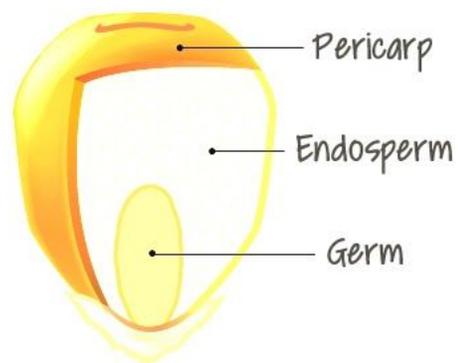


What is Popcorn?

Who doesn't love popcorn? Popcorn dates back to the early 1600s and is related to aztec indian ceremonies however it is mainly used today as a popular movie snack. Popcorn is produced in the central part of the US including Iowa, Nebraska, Kansas, Missouri, Illinois, Ohio, Kentucky, Michigan and Indiana. It can also be eaten in many different recipes and events and is a common snack for people trying to eat a healthier diet as 1 cup of air popped corn contains 31 calories, 1 gram of Protein, 6 grams of Carbs, 1 gram of Fiber and a tiny bit of Fat. Have you ever thought about how it pops or what's inside the hard kernel? This lesson is to help give you some of this information.



Popcorn is a whole grain. Popcorn differs from other types of corn because its hull is the right thickness to allow it to burst open. Other types of corn include sweet, dent, and flint. The corn kernel is made up of 3 different components: the germ, endosperm and pericarp (hull or bran). **Endosperm** is the starch and is white or yellow in color, it is also a carbohydrate that provides energy to the **germ**, the living part of the kernel. The **pericarp** or **hull** is the outer shell and is made of cellulose. The hull can be many colors on different types of corn. Along with the 3 different components, each kernel contains some moisture inside a circle of soft starch all within the hull. It needs to have between 13.5 and 14% moisture in order to pop. As the kernel heats up the water begins to expand and its particles move around as it starts to turn into steam at 212 degrees Fahrenheit. This steam begins to gelatinize the starch and as the kernel continues to heat to about 350-460 degrees, the pressure inside the grain or kernel will be too strong for the hull to contain it and will explode open. The steam will then be released and the soft



starch will be inflated and then cool off to the popcorn shape. A single kernel will be 40-50 times its original size as popcorn.

Activities- Play with your Food.

1. Pop some popcorn. Count how many kernels popped vs how many didn't. Discuss why you think there were ones that didn't pop.
2. Use your popped popcorn to help practice addition, subtraction or multiplication and division.
3. Use your popped vs unpopped kernels as game pieces in a tic-tac-toe board
4. Make a picture with your kernels and popcorn.
5. See how many popcorn pieces you can throw into the air and catch in your mouth
6. Research different popcorn traditions.
7. Look up recipes using popcorn that you could make with your family.

Once you have participated in this Popcorn lesson, let us know what you learned in the [Post Activity Evaluation form](#)