

Developmental Math

Supplemental Resources Guide

This guide is provided to students by the DCC Math Lab. This guide is designed to supplement the instructional materials provided by the Hawkes Learning Courseware. Throughout this document you will find links to external websites and videos. Although we make every effort to ensure these links are accurate, up to date and relevant, the DCC Math Lab cannot take responsibility for pages maintained by external providers.

If you come across any external links that do not work, we would be grateful if you could report them to the DCC Math Lab by emailing us at mathlab@danville.edu.



Danville Community College

Unit 0 (Operations with Whole Numbers)

Section	Topic	Resources	Description
0.1	Adding whole numbers (with "carrying')	https://youtu.be/mAvuom42NyY	Video - How to add whole numbers
	also see	https://youtu.be/N3l6OiO5mKI	Video - Example of adding whole numbers
0.2	Subtracting whole numbers (with "borrowing")	https://youtu.be/Y6M89-6106I	Video - How to subtract whole numbers
0.3a	Multiplying by a single digit number	https://youtu.be/FJ5qLWP3Fqo	Video - How to multiply by a one-digit number
0.3b	Multiplying by a two digit number	https://youtu.be/RVYwunbpMHA	Video - how to multiply by a two-digit (or more) number
0.4a	Long division-dividing by a single digit number	https://youtu.be/KGMf314LUc0	Video - Basic Division (Single digit divisor)
0.4b	Long division-dividing by a two digit number	https://youtu.be/HdU_rf7eMTI	Video - Basic Division (Two digit divisor)
0.5	Order of Operations	https://youtu.be/dAgfnK528RA	Video - Order of Operations, Whole Numbers

Unit 1 (Operations with Positive Fractions)

Section	Topic	Resources	Description
1.1	Exponents and Prime Numbers	https://youtu.be/ONvLtTwnUHs	Video - Factoring numbers
	also see	https://youtu.be/OHONSnnb94w	Video - Prime Factorization
	also see	https://youtu.be/-zUmvpkhvW8	Video - Introduction to Exponents
1.2	Introduction to Fractions and Mixed Numbers	https://youtu.be/s_nOwDux2gM	Video - Mixed Numbers
1.3	Ratios and Rates	https://youtu.be/RQ2nYUBVvqI	Video - Ratios and Rates
1.4	Multiplication and Division with Fractions and Mixed Numbers	https://youtu.be/qmfXyR7Z6Lk	Video - Simple multiplication of fractions
	also see	https://youtu.be/4lkq3DgvmJo	Video - Simple division of fractions
	also see	https://youtu.be/AtBUQH8Tkqc	Video - Simplifying fractions
1.5	Least Common Multiple	https://youtu.be/pZEmFSP3Z0I	Video - Least Common Denominator (or Least Common Multiple)
1.6	Addition and Subtraction with Fractions	https://youtu.be/xNsyNwAkqfk	Video - Addition & Subtraction of fractions (no regrouping)
1.7	Addition and Subtraction with Mixed Numbers	https://youtu.be/pynfj2bYRms	Video - Addition of Mixed Numbers
	also see	https://youtu.be/RqUPSZLwHH0	Video - Subtracting Mixed numbers
1.8	Order of Operations with Fractions and Mixed Numbers	https://youtu.be/8ikRUi6PaJU	Video - Order of Operations, Fractions
	also see	https://youtu.be/ro6yRADn3Mw	Video - Order of Operations, Fractions

Unit 2 (Operations with Positive Decimals and Percents)

Section	Topic	Resources	Description
2.1	Introduction to Decimal Numbers	https://youtu.be/KG6ILNOiMgM	Video - Introduction to decimal numbers and place value
	also see	https://youtu.be/fd-E18EqSVk	Video - Rounding
2.2	Addition and Subtraction with Decimal Numbers	https://youtu.be/kwh4SD1ToFc	Video - Addition and Subtraction with decimals
2.3	Multiplication with Decimal Numbers	https://youtu.be/kwh4SD1ToFc?t=225	Video - Multiplication with decimals
2.4	Division with Decimal Numbers	https://youtu.be/kwh4SD1ToFc?t=475	Video - Division with decimals
2.5	Decimal Numbers and Fractions	https://youtu.be/do_lbHld2Os	Video - Decimals and Fractions
2.6	Decimal Numbers and Percents	https://youtu.be/JeVSmq1Nrpw?t=285	Video - Decimals and Percents
2.7	Fractions and Percents	https://youtu.be/JeVSmq1Nrpw	Video - Fractions and Percents
2.8	Solving Proportions	https://youtu.be/USmit5zUGas	Video - Proportions
2.9	U. S. Measurements	https://youtu.be/OvWMWCMfBNk	Video - How to convert U.S. Measures to equivalent U.S. Measures
2.1	The Metric System	https://youtu.be/jeEUV7Xfzac	Video - How to convert Metric Measures to equivalent U.S. Measures
2.11	U. S. to Metric Conversions	https://youtu.be/8SHTjGkbDp0	Video - How to convert Metric Measures to equivalent Metric Measures
2.12	Reading Graphs	https://youtu.be/ypp-ex99Sso	Video - Working with Histograms

