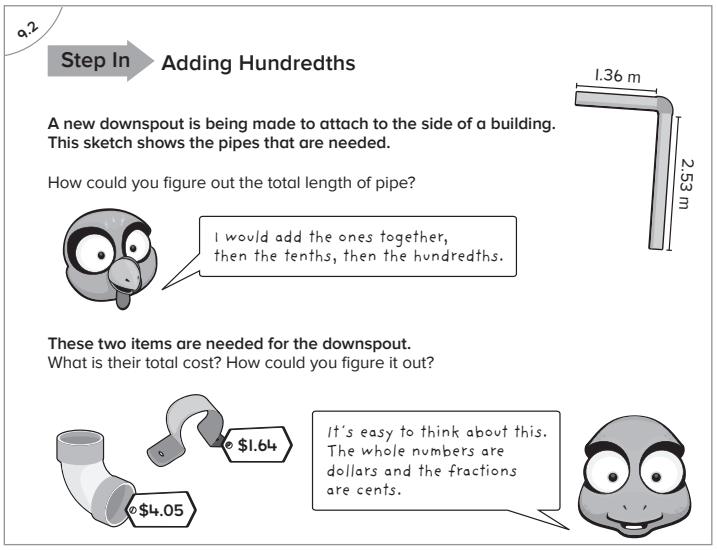
ORIGO STEPPING STONES TEXAS

Core Focus

- Adding decimals and solving word problems involving decimals
- Adding decimal fractions with regrouping using the standard algorithm
- Exploring the relationships between meters, centimeters, and millimeters
- Introducing kilometers

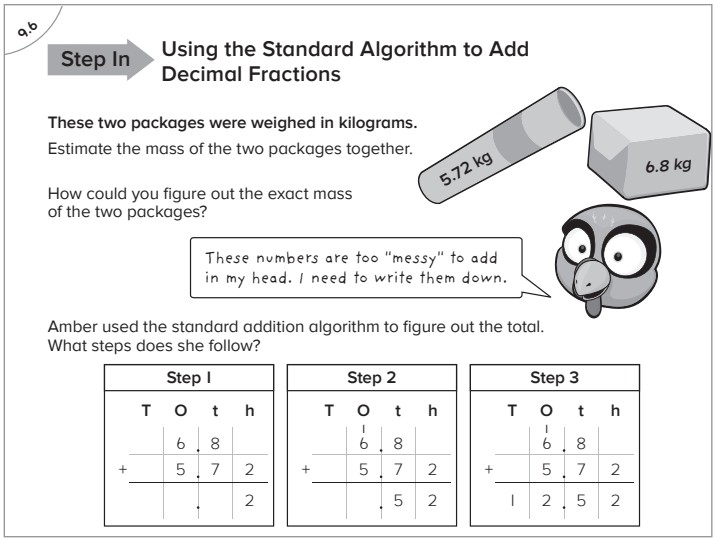
Decimal Fractions

- Students build on what they know about addition to begin adding decimals. It is intentional that no rules or procedures are discussed (i.e. "lining up decimal points"). Rules will come later. Students pay attention to like quantities and equivalence (for example, that $\frac{3}{10} = \frac{30}{100}$) in order to add.



In this lesson, students consider how to add numbers that include hundredths.

- The written procedure for adding decimal fractions — "lining up the decimal places" — ensures students are adding like quantities (tenths with tenths, hundredths with hundredths, etc.).



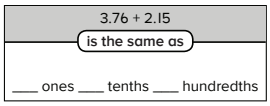
In this lesson, students add decimal fractions with different numbers of places.

Ideas for Home

- Create a set of cards showing the digits 0–9, shuffle the cards and place them facedown. Take turns with your child to draw three cards and use the digits in order of selection to write a decimal fraction in the form 0._____ ____. Compare the two decimal fractions to see which is greater. Be sure to ask how they know.
- Using the same digit cards, take five cards and create a decimal fraction addition sentence that is as close to 10 as possible (over or under). E.g. with the digits 1, 2, 5, 6, and 9, an addition sentence could be 9.6 + 0.521 = 11.21. Take turns with your child to see who can get the closest.
- Shopping for food or ordering in a restaurant is a natural time to practice addition with decimal fractions. Ask your child to mentally add the price of two items. Ask which strategy they used.

