

Popcorn: Legend and Science

Popcorn is a magical treat with deep roots in American culture. Popcorn is a type of grass that has been around for thousands of years and is unique in its ability to pop. What makes popcorn transform from hard kernels or seeds into a fluffy, edible treat?

Part 1 A Folklore Explanation

Native American legend explained that the transformation was because of spirits. They believed that a spirit lived inside each kernel, and as the kernel was heated, the spirit became more and more angry, and finally burst out of its home as an agitated puff of steam. The edible treat remained.

What else might explain why the kernel pops and jumps in the pan, creating this magical transformation? On the back of this sheet, create your own legend or myth that describes the process. Use your imagination!

Part 2 Crack the Science of Popcorn!

Popping popcorn feels like magic but the process is all science. Here's how it works:

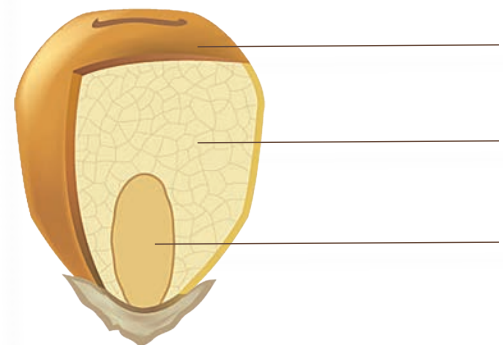
- Popcorn seeds have three parts: the *germ*, *endosperm*, and *pericarp*. The pericarp is also called the *hull*, the hard kernel you might find in the bottom of your popcorn bucket.
- Each tiny golden hull has a small amount of water inside to help it pop. The water is stored inside soft starch of the endosperm.
- As the kernel heats up, the water inside heats up. Water expands as it heats. At about 212 degrees the water turns into steam. Steam makes the starch gelatinous and increases the pressure in the hull.
- At about 347 degrees, the hull bursts open, letting out the steam. Inflated soft starch also bursts out. It rapidly cools making the shape of a puff of popcorn, ready to eat. It's like magic!

Tiny and Powerful!

Use the information you just read and the word bank to label the diagram of a popcorn seed.

Word Bank

endosperm germ
pericarp/hull



Families:

Pop on over to The Popcorn Board at popcorn.org for delicious and nutritious recipes and information on popcorn!