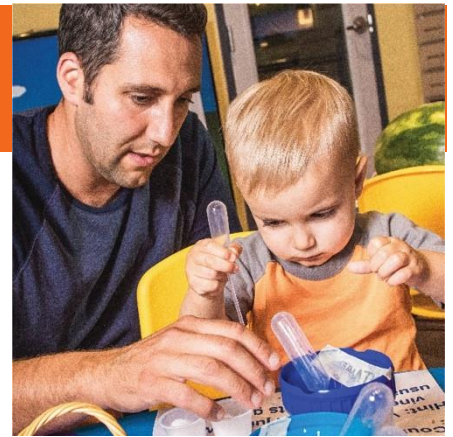


# Science at Home



## Natural Paint

### What You Need

Vegetables (Beets, Carrots and/or Kale)	Cornstarch
Water	Cup or bowl
Blender	Paper
Strainer or coffee filters	Paintbrush

### What You Do

1. Choose a vegetable (beets, carrots and kale work really well).
2. Add one part vegetable and three parts water to a blender. *Example: One cup of carrots and three cups of water.*
3. Blend until liquefied.
4. Use a strainer or coffee filters to remove any lumpy parts or flesh and pour the juice into a cup or bowl.
5. Leave as is for a watercolor paint or add cornstarch a little bit at a time and stir if you would like a thicker texture.
6. Paint on the paper using the paintbrush.

### Questions to ask

- Does the paint look different on the paper as a watercolor than when thickened?
- What color does each vegetable make?
- What happens if you blend multiple types of vegetables together?

### What's the Science?

Paint that you can purchase from stores are made from four main components: **resin, additives, solvent** and **pigment**. Resin is the binder that holds all of the pigments together and allows the paint to stick to the surface of the item being painted. Additives help the paint flow smoothly, dry faster, stay in place, or event make it mold or scuff resistant. Solvents are the liquid part of the paint that carries and dissolves all of the other ingredients. Water and mineral turpentine are often used as solvents for paint. Finally, the pigments are what give paints their color.

Many pigments come from natural materials such as plants, like we used to create our paint, animals and minerals. Some examples of natural pigments are derived from iron oxide (reds and yellows), charcoal (black), calcite (white), cochineal insects (red) and even cow urine (yellow)! Today many colors are synthesized by chemists in laboratory settings. However, the first known synthesized color was actually created over 4,000 years ago in Ancient Egypt when ground limestone, sand, an alkali and a copper-containing mineral such as azurite or malachite were combined and then heated at a very high temperature for several hours, creating what is now known as Egyptian blue.

### Try This

**Use science vocabulary:** Use related science words such as resin, additives, solvent and pigment.

### Additional Resources

- <https://www.resene.co.nz/whatispaint.htm>
- <https://www.thespruce.com/how-paint-is-made-4587730>
- <https://www.youtube.com/watch?v=CtiKkJrB-ag>