Glossary

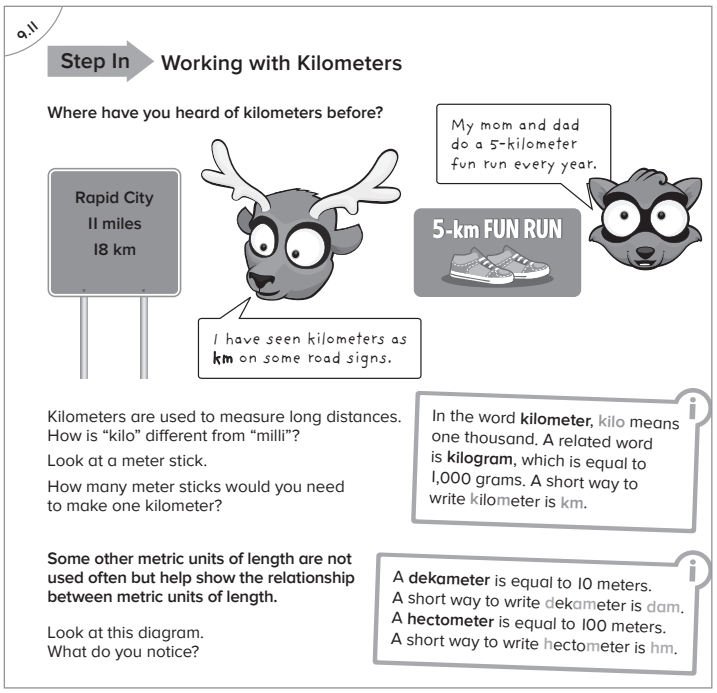
- Here, students think about the place value of each digit in a **decimal fraction**.



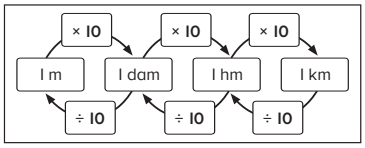
280915

Measurement

- In Grade 4, students explore relationships among various measurements of length in the metric system. In earlier grades, students learned that a **centimeter** (cm) is about the width of a finger, and a **meter** (m) is a little longer than a **yard**, and that 100 cm = 1 m.
- The **decimeter** (dm) and the **kilometer** (km) are introduced in this module. The decimeter is not frequently used, though it is actually a convenient length — 10 cm. The prefix "kilo" means one thousand. A kilometer is 1,000 meters (a little more than half a mile). Internationally, kilometers measure long distances.



- If students can name and picture these metric measurements, then they are not likely to get confused when working with them. If they can picture how the measurements relate to one another (all the relationships are 10s, 100s, or 1,000s), the arithmetic is easy.



- Metric measures are used in all industrialized countries, except the US. In track events or road races, we hear of the 100 m dash, or a 5-k walk or run. Metric distances are used in the Olympic Games.
- Understanding the metric system is mathematically helpful for having a real-world context to understand multiplying and dividing by magnitudes of 10.

Ideas for Home

- Take turns to estimate small lengths or longer distances, and then use a metric ruler, meter stick, or metric tape measure to check your estimates.
- Notice together how ×10 and ÷10 work in the metric system. Think of a measure in one metric unit (e.g. 3 m 23 cm) and practice figuring out what that measure would be in other units (3 m + 23 cm = 323 cm = 3,230 mm); 6 km + 8 m = 6,008 m = 600,800 cm.

Glossary

- The prefix "centi-", as in **centimeter**, means *one-hundredth*. A **centimeter** is *one-hundredth* of a meter, just as a "cent" is *one-hundredth* of a dollar.
- The **millimeter** (mm), is a tiny measure of length (*one-thousandth* of a meter, or *one-tenth* of a centimeter). The prefix "milli-" means one-thousandth. A *milli*pede is a creature with so many legs that it was estimated to have 1,000.