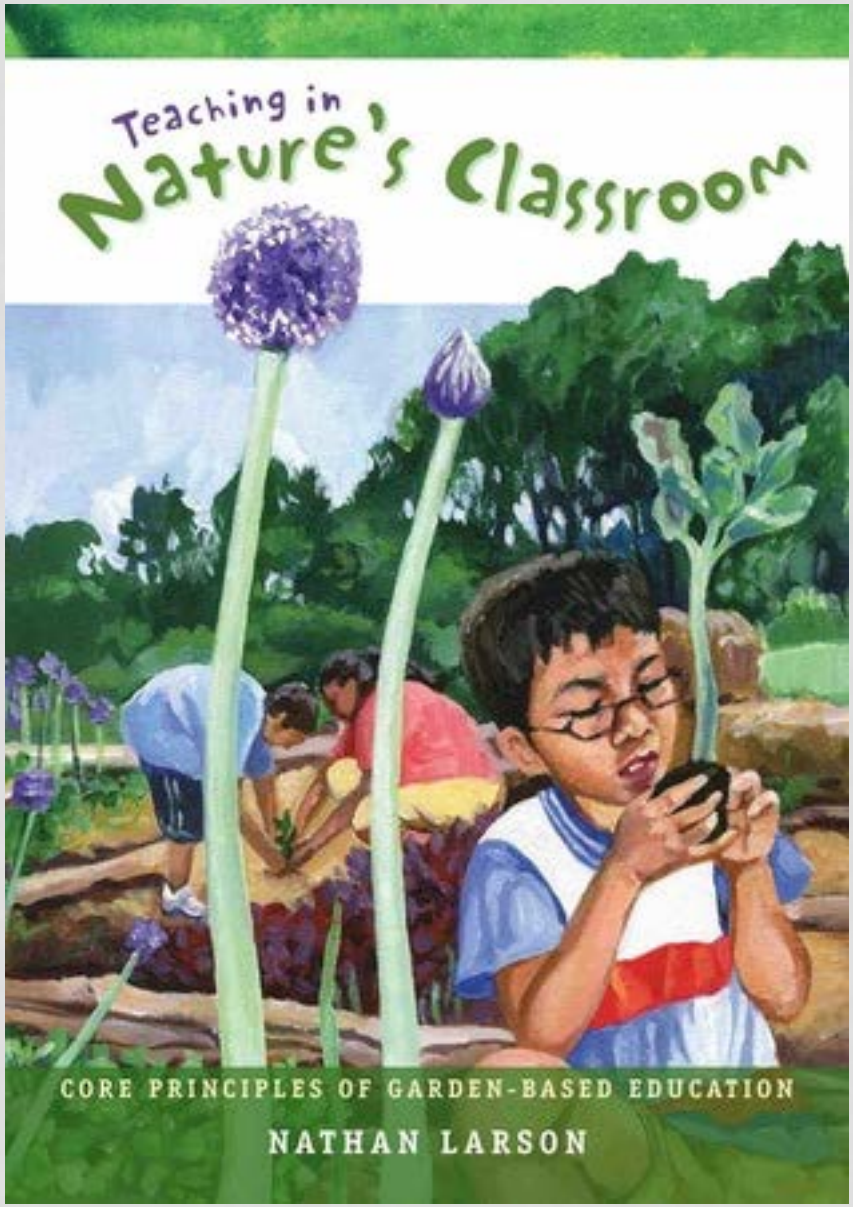
HERE WE GROW SCHOOL GARDENING

UTAH AGRICULTURE IN THE CLASSROOM

WHY PEOPLE NEED PLANTS

As a group, make a list of objects that come from plants.

