

# Wild About Wheat (and other grains)!

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2016-09-02– v1.0

## Session Goals:

1. Demonstrate to visitors the importance of cereal grains throughout human history.
2. Provide visitors with an understanding of cereal domestication.
3. Facilitate visitors' ability to distinguish grain crops and how they are used.

## Activities

### Activity #1 – Grain domestication

#### Desired Learning outcomes:

1. Grains were some of the first plants domesticated.
2. Grains were an important food source for early humans.
3. Grains remain the most important crops worldwide.

#### Materials:

1. Poster board for info on domestication & intro to activities
2. Plants (whole dicocum, dicocoides, durum, bread, and wild wheats)
3. Wheat and oat heads from different species (wild vs domesticated)
4. Heads/rachis for viewing under microscope
5. Microscope

#### Lesson:

- Poster board with a diagram showing how wheat and barley were domesticated, how long ago this occurred, and where it happened.
- Examples of wild wheat and domesticated plants to demonstrate how they have changed over time. We will have signs indicating what the plants are and what traits (if any) domestication traits they have and why those traits are important.
- Have some shattering dicocoides (or other wild species if available) to show what the first farmers dealt with.
- Microscopes to examine the rachis in shattering vs non shattering wheat and hairy wild relative oat and wheat seeds.

### Activity #2 – Do you know your grains?

#### Desired Learning outcomes:

1. Grains come from diverse plants
2. Grains are very important for various purposes including food, feed, and fuel



Materials:

1. Poster board with map to show where various grains, pseudocereals, and grain legumes were domesticated.
2. Display of different types of grains in small, clear boxes to discuss with visitors how they are used.
3. Bags of grain for the “guess that seed” activity.

Lesson:

- Examples of different types of grains, and how they are used. We will have a map where people can pin where different grains were domesticated.
- “Guess that seed” – sacks of grain that people can put their hands in to guess what seed types are in each bag.

### **Activity #3 – PURPLE gRAIN’s Importance for Producing Amber Waves of Grain**

Desired Learning outcomes:

1. Agriculture in Minnesota, specifically of grain crops, plays an important role in feeding and fueling the world
2. Changes in climate, including temperature and rainfall, are affecting the types of crops grown in the upper-Midwest region

Materials:

1. Poster board for introduction part of lesson
2. Purple wheat seeds or grain seeds artificially dyed purple
3. Print outs of various “art” scenes for kids to glue sees on
4. Elmer’s glue
5. Markers/crayons/colored pencils to otherwise decorate seed art

Lesson:

- Discuss where wheat, oats, barley, and rye are grown across the USA.
  - Basics of how water and climate plays a factor in this (for the adults) & how these regions are shifting due to climate change.
  - Discuss how Minnesota/upper-Midwest region plays an important role in production of grains.
- PURPLE gRAIN – have some purple dyed seeds or actual purple wheat that kids can glue onto handouts to make “seed art” (fun for kids)

### **Pre-session trivia:**

1. How many loaves of bread can be produced from one acre of wheat?

**A:** One acre yields ~40 bushels, one bushel weighs ~60 lbs, and ~42 lbs of flour are milled from one bushel. Therefore, ~1,680 lbs of flour are obtained from one acre. For an average size loaf of bread you need ~1lb of flour, so one acre of wheat yields ~1,680 loaves of bread!



2. Where was wheat domesticated and how long ago did this occur?  
**A:** It was domesticated near the present-day Syria/Jordan/Israel area around 12,000 years ago.
3. Bread wheat is the most common type of wheat worldwide, but what is the other predominant wheat type?  
**A:** Durum wheat (a.k.a. pasta wheat).
4. Rank the following crops in order of “importance” to world food security/amount of hectares grown: wheat, corn, soybean  
**A:** Corn, wheat, soybean.
5. What is the longest word in the English language in which the letters are arranged in alphabetical order? (Hint: this has something to do with wheat!).  
**A:** Aegilops – a genus of grasses including wild wheat relatives.

### **Recommended age range**

Activities for Age 3 to adult

### **Recommended citation for this lesson plan:**

Kianian Lab, USDA-ARS. 2016. Wild About Wheat (and other grains)!  
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