Math in Focus

SCHOOL to HOME Connections

Chapter 1 Numbers to 10,000

Dear Family,

In this chapter, your child will study numbers to 10,000. Some of the skills your child will practice are:

- counting, reading, and writing numbers to 10,000
- reading and writing numbers in different ways
- comparing and ordering numbers

Activity

We encounter numbers every day in our lives, for example, the numbers on a clock face, telephone numbers, bus service numbers. Expose your child to numbers around him or her so that large numbers will not be intimidating.

- Have your child keep a lookout for the license plates of the vehicles parked near your home. Then challenge your child to say the license plate numbers (excluding the letters) in word form. For example, `1,234 is one thousand, two-hundred thirty-four.´
- As an extension activity, have your child say the number in expanded form. For example, `1,234 is the sum of, 1,000, 200, 30, and 4.´

Vocabulary to Practice

Word form: Two thousand, four hundred seventy-eight

Standard form: 2,478

Digit: In 2,478, the digits are 2, 4, 7, and 8.

Expanded form: 2,000 + 400 + 70 + 8

2,000	1,000	2

2,000 is **greater than** 1,000.
1,000 is **less than** 2,000.
2,000 is the **greatest** number.
2 is the **least** number.

Math in Focus

SCHOOL to HOME Connections

Chapter 2 Mental Math and Estimation

Dear Family,

In this chapter, your child will learn about mental addition and subtraction, as well as estimation.
Some of the skills your child will practice are:

- adding and subtracting 2-digit numbers mentally, with or without regrouping
- rounding numbers to estimate sums and differences
- using front-end estimation to estimate sums and differences

Activity

The ability to estimate sums has numerous applications in everyday life. For example, have your child estimate the cost of your next shopping trip.

- Help him or her draw up a short family grocery shopping list.
- Then have your child write the prices of each item (wherever possible) by looking at advertised prices in the newspapers. Ensure the prices are in whole dollars as your child has not learned to estimate cost in compound units.
- Finally, have him or her estimate the total cost of the groceries.

Vocabulary to Practice

Rounded is a term used in estimating numbers to the nearest ten, hundred, and so on.

2,436 is 2,400 when rounded to the nearest hundred.

An **estimate** is a number close to the exact number.

396 is 400 when rounded to the nearest hundred. 400 is an estimate.

1,245 + 2,534 = 3,779
1,245 rounded to the nearest thousand is 1,000.

2,534 rounded to the nearest thousand is 3,000.

The estimated sum is 4,000. 3,779 is close to 4,000 so the answer is **reasonable**.

The **leading digit** in a number is the digit with the greatest place value. The leading digit for 2,475 is 2.

Front-end estimation uses leading digits to estimate sums and differences.

Math in Focus

SCHOOL to HOME Connections

Chapter 3 Addition up to 10,000

Dear Family,

In this chapter, your child will learn to add numbers up to 10,000. Some of the skills your child will practice are:

- adding without regrouping
- adding with regrouping in ones, tens, and hundreds

Activity

Addition is an important math skill. Knowledge of this skill allows your child to participate in solving many real-world problems.

- Have your child imagine that he or she has $10,000 with which to buy as many computers and electronic appliances as possible for a charity.
- Brainstorm with your child which items the charity may need before checking the newspapers or fliers to come up with a best-value-for-the-money shopping list.
- Finally, have your child add up the costs to make sure that the available money is fully utilized.

Vocabulary to Practice

The **sum** is the answer to an addition problem.

123 + 45 = 168

168 is the sum of 123 and 45.

To **regroup** is to change
10 ones to 1 ten or 1 ten to 10 ones;
10 tens to 1 hundred or
1 hundred to 10 tens;
10 hundreds to 1 thousand or
1 thousand to 10 hundreds.

Math in Focus

SCHOOL to HOME Connections

Chapter 4 Subtraction up to 10,000

Dear Family,

In this chapter, your child will learn to subtract numbers within 10,000.
Some of the skills your child will practice are:

- subtraction without regrouping
- subtraction with regrouping in ones, tens, hundreds, and thousands

Activity

Like addition, subtraction is another important math skill. Subtraction is the opposite of addition. There are many situations that allow your child to practice this skill. For example, have your child help to plan your family's next vacation (real or imaginary).

