

Nelson Mathematics Concepts and Connections 9

Curriculum Correlation – Expectations to Lessons

Developing and Consolidating Money Sense	
Specific Expectations	
Understanding and Using Decimals	
DMS1.01 – read and interpret money values given in words and symbols, using the correct place value (e.g., \$25 million is \$25 000 000; \$43K is \$43 000), found in everyday contexts;	1.7A, 1.7B
DMS1.02 – write money values, using correct units (e.g., 79 cents may be written as 79¢ or \$0.79)	1.1A, 1.1B, 1.2B, 1.5A, 1.5B
DMS1.03 – round money values to stated accuracies (e.g., the nearest cent, the nearest dollar, the nearest ten dollars, the nearest hundred dollars, the nearest thousand dollars, and the nearest million dollars), in applications drawn from everyday solutions;	1.2A, 1.2B
DMS1.04 – use estimation strategies involving addition, subtraction, multiplication, and division to round money values appropriately within a given context (e.g., I am shopping and have \$40 with me. I will round up when estimating, to make sure that my total is less than \$40.);	1.2A, 1.2B, 1.5A, 1.5B, 1.6A, 1.6B 4.2A, 4.2B, 4.3A, 4.3B, 4.4A, 4.4B
DMS1.05 – interpret numerical information drawn from the media or through conversation and explain its significance, using familiar references (e.g., I read in the newspaper that an athlete earned \$250 000 last year. How many hours would you need to work to earn that much money?);	1.7A, 1.7B, 1.8A 3.2A, 3.2B
DMS1.06 – enter decimal numbers correctly on a numerical key pad (e.g., calculator, computer, ATM, cash register) and read and interpret decimal numbers correctly from a display (e.g., 16.5 means \$16.50, not \$16.05);	1.5A, 1.5B 4.2B
DMS1.07 – demonstrate the effective use of a calculator in operations with decimals;	1.4A, 1.5A, 1.5B 4.2B, 4.3A, 4.5A, 4.5B, 4.6A, 4.6B,
DMS1.08 – estimate change for a transaction (e.g., for a transaction of \$13.72, the change from a \$20 bill should be a little more than \$6.00);	1.4B 4.2A, 4.2B
DMS1.09 – represent a given coin or bill as a combination of other coins or bills (e.g., \$5 could be given as one \$5 bill, as five loonies, or as two toonies and one loonie);	4.1A
DMS1.10 – identify different combinations of coins and bills that would result in a given amount of money (e.g., What are possible ways to make \$27.48, using coins and bills?);	1.3A, 1.3B, 1.4A, 1.4B 4.1A, 4.1B
DMS1.11 – judge the reasonableness of calculations involving decimals, through estimation using mental mathematics, where appropriate.	1.4B, 1.5A, 1.5B 4.2A, 4.2B
Solving Problems Involving Money	
DMS2.01 – make the correct change for an offered amount with and without concrete materials (e.g., change from a \$5 bill for an item costing \$4.77);	1.4A, 1.4B 4.1A, 4.1B, 4.2A, 4.2B
DMS2.02 – solve problems involving estimating the totals of money values found in real contexts (e.g., the total of a transaction, the total cost of several items on a restaurant menu, the total cost of several items in a newspaper advertisement);	1.2A, 1.2B, 1.4B, 1.5A, 1.5B, 1.6A, 1.6B 4.2A, 4.2B, 4.3A, 4.3B, 4.4A, 4.4B

