Page Strong's research on fabrics was also adapted. Photos courtesy of Wikimedia Commons.