- Draw up a list of costs with your child, such as air tickets, accommodation, vehicle rental, and insurance.
- You may search the Internet with your child for the costs of these items.
- Next have your child compare the prices of these items from other travel agencies or websites. Have your child calculate how much could be saved by choosing one particular airline over another, and so on.
- Finally, have your child add up the costs. If the cost of the trip is more than what you have budgeted for, discuss how he or she can cut down on expenses. For example, cut short the vacation, fly with a cheaper airline, or book the hotel earlier to enjoy a discount.

Vocabulary to Practice

The **difference** is the answer to a subtraction problem.

1,047 − 23 = 1,024

1,024 is the difference between 1,047 and 23.

To **regroup** is to change
10 ones to 1 ten or 1 ten to 10 ones;
10 tens to 1 hundred or
1 hundred to 10 tens;
10 hundreds to 1 thousand or
1 thousand to 10 hundreds.

Math in Focus

SCHOOL to HOME Connections

Chapter 5 Using Bar Models: Addition and Subtraction

Dear Family,

In this chapter, your child will learn to solve real-world problems involving addition and subtraction.
The key skill your child will practice is:

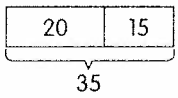
- using bar models to solve 2-step real-world problems on addition and on subtraction

Vocabulary to Practice

The **sum** is the answer to an addition problem.

The **difference** is the answer to a subtraction problem.

A **bar model** helps to solve word problems. Bars are drawn, labeled with all the relevant information, and divided according to the situation in the word problem.



Activity

The information in a real-world problem is presented as text rather than in mathematical notation. Children often have difficulty translating the English words into mathematical language. However, once they figure out the actual math equation, finding the solution is fairly simple. Here's an example of a real-world problem your child can solve using adding-on bar models:

John collected 74 big leaves and 97 small leaves one autumn day. How many leaves did he collect in all?

- Have your child read the text and pick out the important information: 74 big leaves and 97 small leaves. Then draw the models. (The bars do not have to be drawn exactly to scale.)

- Next have your child read the question and say what the question is asking.
- Finally, have your child perform the operation: 74 + 97 = 171.

Math in Focus

SCHOOL to HOME Connections

Chapter 6 Multiplication Tables of 6, 7, 8, and 9

Dear Family,

In this chapter, your child will learn to understand multiplication using the array model and the area model, and see how multiplication and division are related.
Some of the skills your child will practice are:

- learning multiplication facts of 6, 7, 8, and 9
- dividing to find the number of items in each group
- dividing to make equal groups

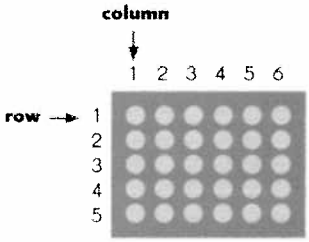
Activity

Show your child that multiplication can be fun. Play this multiplication game with your child to reinforce the facts that he or she is learning. This game can be played by two or more people.

- First decide on a multiplication fact, for example, 6. Then start counting from one. Players take turns to say the next number in the series.
- At each multiple of 6, the player replaces the multiple of 6 by saying 'Up!' instead. Example: 1, 2, 3, 4, 5, *Up!*, 7, 8, 9, 10, 11, *Up!*, 13, 14, 15, 16, 17, *Up!*, ... If the player is stumped or says the number instead of 'Up!', he or she drops out of the game. The game continues until only one player remains in the game.
- When your child is proficient with the multiplication facts of 6, repeat the game using multiplication facts of 7, 8, or 9.

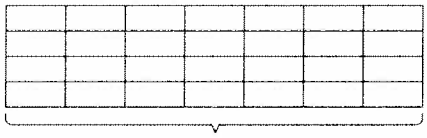
Vocabulary to Practice

An **array model** is an arrangement in rows and columns.

