Everyone can be successful using math!

Be Positive About Math

Every child can learn math. Regardless of your own abilities and interest in math, **you can help your child to succeed** in math. The important thing is to welcome math into your child's everyday life.

In the world your child is entering, an understanding of math will be **essential for success**. Math has never been more important than in today's competitive, technological world.

Painting is a science and all sciences are based on mathematics.

Leonardo da Vinci - Italian artist

What Learning Math can Give Your Child

- Math is a way of thinking; it has often been called a language. Just like learning a new language, learning math actually develops thinking skills and parts of your child's brain.

- Math will enable your child to recognize patterns and relationships, use this information to make better decisions, and solve problems more creatively.

- Mastering math will build your child's self-confidence and ability to think flexibly.

- Solid math skills will open the door to a variety of career opportunities in the future.

New Brunswick / Nouveau Brunswick

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What Your Child is Learning as a Math Student

Your child is learning more than simply memorizing math facts and rules. Your child is learning to:

- explore possibilities and to take risks in order to succeed.

- make sense of math, and is developing an understanding of how it works.

- make connections between everyday experiences and the skills and ideas learned in math class.

- share and explain his or her thinking by talking, writing, and drawing.

- use technology to explore and learn new ideas.

- solve problems.

- think logically and critically.

Ask prompting questions when your child needs help.

- What do you already know to help you solve the problem?
- Can you draw a picture or make a diagram?
- What words or directions do you not understand?
- Do you see any patterns?
- Does that make sense to you?
- How do you know?
- If you don't know, how can you find out?

Create a positive attitude to math.

- Show your child that you think math is important.
- **Be confident** that everyone can learn math.
- Encourage your child to keep trying, even when an answer is difficult or slow to find.
- Treat errors and misconceptions as opportunities to learn.
- Celebrate successes.

Make math part of everyday life.

- Discuss everyday objects and activities that use math, such as sports, music, and art.
- Encourage your child to use their math skills to help cook, shop, measure and create schedules.
- Provide games and activities that use math, such as checkers and chess, video games, and puzzles (e.g., Sudoku).
- Practice estimation of calculations and measurements. Discuss strategies.
- Look for examples of large numbers and bar graphs; discuss what they represent.
- Explore math in the weather, such as the amount of rain and snow, and temperature.

Show an interest in your child's math studies.

- Provide a space and materials to help your child at home.
- Ask your child to share what he or she is learning in math class.
- Be an interested listener, accepting different ways to find solutions.
- Ask your child to explain how to solve homework questions so you can ensure that he or she understands the skill being practiced.
- Keep in contact with your child's teacher.

You can Help your Child Succeed in Math

The **Big Ideas** of **Grade 5 Math**

- Numbers to 1 000 000: represent and describe numbers in many ways
  985 703   nine hundred eighty-five thousand seven hundred three
  $900\,000 + 80\,000 + 5000 + 700 + 3$

- Addition and subtraction with decimals (to thousandths)
  Use estimation before to predict answers or after to check answers

- Multiplication (2-digit by 2-digit): solve problems using a variety of strategies including mental math and estimation

  $13 \times 23 =$ can be solved by:

  $46 \times 78 =$
  $= (40 + 6) \times (70 + 8)$
  $= (40 \times 70) + (40 \times 8) + (6 \times 70) + (6 \times 8)$
  $= 2800 + 320 + 420 + 48$
  $= 3588$

- Division (3-digit by 1-digit): solve problems, use estimation, and interpret remainders

  $$\begin{array}{r} 151 \\ 3\overline{)453} \\ -300 \quad 100 \\ \hline 153 \\ -150 \quad 50 \\ \hline 3 \quad 1 \end{array}$$

  $453 \div 3 =$
  Think $453 = 300 + 150 + 3$
  $= (300 \div 3) + (150 \div 3) + (3 \div 3)$
  $= \quad 100 \quad + \quad 50 \quad + \quad 1$
  $= 151$

  Remainders are treated differently depending on the situation (e.g., number of cars needed to transport people, sharing food and money).

