The Rain Gauge

Chapter 1

On top of a “No Parking” sign outside Centennial Middle School in Boulder, Colorado, there is a plastic cylinder. Inside the cylinder is a smaller cylinder with a funnel at the top. This is a rain gauge.

Each morning before school starts, science teacher Mr. Schmoker climbs a ladder and measures the amount of water in the gauge. This measurement tells him how much rain fell the day before. A thunderstorm leaves a little water. Many days it does not rain and there isn’t any water at all. But in September 2013 a very large rainstorm brought more rain to Boulder than Mr. Schmoker had ever measured before. The rain caused rivers to flood roads and houses. School was canceled, but still Mr. Schmoker measured the amount of water in the rain gauge each day. In fact, Mr. Schmoker measured more rain than anyone had ever measured in Boulder, Colorado.

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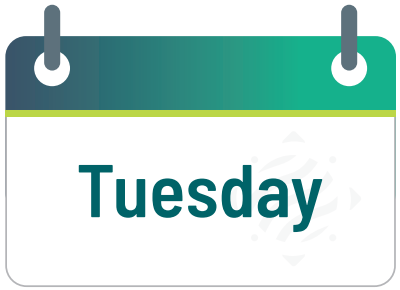
Chapter 2



On Tuesday Mr. Schmoker measured the amount of water in his rain gauge like he does every school day. It had rained, so he expected to find water in the rain gauge but the amount of water he found was surprising. That's a lot of water for Boulder, thought Mr. Schmoker. The sky was still dark with clouds. The weather was about to get even more unusual.

How much rain did he measure in the gauge?

Put the water from your Tuesday container into the rain gauge and measure the amount of rain that fell. The ruler on the side of the inner tube measures an inch of rainfall. It looks much larger than an inch because water from a larger area is funneled into a smaller area.

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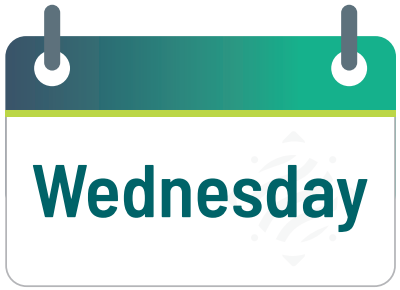
Chapter 3



Mr. Schmoker got to the top of the ladder and found a surprise. He noticed that even more water was in the rain gauge than there was on Tuesday. The water filled the inner tube and spilled over into the outer tube. He measured the amount of water in the inner tube and wrote the number down. Then he poured the water out and measured the water that was in the outer tube. He added the numbers together to get the total.

How much rain did Mr. Schmoker measure on Wednesday morning?

Put the water from your Wednesday container into the rain gauge and measure the amount of rain that fell. Remember to measure the water in the inner cylinder and then pour that water into another container and add the rest of the water from the outer cylinder into the inner cylinder. Add the numbers together to get the total.

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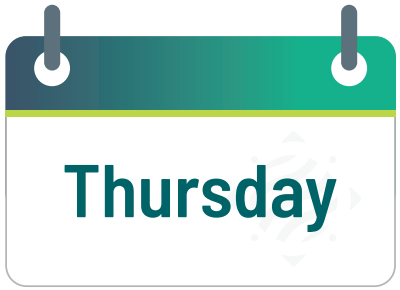
Chapter 4



On Thursday school was canceled. It had rained so much that rivers and creeks had overflowed their banks. Mr. Schmoker was at home in the morning. He went outside to see his backyard rain gauge and found five inches of water! He'd heard that, near the school, it had rained even harder. School was canceled, but the school's rain gauge wasn't taking the day off. Mr. Schmoker hopped in his truck and drove carefully to school, avoiding flooded areas. At school, he switched the very full rain gauge with an empty one. He went to his classroom to measure the water and was startled by a loud alarm! Mr. Schmoker discovered that no one was supposed to be at school, not even teachers.

Did Mr. Schmoker find more water in the school's rain gauge than he did at home?

