InsightMath California

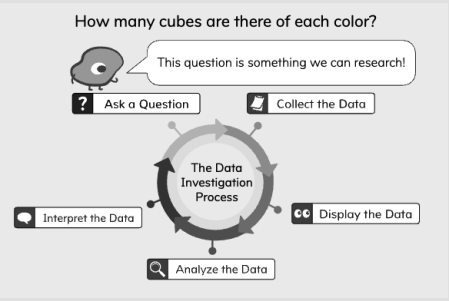
Investigating Data

Family Guide | Grade 3 | Unit 10

Your student is exploring how asking questions and using data to critically answer those questions help to make sense of the world.

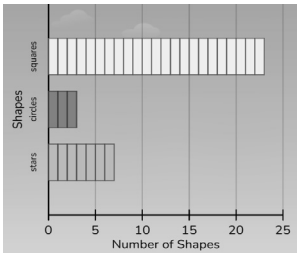
Key Math Ideas

In this unit, your student will explore data and how it can be used to answer questions. They will explore the steps of a data investigation: asking questions, collecting data, showing the data in a graph, and analyzing and interpreting the data. Your student will learn how to build picture graphs and bar graphs that can show larger numbers. This builds on what they learned about collecting and organizing information in earlier grades. They will also connect what they know about time (like measuring time and determining how much time has passed) with ways to display information and see how timelines and bar graphs can show the same information in different ways.

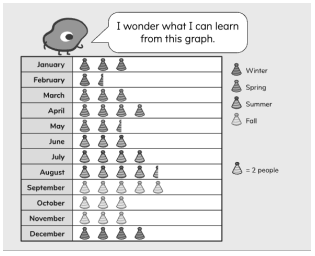


→ In the beginning of the unit, your student will learn to

- describe the difference between statistical questions (How tall are students in our class?) and non-statistical questions (How tall is the teacher in our class?);
- make reasonable predictions about data;
- create scaled picture graphs and bar graphs to display data, where each object or tick mark represents an amount greater than 1 (see examples to the right);
- answer questions about the data in a bar or picture graph.



Scaled Bar Graph



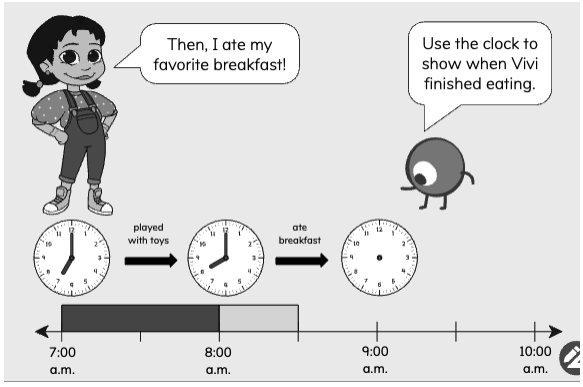
Scaled Picture Graph

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

- plan and conduct a survey by coming up with a question about the real world and collecting data to answer the question;
- use equations to model and solve questions about the data in a scaled picture graph or bar graph.

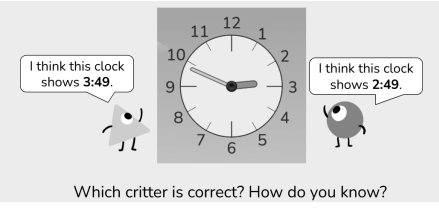
→ By the end of the unit your student will learn to

- tell and write time from analog and digital clocks to the nearest minute;
- solve problems involving elapsed time (the amount of time that passes between a start and end time);
- use a number line to model and solve addition and subtraction word problems involving time;
- plan and conduct a data investigation involving time.



Helpful Hint

Students often misinterpret time as the minute hand approaches the next hour by adding an hour to the time, similar to the example in the image to the right. Emphasize the position of the hour hand, noting that the hour is not 3 until the hour hand arrives at or passes the 3.



Which critter is correct? How do you know?

Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the beginning of the unit:

- What questions could you answer by collecting data?
- How does organizing data in a graph help you analyze the data?
- How are a picture graph and bar graph similar and different?
- Do you prefer to show data with a picture graph or bar graph? Why?
- When looking at a graph:
  - Which category has the greatest amount?
  - Which category has the least amount?
  - What does this data tell you?

→ By the end of the unit:

- How many minutes does each tick mark on the clock represent?
- How can you use the minute and hour hands to determine what time it is?
- How does a timeline show how much time as passed?

If...	Try...
your student struggles to come up with a statistical question (a question that expects a variety of responses) . . .	asking your student to predict how others will respond to the question. If there are not many ways to answer their question, then it is not a statistical question.

Student Strengths Spotlight

I start by observing what is happening in the problem.	Before starting to solve, students take time to understand and make sense of the problem.
I listen to other people's ideas and explain if I agree or disagree.	Listening and respectfully critiquing others' ideas about how to solve problems helps students understand concepts more fully.
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!

- **Count the Colors.** Gather a group of objects that have a variety of colors (colored writing utensils, blocks, colored candies, etc.) and have your student create a data display, such as a bar graph or picture graph, to show how many of each color there are. Ask them questions about their graph, such as, "How many more of ___ color do you have than ____?" Or, "Which color do you have the most of?"

- **Plan for the Day.** Explore telling time and determining elapsed time with your student by planning out your dat together. Create a worksheet similar to the one shown, where your student can write the start time or the end time for each part of the day. This activity helps them understand elapsed time in a practical situation.