Building Math Success

GRADE 6

Be Positive and Supportive

When you talk about math ideas and show how math is part of daily life, you are showing how math is important. You can encourage your child to think positively and be persistent as you work together to build math confidence and math understanding.

The goal of this document is to support parents and caregivers as they promote positive math thinking. It also provides an overview of what Saskatchewan students will be taught in school in Grade 6.

Make Math Real at Home

- Discuss how math is part of everyday activities, such as sports, music and art.
- Comment on and discuss the meaning of charts and graphs that you may see online or in the news.
- Discuss how we use positive and negative numbers when talking about temperatures.
- Calculate the cost of items you use in your home. For example, if you buy 5 cans of soup for $7.00, how much does one can cost?
- When playing games that involve drawing a card or rolling a die, talk about the probability of drawing a particular card or rolling a specific number.
- Interpret and compare sports statistics.

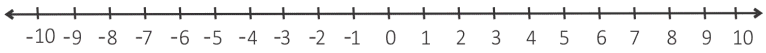
Overview of Grade 6 Math

NUMBER

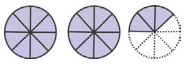
- Understand place value beyond one million and one thousandth.
  - $1.8 billion is $1 800 000 000.
- Understand that a prime number is a number that cannot be divided by any number except itself and 1.
  - 2, 5, 7, 11 and 13 are examples of prime numbers.
- Determine factors (numbers that divide into) and multiples of numbers less than 100.
  - The factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24.
  - Multiples of 12 less than 100 are 12, 24, 36, 48, 60, 72, 84 and 96.
- Understand the order of operations: brackets, multiplication and division, addition and subtraction.
  - $18 + 4 \times 2 = 26 \quad 25 \div (9 - 4) = 5$
- Multiply and divide whole numbers and decimals. Verify the correct decimal placement.
  - "If I multiply 2.163 by 8, I know the answer will be close to 16, so the decimal will be after the 16."
  - "If I divide 3.962 by 8, I know the answer will be close to $\frac{1}{2}$ or 0.5, so the decimal will be after the 0."
- Understand percent, and relate fractions, decimals and percents (up to 100).

$\frac{6}{12}$ of the boxes are shaded. $\frac{6}{12} = \frac{1}{2}$; and, $\frac{1}{2} = 0.50 = 50\%$

- Compare and put in order positive and negative integers (using <,> or =), and place integers on a number line.



- Understand fractions, including improper fractions and mixed numbers.
  - The circles represent $\frac{19}{8}$ which is the same as $2\frac{3}{8}$.



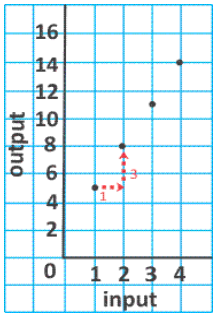
- Understand part-to-part ratios and part-to-whole ratios.
  - The ratio of squares to circles is 5:3 (part to part ratio).
  - The ratio of squares to total shapes 5:8 (part to whole ratio).

PATTERNS AND RELATIONS

- Create tables of values, understand the pattern, and graph the results.

Input	Output
1	5
2	8
3	11
4	14

As the input increases by 1, the output increases by 3.

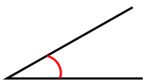


- Model and explain equality, and making equations equal.
  - What value does "A" need to be to balance the scale?

  - "I know that $6 = 3t$. I can add the same number to each side (for example, $6 + 5 = 3t + 5$) and it will still be equal."

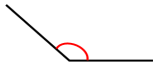
SHAPE AND SPACE

- Classify, measure and draw angles.



An acute angle is less than 90°.

A right angle is 90°.



An obtuse angle is between 90° and 180°.

A straight angle is 180°.

A reflex angle is between 180° and 360°.

  - The sum of the angles of a triangle is 180°.
  - The sum of the angles of a quadrilateral (4-sided figure) is 360°.