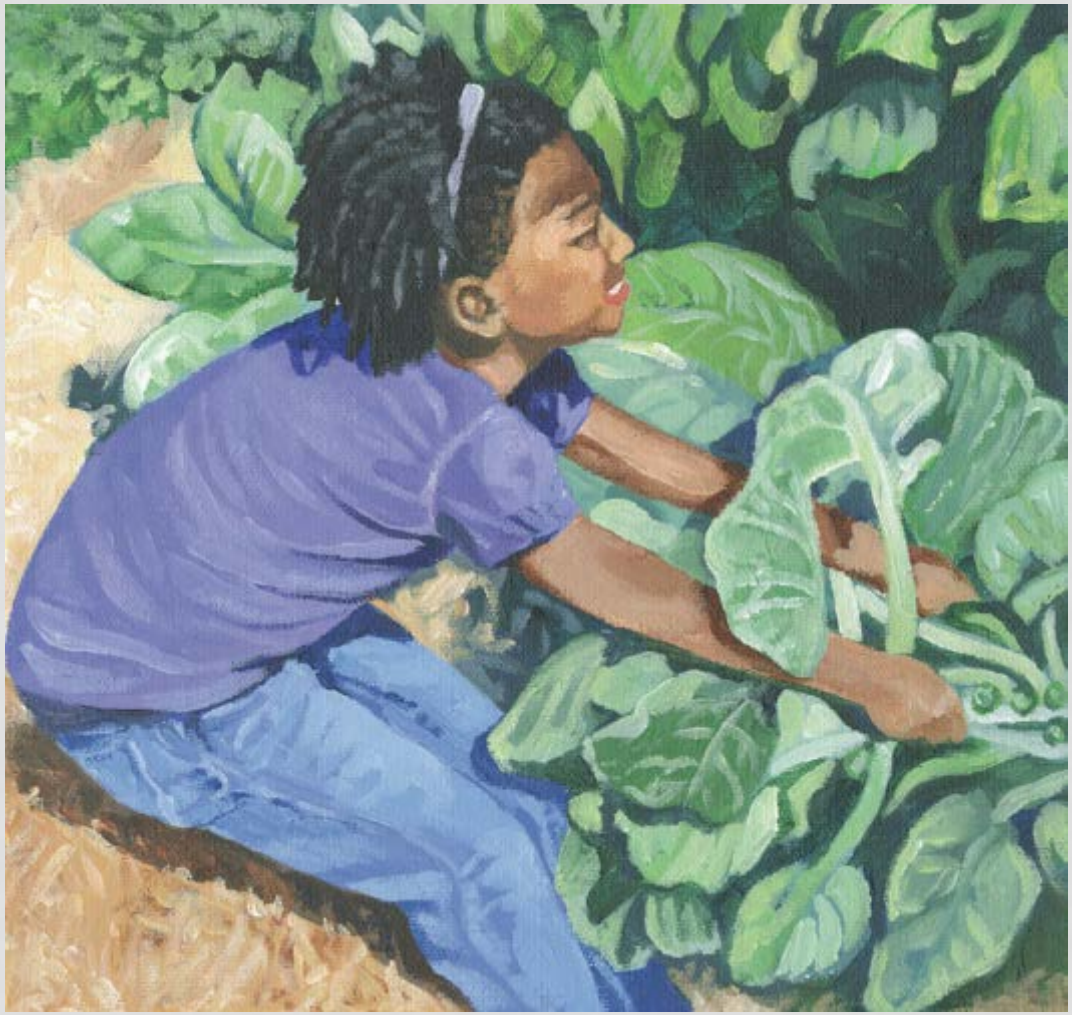
- Plants make up the base of the food chain by gathering energy from sunlight and turning it into food for themselves and other living organisms.
- The food we eat and many of the things we use in our daily lives come directly or indirectly from plants.
- Plants provide, food, fabric, shelter, oxygen, and fuel.


Teaching in
Nature's Classroom
CORE PRINCIPLES OF GARDEN-BASED EDUCATION
NATHAN LARSON

