

“Young people are in constant motion and tension between **being** and **becoming**. They are in process of **being** themselves in their everyday lives ... However, young people are also in a state of **becoming** young adults.”

Kate Tilleczek,  
Professor in the Faculty  
of Education,  
University of Prince  
Edward Island

#### Recommended Resources

There is a wealth of information on the internet in addition to the links and other resources listed below. For an up-to-date list, please check our website.

#### Math support

TVO Independent Learning Centre  
“Homework Help” is a free online resource for students in grades 7 to 10. Ontario teachers provide free, live, one-on-one tutoring.

[homeworkhelp.ilc.org/](http://homeworkhelp.ilc.org/)

#### Ontario-based “gap closing” support

ePractice is a series of digital, interactive math activities. Students receive immediate feedback on their work.

[edugames.ca/newsite/math/index.html](http://edugames.ca/newsite/math/index.html)

**Mathies**, a website designed for Ontario K–12 students and parents.

[mathies.ca](http://mathies.ca)

#### Books

*A Gebra Named Al*, Wendy Isdell

Julie hates algebra until she meets a gebra named Al and, along with the Periodic horses, travels through the Land of Mathematics.

*Chasing Vermeer*, Blue Balliett

Two children work together to recover a famous Johannes Vermeer painting. The book explores themes of art, chance, coincidence, deception, and problem-solving.

#### Career Support

##### Career Cruising

This career-planning tool includes skills assessments, career profiles, interviews with real professionals, and information about university, college, and apprenticeship programs.

[www.careercruising.com](http://www.careercruising.com)

##### Canadian Women in STEM Careers Videos

This website promotes science and engineering careers for girls.

[wiseatlantic.ca/teachers.asp](http://wiseatlantic.ca/teachers.asp)

# Module Five

# Fact Sheet

Grades 7 and 8

# Countless Opportunities

## CODE

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# Handy math facts for the intermediate division

## Characteristics of the intermediate division student

### Most students in the intermediate division:

- Start thinking about the future.
- Thrive in settings that encourage them to interact with others and to develop strong friendships and close one-to-one relationships.
- Generally have longer attention spans than they used to, and are capable of high levels of abstract thought.
- Want to assert their individuality and independence, but want to conform, too—for example, by dressing and behaving like their peers.
- Can be highly critical of adults, often identifying with only one special adult mentor.
- Experience significant changes that affect them in many ways:
  - Physical changes affect personal appearance and often result in self-consciousness.
  - Psychological and emotional changes can result in mood swings and feeling insecure one minute, then testing limits with a “know it all” attitude the next.
  - Changing sleep patterns and diet can result in low energy levels.

## Math milestones for the intermediate division student

### By the end of grade 8, your child should be able to:

- Solve multi-step problems involving whole numbers, decimals, and percentages.
- Multiply and divide fractions and integers.
- Apply order of operations in math problems with brackets and exponents.
- Develop circumference and area relationships for a circle, surface-area relationships for cylinders, and angle relationships for parallel and intersecting lines.
- Solve equations involving one unknown—for example  $2x + 3 = 11$ .
- Display data using various graphs, such as histograms and scatter plots.
- Calculate the probability of complementary events—for example, what are the odds of rolling either an odd (1, 3, 5) or even (2, 4, 6) number with a die?

## Supporting your intermediate learner at home

- Be supportive during this period of change in your child’s life. Encourage your child to look forward to new friends, experiences, and learning.
- Help your child to look ahead to the future and to set goals.
- Encourage your child to keep doors open by taking math and science courses in secondary school.

- Ask your child to teach you how to use math software that is licensed for Ontario students to use at home, such as “The Geometer’s Sketchpad,” “Tinkerplots,” or “Fathom.”
- Show your child that math is important in everyday life:
  - Use a spreadsheet such as Excel to determine an affordable cell phone plan.
  - Calculate a reasonably priced take-out dinner for the family using coupons or discounts.
  - Review the latest hockey or baseball stats.
- If you believe that your child would benefit from extra help or tutoring:
  - Seek advice from a trusted adviser, such as your child’s teacher or a member of a community outreach program.
  - MIT’s “MathScore” is an example of a high quality remediation program. [mathscore.com/mathInterventionRTI.html](https://mathscore.com/mathInterventionRTI.html)
- If you believe that your child would benefit from enrichment:
  - Ask your child’s math teacher about *The Gauss* math competition at the University of Waterloo, or challenge your child to try questions from previous years. [cemc.math.uwaterloo.ca/contests/past\\_contests.html](https://cemc.math.uwaterloo.ca/contests/past_contests.html)
  - Talk to your child’s teacher about the Ontario Mathematics Olympiad in your area, produced by the Ontario Association of Mathematics Education (OAME).
- Encourage your child to believe that success results from effort, determination, and learning from mistakes.