Explain Events, Procedures, and Ideas

Grade 4 Reading Worksheet - Building Confidence

Name _____ Date _____

Read the text. Circle the answer to each How question.

READ THIS FIRST

Why Popcorn Pops

A popcorn kernel looks like a tiny, hard seed. Put it in a hot pan, though, and it suddenly bursts into a fluffy white puff. Why does this happen?

The answer is hidden inside the kernel. Each kernel has three main parts. The outside is a hard shell called the hull. Inside the hull is soft starch, and mixed into the starch is a tiny drop of water.

When the kernel is heated, the water inside gets hotter and hotter. Soon it turns into steam. Steam takes up much more space than water does. However, the hard hull does not let the steam escape. So the pressure inside the kernel keeps building.

At the same time, the heat softens the starch. It turns into a soft, gooey paste.

At about 350 degrees Fahrenheit, the hull cannot hold the pressure any longer. It splits open with a pop. The steam rushes out, and the soft starch puffs up into a foam. As it cools, the foam turns hard and crunchy. In less than a second, the kernel has turned inside out.

Not every kernel pops. Some kernels have a crack in the hull. The steam leaks out slowly through the crack, so the pressure never builds. Other kernels have lost too much water from sitting on a shelf for too long. Many people call these leftover kernels duds.

So a good pop needs two things working together: water inside and a strong hull around it.

1. How does the water inside the kernel turn into steam?
   - It gets squeezed flat by the soft starch around it.
   - It gets hotter and hotter as the kernel is heated.
   - It slips out through a tiny crack in the hull.

2. How does a cracked kernel lose its steam?
   - It stays locked inside the soft starch.
   - It bursts out all at once with a loud pop.
   - It leaks out slowly through the crack.

3. How does the kernel look after it cools?
   - like a tiny, hard seed again
   - like a hard, crunchy foam
   - like a soft, gooey white paste

4. How does steam differ from water, according to the text?
   - Steam takes up much more space.
   - Steam can slip through the hull.
   - Steam is much heavier than water.

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Answer Key - Grade 4 Reading Worksheet - Building Confidence

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