

# Patterns and Equations Unit 1 Gr 5

**Master 1.6****To Parents and Adults at Home...**

Your child's class is starting a mathematics unit on patterns and equations. Patterns occur regularly in mathematics. As children learn to analyse patterns, they develop powerful reasoning skills that will help them make sense of mathematics. Knowing how to create equations helps your child to solve story problems.

*In this unit, your child will:*

- Analyse a number pattern and state the pattern rule.
- Pose and solve problems by applying a patterning strategy.
- Describe a pattern using an expression.
- Interpret a problem and select the best strategy.
- Express a problem as an equation.
- Create and solve equations using all four operations.

Here are some suggestions for activities that you can do at home:

- Look for visual patterns around your home on fabrics, clothing, wallpaper, etc. How do the patterns change?
- Often adults use tables to organize data. Talk with your child about how she or he uses tables to organize and analyze patterns.
- Talk about how you use patterns in your daily life.

Here's a game you can play with your child to help solve for an unknown.

## Guess How Many I'm Hiding!

Place some objects such as coins or counters on a table top. Keep some hidden. Tell your child what the total is. Then, have your child guess how many you have hidden and write an equation, e.g.,  $17 + c = 34$ , where  $c$  represents the hidden quantity. After playing a few rounds, ask your child to hide some of the objects while you guess the unknown quantity.

**To Parents and Adults at Home ...**

Your child's class is starting a mathematics unit on whole numbers. Your child will learn how to represent and describe whole numbers to 1 000 000 in a variety of ways. He or she will also develop strategies for estimating sums and differences with whole numbers, and learn when to apply these strategies in ways that are appropriate and effective.

In this unit, your child will:

- Recognize and read numbers to 1 000 000.
- Read and write numbers in standard, expanded, and written forms.
- Use place value to represent numbers.
- Estimate sums and differences, and select and use estimation strategies to determine if his or her calculations are reasonable.
- Pose and solve problems using whole numbers.

Students are encouraged to use a variety of estimation strategies to add and subtract depending on situation and context. Calculating with number sense means that children look at the numbers and operations involved and choose the most efficient strategy. Ask your child to show you some of the different estimation strategies that he or she uses. Here's a suggestion for an activity you can do at home:

**Newspaper Numbers**

Take a page each from a newspaper and circle all the numbers in the articles and advertisements on that page. Then talk about the circled numbers. Which are estimates? Which are not? How can you tell? Next, both of you choose one number and describe it to one another in terms of its number of millions, ten thousands, thousands, hundreds, tens, and ones only. Then challenge your child to find your secret number while you identify her or his number.

### To Parents and Adults at Home ...

Your child's class is starting a mathematics unit on multiplying and dividing whole numbers. Students will develop strategies for estimating products and quotients, and multiplying and dividing whole numbers. Throughout the unit, they learn when estimation and mental math strategies are appropriate and effective.

In this unit, your child will:

- Recall basic multiplication and division facts.
- Use different strategies to estimate products and quotients.
- Multiply and divide numbers mentally.
- Multiply a 2-digit number by a 2-digit number.
- Divide a 3-digit number by a 1-digit number.
- Pose and solve problems using whole numbers.
- Solve problems with more than one step.

Students are encouraged to use a variety of different strategies to multiply and divide whole numbers. Calculating with number sense means that children look at the numbers and operations involved, and choose the strategy that is most efficient. You may want to ask your child to show you some of the different strategies he or she uses.

Here is a suggestion for a game you can play at home:

#### *Duelling Products*

- Remove the jokers and face cards from a deck of playing cards. Use aces as 1 and tens as 0. Shuffle the cards and divide them equally between you.
- Each player turns over 2 cards and multiplies the numbers. The player with the greater product takes all the cards.
- If both players get the same product, leave the cards on the table. The winner of the next round takes all the cards.

The winner is the player with more cards after all the cards have been turned over.

## Master 4.6

**To Parents and Adults at Home...**

Your child's class is starting a mathematics unit on measurement.

In this unit, your child will:

- Estimate and measure length in millimetres and centimetres.
- Investigate the relationships between millimetres and centimetres, and between millimetres and metres.
- Explore rectangles with equal perimeters.
- Explore rectangles with equal areas.
- Construct different rectangles, given the area and/or perimeter.
- Estimate, measure, and record volume in cubic centimetres and in cubic metres.
- Estimate, measure, and record capacity in millilitres and litres.

Measurement provides a strong connection between what students learn in math and their life experiences. Measurement is a skill that is used in everyday life and in building, designing, and constructing any kind of project.

