Grade 8 PLT Correlations to Minnesota Academic Standards in Mathematics

				Math correlation grade →	PreK-8	gr 5-8	gr K-8	PreK-8	PreK-8	K-6	K-8	Gr 6-8	Gr 1-8	Gr 6-8	Gr 5-8	gr 4-8	gr 4-8	gr 4-8	gr 4-8	gr 7-8	gr 4-8	gr 4-6	gr 4-8	gr 4-8	K-8	gr 4-8	gr 1-8	gr 3-8	gr 6-8	gr 5-8
				Project Learning Tree Activity Number:	4	12	16	21	22	25	27	29	32	35	37	38	41	47	48	50	53	66	67	69	70	73	77	80	84	85
				page number (2006 edition)	26	59	77	97	102	111	117	123	135	147	159	163	179	200	203	217	232	279	284	291	297	314	332	345	363	370
	strand	Sub-strand	Standard	benchmark	Sounds Around	Invasive Species	Pass the Plants, Please	Adopt a Tree	Trees as Habitats	Birds and Worms	Every Tree for Itself	Rain Reasons	A Forest of Many Uses	Loving it Too Much	Reduce, Reuse, Recycle	Every Drop Counts	How Plants Grow	Are Vacant Lots Vacant?	Field, Forest, and Stream	400-acre Wood	On the Move	Germinating Giants	How Big is Your Tree?	Forest for the Trees	Soil Stories	Waste Watchers	Trees in Trouble	Succeeds Like Succession	The Global Climate	In The Driver's Seat
Grade 8	I. Mathematical Reasoning		Apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.	1. Assess the reasonableness of a solution by comparing the solution to appropriate graphical or numerical estimates or by recognizing the feasibility of a solution in a given context.																										
				2. Appropriately use examples and counterexamples to make and test conjectures, justify solutions and explain results.																										
				3. Translate a problem described verbally or by tables, diagrams or graphs, into suitable mathematical language, solve the problem mathematically and interpret the result in the original context.	0																								X	
				4. Support mathematical results by explaining why the steps in a solution are valid and why a particular solution method is appropriate.																										
				5. Determine whether or not relevant information is missing from a problem.																										
				6. Use accurately common logical words and phrases such as "and," "or," "if … then …," "unique," "only if."																										
Grade 8	II. Number Sense, Compulation, & Reasoning	A. Number Sense	Use rational and irrational numbers, represented in a variety of ways, to quantify information and to solve real-world and mathematical problems.	1. Represent and compare rational and irrational numbers symbolically and on a number line.																0										
				2. Use rational and irrational numbers to solve real-world and mathematical problems.																0	0								X	X
				3. Use scientific notation with positive and negative powers of 10, with appropriate treatment of significant digits, to solve real-world and mathematical problems.																0										
				4. Classify numbers as rational or irrational.																0										
		B. Computation and Operation	Compute fluently and make reasonable estimates with rational and irrational numbers in real-world and mathematical problems.	1. Use calculator approximations of irrational and rational numbers in multi-step real-world and mathematical problems.												0				0			0			0				
				2. Find integer approximations of square roots of positive integers without a calculator.												0										0				

X = Significant correlation
0 = Some correlation

Project Learning Tree Activity and Grade Correlation

Activity #	4	12	16	21	22	25	27	29	32	35	37	38	41	47	48	50	53	66	67	69	70	73	77	80	84	85
Math correlation grade	PreK-8	gr 5-8	gr K-8	PreK-8	PreK-8	K-6	K-8	Gr 6-8	8	Gr 1-8	Gr 6-8	Gr 5-8		gr 4-8	gr 4-8	gr 4-8	gr 7-8	gr 4-8	gr 4-6	gr 4-8	gr 4-8	K-8	gr 4-8	gr 1-8	gr 3-8	gr 6-8
page number (2006 edition)	26	59	77	97	102	111	117	123	135	147	159	163	179	200	203	217	232	279	284	291	297	314	332	345	363	370
Activity name	Sounds Around	Invasive Species	Pass the Plants, Please	Adopt a Tree	Trees as Habitats	Birds and Worms	Every Tree for Itself	Rain Reasons	A Forest of Many Uses	Loving it Too Much	Reduce, Reuse, Recycle	Every Drop Counts	How Plants Grow	Are Vacant Lots Vacant?	Field, Forest, and Stream	400-acre Wood	On the Move	Germinating Giants	How Big is Your Tree?	Forest for the Trees	Soil Stories	Waste Watchers	Trees in Trouble	Succeeds Like Succession	The Global Climate	In The Driver's Seat