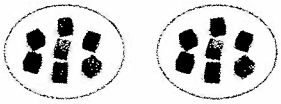


$5 \times 6 = 30$

Area model of multiplication:



$4 \times 7 = 28$



These are **equal groups**. Both have the same number of items.

Math in Focus

SCHOOL to HOME Connections

Chapter 7 Multiplication

Dear Family,

In this chapter, your child will learn multiplication without and with regrouping.
Some of the skills your child will practice are:

- multiplying ones, tens, and hundreds mentally
- multiplying ones, tens, and hundreds without and with regrouping

Vocabulary to Practice

A **product** is the answer in a multiplication problem.

$5 \times 70 = 350$

350 is the product of 5 and 70.

Activity

Multiplication is an important concept in everyday life that we use all the time. Encourage your child to use math in his or her everyday life more often. For example,

- Choose something in your house that your child can count or estimate. It could be the number of books on a shelf, or the estimated number of cookies in a jar.
- Point (for example) to a shelf of books. Have your child count the number of books on the shelf. Ask how many books there would be on 5 shelves if all the shelves had the same number of books. Provide your child with pen and paper to work out the answer.
- This practical activity gives your child computational practice around the house.

Math in Focus

SCHOOL to HOME Connections

Chapter 8 Division

Dear Family,

In this chapter, your child will learn mental division, finding quotients, and finding remainders.
Some of the skills your child will practice are:

- using related multiplication facts to divide
- dividing a 1-digit or a 2-digit number by a 1-digit number, with or without a remainder
- identifying odd and even numbers

Activity

Division is the opposite of multiplication. Children often find it difficult to understand division and the relationship between multiplication and division. Encourage your child to use different multiplication and division concepts in his or her everyday experiences and real-life situations. Children love solving problems involving food. Division would mean helping each person get a fair share.

- Tell your child that the host at a party serves 72 chicken wings. If the host places an equal number of chicken wings on 6 tables, how many chicken wings are placed on each table? What if there are 9 tables instead of 6?
- Reverse roles. Invite your child to make up a story for you and then have him or her check your answer.

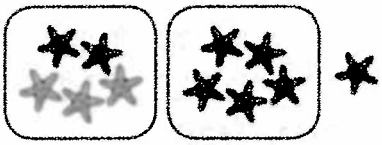
Vocabulary to Practice

A **quotient** is the answer to a division problem.

$8 \div 2 = 4$

4 is the quotient.

A **remainder** is the number left over from a division problem.



$11 \div 2 = 5$ R 1

When 11 is divided by 2, the remainder is 1.

Any number that has the digit 0, 2, 4, 6, or 8 in its ones place is an **even number**. 9,354 and 4,956 are even numbers.

Any number that has the digit 1, 3, 5, 7, or 9 in its ones place is an **odd number**. 8,203 and 1,245 are odd numbers.

Math in Focus

SCHOOL to HOME Connections

Chapter 9 Using Bar Models: Multiplication and Division

Vocabulary to Practice

Twice means two times.

Double also means two times.

Dear Family,

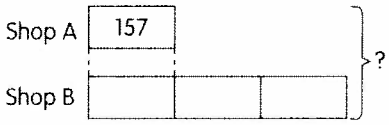
In this chapter, your child will learn to solve real-world problems involving multiplication and division.
Some of the skills your child will practice are:

- using bar models to solve one-step and two-step multiplication word problems
- using bar models to solve one-step and two-step division word problems

Activity

Your child is learning that using bar models is an effective way of translating information in a word problem into component parts. Your child will soon find solving math problems a breeze. Here's an example of a real-world problem you can try with your child at home.
On Monday, Shop A sold 157 rolls of paper towel.
On the same day, Shop B sold 3 times as many rolls of paper towel as Shop A.
How many rolls of paper towel did they sell in all?

- Have your child read the text and pick out the important information: Shop A sold 157 rolls and Shop B sold 3 times as many rolls as Shop A. Then draw the models.



