



acadience® reading k–6

Student Materials

Grade 5 | Benchmark 3

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Build a Thermometer

► If you walk outside on a summer day, you will usually feel warm. However, if you walk outside in the wintertime, you will usually feel much colder. How could you find out the exact temperature? You could use a thermometer, which is a tool that measures temperature.

To better understand how a thermometer works, you can construct your own. Begin by filling a small soda bottle with cold water. Make sure the bottle is filled to the brim. Next, add four drops of food coloring to the water to make it more visible.

Make a ball of modeling clay that is large enough to form a stopper for the bottle. Flatten the clay to create a long thin ribbon, and wrap it around the middle of a straw.

Position the straw in the bottle so the clay forms a stopper at the top of the bottle with the straw through the middle of the clay. Carefully seal the bottle with the clay without pinching to ensure the straw remains completely open. To prevent water from escaping, confirm that there are no holes or cracks in the clay. You will notice that half of the straw is submerged in the water, while the other half is outside the bottle. Gently force the clay plug into the top of the bottle until the level of the water moves up into the straw above the bottle.

Now it is time to utilize your bottle thermometer to measure temperature. Place it in a larger bottle that is filled with hot water. Every two minutes for the next ten minutes, take a reading by marking the straw water line. Use a ruler to calculate the difference between each mark and the original water mark.

Next, fill the larger bottle with cold water and ice. Place your bottle thermometer into the icy water. Take the same kinds of measurements that you did with the hot water, and compare your results.

How Kangaroo Got Her Pouch

▶ On a lovely sunny day, a mother and her youngest son were taking a relaxing walk through the outback. Suddenly, Mother Kangaroo lost sight of her offspring, and she started searching for him. She peered under some bushes and in the emerald grass.

Joey suddenly bounded up and shouted that he was right behind her. Mother was startled and leaped into the air. The young kangaroo apologized for surprising her.

The two ambled along on their journey, pausing after a while to munch on some delicious grass. When Mother glanced up, she was alarmed to see that Joey had vanished again. She started searching, but, instead of finding her son, she discovered her old friend Wombat. They greeted each other, and Mother said, “My rascal son has wandered off again. Did you happen to see him?”

Wombat said that he was very sorry to see her distressed, but he had not seen the youngster. He did, however, have a suggestion she could consider. “I am extremely thirsty,” he said, “so why don’t you help me search for water, and then when I’m refreshed we can search together for your meandering son.” Mother agreed to the arrangement, and then shielded her eyes from the sun and peered into the distance. She was much taller than Wombat, so she could see over the grass. Before long, Mother saw a pool of sparkling water, so she had Wombat grab her tail, and she led him to the water.

As Wombat took a drink of the cool water, Joey came bounding up to his mom. She shook her head ruefully at her playful son. Wombat decided he should do something to help Mother so she would not have to keep searching for Joey. He created a pouch out of blades of grass, and then he tied it around Mother’s waist. As soon as Mother opened the pouch, Joey jumped inside it. Mother thanked her friend for the inventive solution. Since that time, Mother Kangaroo always wears her pouch so she does not have to go searching for Joey.

An Amazing City

► Every day, tourists flock to see special places around the world. One place that is special because it is so old is the site of the ruins of an ancient city in Mexico.

The Mayan people built this ancient city more than one thousand years ago. The site covers four square miles. The structures that were left behind show that this community was once thriving. Many scientists have come to this location and tried to solve the mysteries of the city. They have excavated the ruins and carefully restored as much as they could.

One question that is still unanswered is why there are two styles of architecture in the city. Some buildings look like ones found in other Mayan cities. However, other buildings, such as the pyramid, temple, and ball court, have a different design. They look like structures built by a group of people called the Toltecs. One theory is that the Toltecs took over the city. Another theory is that the Maya learned about the Toltecs' style by trading with them. If the Maya liked the buildings they saw, they might have tried to imitate them.

The pyramid at this site has been completely restored on two of its four sides. It towers over the other buildings. Visitors climb ninety-one steps to reach the top platform for a grand view of this amazing place. The total number of steps on all sides of the building adds up to three hundred and sixty-five, which means there is one step for every day in the year. At the top of the pyramid, there is a temple. Inside, there is a statue of a jaguar that is painted red and has green eyes.

The pyramid attracts the most visitors at the autumn and spring equinoxes. On those days, the sun on the stairs casts a shadow that looks like a giant feathered serpent. As the sun moves through the sky, the snake appears to slither down the sides of the pyramid. Thousands of tourists watch as the shadow of the ancient figure returns to its home.