Put the water from your Thursday container into the rain gauge and measure the amount of rain that fell.

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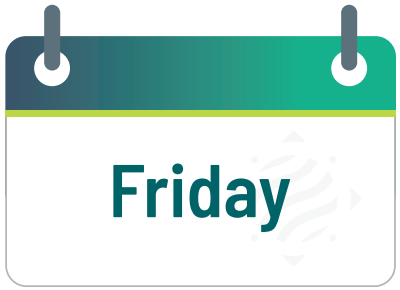
Chapter 5



School was still canceled because of the flooding in Boulder. Mr. Schmoker found a safe route from his home to school so that he could measure the amount of water in the rain gauge. He drove his truck, avoiding raging rivers and bridges that were closed. This time he didn't go into the school. He didn't want to set off the alarm. He had left the ladder outside so that he could get to the rain gauge. The rain was lighter by the time he got to school, but rain that fell over the past day and night filled the gauge. Mr. Schmoker had to empty and refill the inner tube a few times and then add the numbers to get the total rainfall.

Find out how much water Mr. Schmoker found in the school's rain gauge.

Put the water from your Friday container into the rain gauge and measure the amount of rain that fell.

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Chapter 6

On Saturday morning the rain stopped. People came outside to see what had happened. They talked to their friends and neighbors. They looked at the flooded areas. No one goes to school on a Saturday, but Mr. Schmoker did. He knew it was important to make a measurement each day to know how much rain fell at that spot. He found a very small amount of water in the rain gauge. The good thing about a rain gauge is that it's possible to measure very small amounts of rain.

Find out how much water Mr. Schmoker found in the school's rain gauge.

Put the water from your Saturday container into the rain gauge and measure the amount of rain that fell.

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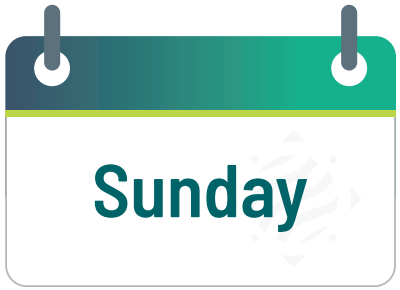
The Rain Gauge

Chapter 7



While people cleared the sand from the streets and the water from their basements, Mr. Schmoker measured the water in the rain gauge. He found only a small amount of water in the gauge. Was the storm ending? It looked like it was, but the forecast called for more rain.

Find out how much water Mr. Schmoker found in the school's rain gauge.

Put the water from your Sunday container into the rain gauge and measure the amount of rain that fell.

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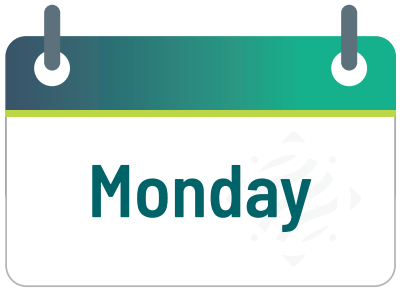
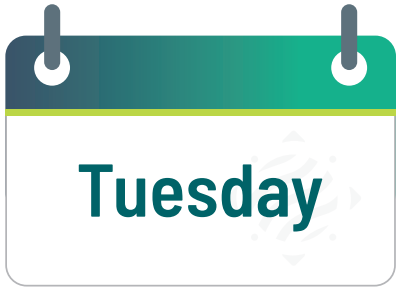
Chapter 8





School was still canceled on Monday, but again Mr. Schmoker went to school to check the rain gauge. He found more water in the gauge than over the weekend.

Find out how much water Mr. Schmoker found in the school's rain gauge on the last day of the storm.

Put the water from your Monday container into the rain gauge and measure the amount of rain that fell.

School was canceled on Tuesday too. The rain had stopped, but the creeks and rivers were still flooding. Mr. Schmoker had never missed this many days of school because of the weather. Because he measured the rain gauge each day, we know that more rain fell in Boulder that week than anyone has measured before

What was the total amount of rain that fell during the storm?

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