- Next have your child read the question and say what the question is asking.
- Finally, have your child perform the operation: 157 × 4 = 628.

Math in Focus

SCHOOL to HOME Connections

Chapter 10 Money

Dear Family,

In this chapter, your child will learn to add and subtract money. Some of the skills your child will practice are:

- adding dollars and cents, with and without regrouping
- subtracting dollars and cents in different ways, with and without regrouping
- solving up to two-step real-world problems involving addition and subtraction of money

Vocabulary to Practice

The **difference** is the answer to a subtraction problem.

$1.40 – $0.20 = $1.20

An **estimate** is a number close to the exact number.

396 is 400 when rounded to the nearest hundred. 400 is an estimate.

To **regroup** is to change $1 to 100 cents or 100 cents to $1.

The **sum** is the answer to an addition problem.

$12 + $45 = $57

Activity

Learning about money allows your child to understand the practical applications of money. A simple yet practical activity to teach your child the value of money is to have him or her pay for purchases with real money on one of your shopping trips. Then have your child estimate how much change he or she should get. The next activity introduces your child to budgeting.

- Have your child imagine that he or she is given a budget of $50 to spend.
- Ask your child: 'What would you spend it on?'
- Have your child make a list of items he or she would like to have and then find out how much they cost from advertisements in the newspapers or magazines.
- Then have your child add up the costs of the items to find out if the budget is met.
- Ask your child: 'If your budget is now $30, what items would you remove from your list?'

Math in Focus

SCHOOL to HOME Connections

Chapter 11 Metric Length, Mass, and Volume

Dear Family,

In this chapter, your child will learn to measure length, mass, and volume using metric units of measurement.
Some of the skills your child will practice are:

- using meters and centimeters as units of measurement of length
- reading scales in kilograms and grams
- finding the volume and capacity of a container in liters and milliliters
- converting units of measurement

Activity

Measurement is not a new concept. Your child applies his or her knowledge of measurement when he or she measures out the ingredients for a recipe or when he or she says how much taller he or she has grown in a year.

- Have your child use a measuring tape to measure objects in the house. These objects should be longer than 1 meter. For example, height of doors, length of the bed and tables.
- Have your child record the lengths in centimeters. Then have him or her convert the lengths into compound units. For example, 135 cm = 1 m 35 cm.
- Finally have your child arrange the lengths from the longest to the shortest.

Vocabulary to Practice

Centimeter (**cm**), **meter** (**m**), and **kilometer** (**km**) are metric units of length. 100 cm = 1 m, 1,000 m = 1 km

Kilogram (**kg**) and **gram** (**g**) are metric units of mass. 1 kg = 1,000 g

Liter (**L**) and **milliliter** (**mL**) are metric units of volume and capacity. 1 L = 1,000 mL

Volume is the amount of liquid in a container.

Capacity is the amount of liquid a container can hold.

Math in Focus

SCHOOL to HOME Connections

Chapter 12 Real-World Problems: Measurement

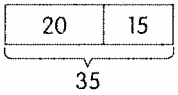
Dear Family,

In this chapter, your child will learn to solve up to two-step problems on metric measurements of length, mass and volume. Some of the skills your child will practice are:

- drawing bar models to solve one-step and two-step measurement problems
- choosing the operation to solve one-step problems
- writing and solving two-step measurement problems

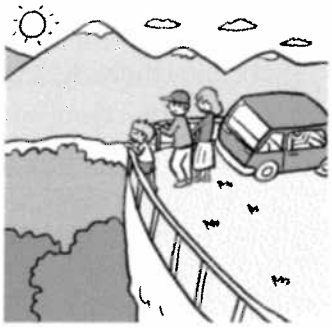
Vocabulary to Practice

A **bar model** helps to solve word problems. Bars are drawn, divided according to the situation in the word problem, and labeled with all the relevant information.



Activity

This chapter enables your child to develop his or her ability to solve mathematical problems involving measurement.