Benchmark correlations

strand	Sub-strand	Standard	benchmark	4	12	16	21	22	25	27	29	32	35	37	38	41	47	48	50	53	66	67	69	70	73	77	80	84	85
		Understand the meanings of the basic operations, including the use of integer exponents and nth roots, and how the operations relate to one another. Appropriately use calculators and other technologies to solve problems.	3. Multiply and divide expressions involving exponents with a common base.												0										0				
			4. Use the inverse relationship between nth roots and nth powers of rational numbers to solve real-world and mathematical problems.												0														
			5. Apply the correct order of operations and grouping symbols when using calculators and other technologies.												0							0			0				
			6. Know, use and translate calculator notational conventions to mathematical notation.												0										0				
			7. Understand that use of a calculator requires appropriate mathematical reasoning and does not replace the need for mental computation.												0							0			0				
Grade 8 — III. Patterns, Functions, & Algebra	A. Patterns and Functions	Understand and describe progressions. Use graphs and tables to solve real-world and mathematical problems.	1. Recognize when a list of numbers forms an arithmetic or geometric progression and be able to determine subsequent terms in the progression.																										
			2. Represent quantitative relationships graphically and use the graphs to solve real-world and mathematical problems.		0														0									X	
			3. Generate a table of values from a formula and graph the resulting ordered pairs on a grid.																									X	
	B. Algebra (Algebraic Thinking)	Use algebraic operations to generate equivalent expressions, and use proportional reasoning to solve real-world and mathematical problems. Demonstrate the ability to manipulate an equation by applying arithmetic operations to both sides to maintain equivalence.	1. Multiply and divide expressions of the form axn.																										
			2. Use simple formulas with more than one variable to solve real-world and mathematical problems.																			X							
			3. Use proportions and percents with one unknown quantity to solve real-world and mathematical																									X	
			4. Apply the correct order of operations including addition, subtraction, multiplication, division, grouping symbols and powers, to simplify and evaluate algebraic expressions.																						0				0
Grade 8 — IV. Data Analysis, Statistics, & Probability	A. Data and Statistics	Represent data and use various measures associated with data to draw conclusions and...	1. Construct and analyze histograms, circle graphs, stem-and-leaf plots and box-and-whisker plots.												0			0											

X = Significant correlation
0 = Some correlation

Grade 8 PLT Correlations to Minnesota Academic Standards in Mathematics

				Math correlation grade	PreK-8	gr 5-8	gr K-8	PreK-8	PreK-8	K-6	K-8	Gr 6-8	Gr 1-8	Gr 6-8	Gr 5-8		gr 4-8	gr 4-8	gr 4-8	gr 4-8	gr 7-8	gr 4-8	gr 4-6	gr 4-8	gr 4-8	K-8	gr 4-8	gr 1-8	gr 3-8	gr 6-8	gr 5-8
				Project Learning Tree Activity Number:	4	12	16	21	22	25	27	29	32	35	37	38	41	47	48	50	53	66	67	69	70	73	77	80	84	85
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	strand	Sub-strand	Standard	benchmark	Sounds Around	Invasive Species	Pass the Plants, Please	Adopt a Tree	Trees as Habitats	Birds and Worms	Every Tree for Itself	Rain Reasons	A Forest of Many Uses	Loving it Too Much	Reduce, Reuse, Recycle	Every Drop Counts	How Plants Grow	Are Vacant Lots Vacant?	Field, Forest, and Stream	400-acre Wood	On the Move	Germinating Giants	How Big is Your Tree?	Forest for the Trees	Soil Stories	Waste Watchers	Trees in Trouble	Succeeds Like Succession	The Global Climate	In The Driver's Seat
	Probability		draw conclusions and identify trends.	2. Compute the quartiles of a data set.																0											
		B. Probability	Calculate and express probabilities numerically and apply probability concepts to solve real-world and mathematical problems.	1. Understand that if p is the probability of an event occurring, then 1 - p is the probability of the event not occurring.																											
				2. Convert between odds and probabilities.																											
				3. Use a variety of experiments to explore the relationship between experimental and theoretical probabilities and the effect of sample size on this relationship.																											
Grade 8	V. Spatial Sense, Geometry, & Measurement	A. Spatial Sense	Recognize the relationship between different representations of two- and three-dimensional shapes. Understand the effect of various transformations	1. Use models and visualization to understand and create various two-dimensional diagrams of three-dimensional shapes.																											
				2. Predict the position and orientation of simple three-dimensional geometric shapes under transformations such as reflections, rotations and translations.																											
Grade 8		B. Geometry	Use basic geometric principles and proportional reasoning to solve real-world and mathematical problems.	1. Apply the relationship between changes in one or more linear distances in a planar figure and the change in area.																											
				2. Use the concept of similarity in simple two-dimensional figures to solve real-world and mathematical problems involving proportionality.																	X											
				3. Know how to find the volumes of cubes, prisms, spheres and cylinders.																											
				4. Know how to find the surface areas of cubes, prisms and cylinders.																											
				5. Calculate perimeter and area of two-dimensional figures obtained by putting together triangles, parallelograms, and sectors of circles to solve real-world and mathematical problems.																											
Grade 8		C. Measurement	Make calculations of time, length, area and volume within and between standard	1. Find approximate equivalent measures of length, temperature and weight for common units in U.S. customary and metric measuring systems.																						0					