- Fractions: create equivalent fractions, compare and order using objects, pictures, and symbols

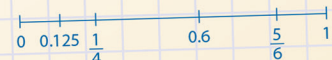 $\frac{1}{4} = \frac{3}{12} \rightarrow$

  $\frac{12}{20} = \frac{6}{10} = \frac{3}{5}$

  $0 \quad \frac{1}{10} \qquad\qquad \frac{2}{3} \quad \frac{4}{5} \quad 1$

- Decimals (tenths, hundredths, thousandths): describe, represent, relate to fractions, compare, and order

  3.231
  three and two hundred thirty-one thousandths

  $0.56 = \frac{560}{1000}$

  $0 \quad 0.125 \quad \frac{1}{4} \qquad 0.6 \qquad \frac{5}{6} \quad 1$

- Patterns: describe using words and mathematical expressions

  5, 9, 13, 17, 21, ...
  This pattern can be described as "four more"

  This pattern can be described as "seven less"

Input	Output
10	3
11	4
12	5
13	6

- Equations: solve one-step equations that include a letter to represent an unknown number
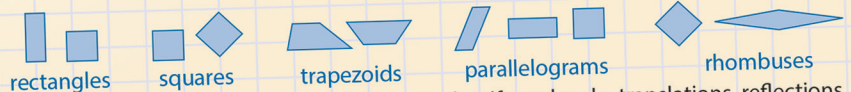 $24 \div t = 6$ $56 = 7m$ $9 = b - 5$

- Perimeter and area of rectangles: draw rectangles given either the perimeter or area; explore the relationship between perimeter and area

- Measure and estimate
  - Length: millimetres (mm) and kilometres (km), 10 mm = 1 cm, 1000 mm = 1 m, 1000 m = 1 km
  - Volume: cubic centimetres (cm³) and cubic metres (m³)
  - Capacity: millilitre (mL) and litre (L)   1000 mL = 1 L

- Describe shapes using the terms horizontal, vertical, intersecting, parallel, and perpendicular

- Quadrilaterals: name and sort rectangles, squares, trapezoids, parallelograms, and rhombuses

  rectangles   squares   trapezoids   parallelograms   rhombuses

- Transformations (change the position of shapes): identify and make translations, reflections, and rotations

  translation   reflection   rotation

- Statistics: construct and interpret double bar graphs and explain difference between first-hand data (collected yourself) and second-hand data (collected by someone else)

- Probability: describe and compare the likelihood of events using words such as impossible, possible, certain, less likely, equally likely, and more likely

Books that Make Math Fun

All of these books are available at New Brunswick Public Libraries.

- **If the World Were a Village** by *David J. Smith*
- **The King's Chessboard** by *David Birch*
- **The Best of Times** by *Greg Tang*
- **Spaghetti and Meatballs for All** by *Marilyn Burns*
- **Three Pigs, One Wolf, and Seven Magic Shapes** by *Grace Maccarone*
- **A Cloak for the Dreamer** by *Aileen Friedman*
- **Cloudy with a Chance of Meatballs** by *Judi Barrett*
- **The Number Devil : A Mathematical Adventure** by *Hans Magnus Enzensberger*
- **Sir Cumference and the Isle of Immeter** by *Cindy Neuschwander*

Internet Resources for Grade 5 Math Students:

The Internet is a source of many resources to help you and your child understand and practice math at the Grade 5 level and beyond. These sites were active at the time of publication, but you should preview them first to ensure they are appropriate for your child's needs and interests.

- **Interactive Math Dictionary** - a great resource for you and your child: http://www.amathsdictionaryforkids.com/
- **National Council of Teachers of Mathematics** - "Illumination" interactive activities: http://illuminations.nctm.org/Activity Search.aspx
- **National Council of Teachers of Mathematics** - "Figure This" puzzles and problems: http://www.figurethis.org/
- **National Library of Virtual Manipulatives** - interactive activities for all grade levels: http://nlvm.usu.edu/en/nav/vlibrary.html
- **Math Frog** - resources and games in English and French: http://cemc2.math.uwaterloo.ca/mathfrog/
- **NRich** - activities, games, and problems: http://nrich.maths.org/forstudents
- **Cool Math 4 Kids** - puzzles, games and much more: www.coolmath4kids.com
- **Math Playground** – collection of videos, puzzles, problems, and games: http://www.mathplayground.com

Contact Us

The Department of Education and Early Childhood Development is committed to your child's success in math. If you have any questions about your child's progress or about how you can be an active part of his or her learning, contact your child's teacher or the Department of Education and Early Childhood Development at 506-453-3678.