- Think of a place around the state that you would like to visit on a road trip. Identify one or two interesting stopovers along the way.
- With the use of a map, find out the distances, in kilometers, between your home, the intended stopovers, and the destination. Ask your child to find the total distance (in kilometers) from your home to the destination.
- Ask your child: 'If you bought snacks and 500 mL of lemonade for each person in the family, how many liters of lemonade would you buy?'

Math in Focus

SCHOOL to HOME Connections

Chapter 13 Bar Graphs and Line Plots

Dear Family,

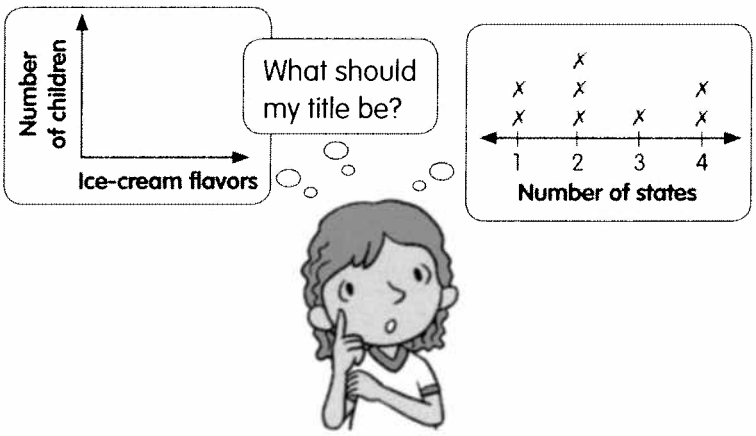
In this chapter, your child will learn how to use bar graphs and line plots to organize data.
Some of the skills your child will practice are:

- making bar graphs with scales
- reading and interpreting data from bar graphs
- making a line plot to represent data

Activity

Surveys are everywhere! You can find survey results when you turn on the television, or flip open a newspaper or magazine. Conduct a survey with your child and help him or her to present the results using a bar graph or a line plot.

- Have your child say what he or she would like to do a survey on. Possibilities include a survey on your child's friends' favorite ice-cream flavor or the number of states they have visited.
- Then have your child conduct the survey and tally all the responses.
- Finally, help your child present the results in a bar graph or line plot.



Vocabulary to Practice

In drawings, a **vertical** line is one that goes in the top to bottom direction of the page.

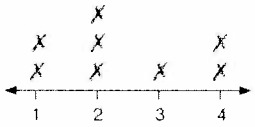
In drawings, a **horizontal** line is one that goes across the page.

An **axis** is a grid line that can be either vertical or horizontal.

The **scale** is the numbers that run along the vertical or horizontal axis of a graph.

A **line plot** is a diagram that uses a number line to show how often an event happens.

Number of Birthday Cards Received



A **survey** is a method of collecting information or data.

Math in Focus

SCHOOL to HOME Connections

Chapter 14 Fractions

Dear Family,

In this chapter, your child will learn about fractions as parts of a region or parts of a set.
Some of the skills your child will practice are:

- reading, writing, and identifying fractions of wholes
- identifying equivalent fractions
- writing fractions in simplest form
- comparing and ordering fractions
- adding and subtracting like fractions

Activity

An understanding of fractions is important for various real-life situations such as in cooking. Help your child connect fractions to division and build wholes from fractional parts.

- Have your child record what he or she does in a particular day. For example, the amount of time he or she spends in school, playing, watching television, reading, sleeping. Help your child to round the amount of time to the nearest hour.
- Then have him or her write the amount of time each activity takes as a fraction of the total number of hours in a day. For example, if he or she spent 2 hours playing basketball, the fraction is $\frac{2}{24}$.
- Finally, have your child add up all the fractions to make sure they equal one whole. You may want to work with smaller denominators first as a warm up to this activity.
  For example, $\frac{2}{24} + \frac{3}{24} + \frac{1}{24} + \frac{4}{24} + \frac{4}{24} + \frac{10}{24} = \frac{24}{24}$.

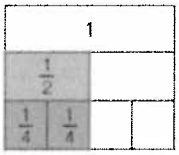
Vocabulary to Practice

A fraction is a part of a **whole**.