DMS2.03 – solve problems requiring estimating and calculating costs of projects that require the purchase of multiples of the same item (e.g., 18 sheets of Bristol board and 9 glue sticks);	1.5A, 1.5B 3.3A, 3.3B, 3.4B, 3.5A, 3.5B, 3.6A, 3.6B
DMS2.04 – solve problems by exploring the cost of several items (e.g., collect data through reading newspapers, catalogues, and online sources) and produce an organized list, using technology as appropriate;	1.5B 3.4A, 3.4B 4.3B
DMS2.05 – identify, record, and monitor daily purchases to determine personal weekly expenditures.	1.6B 4.3A, 4.3B
Communication Information about Money	
DMS3.01 – verbalize their observations and reflections regarding money sense and ask questions to clarify their understanding (e.g., talk about their own and other students' solutions to problems);	1.1A, 1.2A, 1.2B, 1.4A, 1.4B, 1.5A, 1.5B, 1.6A, 1.7A, 1.7B, 1.8A 3.2A, 3.2B 4.1A, 4.2A, 4.3A, 4.3B, 4.4A, 4.5A, 4.6A
DMS3.02 – explain their reasoning used in problem solving and in judging reasonableness;	1.2B, 1.3A, 1.4A, 1.4B, 1.5A, 1.5B, 1.6A, 1.6B 3.2A, 3.2B 4.1A, 4.2A, 4.4A, 4.3A, 4.6A, 4.6B
DMS3.03 – communicate, orally and in writing, the solutions to money problems and the results of investigations, using appropriate terminology, symbols, and form.	1.1A, 1.1B, 1.2A, 1.2B, 1.4A, 1.4B, 1.5A, 1.5B, 1.6A, 1.6B, 1.7A, 1.7B 4.1A, 4.1B, 4.2A, 4.2B, 4.3A, 4.3B, 4.4A, 4.4B, 4.5A, 4.5B, 4.6A, 4.6B
Developing and Consolidating Concepts in Measurement	
Specific Expectations	
Understanding and Using the Metric System	
DCM1.01 – investigate, discuss, and describe applications from everyday life and the workplace that would involve the measurement of length in commonly used metric units (millimetre, centimetre, metre, and kilometre);	2.2 3.1B, 3.3A, 3.3B, 3.4B, 3.5A, 3.5B 5.1A, 5.1B, 5.5B
DCM1.02 – investigate, discuss, and describe applications from everyday life and the workplace that would involve the measurement of mass in commonly used metric units (milligram, gram, and kilogram);	2.2 3.8A, 3.8B
DCM1.03 – investigate, discuss, and describe applications from everyday life and the workplace that would involve that measurement of capacity in commonly used metric units (millilitre, litre, and kilolitre);	2.2
DCM1.04 – explain and use correctly prefixes in the metric system;	3.1A, 3.1B 5.1A, 5.1B, 5.5B, 5.8A, 5.8B
DCM1.05 – convert between metric units commonly used in everyday applications (e.g., 260 cm is 2.6 m or 2 m 60 cm);	3.1A, 3.1B
DCM1.06 – demonstrate accuracy in measuring length, capacity, and mass in everyday applications, using teacher-selected tools, and record the measurements using the correct abbreviations for metric units;	2.1 5.1A, 5.1B, 5.5B
DCM1.07 – investigate, identify, and use personal referents to aid in the estimation of length, capacity, area, and mass in everyday situations (e.g., a	2.1, 2.5A 3.4B