LET THE GARDEN BE THE TEACHER

MAKE IT HANDS-ON

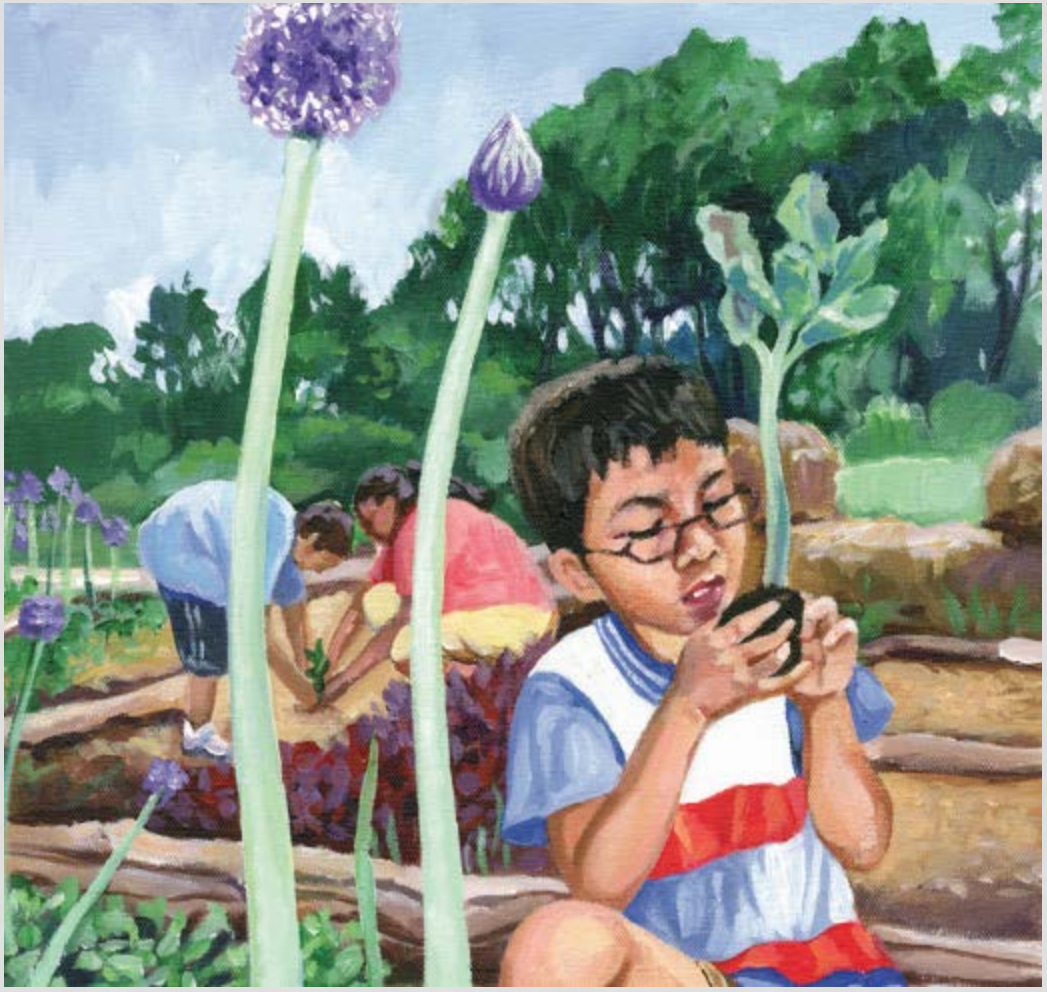
LET THE KIDS BE THE GARDENERS



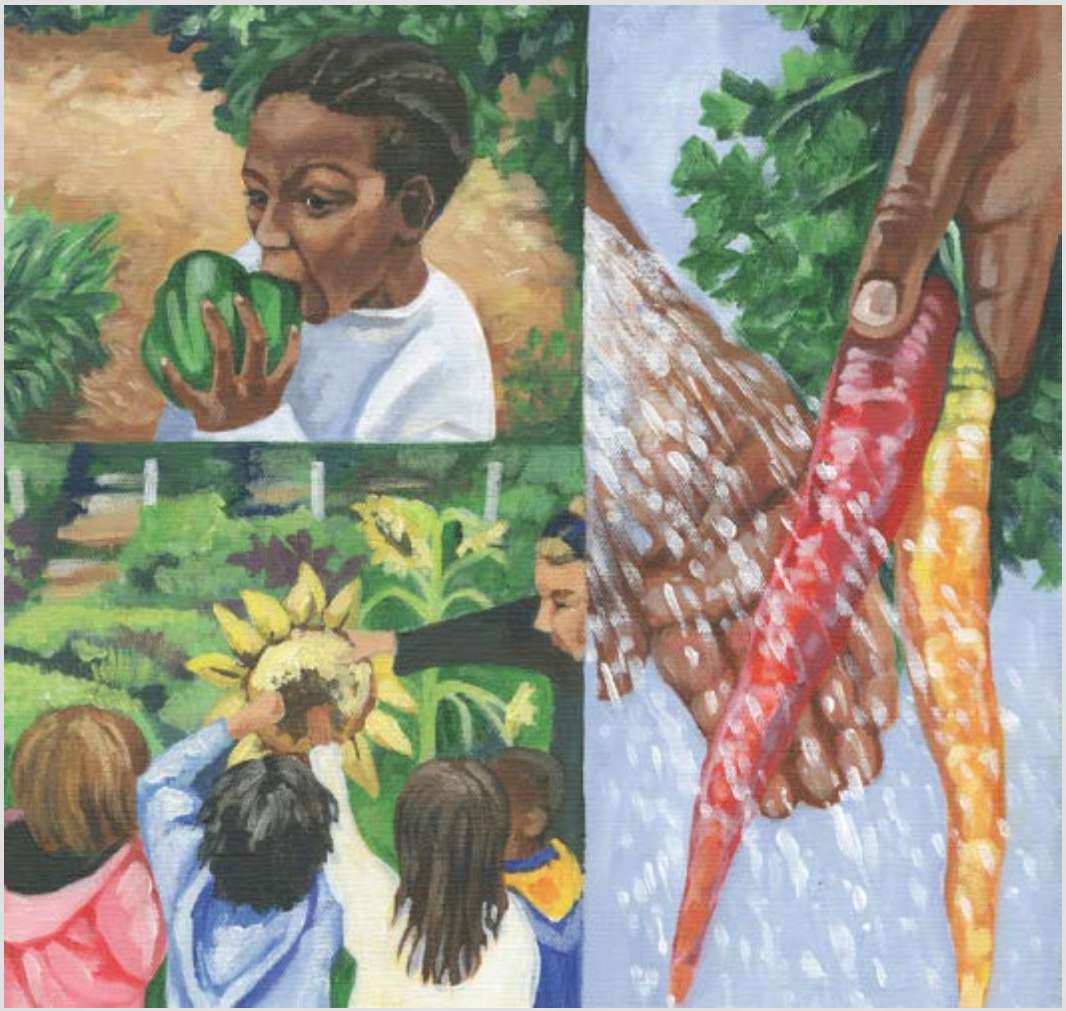
BUILD SELF-EFFICACY

BUILD A DIVERSE LEARNING COMMUNITY

CULTIVATE A SENSE OF WONDER



