Chapter 11
Skip-Counting and Equivalent Sets

In this chapter, children explore multiplication and division using equal sets of concrete objects. Through skip-counting and rectangular arrays, children build ideas about repeated addition and area as models for multiplication. They are also introduced to formal multiplication notation, though mastery is not expected. While this chapter does not use formal division notation, it lays the foundation for understanding the meaning of division. The ideas in this chapter are developed further in Chapter 13 and 16.

About the Math

- Second graders often naturally solve problems we think of as multiplication by using repeated addition, for example, solving 4 x 6 as $6 + 6 + 6 + 6$.
- Children are familiar with the fact that $12 = 6 + 6$. Another way to think about this is that 12 is composed of 2 sets of 6. The focus on grouping informally introduces children to factors and multiples.
- Working with rectangular arrays as a model for multiplication previews the measurement of area.
- Seeing order and patterns in the multiplication table helps children learn and remember the multiplication facts, and it also helps them catch errors. Mastery is not expected at this time.
- Repeated subtraction is one way to think about division, in the same way that repeated addition is one way to think about multiplication.

Vocabulary

equivalent

The sets are **equivalent**.

skip-count(ing)

460, 462, 464, 466, 468,...

jump

$1 + 3 = 4$

There are three **jumps** between 1 and 4.

array
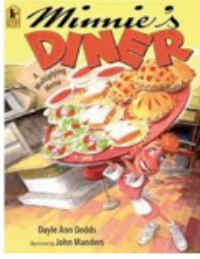
A rectangular arrangement of objects in rows and columns

$3 \times 4 = 12$

In the Car Activities

★ Is _____ an odd or even number?

★ Count by 9's starting at 0

Family Fun

How Many?

Work with your child to play this game. Your child will play a similar game in Lesson 2.

- **You will need a recording sheet, like the one shown below, a number cube, an pennies or other small items like buttons or cereal pieces.**

How many items are in each set?	How many sets are there?	How many items are there in all?

- **You and your child take turns. For each turn, toss a number cube two times. The first toss shows how many items to put in a set. The second toss shows how many sets to make.**

- **Find the total number of items.**

- **Play until you and your child each take 5 turns.**

Sharing Cookies

Work with your child to share amounts of cookies fairly.

- **You will need 3 plates and a handful of cookies or other small food items.**

- **Count out any number of cookies into a pile.**

- **Together, see if the cookies can be shared fairly among 3 people by placing the cookies on the plate.**

- **Could you share the cookies fairly? Try other amounts of cookies and see which amounts can be shared fairly and which cannot.**