InsightMath

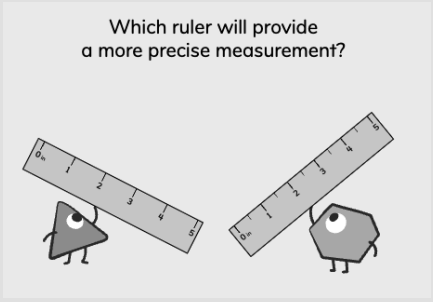
Exploring Measurement

Family Guide | Grade 3 | Unit 9

Your student is exploring how measuring the size of an object requires choosing an appropriate attribute, tool, and unit to match the situation.

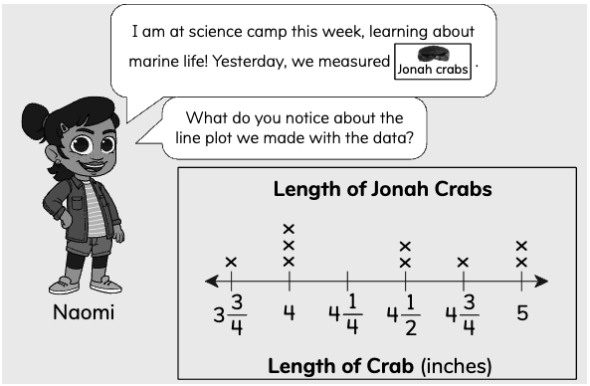
Key Math Ideas

In this unit, your student will explore different types of measurement. In previous grades, they measured lengths to the nearest whole inch; in this unit, they will measure lengths to the nearest quarter inch, allowing them to use their fraction understanding in a new way. They will then create line plots with these measurements as a way to organize and analyze data. Your student will also explore new units of measure and measurement tools as they are introduced to liquid volume and mass.



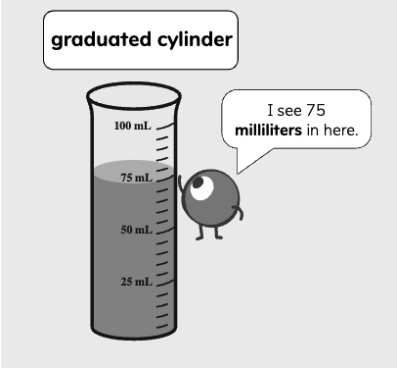
→ In the beginning of the unit, your student will learn to

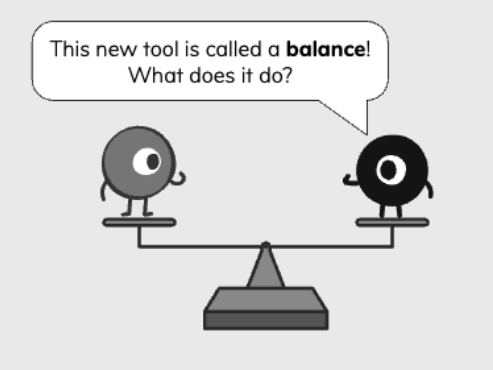
- select a tool to measure the length of an object;
- measure length to the nearest half or quarter inch;
- recognize that measuring to the nearest half or quarter inch is a more precise measurement than measuring to the nearest whole inch;
- create a line plot using measurement data;
- analyze line plots and answer questions using the data on a line plot.



→ At the end of of the unit, your student will learn to

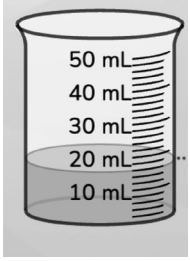
- estimate liquid volume in milliliters and liters;
- use a graduated cylinder to measure liquid volume (in milliliters and liters);
- make connections between graduated cylinders and
- number lines;
- estimate mass in grams and kilograms;
- use a bucket balance to measure mass;
- solve word problems involving mass and volume.





Helpful Hint

Graduated cylinders can be labeled in many different ways. Remind your student to look closely at how the numbers next to the tick marks to determine what each tick mark is counting by. For example, each tick mark might represent 2 milliliters. This is important to pay attention to when measuring volume with a graduated cylinder.



Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the first half of the unit:

- How could you measure the length of an object more precisely?
- What do the tick marks on a ruler tell us?
- What does each dot or X on a line plot represent?

→ By the end of the unit:

- What tool can you use to measure volume? What units can you use?
- Which is greater, 1 liter or 1 milliliter of water?
- What tool can you use to measure mass? What units can you use?
- Which has a greater mass, an object with a mass of 1 gram or an object with a mass of 1 kilogram?

If...	Try...
your student believes that smaller units are always used to measure smaller things and larger units are always used to measure larger things . . .	to help them understand that smaller units are used to increase precision of measurement. For example, for a refrigerator to fit in a space that is 30.75 inches wide, you need to make sure you measure the total width of the refrigerator to fit in that place.

Student Strengths Spotlight

I make a plan to solve a problem and adapt my plan if I need to.	Before solving problems, students take time to make a plan and then are able to change the plan if needed.
I use math tools and strategies to help me learn.	Students learn to use the appropriate measuring tools and strategies to solve problems.
I use math to describe what is happening around me.	Reasoning abstractly and quantitatively allows students to use math to explain real-world events.

Try This Together!

- **Measuring Tools.** Try to gather various measuring tools around your home like a measuring cup, a measuring tape, an analog thermometer, or any other tool that has marks on it for measuring. Have your student examine the tick marks to determine what each one represents. Are they counting by 1s, 2s, 5s, etc.?
- **Let's Estimate.** Practice estimation with your student by asking questions like,"How many spoons of water can fill the glass?" or "If one spoon of water is 5 ml, then how much water can fill the cup?" This activity will help them understand how they can relate the volume of one object to the other.