Bridges in Mathematics
Grade 1 Unit 2

Developing Foundational Facts

In this unit, your student will:

- Recognize the number of dots on dominoes or dice without counting one by one

- Add and subtract within 10

- Practice addition and subtraction strategies

- Use dominoes and picture cards to write a fact family of equations

- Solve and write word problems

Your student will practice these skills by solving problems such as these:

| PROBLEM	COMMENTS
How many dots are shown on the domino? **Here are some strategies students might use:** **Combine small groups:** *"I see 3 and 3, and that's 6. Then if you put 1 more on, it's 7."* **Count on:** *"I see 5 and 4. I can start with 5 and count on 4 more. 5 … 6, 7, 8, 9. There are 9 dots."* **Use a known fact:** *"I know that 5 + 5 is 10. There is 1 dot missing from this side to make 5, so 1 less than 10 is 9."*	Dot patterns on dominoes and dice help children recognize a quantity without having to count individual dots. After recognizing a quantity, students can use strategies other than counting by 1s to find a total. Domino Squares provide practice with addition. As students add the dots vertically and horizontally, they discover that the total number of dots doesn't change. Add $= 5$ $+$ $= 5$ $6 + 4 = 10$
Write the fact family for the dots shown on this card. $6 + 4 = 10$ $4 + 6 = 10$ $10 - 6 = 4$ $10 - 4 = 6$ Choose one fact and write a story. $5 + 2 = 7$ $2 + 5 = 7$ $7 - 5 = 2$ $7 - 2 = 5$ There were 5 cats at the adoption center, and 2 more cats came. How many cats are there in all?	Students use dominoes and double-flap cards to explore fact families. A fact family is a set of four related facts. In this example, the numbers 6, 4, and 10 are related because you can add 6 + 4 = 10. You can also switch the first two numbers and still get the same answer: 4 + 6 = 10. This is known as the commutative property of addition. These addition facts also have a direct relationship to subtraction facts. Subtraction is the opposite of addition. Using these same numbers, students can also write the subtraction equations 10 – 6 = 4 and 10 – 4 = 6. These four equations make up a fact family.

Frequently Asked Questions About Unit 2

Q: My student writes some numbers backward. Should I be concerned?

A: Some first graders write their numbers backward. Children at this age are developing their motor skills and hand-eye coordination. Some are still learning to form their numbers correctly. If your student reverses a number, point it out and ask them to model it after a number on the page. Practice writing numbers in other fun ways, such as with chalk on the sidewalk, salt poured in a shallow dish, or in shaving cream or soap on the shower or tub wall. Over time, children will learn to practice correct formation and position.

Q: Fact families seem complicated. Why not give students the equations to solve?

A: Fact families help young children understand part-part-whole relationships and how addition and subtraction are related. Models, such as this domino, clearly show the whole quantity (10 dots) along with the parts (4 dots on one side and 6 dots on the other side). Understanding fact families also helps students solve problems such as this one: *Mei and Yong have 4 shells. They find some more. Now they have 10. How many shells did they find?* This problem is written as the equation 6 + _____ = 10. Children who understand this relationship can think, "What goes with 6 to make 10?" and recognize 4 as the missing number.
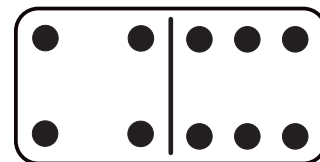
Q: How can I support my student's learning??

A: Dominos and dice are popular games played in many cultures. If you have access to dice or dominoes games, consider playing with your student this month. Encourage them to tell you how many dots they see on the domino or dice and how they see the dots.

To further support your student in learning mathematics, you can:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 1: Set 2 together. These activities complement the learning that takes place in the classroom during Unit 2 and provide fun ways to engage in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as Double It, Spin & Subtract, and Domino Add & Compare.
- Visit apps.mathlearningcenter.org and invite your student to explore the Number Frames, Number Rack, and Money Pieces apps. Throughout Unit 2, students explore these tools in their physical forms in the classroom.
- Read books with your student and look for items in the illustrations that you can count. Ask questions such as, "How many would there be if you added 1 or subtracted 1?," "How many would there be if you doubled the number?," or "How many more would you need to make 10?" Some book suggestions include:
  - » *A Box of Red Dominos* by Frances Boricchio
  - » *My Rows and Piles of Coins* by Tololwa M. Mollel, illustrated by E. B. Lewis
  - » *Saturday* by Oge Mora
  - » *We Are One: How the World Adds Up* by Susan Hood, illustrated by Linda Yan