ENGAGE THE SENSES

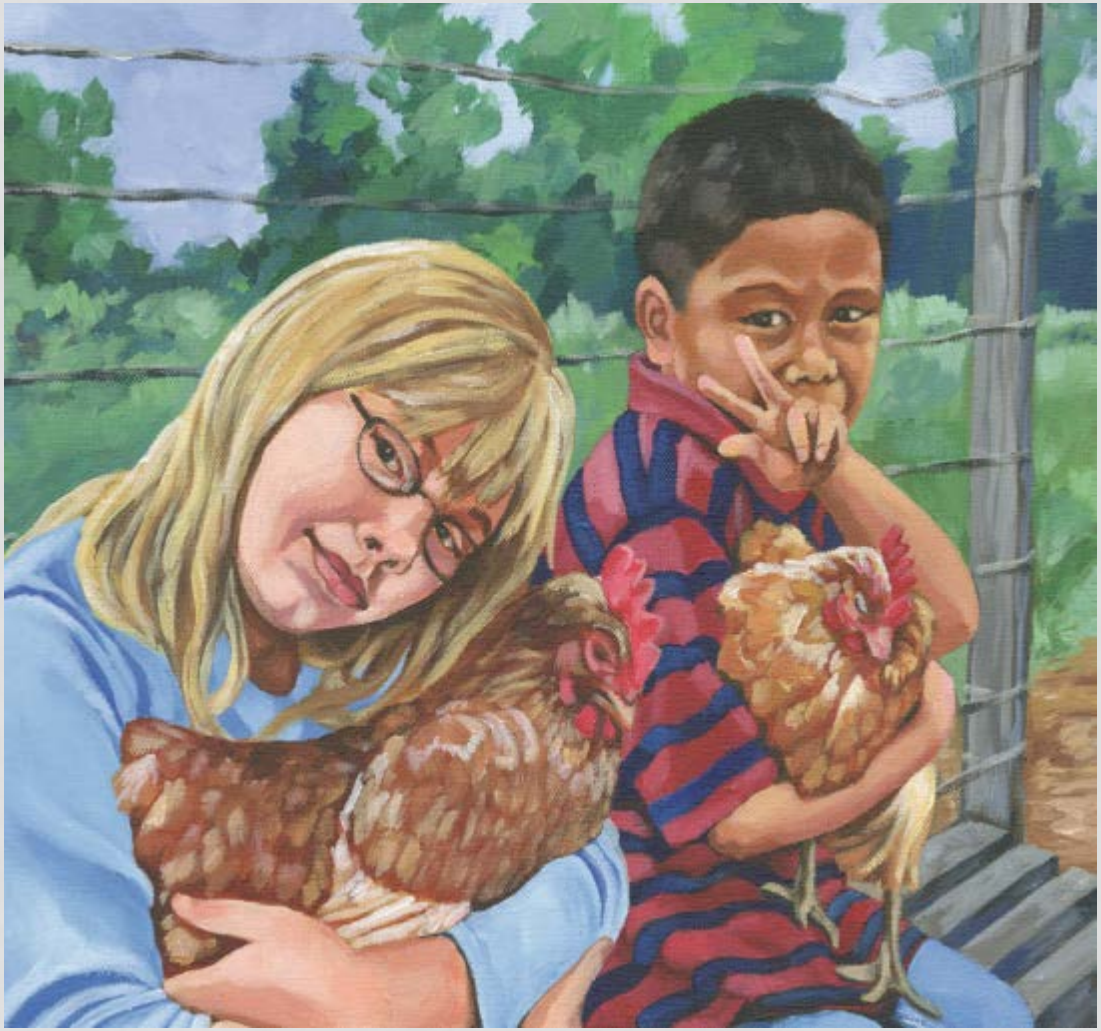


ENGAGE KIDS IN MEANINGFUL FITNESS

IMMERSE YOURSELF IN NATURE

MAKE CONNECTIONS TO HOME AND COMMUNITY

ENGAGE WITH WORMS, BEES, CHICKENS AND OTHER ANIMALS



WORK *AND* PLAY IN THE GARDEN