Unit 3 (Algebra basics)

Section	Topic	Resources	Description
3.1a	The Real Number Line and Inequalities	https://youtu.be/8g6uJmFoFOw	Video - Introduction to Inequalities, Symbols, and the Number Line
3.1b	Introduction to Absolute Value	https://youtu.be/BrYy1bgh3Y0	Video - Absolute Value (Basic)
3.2	Introduction to Exponents	https://youtu.be/-zUmvpkhvW8	Video - Introduction to Exponents
3.3	Square Roots	https://youtu.be/B4zejSI8zho	Video - Introduction to Roots
3.4	Addition with Real Numbers	https://youtu.be/iVvUiExjes	Video - Addition and Subtraction with Integers
3.5	Subtraction with Real Numbers	https://youtu.be/Ekl7g9x7xuw	Video - Subtraction with Integers
3.6	Multiplication and Division with Real Numbers	https://youtu.be/K_tPbVPfHgk	Video - Multiplication and Division with Integers
3.7	Order of Operations with Real Numbers	https://youtu.be/dAgfnK528RA	Video - Order of Operations, Whole Numbers
3.8	Introduction to Scientific Notation	https://youtu.be/bXkewQ7WEtl	Video - Introduction to Scientific Notation
3.9	Properties of Real Numbers	https://youtu.be/v-6MShC82ow	Video - The Distributive Property
3.10	Simplifying and Evaluating Algebraic Expressions	https://youtu.be/ffLLmV4mZwU	Video - Introduction to Polynomials and Terms
	also see	https://youtu.be/DKC74YKJpNY	Video - Combining Like Terms in Polynomials
	also see	https://youtu.be/dsqslQv9lik	Video - Substituting numbers for letters in an Algebraic Expression
3.11a	Solving Linear Equations: $x + b = c$	https://youtu.be/l3XzepN03KQ	Video - Solving Basic Equations, Adding and Subtracting
3.11b	Solving linear Equations: $ax = c$	https://youtu.be/Qyd_v3DGzTM	Video - Solving Basic Equations, Multiplying and Dividing
3.12	Solving Percent Problems Using the Equation $R \cdot B = A$	https://youtu.be/ao89Kz-6Ed8	Video - Using the Is/Of Method to solve Percent Problems
3.13	Applications: Discounts, Sales Tax, Commission, etc.	https://youtu.be/wL9XCoddK1s	video - Solving for Total Price, Sales Tax, and Original Price
3.14	Applications: Simple Interest	https://youtu.be/f6Hed9JR8u4	Video - Finding Simple interest
3.15	Perimeter	https://youtu.be/AAY1bsazcgM	Video - Finding the Perimeter of a Polygon
3.16	Area	https://youtu.be/xCdxURXMdFY	Video - Finding the Area of a Polygon
3.17	Circles	https://youtu.be/cC0fZ_lkFpQ	Video - Circles and Pi
	also see	https://youtu.be/O-cawByg2aA	Video - Finding the Circumference and Area of a Circle
3.18	Volume	https://youtu.be/qJwecTgce6c	Video - Calculating Volume

Unit 4 (First Degree Equations and Inequalities in One Variable)