X = Significant correlation
0 = Some correlation

Grade 8 PLT Correlations to Minnesota Academic Standards in Mathematics

strand	Sub-strand	Standard	benchmark	Sounds Around (4) PreK-8 / 26	Invasive Species (12) gr 5-8 / 59	Pass the Plants, Please (16) gr K-8 / 77	Adopt a Tree (21) PreK-8 / 97	Trees as Habitats (22) PreK-8 / 102	Birds and Worms (25) K-6 / 111	Every Tree for Itself (27) K-8 / 117	Rain Reasons (29) Gr 6-8 / 123	A Forest of Many Uses (32) Gr 1-8 / 135	Loving it Too Much (35) Gr 6-8 / 147	Reduce, Reuse, Recycle (37) Gr 5-8 / 159	Every Drop Counts (38) / 163	How Plants Grow (41) gr 4-8 / 179	Are Vacant Lots Vacant? (47) gr 4-8 / 200	Field, Forest, and Stream (48) gr 4-8 / 203	400-acre Wood (50) gr 4-8 / 217	On the Move (53) gr 7-8 / 232	Germinating Giants (66) gr 4-8 / 279	How Big is Your Tree? (67) gr 4-6 / 284	Forest for the Trees (69) gr 4-8 / 291	Soil Stories (70) gr 4-8 / 297	Waste Watchers (73) K-8 / 314	Trees in Trouble (77) gr 4-8 / 332	Succeeds Like Succession (80) gr 1-8 / 345	The Global Climate (84) gr 3-8 / 363	In The Driver's Seat (85) gr 6-8 / 370
		between standard measuring systems using good judgment in choice of units.	2. Use arithmetic to solve simple real-world and mathematical problems involving mixed units such as minutes and hours in elapsed time, degrees and minutes in latitude and longitude and feet and inches in distance.													0		0				X		0				0	

The Project Learning Tree PreK-8 Activity Guide is written from a comprehensive environmental systems-based perspective and is multidisciplinary and cross-curricular in nature. Many lessons cover a wide spectrum of topics.

This correlations system represents PLT's interpretation of the Minnesota Academic Standards and their relation to the PLT PreK-8 Activity Guide (2006 revision). The activities are correlated to the Minnesota Academic Standards to illustrate the level to which the lessons address the learning benchmarks within the standards. No activities are designed to specifically meet the U.S. National Education Standards or the Minnesota Academic Standards. Individual educators are responsible for addressing specific requirements outlined within the Minnesota Academic Standards. Although each PLT activity provides assessment suggestions, individual educators are responsible for assessing student work. We strongly encourage all educators to modify lessons from the PLT Guide as they best see fit.

The grid below suggests correlations between each PLT activity and the MN Academic Benchmarks it addresses. An "x" means that the activity partially or fully addresses the concepts and language used in the Benchmark. An "o" means that the activity introduces the concepts and language used in the Benchmark.

We welcome your comments and suggestions regarding the accuracy and usefulness of this system.
We sincerely hope you will find these correlations useful as you integrate PLT activities into your curriculum.

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