UTILIZE AN INTEGRATED CURRICULUM

CULTIVATE A CONNECTION TO FOOD

CULTIVATE A SENSE OF PLACE

OBSERVING SEEDS

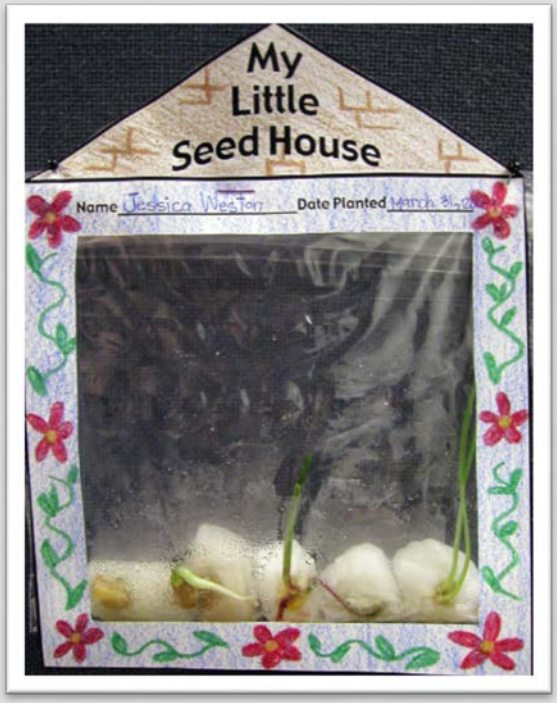
- Seeds are contained in the fruit of the plant.
- Seeds are the means by which plants reproduce.
- Some seeds are eaten.