Section	Topic	Resources	Description
4.1a	Solving Linear Equations: $x + b = c$	https://youtu.be/l3XzepN03KQ	Video - Solving Basic Equations, Adding and Subtracting
4.1b	Solving linear Equations: $ax = c$	https://youtu.be/Qyd_v3DGzTM	Video - Solving Basic Equations, Multiplying and Dividing
4.2	Solving linear Equations: $ax + b = c$	https://youtu.be/LDliYKYvvdA	Video - Solving Two-step Equations
4.3	Solving linear Equations: $ax + b = cx + d$	https://youtu.be/qLJKZ0tPYTc	Video - Solving equations with a variable on both sides of the equals sign
4.4	Working with Formulas	https://youtu.be/sBgjEBs6VoY	Video - Solving for a Variable in a Formula
4.5	Translating English Phrases and Algebraic Expressions	https://youtu.be/KmuWR_LriQU	Video - How to Set Up Word Problems
4.6	Applications: Number Problems and Consecutive Integers	https://youtu.be/0k9Exo8fLXQ	Video - How to Solve Consecutive Integer Problems
4.7	Applications: Distance-Rate-Time	https://youtu.be/OywQoXFBJPE	Video - How to solve Distance-Time-Rate Problems
4.7	Applications: Interest	https://youtu.be/3IAE74J09mY	Video - How to find Amounts invested, given interest rates/amount
4.7	Applications: Average	https://youtu.be/eEY3U3x_THc	Video - finding Missing number when Average is known
4.8	Solving Absolute Value Equations	https://youtu.be/nrw0jXulqFw	Video - How to solve Absolute Value problems
4.9	Linear Inequalities	https://youtu.be/8hhewFQ_K0w	Video - Introduction to Inequalities

Unit 5 (Linear Equations, Inequalities and Systems of Linear Equations in Two Variables)

Section	Topic	Resources	Description
5.1	The Cartesian Coordinate System	https://youtu.be/9Uc62CuQjc4	Video - Plotting points and graphing
	also see	https://youtu.be/DXr_xU5g-GU	Video - Find two points to graph a line
	also see	https://youtu.be/RX9p7Oezplw	Video - Find two points to graph a line
	also see	https://youtu.be/NJuXGxYvac8	Video - Graphing a Vertical Line
5.2	Finding X and Y Interecepts	https://youtu.be/mSZGEV8WWI	Video - How to find X and Y Intercepts
	also see	https://youtu.be/KdsphE7E3IO	Video - How to find X and Y Intercepts
5.3a	Slope	https://youtu.be/XSUmSIYudo	Video - How to find Slope when given two points
5.3b	Slope-Intercept Form	https://youtu.be/MXV65i9g1Xg	Video - Introduction to Slope and Slope-Intercept Form
		https://youtu.be/hzHz72H2vK8	Video - Find an Equation when given the slope and y-intercept
5.4a	Point-Slope Form	https://youtu.be/zpl4RUaH1hw	Video - Alternate way to find Equation, given point and slope
		https://youtu.be/ECui8cbuunw	Video - Alternate way to find Equation, given two points
5.4b	Parallel and Perpendicular Lines	https://youtu.be/DKkZzRjIOg	Video - Determine if slopes are parallel, perpendicular, or neither
		https://youtu.be/gq9hlxUER9M	Video - Finding equations of lines that are parallel or perpendicular
5.5	Graphing Linear Inequalities	https://youtu.be/XoVo8degv_s	Video - How to graph Inequalities
5.6	Introduction to Functions and Function Notation	https://youtu.be/_e0EdFGpcvc	Video - How to solve function notation problems
	also see	https://youtu.be/52tpYl2tTqk	Video - Introduction to Functions
5.7	Systems of Linear Equations: Solution by Graphing	https://youtu.be/UgsvlmmVUoo	Video - How to solve a system of equations by graphing
5.8	Systems of Linear Equations: Solution by Substitution	https://youtu.be/YriMMWbndn0	Video - How to solve a system of equations, Substitution Method
5.9	Systems of Linear Equations: Solution by Addition	https://youtu.be/XOJgzW4P7T8	Video - How to solve a system of equations, Addition Method
5.10a	Applications: Distance-Rate-Time	https://youtu.be/0YX_0fpMnpQ	Video - How to solve Distance-Rate-Time problems
	also see	https://youtu.be/JdIALgiv3aE	Video - How to solve Distance-Rate-Time problems; 2 more examples
5.10b	Applications: Number Problems	https://youtu.be/VjPX-XIN7Ok	Video - How to solve Word Problems
5.10c	Applications: Amounts and Costs	https://youtu.be/liW_ALj4Qj8?t=343	Video - Comparing Cost per Unit
5.11	Applications: Interest and Mixture	https://youtu.be/2fw6OZ1EZnQ	Video - Solving Percent and Mixture problems

Unit 6 (Exponents, Factoring and Polynomial Equations)