small paper clip has a mass of about 1 g; the width of my baby finger is about 1 cm; the area of a room is about 10 square metres; the length of my walking stride is about 60 cm; a can of juice contains about 350 mL);	
DCM1.08 – estimate and use measurements of length, capacity, and mass in everyday applications (e.g., the distance from the school to the skating rink is about 1 km; the cups in the cafeteria hold about 350 mL; one protein bar has a mass of about 85 g).	2.1 3.3A, 3.3B, 3.4B, 3.5A, 3.5B
Understanding and Using the Imperial System	
DCM2.01 – investigate, discuss, and describe applications from everyday life and the workplace that would involve the measurement of length in feet and inches;	2.2, 2.3A, 2.3B, 2.4A, 2.4B, 2.6A, 2.6B 3.3A, 3.3B 5.2, 5.3A, 5.3B, 5.5A, 5.6A, 5.6B, 5.7A, .5.7B, 5.9A, 5.9B, 5.10A, 5.10B
DCM2.02 – measure length in feet and inches, to an accuracy of 1/4 inch, using tape measures and 12-inch rulers;	2.3A 3.3A, 3.3B 5.2, 5.9A
DCM2.03 – record measurements, using commonly accepted abbreviations for the chosen units (e.g., 5 inches could be written as 5 in. or 5"; 7 feet could be written as 7 ft. or 7");	2.3A, 2.3B, 2.4A, 2.4B, 2.6B, 2.9B, 2.10B 5.2, 5.3A, 5.3B, 5.4, 5.5A, 5.6A, 5.6B, 5.9A, 5.9B, 5.10A, 5.10B
DCM2.04 – investigate, identify, and use personal referents to aid in the estimation of length in feet and inches (e.g., 1" is about the distance from the tip of my thumb to the first knuckle);	3.4B
DCM2.05 – estimate and use measurement of lengths in feet and inches in everyday situations (e.g., the length of a car is about 10').	2.3A, 2.3B 3.4B
Understanding and Applying Perimeter, Area, and Volume	
DCM3.01 – explore and describe situations from everyday life and the workplace that require calculation or measurement of perimeter (e.g., fencing, wall paper borders, the baseboard around a room, the distance around a track or a baseball diamond);	2.2, 2.3A, 2.3B, 2.4A, 2.4B 5.2, 5.6A, 5.6B, 5.10A, 5.10B
DCM3.02 – estimate, measure, and calculate perimeters drawn from applications in everyday life and the workplace;	2.3A, 2.3B, 2.4A, 2.4B 5.2, 5.6A, 5.6B, 5.10A, 5.10B
DCM3.03 – explain and illustrate how to determine the perimeter of any figure bounded by straight line segments;	2.3A 5.2
DCM3.04 – explore and describe situations from everyday life and the workplace that require calculating and measuring area (e.g., buying wallpaper, floor tiles, sod, patio slabs);	2.2, 2.5B, 2.6A, 2.6B, 2.7B 3.6A, 3.6B, 3.7A, 3.7B 5.3A, 5.3B, 5.6A, 5.6B, 5.10A, 5.10B
DCM3.05 – investigate the areas of a variety of rectangles and triangles, using concrete materials (e.g., square tiles, interlocking cubes, rectangular and triangular pattern blocks, triangle models, grid paper);	2.5A, 2.5B 3.6A, 3.6B 5.3A, 5.3B, 5.8A, 5.8B
DCM3.06 – estimate, measure, record rectangular areas found in everyday life and the workplace, using uniform non-standard units (e.g., floor tiles, ceiling tiles, square pattern blocks);	2.5A, 2.5B 3.6A, 3.6B 5.3A, 5.3B, 5.9A, 5.9B
DCM3.07 – predict and explain, from experiences involving concrete materials, that the area of any rectangle can be found by multiplying its length	2.6A 3.7A, 3.7B