DISSECTING SEEDS

- On the outside of the seed is the seed coat. Its purpose is to protect the seed.
- On the inside is the embryo (what will become the new plant) and food for the embryo—the cotyledon.
- When the seed receives the proper amount of warmth and moisture, it will begin to germinate.
- The cotyledons provide food for the embryo until it grows new leaves. The leaves will then use the energy from sunlight to carry out photosynthesis, making food for the plant.

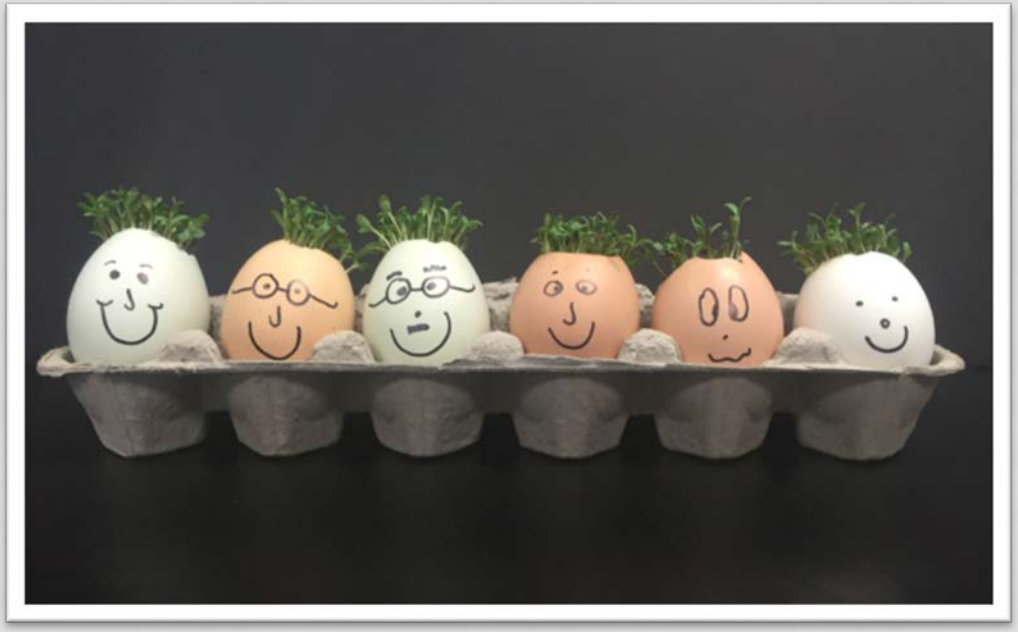
WHAT DOES A SEED NEED TO GERMINATE?

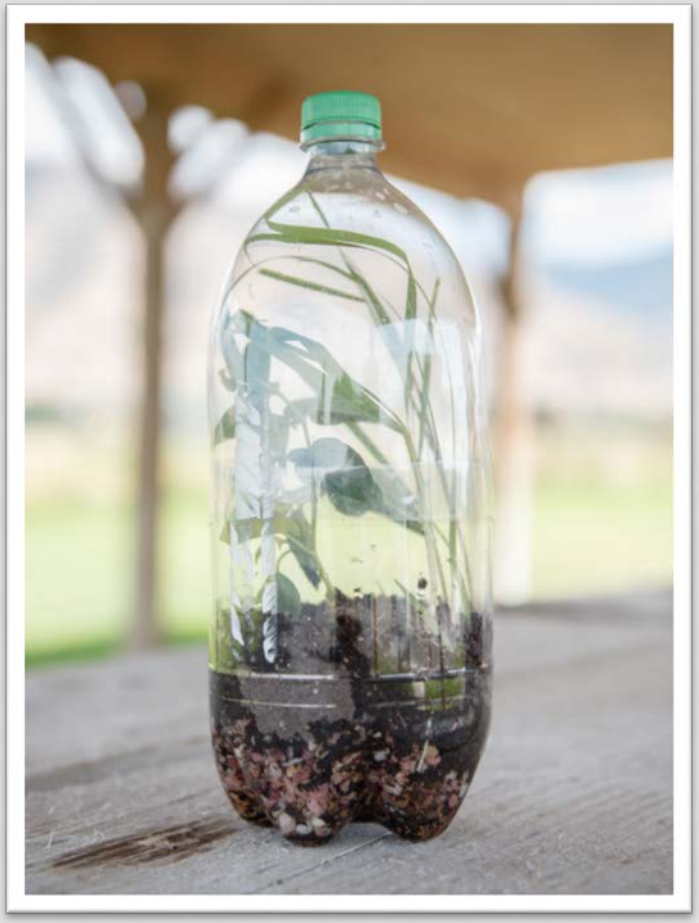
Most seeds are dormant until they receive warmth and moisture. When a seed receives the correct amount of moisture and the proper temperature, it will begin to germinate, which means it becomes active and sprouts.


