Bridges in Mathematics Grade 1

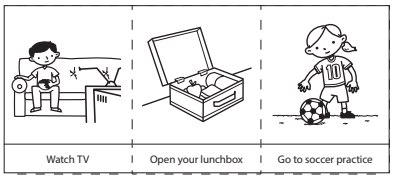
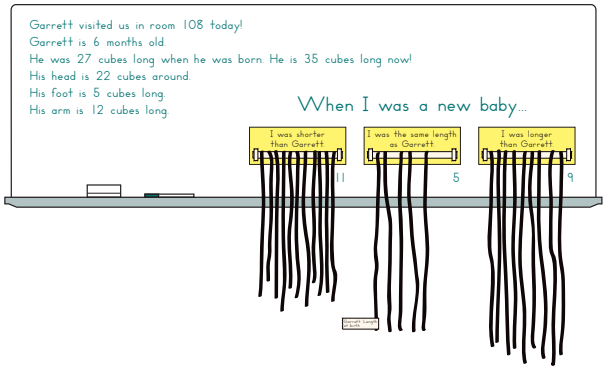
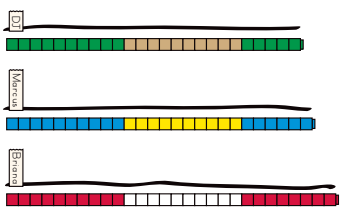
Unit 8: Changes, Changes

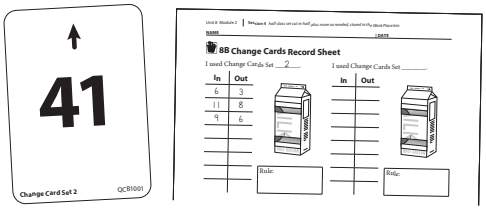
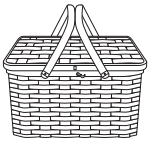
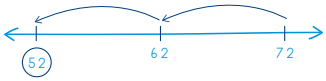
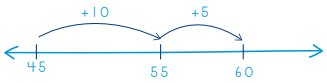
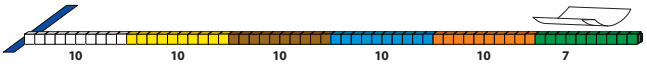
In this unit your child will:

- Explore change with math and science concepts
- Develop a sense of time by experiencing activities that last a second, minute, hour, and day

- Solve problems using addition and subtraction up to 100
- Measure, order, compare, and find differences in length
- Collect and analyze data by making simple charts and graphs using pictures, numbers, and tally marks

Your child will practice these skills by solving problems like those shown below.

PROBLEM	COMMENTS
How long will it take to do each activity?  *"I go to soccer practice from 4:30 to 5:30. That's 1 hour."*	**Time and Change** During the first grade year students have practiced telling time to the hour and half-hour. But just how long is a minute? How long is an hour? For many first graders time is an abstract concept. The link between time and change is made as students discover how long it takes to crumble a piece of paper or wait for an ice cube to melt. They discuss familiar activities that occur during their day to help develop a sense of time.
Put your string on the chart to show if you were shorter, the same length, or longer than baby Garrett when you were born.  With your group, put the strings in order from shortest to longest.  	**How We've Grown and Changed** The school year ends with the students thinking about how they have changed since birth. There are two important small projects that students do at home before starting the class activities. The first one asks families to help measure and cut a string to match the length of their child at birth. Students will use the string length for comparing lengths in class. The second small project asks families to help their child find photos or draw pictures to represent an event from each year in their life. These photos or drawings are used to make a timeline of the child's life. Timelines are shared and displayed in class. Your help with these projects is appreciated.

PROBLEM	COMMENTS
If 41 goes into the Change Box, what number will come out?  *"I think it's adding 10 every time, and it'll be 51 when it comes out. So 41 + 10 = 51."*	**Changing Numbers**  Students hear a tale about Grandma and her very special picnic basket. When 1 sandwich is put in the basket, 2 are pulled out. When 2 apples go in, 4 apples come out. What is Grandma's basket doing? It's doubling the items! IN: 1 sandwich; 2 apples OUT: 2 sandwiches; 4 apples Next students meet the Change Box. They try to figure out the rule or function. In the example, 25 goes in and 35 comes out. Then 32 goes in and 42 comes out. Each time the number going in the box increases by 10 (25 +10 = 35, 32 +10 = 42).
Sandra's glider landed at 72. Shawna's glider landed 20 less than Sandra's. Where did Shawna's glider land.  *"I counted back 20 by 10s. I started at 72, and jumped to 62 and then 52. Shawna's gliders landed at 52."* Maya's glider flew 15 cubes farther than Mark's glider. How much further did Maya's plane fly?  *"45 to 55 is 10. 55 to 60 is 5. 10 + 5 is 15. Maya's glider flew 15 cubes further than Mark's glider."*	**Change in Location** Students make paper gliders and runways with cubes to measure and compare how far the gliders fly. They collect data on how far each glider flies using tally marks. On another day, they make changes to their gliders to see if they can improve their flying distance.  The number line helps students keep track of counting as well as compare the difference between two numbers when solving problems about the glider flights.

FREQUENTLY ASKED QUESTIONS ABOUT UNIT 8

Q: Why end the year with a unit on change?

A: Scientists use mathematics to make sense of data they collect through studies and experiments. In this unit, students use time, measurement, and computation to find patterns and make comparisons focusing on their own activities, interests, and lives. By integrating math and science in a purposeful way, this unit helps students see that mathematics is not a collection of disconnected skills and topics, but a way of thinking and a set of tools they can use to make sense of the world around them.

Q: What can I do over the summer break to keep my child's math skills sharp?

A: Summer is a perfect time to help your child understand how math is used in everyday life. Travel brings many opportunities: Look at restaurant menus for finding the most and least expensive items or determining the total cost or difference in price of two selections. Road games with license plates are always a favorite. Try assigning all letters a value of 5 or 10, and then adding the numbers to find the total. For example, if letters are worth 10, SGR 725 would be 10 + 10 + 10 + 7 + 2 + 5, or 44. While driving or waiting in lines, practice counting forward and backward, starting and stopping on different numbers.

There are plenty of everyday ways to enjoy math too. Practicing math facts with cards, spinners, and dice is fun when a grownup and child take turns using strategies without pressure. The grocery store is a great place to find numbers and make comparisons. Your child will enjoy making real or pretend purchases when she counts out the change to pay. A warm day outside with water and measuring cups provides lots of learning fun. Look for two- or three-dimensional shapes during a neighborhood walk or trip to the park. Plant something together; then measure and record its growth over time. Race toy cars or make your own paper gliders, and measure the distance they travel. Most important, have fun using math with your child.