Section	Topic	Resources	Description
6.1a	Exponents	https://youtu.be/g5ZGDNxJwxA	Video - Laws of Exponents
6.1b	Negative Exponents	https://youtu.be/wSracsFI8	Video - Introduction to Negative Exponents
6.2a	Power Rules for Exponents	https://youtu.be/A1wKTiBTsfk?t=152	Video - Laws of Exponents
	also see	https://youtu.be/Pu2dqa1GgYU?t=24	Rap Video - Power Rules of Exponents
6.2b	Scientific Notation - addition and subtraction	https://youtu.be/p0zVNTko7z4	Video - Addition and Subtraction using Scientific notation
	Scientific Notation - multiplication and division	https://youtu.be/UADVIDjdaVg	Video - Multiplication and Division using Scientific notation
6.3	Introduction to Polynomials	https://youtu.be/ffLLmV4mZwU	Video - Introduction to Polynomials
6.4	Addition and Subtraction with Polynomials	https://youtu.be/DKC74YKJpNY	Video - Simplifying Polynomials
6.5	Multiplication with Polynomials	https://youtu.be/XYP8oPVdrZw	Video - Multiplying Polynomials
6.6a	The FOIL Method	https://youtu.be/dX5EnXOdI2w	Video - Foil Method explained
6.6b	Special Products of Binomials	https://youtu.be/rMF_SX0SgB8	Video - Difference of Two Perfect Squares
6.7	Division by a Monomial	https://youtu.be/L09nAQnnGJQ	Video - Dividing a Polynomial by a Monomial
6.8a	Greatest common Factor of Two or More Terms	https://youtu.be/-VKAYqzRp4o?t=103	Video - Introduction to Greatest Common Factor (Algebraic Expressions)
6.8b	Greatest common Factor of a Polynomial	https://youtu.be/-GPhHv7gxl4	Video - Introduction to Factoring Polynomials using the GCF
6.8c	Factoring Expressions by Grouping	https://youtu.be/kna95eSeb5A	Video - Factoring by Grouping
6.9	Factoring Trinomials with a Leading Coefficient of 1	https://youtu.be/2iYlgo4I3Qw	Video - Introduction to Factoring Trinomials
6.10a	Factoring Trinomials by Trial and Error	https://youtu.be/YtN9_tCaRQc	Video - Factoring Trinomials, Trial and Error (and "Magic X" Method)
6.10b	Factoring Trinomials by the A-C Method	https://youtu.be/M1oIJRu92CM	Video - Factoring Trinomials using the A-C Method
6.11a	Special Factorizations - Squares	https://youtu.be/GznFQpsgVvk	Video - Factoring Perfect Squares and Difference of Squares
6.11b	Special Factorizations - Cubes	https://youtu.be/5wISczFXops	Video - Factoring Sum of Cubes and Difference of Cubes - SOAP Method
6.12	Additional Factoring Practice	https://youtu.be/9MUDAr1PnIE	Video - Review of Factoring Trinomials
6.13	Solving a Quadratic Equation by Factoring	https://youtu.be/Z5MnP9da4EM	Video - How to solve a Quadratic Equation by Factoring
6.14	Applications of Quadratic Equations	https://youtu.be/LMApqDGjOr4	Video - How to solve Consecutive Integers and Area of Rectangle

Unit 7 (Rational Expressions and Equations)

Section	Topic	Resources	Description
7.1a	Introduction to Rational Expressions	https://youtu.be/i7w_aRlVagU	Video - Simplifying Rational Expressions
7.1b	Multiplication and Division with Rational Expressions	https://youtu.be/SpCGa-nbhos	Video - Multiplying Rational Expressions
	also see	https://youtu.be/2kmjENwKscQ	Video - Dividing Rational Expressions
7.2	Addition and Subtraction with Rational Expressions	https://youtu.be/pADVEcKx4uQ	Video - Adding Rational Expressions
	also see	https://youtu.be/Wdlc8PHn4rk	Video - Subtracting Rational Expressions
	also see	https://youtu.be/BHEEoiqGC1Y	Video - Solving Equations with Rational Expressions
7.3	Complex Fractions	https://youtu.be/SZQfuZVhhfk	Video - Simplifying Complex Fractions and Expressions
7.4a	Division by a Monomial	https://youtu.be/Tl0oCD6OXbl	Video - Dividing a Polynomial by a Monomial
7.4b	The Division Algorithm	https://youtu.be/AdTRwnyf52c?t=227	Video - Dividing a Polynomial by a Binomial
7.5	Solving Equations with Rational Expressions	https://youtu.be/wCuWHiB138A	Video - Solving Equations with Rational Expressions
7.6	Applications: Rational Expressions	https://youtu.be/X8dxgr-clu8	Video - Work Word Problems
	also see	https://youtu.be/N7uLkYd857M	Video - Distance/Rate/Time Word Problems
	also see	https://youtu.be/tGP4oDPN3-o	Video - Word Problems involving Proportions