by its width;	5.3A, 5.3B
DCM3.08 – estimate and calculate the areas of rectangles and triangles, drawn from applications in everyday life and the workplace;	2.5A, 2.5B, 2.6A, 2.6B 3.6A, 3.6B, 3.7A, 3.7B 5.3A, 5.3B, 5.8A, 5.8B
DCM3.09 – estimate and calculate the areas of regions that can be broken into rectangles (e.g., L-shaped floor plan, a garden, a roof);	2.7A, 2.7B 3.6B 5.10A, 5.10B
DCM3.10 – explore and describe situations from everyday life and the workplace that require calculation or measurement of volume (e.g., the size of a package, the amount of soil to purchase, the volume of air in a room, amount of liquid medication);	2.2, 2.8, 2.9B 5.6A, 5.6B, 5.10A, 5.10B
DCM3.11 – investigate and calculate the volumes of a variety of prisms whose bases involve rectangular regions (e.g., rectangular, T-shaped, L-shaped), by building the prisms using concrete materials (e.g., interlocking cubes);	2.9A, 2.10A, 2.10B 5.4
DCM3.12 – predict and explain, from investigations involving the building of prisms, that the volume of a prism is given by multiplying the area of its base by its height;	2.9A, 2.9B 5.4
DCM3.13 – estimate and calculate the volumes of rectangular prisms drawn from applications in everyday life and the workplace;	2.8, 2.9B 5.6A, 5.6B, 5.10A, 5.10B
DCM3.14 – select the most appropriate standard unit to measure the perimeter, area, or volume of a figure (e.g., use centimetres squared or cm^2 to measure the area of a book cover, but use metres squared or m^2 to measure the area of a wall);	3.1B 5.6A, 5.6B, 5.10A, 5.10B
DCM3.15 – explain, using examples drawn from their everyday experiences, why length is measured in linear units, why area is measured in square units, and why volume is measured in cubic units;	2.5B, 2.9A 5.6A, 5.6B, 5.10A, 5.10B
DCM3.16 – solve problems involving perimeter, area, and volume in applications drawn from everyday situations.	2.3A, 2.3B, 2.4A, 2.4B, 2.5A, 2.5B, 2.6A, 2.6B, 2.7B, 2.9B, 2.10B 5.6A, 5.6B, 5.10A, 5.10B
Communicating Information about Measurement	
DCM4.01 – organize measurement information, using a simple framework (e.g., template, form, graphic organizer, chart, electronic spreadsheet), draw conclusions from this data, and make decisions based on it;	2.2, 2.3A, 2.5A, 2.6A, 2.9A 5.2, 5.4, 5.10B
DCM4.02 – verbalize their observations and reflections regarding measurements and ask questions to clarify their understanding (e.g., talk about their own and other students' solutions to problems);	2.2, 2.3A, 2.4A, 2.5A, 2.6A, 2.6B, 2.7A, 2.8, 2.9A, 2.9B, 2.10A, 2.10B 3.6A, 3.6B, 3.7A 5.2, 5.3A, 5.3B, 5.4, 5.8A, 5.10A
DCM4.03 – explain their reasoning used in problem solving and in judging reasonableness;	2.4A, 2.5A, 2.6B, 2.10B 5.2, 5.3A, 5.3B, 5.4, 5.8A, 5.9A, 5.10A
DCM4.04 – communicate, orally and in writing, the solutions to measurement problems and the results of investigations, using appropriate terminology, symbols, and form.	2.1, 2.3A, 2.3B, 2.4A, 2.4B, 2.6B, 2.7B, 2.9A, 2.9B, 2.10B 3.1A, 3.1B, 3.7A, 3.7B 5.3A, 5.3B, 5.4, 5.6A, 5.6B, 5.8A, 5.8B, 5.9A, 5.9B, 5.10A, 5.10B

