

Core Focus

- Multiplication: Adding jumps of two and five and equal groups, and describing equal groups and arrays
- Geometry: 3D objects
- Money: Dollars and cents

Multiplication

- Repeated addition of equal-sized groups lays a foundation for thinking about multiplication, though the word *multiplication*, and the multiplication symbol, \times , are not yet used.
- Skip counting is a way to approach repeated addition of equal-sized groups. Both $5 + 5 + 5 + 5$ and *how much is 4 jumps of 5?* can be solved by skip counting: 5, 10, 15, 20.

11.1 Multiplication: Adding jumps of two and five

Step In Imagine you start at 0 and make jumps of 2 along this number line.

What numbers will you land on? How do you know?

How many jumps will you make to reach 10? 5 steps of 2 is 10.

What equation could you write to match the jumps that you made? $2 + 2 + 2 + 2 + 2 = 10$

In this lesson, students relate equal steps made on a number line to repeated addition.

- Skip counting is illustrated through area by representing a number of equal-sized groups as columns or rows. This prepares students to understand that, in multiplying two numbers, one number counts how many groups or rows, while the other number tells the number in each group or row. This arrangement is called an **array**.

11.4 Multiplication: Describing arrays

Step In Where are some places that you might see things arranged in rows?

An arrangement in rows with the same number in each row is called an **array**.

Look at this array of bugs.

How many rows of bugs are there?
How many bugs are in each row?

What is a number story you could tell to match the array?

The bugs are marching in 3 rows. There are 4 bugs in each row.

A row goes across and a column goes up and down. Draw a line through each row in this picture.

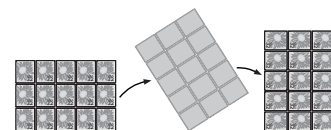
In this lesson, students are introduced to arrays showing objects arranged in equal rows.

Ideas for Home

- Practice skip counting by 2, 5, and 10 with your child. Also try skip counting by other numbers, such as 3 or 4.
- Count out 24 small objects. Have your child see how many equal groups they can create and describe (for example, 12 groups of 2 is 24). Repeat with other numbers such as 12, 15, 16, 18, and 20.
- Ask your child to look for arrays in everyday life. Seats in a theater or sports stadium are arranged in equal rows. An egg carton is 2 rows of 6, and a muffin tray is 3 rows of 4.

Glossary

- An **array** can be described in two ways. The first image shows 3 rows of 5. When the image is turned, it shows 5 rows of 3.

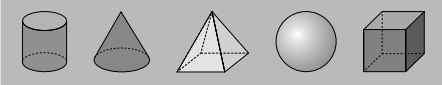


Geometry

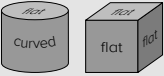
- Students learn new vocabulary related to 3D objects such as *face*, *edge*, *vertex*, *polyhedron*, and *pyramid*. Students use these new words to describe features of polyhedrons and sort a variety of 3D objects.

11.6 3D objects: Identifying polyhedrons

Step In What are some things that you know about 3D objects?



All 3D objects have surfaces.
Some objects have a flat surface.
A flat surface is called a **face**.
A 3D object with all flat faces is a **polyhedron**.



Look at the 3D objects at the top of the page.
Which objects are polyhedrons? How do you know?


In this lesson, students use the term polyhedron to describe 3D objects that have only flat surfaces.

Money

- Students identify different types of coins and bills, and their value.

11.10 Money: Identifying amounts of money


Step In Look at these coins.



What is the name of each coin?
How much is each coin worth?

Sometimes these types of coins show different pictures.
Why do they show different pictures? What different pictures have you seen?

What is shown on the right?
What is its value in dollars?
What is its value in cents?
How many dimes could you trade for one dollar?
How do you know?
How many nickels could you trade for one dollar?

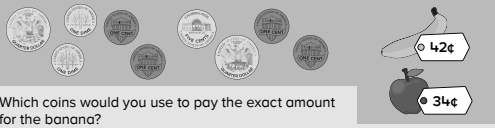


In this lesson, students identify money.

- Students work with dollars and cents and figure out how much they need of each to make a purchase.


11.11 Money: Working with dollars and cents

Step In Look at the coins and fruit below.



Which coins would you use to pay the exact amount for the banana?
Which coins could you use to pay for the banana and get some change?
Which coins would you use to pay for the apple? Why?

Imagine you had these bills.



In this lesson, students work with dollars and cents.

Ideas for Home

- Look together for examples of polyhedrons of various types in your home and community. Some examples include stock cubes and shoe boxes.
- Ask your child to show you different amounts of money using coins: “Show me 35 cents.” To challenge your child, ask them to show you the same amount by using different combinations of coins, or by using the fewest coins possible.

Glossary

- ▶ A **polyhedron** is any 3D object that has only flat faces.
- ▶ A **face** is any flat surface of a 3D object.
- ▶ An **edge** is where two surfaces meet.
- ▶ A **vertex** is where edges meet.