Unit 8 (Rational Exponents and Radicals)

Section	Topic	Resources	Description
8.1	Evaluating Radicals	https://youtu.be/ypi0Z43l1eU	Video - Basics of Evaluating Radicals
8.2	Rational Exponents	https://youtu.be/S7lY4e9G-yk	Video - Simplifying Rational Exponents
8.3	Simplifying Radicals	https://youtu.be/2mejAHKMBiM	Video - How to Simplify Radicals
8.4a	Addition and Subtraction with Radicals	https://youtu.be/yH3kcWuoZak	Video - Adding and Subtracting Radicals (Basic)
	also see	https://youtu.be/qkve0IX77kw?t=307	Video - Subtracting or Adding Radicals (Advanced)
8.4b	Multiplication with Radicals	https://youtu.be/NQE-scWKDlw	Video - Multiplying Radicals
8.5	Rationalizing Denominators	https://youtu.be/LfsJxeye1CA	Video - Dividing Radicals (Rationalizing the Denominator)
8.6	Equations with Radicals	https://youtu.be/NGag3kmub9o	Video - Solving Equations containing Radicals
8.7	Complex Numbers	https://youtu.be/uK99ImJV-Pw	Video - Introduction to Complex Numbers and Simplifying Expressions
	also see	https://youtu.be/hqr1DtXXHpY	Ditto - uses term "Transpose" (!)
	also see	https://youtu.be/KTNcYYHuBTY	Ditto - part 2 of above
8.8a	Applications: The Pythagorean Theorem	https://youtu.be/WqhIG3Vakw8	Video - Introduction to the Pythagorean Theorem
	also see	https://youtu.be/qGRYfXdJKes?t=17	Video - Using the Pythagorean Theorem to solve Word Problems
8.8b	Applications: The Distance Formula and the Midpoint Formula	https://youtu.be/otljqzKlnXc	Video - Finding the Distance between two points
	also see	https://youtu.be/2T7m9uYkcuQ	Video - Finding the Midpoint of a Line Segment

Unit 9 (Functions, Quadratic Equations and Parabolas)

Section	Topic	Resources	Description
9.1	Functions and Function Notation	https://youtu.be/GQGFMUfr10M	Video - Finding the Domain of a Function
9.2a	Solviing Quadratic Equations: The Square Root Method	https://youtu.be/mZs5pQ6gAUQ	Video - Square Root Method of Solving Quadratic Equations
9.2b	Solviing Quadratic Equations: Completing the Square	https://youtu.be/prx_Bf2hakw	Video - Solving Quadratic Equations by Completing the Square
	also see	https://youtu.be/1tIXSI-dxZQ	Video - Solving Quadratic Equations by Completing the Square
9.3	The Quadratic Formula	https://youtu.be/ill7E1m6f9M	Video - Solving Quadratic Equations using the Quadratic Formula
9.4	Applications: Quadratic Equations	https://youtu.be/3FtCGHU6xmw	Video - Solving "Projectile" problems using Quadratic Equations
	also see	https://youtu.be/U8Ov-9IfUQE	Video - Solving "Geometry" problems using Quadratic Equations
	also see	https://youtu.be/OJSwAelOzHc	Video - Solving "Cost per Person" problems using Quadratic Equations
	also see	https://youtu.be/03Ox39vvaiM?t=565	Video - Solving "Work" problems using Quadratic Equations
	also see	https://youtu.be/7Q0KrYrW9R0	Video - Solving Various types of Word Problems using Quadratic Equations
9.5	Graphs of Quadratic Equations	https://youtu.be/_vkHw7caCN4	Video - Graphing Quadratic Equations
	also see	https://youtu.be/cFKYrodrXtc	Video - Graphing Quadratic Equations
9.6	Quadratic Functions: Completing the Square and Applications	https://youtu.be/WOb25i8FBBw	Video - Completing the Square
	also see	https://youtu.be/1tIXSI-dxZQ	Video - Completing the Square