My Little Seed House
Name Jessica Weston
Date Planted March 31, 20

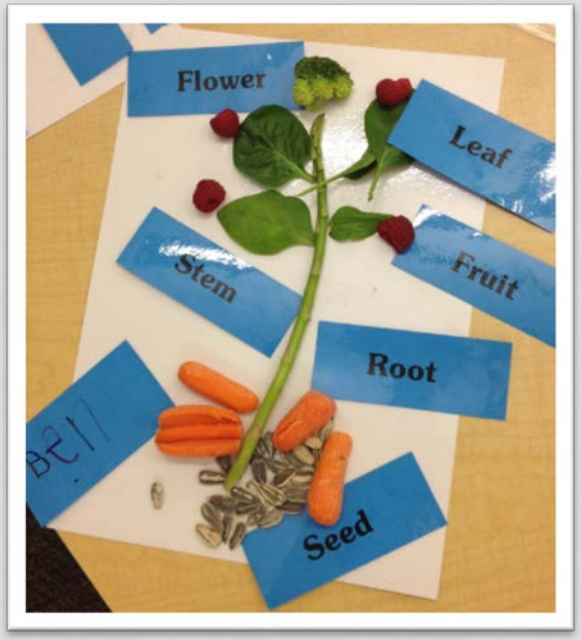
WHAT DOES A PLANT NEED TO GROW?

Plants need water, light, nutrients, and air to grow.





PARTS OF A PLANT



THE LIFE CYCLE OF A FLOWERING PLANT

SOIL

- Soil is made up of 4 components—air, water, organic matter, and mineral matter.
- The mineral component, made up of tiny particles of rock, determines the texture of the soil.
- Soil particles are categorized according to their size as sand, silt, and clay.

SOIL

- The best soil for plants allows water to move slowly through so that some is held in the soil for plants to use.
- Soil that is good for plants has a mixture of sand, silt, and clay particles as well as organic material.
- Organic matter is formed by the decomposition of dead plants and animals or plant and animal waste and acts like a sponge to help the soil capture water.
- Well-managed soils that are high in organic matter tend to be more porous, allowing them to rapidly absorb water.

SOIL

- Utah has 1,300 different soil types, each having their own unique characteristics.
- The color of the soil can indicate what kinds of minerals are in the soil and what kinds of plants will grow well in that soil.

SOIL

General Rules about soil color:

- **Black, Black/Brown:** Soil that has high organic matter content and nutrients for plants. These are deep soils formed mainly of materials transported by water, ice, or gravity.
- **Gold/Yellow:** Soil from certain sandstones.
- **Taupe:** Clayey soils with lower organic matter content. Soils formed mainly in residual materials from ancient sea beds.
- **Red:** Soil with high iron content.
- **Cream:** Soil with high amounts of lime formed with wind-blown silty material.

VERMICOMPOSTING

- Worms live in soil and help change bits of dead plants and animals into nutrients that plants can use.
- Worms eat organic matter and then turn them into castings—also known as worm poop—that are nutrient rich and useful to plants.
- Worms also help aerate and loosen the soil so that the roots of plants can more easily develop underground.