

### MATERIALS

- Wheat seeds
- Warren hoe
- Small watering cans
- Spading fork and claw cultivator, if needed

### PREPARATION

- Spring wheat should be planted as early as the ground can be worked.
- Fill small watering cans, set near grain bed
- Set aside spading fork and claw cultivator if extra tilling is required.

### PROCEDURE

As a class, gather in the garden. Arrange students around the wheat bed and introduce the day's activity.

Demonstrate how to use a garden rake to lightly smooth the soil surface in preparation for planting. Select a few student volunteers to use the rake, working until the entire bed is sufficiently prepped. If the soil needs some extra work, first use a spading fork and claw cultivator before raking. Collect tools and set aside.

Next, show students what the warren hoe can do by making a furrow in the soil – ask, “What might we use this tool for?” Once you have deduced that it can be for digging furrows to easily plant seeds in, have students line up for a turn to use the warren hoe to dig two rows to plant wheat seeds in. Let each student make about 1 foot of the furrow before passing off the tool. The furrows need to be about 1-1.5 inches deep.

Ask students to line up on the edges of the garden bed, hand a large handful of wheat seeds to each person. All together, scatter the seeds in the furrows and “tuck them in”, covering them with soil and gently patting down the earth. Tell students that for every pound of wheat we plant, we can harvest over 8 pounds of grain in the fall!

Have students take turns watering the newly planted seeds.

# Planting Wheat

## Food & Technology

### ENGAGE

Tell students “*Domestication* is when a species of plant or animal is changed over years and years for the benefit of humans.” “We say that our house pets, dogs, cats, rabbits, as well as farm animals such as cows, sheep, horses, have been *domesticated*.” Before we apply this term to our garden plants, make a list on the board with your students of the differences they can think of between pets and their wild relatives (i.e. dog vs. wolf, house rabbit vs. wild rabbit). Have students explain in their own words what *domesticated* means.

### OBJECTIVES

- Students will understand what *domestication* means in relation to plants and animals
- Students will be able to give examples of how intentional and unintentional *domestication* has changed various food crops and animals that are part of our food system

### EXPLAIN

#### Wheat, a popular crop

Originally from western Asia, wheat now makes up 41% of the calories eaten by people across the globe. After planting and growing, wheat must be processed before it can be eaten, a factor that keeps it out of many home gardens. Curing, threshing, winnowing, grinding, and baking all must occur before we can eat this tasty grain.

#### Wheat, deconstructed

Wheat was once a wild grass. Over 13,000 thousand years ago, Neolithic peoples in Turkey, Iraq, Jordan, and Syria started to snack its tasty seeds, and started to collect and plant them. As they collected their seeds, they unknowingly began to *domesticate* the plant and control its genetic future. They choose the seeds that tasted the best and harvested them from the plants that were the most productive and most well adapted to the climate – the healthiest looking plants. By collecting and planting these seeds, they selected desirable traits of the wheat plant for replication, and over time, wheat was significantly altered to the domesticated plant we cultivate today – a very different plant than its ancient forbearer.

#### Wheat and what else?

Think of the many other domesticated foods we eat on a regular basis that are very different than their *wild* relatives. Apples in the store are gigantic in comparison to the apples we see growing in our yards. Store bought strawberries are huge in relation to their wild strawberry relatives. These are plants that, like wheat, have also been *domesticated* over time by humans. The apples and strawberries you buy in the store have been selectively bred over centuries for desirable qualities such as taste, size, and plant productivity.

### ADDITIONAL CONTENT INTEGRATION *(see previous page)*

Human interaction with different plants and animals over millennia had caused them to change to better serve our societal needs. Let’s think about how else we change the face of the planet. Ask students to think of one thing that they see humans changing in the environment around them (some examples might be cars, roads, buildings, etc.). What are the positive and negative effects of this? Can you think of a better way to meet the same needs of our society?

### ADDITIONAL MATERIALS

- Chart paper
- Marker

### EVALUATE

**Journal prompt:** Illustrate your understanding of *domestication*, choosing either a plant or animal to explain its meaning.