Here are some suggestions to help support your child's learning:

- Have your child draw a new floor plan for a room that indicates the positions of and measurements for each piece of rearranged furniture.
- If you are cooking or baking, have your child help measure the ingredients.
- If you are hanging a mirror or picture, have your child measure to find the best place for it on the wall.

**Master 5.6****To Parents and Adults at Home ...**

Your child's class is starting a mathematics unit on fractions and decimals.

In this unit, your child will:

- Model, compare, and order fractions and decimals.
- Explore equivalent fractions and decimals.
- Relate fractions to division and to decimals.
- Use decimals to record measurements.
- Estimate decimal sums and differences.
- Add decimals with tenths, hundredths, and thousandths.
- Subtract decimals with tenths, hundredths, and thousandths.
- Pose and solve problems involving fractions and decimals.

Fractions and decimals are used and encountered frequently in our world. For example, prices on grocery and other store advertising flyers typically show decimals and special sales announcements that include fractions. Encourage your child to look for such examples and to use fractions and decimals at home.

If you are dividing something into equal pieces, such as an orange, have your child name fractions that describe the pieces. For example, if the orange is divided into 8 equal pieces, each piece is one-eighth of the orange.

While shopping, encourage your child to look for decimals on price tags and labels. Have your child help you estimate the total amount of the items you intend to purchase, as well as how much change you should receive.

## To Parents and Adults at Home ...

Your child's class is starting a mathematics unit on geometry. Geometric shapes are in the world all around us, and mathematics can help your child recognize important features of geometry. Recognizing geometric features and understanding geometric form are key steps in developing a higher level of mathematical thinking.

In this unit, your child will:

- Build, represent, and describe geometric objects and shapes
- Identify and sort quadrilaterals (that is, shapes with 4 sides)

Geometric shapes and objects can be found outside the classroom. Encourage your child to look for geometric shapes and objects around the home and neighbourhood, and talk about them.

Here are some suggestions for activities that you can do at home:

- Look for geometric shapes in buildings and street signs. For example, a stop sign has the shape of an octagon, and a yield sign has the shape of a triangle.
- Find objects around the house that have different shapes. For example, a tissue box or a cereal box has the shape of a rectangular prism. Ask your child to tell you the differences between the objects.

**Master 7.6****To Parents and Adults at Home...**

Your child's class is starting a mathematics unit on statistics (data analysis) and probability (chance and uncertainty). These important branches of mathematics help us make informed decisions in many aspects of everyday life, from playing games to choosing medical treatments.

In this unit, your child will:

- Learn the difference between first-hand and second-hand data
- Ask questions and decide whether the answer requires first-hand or second-hand data
- Find examples of second-hand data in print and electronic media
- Solve problems by constructing and interpreting double bar graphs
- Use words such as likely, unlikely, impossible, and certain
- Describe the probability of everyday events
- Compare the likelihood of two events

Data analysis and probability concepts can be practised at home as well as at school. Here are some suggestions for activities you can do at home:

- Watch for examples of tables and double bar graphs in newspapers, magazines, or on the World Wide Web. Ask your child what information the tables or graphs convey.
- Play board games and card games with your child. Compare games that depend on chance (for example, snakes and ladders) with games that depend on skill (for example, chess). Look for games that combine chance and skill.
- Encourage your child to discuss general ideas of randomness, luck, and chance. Is it true that some people are luckier than others? Can you improve your chances by wearing a lucky pair of shoes? What does it mean to say that something happens by chance? Rather than just looking for "correct" answers, enjoy the opportunity to discover more about your child's thinking as you explore these complex ideas together.

# Transformations

## Unit 8

Name \_\_\_\_\_

Date \_\_\_\_\_

Master 8.6

### To Parents and Adults at Home ...

Your child's class is starting a mathematics unit on motion geometry called transformations.

Your child will explore how shapes are moved or transformed.

*In this unit, your child will:*

- Describe and explore translations (slides), reflections (flips), and rotations (turns).
- Perform and identify translations, reflections, and rotations.
- Draw translations, reflections, and rotations.

Shapes can be moved in different ways to produce images.

Your child will learn to describe motion in the following ways:

A translation moves a shape horizontally (left or right), vertically (up or down), or along a slanted line, to produce a translation image.

A reflection produces an image after a reflection in a line of reflection.

A rotation turns a shape clockwise or counterclockwise, about a point of rotation, by a fraction of a turn.

Here are some suggestions for activities you can do with your child.

Have your child find objects at home that slide (for example, a drawer opening or closing), reflect (for example, a reflection in a mirror or other shiny surface), and turn (for example, the hands on a clock).