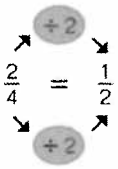
A **numerator** is the number above the line in a fraction. It shows the number of required parts of a whole.

A **denominator** is the number below the line in a fraction. It shows the number of equal parts into which the whole is divided.

$\frac{1}{2}$ and $\frac{2}{4}$ name the same parts of a whole. They are **equivalent fractions**.



$\frac{1}{2}$ is a fraction in its **simplest form**.



Fractions with the same denominators are **like fractions**.

Fractions with different denominators are **unlike fractions**.

Math in Focus

SCHOOL to HOME Connections

Chapter 15 Customary Length, Weight, and Capacity

Dear Family,

In this chapter, your child will learn to measure length, weight, and capacity in customary units.
Some of the skills your child will practice are:

- using inch, foot, and mile as units of length
- using ounce, pound, and ton as units of weight
- reading scales in ounces and pounds
- measuring capacity with cup, pint, quart, and gallon
- estimating lengths, weights, and capacity

Vocabulary to Practice

Inch (in.), **foot (ft)**, **yard (yd)**, and **mile (mi)** are customary units of length. 12 in. = 1 ft, 3 ft = 1 yd, 5,280 ft = 1 mi

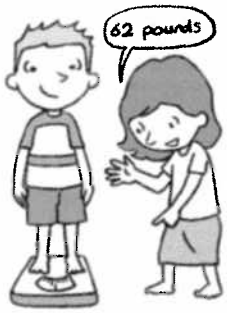
Ounce (oz), **pound (lb)**, and **ton (T)** are customary units of weight. 16 oz = 1 lb

Cup (c), **pint (pt)**, **quart (qt)**, and **gallon (gal)** are customary units of capacity. 2 c = 1 pt, 2 pt = 1 qt, 4 qt = 1 gal

Activity

Finding measures is a practical skill in our everyday lives.
For example, when we want to buy a new sofa set, we measure the length of the sofa to check if it fits into the living room.

- Have your child measure his height and weight and that of a sibling or cousin in customary units and record them in a notebook.
- At the end of the year, have your child repeat the measurement and compare the difference in their heights and weights.
- Ask your child:
  'Who is growing more quickly?'
  'What is the difference in your weights?'



Math in Focus

SCHOOL to HOME Connections

Chapter 16 Time and Temperature

Dear Family,

In this chapter, your child will study measurements of time and temperature.
Some of the skills your child will practice are:

- telling time to the minute
- changing minutes to hours or hours to minutes
- adding and subtracting time, with and without regrouping
- finding elapsed time
- reading a Fahrenheit thermometer

Activity

Finding elapsed time is a great way to practice mental math skills. Try the following activity.

- Have your child write down the time his or her favorite television program starts.
- Then have your child calculate how many hours it is until the program begins. For example, if it is 9:15 A.M. now and his favorite program starts at 4:30 P.M., it is 7 h 15 min until the program begins.
- Have your child find out the actual duration of the show by writing down the start and end times of each commercial break. Then subtract the total time for commercials from the show's overall length.

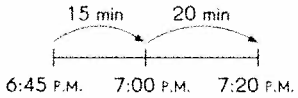
Vocabulary to Practice

Hour (**h**) and **minute** (**min**) are unit measurements of time.
1 h = 60 min

9:20 A.M. is 20 minutes **past** 9.
9:45 A.M. is 15 minutes **to** 10 or 15 minutes **before** 10.

Elapsed time is the amount of time that has passed between the start and the end of an activity.

A **time line** is used to find elapsed time.



Degrees Fahrenheit is the customary unit of measurement for temperature.