Extending Understanding of Proportional Reasoning

Specific Expectations	
Constructing Understanding of Fractions, Percentages, Ratios, and Rates	
DPR1.01 – represent the magnitudes of the fractions $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{3}{4}$ using manipulatives and by constructing diagrams and models;	1.8A, 1.8B, 1.9A, 1.10 4.7A, 4.7B, 4.8A, 4.8B, 4.9 5.11
DPR1.02 – represent the addition and subtraction of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and 1, in the context of fractional parts of an hour, a cup, a dollar, and an inch by constructing diagrams and using models;	1.10 2.3A, 2.3B 4.7A, 4.7B, 4.8A, 4.8B
DPR1.03 – estimate and add pairs of simple fractions with the support of an appropriate model (e.g., estimate $2\frac{1}{2} + 1\frac{3}{4}$ then add using a 12-inch ruler to model and validate results);	1.10 2.3A, 2.3B 4.7A, 4.7B, 4.8A
DPR1.04 – interpret simple fractions of a dollar in decimal form (e.g., 25 cents is a quarter, which is $\frac{1}{4}$ of a dollar or \$0.25; 10 cents is a dime, which is $\frac{1}{10}$ of a dollar or \$0.10);	1.8A, 1.8B
DPR1.05 – explore the relationship between the fractions $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ and $\frac{3}{4}$ and decimals, using a calculator, concrete materials, and diagrams;	1.8A, 1.8B, 1.9A, 1.10 4.9, 4.10B
DPR1.06 – round decimal values appropriately within in a given context (e.g., calculations with money, round to 2 decimal places);	1.2A, 1.2B, 1.6A, 1.6B 4.3A, 4.3B, 4.4A, 4.4B
DPR1.07 – multiply a fraction by a whole number, using a calculator;	5.5A
DPR1.08 – represent and explain the meaning of percent as part of 100, by constructing diagrams, using concrete materials (e.g., base ten materials);	1.9A, 1.9B 4.10A
DPR1.09 – explore the relationship between fractions, decimals, and percentages, using a calculator, concrete materials, and diagrams;	1.9A, 1.9B, 1.10 4.9, 4.10A, 4.10B, 4.11A, 4.11B
DPR1.10 – identify and use common equivalences or approximations between fractions and percentages (e.g., $\frac{1}{4} = 25\%$, $\frac{1}{3} = 33\%$, $\frac{1}{2} = 50\%$, $\frac{2}{3} = 67\%$, $\frac{3}{4} = 75\%$, and $1 = 100\%$) in contexts such as sales and discounts (e.g., Which is the better deal, $\frac{1}{3}$ off or 25% off?);	1.9A 4.10A, 4.10B
DPR1.11 – identify and use ratios, including equivalent ratios, to express the relationships among quantities represented by models and diagrams;	3.10A, 3.10B, 3.11A, 3.11B 4.12B 5.1A, 5.1B, 5.5A, 5.5B, 5.7A, 5.7B
DPR1.12 – explore and describe the use of ratios from their personal experiences (e.g., ratio of ingredients in a recipe, bicycle gear ratios, the ratio of red cars to blue cars in the school parking lot is 12:10 or 6:5);	3.10A, 3.10B
DPR1.13 – explore and identify rates drawn from their experiences and the units used in them (e.g., the speed limit for an automobile in the city is 50 km/h);	3.8A, 3.8B 4.5B, 4.6A, 4.6B, 4.12A
DPR1.14 – calculate rates in activities drawn from their experiences (e.g., heart rate in various situations, walking speed, rate of pay, cost/linear foot, cost/m ²).	3.8B, 3.9A, 3.9B 4.5B, 4.6A, 4.6B, 4.12A
Solving Problems	
DPR2.01 – solve problems involving fractions and percentages in practical situations (e.g., discount, sales tax, nutrition facts, sports data), by converting to decimals and using a calculator, where appropriate;	4.10B, 4.11A, 4.11B

DPR2.02 – solve simple problems using equivalent ratios (e.g., recipes, scale diagrams);	2.4A, 2.4B 3.3A, 3.3B, 3.10B, 3.11A, 3.11B 4.12B 5.1A, 5.1B, 5.5A, 5.5B, 5.7A, 5.7B
DPR2.03 – solve problems involving rates (e.g., You make \$7/h. How long will you have to work to make a purchase worth \$150?);	3.8B, 3.9A, 3.9B 4.5B, 4.12A
DPR2.04 – calculate and compare the unit costs of items found in everyday situations (e.g., compare the cost of one bottle of water bought from a vending machine versus the cost of one bottle from a case 24);	3.9A, 3.9B 4.6A, 4.6B
DPR2.05 – read, interpret, and explain, orally and in writing, data displayed in simple tables and graphs.	4.5A, 4.5B, 4.7A, 4.10B, 4.12B
Communicating Information about Proportional Reasoning	
DPR3.01 – verbalize their observations and reflections regarding proportional reasoning and ask questions to clarify their understanding (e.g., talk about their own and other students' solutions to problems);	1.8A, 1.9A, 1.10 3.8A, 3.9A, 3.10A, 3.11A 4.6A, 4.6B, 4.7A, 4.8A, 4.9, 4.10A, 4.11A, 4.11B, 4.12A, 4.12B 5.1A, 5.5A, 5.7A, 5.7B, 5.11
DPR3.02 – explain their reasoning used in problem solving and in judging reasonableness;	1.8A 3.8A, 3.10B, 3.11A 4.6A, 4.6B, 4.9, 4.10A, 4.11A, 4.11B 5.1A, 5.7A
DPR3.03 – communicate, orally and in writing, the solutions to proportional reasoning problems and the results of investigations, using appropriate terminology, symbols, and form.	1.8A, 1.8B, 1.9A, 1.9B, 1.10 3.8B, 3.9A, 3.9B, 3.11A, 3.11B 5.1A, 5.1B, 5.5A, 5.5B, 5.7A, 5.7B, 5.11