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.

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 8.

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 and discuss possible bias in the representation.

- Estimate and/or calculate the price of a meal for your family.

- Calculate discounts and find the least expensive options for things such as cell phone plans.

- Interpret and compare sports statistics. Talk about probabilities in sports and games.

- Calculate travel times, taking breaks and time zones into account.

Online Resources for Grade 8 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*.

saskatchewan.ca

Saskatchewan

Overview of Grade 8 Math

NUMBER

- Understand squares and square roots of whole numbers.
  - 144 is a square number because a square can have dimensions of 12 units x 12 units.
  - 26 is not a perfect square because no two identical numbers multiplied together equal 26.
  - The square root of 55 is between 7 and 8, because 7 x 7 = 49 and 8 x 8 = 64.
- Solve problems involving percents.
  - On a grid containing 100 squares, 17 squares would be shaded to represent 17%.
  - 2.45 is the same as 245%. 1½ could also be expressed as 150%.
  - A $185.00 item reduced by one third is a "better deal" than 30% off of a $179.00 item.
- Explain rates and ratios in familiar situations.
  - It costs $1 per song for a music download (rate).
  - In Saskatchewan there are two trucks for every car, so the ratio of trucks to cars is 2:1 (ratio).
- Understand the difference between ratios and fractions.
  - If pink paint is 1 part red and 3 parts white, the ratio of red to white is 1:3. The fraction of red paint in the mixture is ¼.
- Multiply and divide positive fractions, using models to assist understanding.

  $\frac{1}{2} \div \frac{1}{6} = 3$

  Think: How many groups of 1/6 are in 1/2?
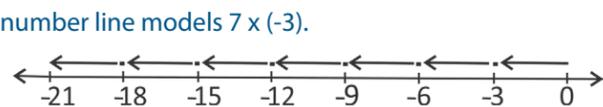
  $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$

  $\frac{1}{2} \div \frac{1}{6}$ can be calculated by multiplying $\frac{1}{2}$ by the reciprocal of $\frac{1}{6}$ which is $\frac{6}{1}$.

  $$\frac{1}{2} \times \frac{6}{1} = \frac{6}{2} = 3$$

- Multiply and divide integers, using models and examples to assist understanding.
  - This number line models 7 x (-3).

  -21 -18 -15 -12 -9 -6 -3 0

  - Positive and negative integers are used when we talk about rising and falling temperatures or discuss spending and saving money.

PATTERNS AND RELATIONS

- Represent and explain the relationship of two variables that make a straight line on a graph (linear relation).
  - If it takes 1 hour to drive 60 kilometers, it takes 3 hours to drive 180 kilometers.

  Distance travelled / Hours
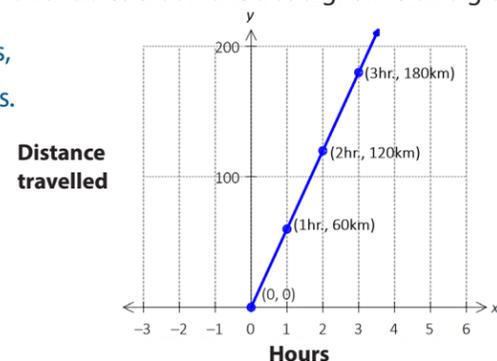
- Solve problems using linear equations.
  - If a 5 cm plant consistently grows 1.5 cm per day, the plant will be 35 cm tall in 20 days. If x = the number of days and y = plant height, the linear equation is y = 5 + 1.5x.

SHAPE AND SPACE

- Use the Pythagorean Theorem ($a^2 + b^2 = c^2$).

  6 m, 8 m, c
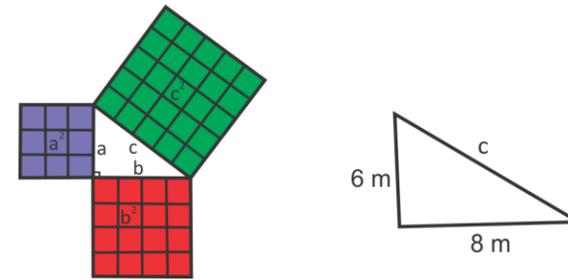
  - When building a deck, use $a^2 + b^2 = c^2$ to check if the corners are square by measuring the two sides of the deck and the diagonal. For example, if the sides of the deck measure 6 meters and 8 meters, the diagonal will be 10 meters if the corner is a right angle (90°).
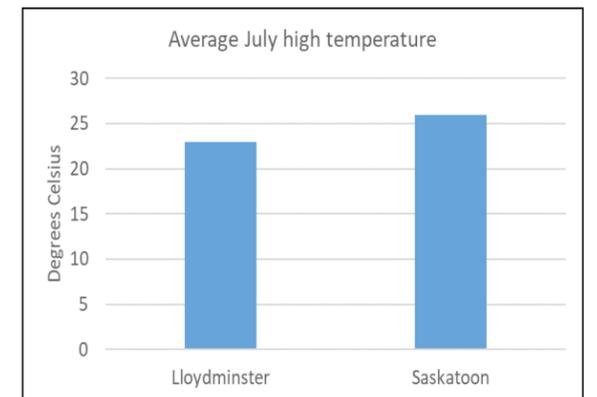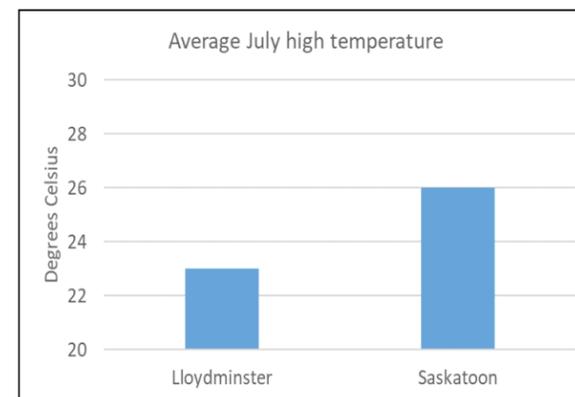- Determine the surface area of rectangular prisms (boxes), triangular prisms and cylinders.

  Rectangular prism and net   Triangular prism and net   Cylinder and net
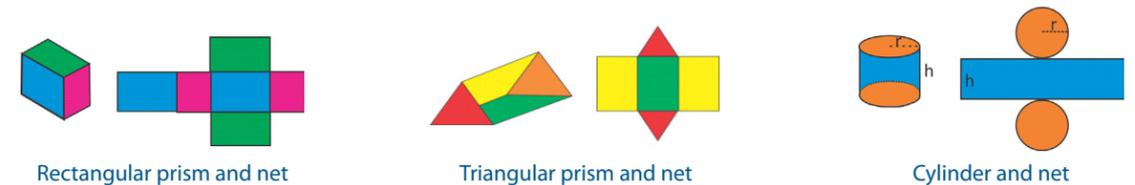
- Determine the volume of rectangular prisms and cylinders.
- Understand tessellations (arrangement of shapes without gaps or overlaps) and verify shapes that will tessellate.
  - is a shape that will tessellate.
  - is a shape that will not tessellate.

STATISTICS AND PROBABILITY

- Represent data using graphs, interpret graphs, and look for ways that data may be misrepresented.

  Average July high temperature   Average July high temperature

  - The first temperature graph is misleading as it appears that in the month of July it is twice as warm in Saskatoon as in Lloydminster. The difference is the first temperature scale begins at 20 rather than 0.
- Understand the probability of two separate events.
  - When you toss a coin and throw a die, what is the probability of getting heads and a six?