Math in Focus

SCHOOL to HOME Connections

Chapter 17 Angles and Lines

Dear Family,

In this chapter, your child will learn to identify angles and lines. Some of the skills your child will practice are:

- finding angles in plane shapes and real-world objects
- comparing the number of sides and angles of plane shapes
- making a right angle
- comparing angles to a right angle
- identifying perpendicular and parallel lines

Activity

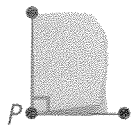
We are surrounded by angles and lines. Take time to show your child the parallel or perpendicular lines around the house. For example, in window frames, or silverware as it lies on the table. Then try this activity. Using a rectangular piece of paper, fold a simple paper airplane.

- Have your child find the number of each type of angle (right angle, less than a right angle, or more than a right angle) that can be found on the plane.
- Explain that a plane has many angles. Have your child experiment with folding different planes and flying them. Encourage your child to use descriptions of angles to discuss which ones fly better.

Vocabulary to Practice

When two line segments share the same endpoint, they form an **angle**.

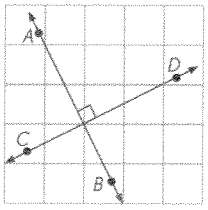
Angle *P* is a **right angle**.



45° is **greater than** 20°.
20° is **less than** 45°.

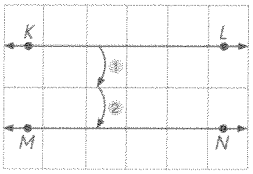
Perpendicular lines are two lines that meet at right angles.

Line *AB* is perpendicular to line *CD*.



Parallel lines are lines that will not meet no matter how long they are drawn.

Line *KL* is parallel to line *MN*.



Math in Focus

SCHOOL to HOME Connections

Chapter 18 Two-Dimensional Shapes

Dear Family,

In this chapter, your child will study polygons. Some of the skills your child will practice are:

- classifying polygons and quadrilaterals
- combining and separating polygons to make other polygons
- sliding, flipping, and turning shapes
- identifying congruent and symmetric figures
- using folding to find a line of symmetry

Activity

If we take a closer look at the things around us, we will see that symmetry exists in nature as well as in man-made objects. Have your child look for symmetry in the home or outside to gain a further appreciation of the beauty of geometric shapes.

- Together with your child, look for and make a list of symmetrical shapes around the house. For example, the pattern on the tablecloth.
- Help your child do a search on the Internet for symmetry in architecture, such as the Taj Mahal of India and the Eiffel Tower in Paris, France.
- Ask your child: 'What buildings can you think of in our town that employ the use of symmetry in their architecture?'

Vocabulary to Practice

A **polygon** is a closed plane figure formed by three or more line segments.

A **vertex** is a point where two sides of a polygon meet.

Identical figures are **congruent**. They have the same shape and size.

Symmetry occurs when two halves of a figure fit each other exactly when folded along a line.

A **line of symmetry** divides a figure into two congruent halves. The congruent halves fit each other exactly when folded along this line.

Math in Focus

SCHOOL to HOME Connections

Chapter 19 Area and Perimeter

Dear Family,

In this chapter, your child will learn to find the area and perimeter of rectangular figures.
Some of the skills your child will practice are:

- understanding the meaning of area and perimeter
- using square units to find and compare the areas of plane figures
- estimating the area of small and large surfaces
- measuring or finding perimeter

Activity

Children sometimes confuse area with perimeter. Carry out this simple yet fun activity at home to help reinforce the concepts of area and perimeter.

- Have your child imagine that both of you are about to do a complete makeover of a bedroom.
- Ask your child what you must know before starting. Lead your child to see that you first find the measurements of the room.
- Using a measuring tape, help your child find the length, width, and height of the room. Then with the information, discuss how to find the floor area, for example, to decide on the amount of flooring or the perimeter of the room in order to decide what length of wallpaper border to purchase.

Vocabulary to Practice

Area is the number of square units needed to cover the surface of each figure.

Square units are units such as square centimeter, square inch, square foot, or square meter that are used to measure area.

Square centimeter (cm^2) and **square meter** (m^2) are metric units of measure for area.

Square inch ($in.^2$) and **square foot** (ft^2) are customary units of measure for area.

Perimeter is the distance around a figure. Perimeter is measured in linear units such as centimeters, inches, meters, and feet.