- Determine the perimeter (distance around) of polygons (multi-sided figures), the area of rectangles and the volume of rectangular prisms (boxes).
- Classify types of triangles.

Acute △: all angles less than 90°

Right △: one 90° angle

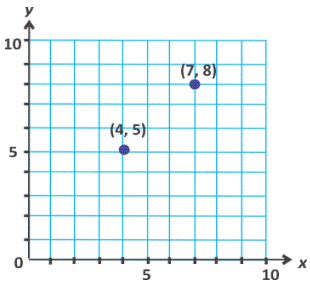
Obtuse △: one angle great than 90°

Scalene △: no equal sides or angle

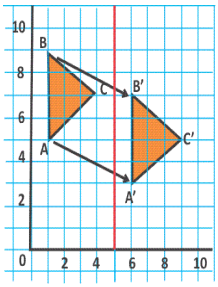
Equilateral △: 3 equal sides

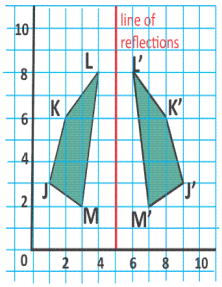
Isoceles △: 2 equal sides and angles

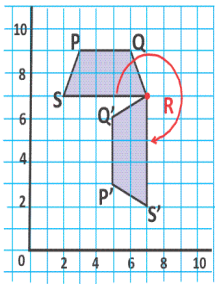
- Differentiate between regular and irregular polygons (many-sided-shapes).
  - A regular polygon has equal sides and angles; an irregular polygon does not have all sides equal and all angles equal. A square is an example of a regular polygon; a rectangle that is not a square is an example of an irregular polygon.
- Plot points (positive numbers only) on the coordinate axis (x and y axis).



- Identify translations, reflections and rotations.

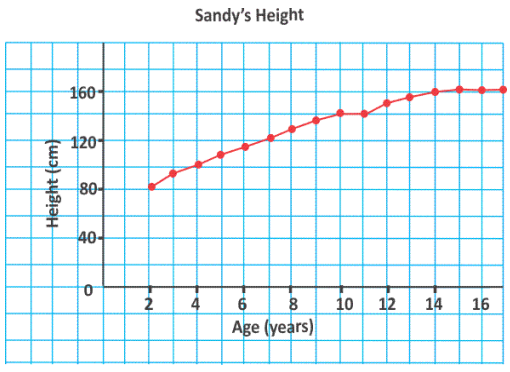




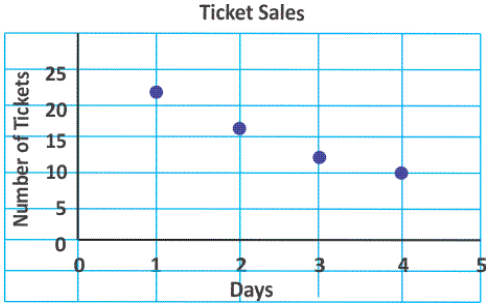


STATISTICS AND PROBABILITY

- Understand, interpret and create line graphs and graphs of discrete data points.
  - A line graph showing age and height is correct because there can be values between the plotted points.



  - A graph of dots is correct for showing values for ticket sales each day. A line graph would be incorrect because there are no "in-between" values.



Math Learning in the Classroom

Math learning occurs in many ways in the classroom. Teachers observe students during daily work, have conversations with students about math ideas and look at the results of their math work.

If you have questions about math in the classroom or if your child needs additional support, please contact your child's teacher.

Online Resources for Grade 6 Math Students

These sites were active at the time of publication. Please review them to determine if they are appropriate for your child's needs and interests.

- **NRICH math** – interactive tasks and games for all grade levels: https://nrich.maths.org
- **Math is Fun** – games, puzzles, a math dictionary and more: www.mathsisfun.com
- **Mathpickle** – original math puzzles, games and problems: http://mathpickle.com

To view the entire Saskatchewan curriculum, go to *www.curriculum.gov.sk.ca*.