

# Mathematics Essentials 12

*Foundational Outcomes*

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## Outcomes Framework Mathematics Essentials 12 (2020-2021)

In September 2020, teachers will be working hard to create a space that is safe and welcoming for all learners no matter the location of their “classroom”. The first weeks will still be a time to establish a sense of community, engage learners in rich interactive experiences to promote critical thinking and create opportunities for collaboration and discussion. This is an opportune time to develop a culture and a climate for mathematics learning, conducive to collaboration, risk taking and inquiry.

The **Foundational Outcomes** identified in this document represent outcomes determined to be relevant for future learning in mathematics. Decisions about foundational outcomes were made in consultation with teachers, provincial mathematics team, Board and Regional Centre staff. The foundational outcomes are meant to guide teachers in making decisions about creating learning experiences that will prepare and engage their learners in a responsive way. However, a teacher’s professional judgment remains the most important guide to effectively responding to the needs of their learners.

Colour coding has been used to identify outcomes as foundational (**green**), optional (**orange**) or non-foundational (**red**) for the 2020-2021 school year.

1.1 demonstrate an understanding of the meaning and uses of accuracy and precision
1.2 use a measuring tape to measure tactile items in both imperial and SI units
1.3 identify the difference between length, area, and volume
1.4 demonstrate an understanding of the meaning and uses of significant figures
1.5 demonstrate an understanding of and be able to solve problems using dimensional analysis
1.6 identify, use, and convert among and between SI units and imperial units to measure and solve measurement problems
1.7 estimate distances by using a personal benchmark such as walking pace
1.8 demonstrate an understanding of and be able to solve problems using the Pythagorean Theorem
2.1 investigate a range of career opportunities to determine the best possible fit for their interests within the trades
2.2 demonstrate to others what type of mathematical knowledge is required to be successful at various career choices
2.3 demonstrate entry-level competence in the mathematics associated with the specific career choice a student has made

<b>2.4</b> sketch and construct a model that will enable a student to show others some mathematics involved in a career interest
<b>3.1</b> calculate the dimensions of actual objects using blueprints with various scales
<b>3.2</b> sketch and build representations of three-dimensional objects using a variety of materials and information about the objects
<b>3.3</b> illustrate, explain, and express ratios, fractions, decimals, and percentages in alternative forms
<b>3.4</b> find and calculate rates in practical applications such as pulse rate
<b>3.5</b> estimate and calculate deductions taken from a pay stub as percent of gross earnings
<b>3.6</b> sketch enlargements and reductions of objects using various scales
<b>3.7</b> use the slope formula to solve trigonometric problems commonly found in industry
<b>4.1</b> demonstrate to others what type of mathematical knowledge is required to be successful at their career choice
<b>4.2</b> demonstrate competence in the mathematics associated with the specific career choice a student has made
<b>4.3</b> prepare a detailed blueprint for, and construct a model that will enable a student to show others some mathematics involved in a specific career interest
<b>4.4</b> visit a post-secondary institution that teaches the trade of interest for each student
<b>4.5</b> visit a job-site situation that will provide an example of the career that each student has chosen to pursue