

Wyoming Project Learning Tree
Correlation Key
to
The Wyoming Mathematics Content and Performance Standards
for
Grades 5-8

Introduction:

The purpose of this document is to provide Wyoming educators who use Project Learning Tree materials with an easy reference guide in how Plots activities correlate to the Wyoming Mathematics Content and Performance Standards for grades 5-8. Project Learning Tree is an interdisciplinary environmental education program. PLT activities supplement curriculum and can be used to organize instructional units in a variety of subjects. Educators can use PLT activities to teach or assess mastery of mathematical skills in number operations and concepts, geometry, measurement, algebraic concepts and relationships, statistics and probability, tools and technology, problem-solving and mathematical reasoning.

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CONTENT STANDARD: 1. NUMBER OPERATIONS AND CONCEPTS
Students use numbers, number sense, and number relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

Benchmark 1: Students represent and use numbers in a variety of equivalent forms (such as changing from percent to decimal to fraction, etc.) and in a problem-solving context: Integers as prime factors, factors, and multiples; Rational numbers including fractions, decimals, percents, ratios, and proportions; Roots and powers.

- 29. Rain Reasons
- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 50. 400-Acre Wood
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 73. Waste Watchers
- 85. Air To Drive

Benchmark 2: Students extend their understanding and use of basic arithmetic operations on rational numbers. Simplify numeric expressions using the order of operation; Develop and use order relations (comparisons) for rational numbers.

PLT activities do not apply as written, but with modifications and adjustments, some activities may correlate with the benchmark.

Benchmark 3: Students use number sense for mental math, estimation, and justifying the reasonableness of solutions to problems involving rational numbers.

- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 85. Air To Drive

CONTENT STANDARD: 2. GEOMETRY

Students apply geometric concepts, properties, and relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

Benchmark 1: Students classify, describe, and draw on-two-and three-dimensional geometric shapes, including: Lines, rays, segments, and angles; Parallel and perpendicular relationships; circles and spheres; Polygons such as triangles, squares, rectangles, etc.; Right prisms, cylinders, cones, and pyramids.

- 16. Pass The Plants, Please
- 22. Trees As Habitats
- 28. Air Plants
- 37. Talking Trash, Not!
- 41. How Plants Grow
- 47. Are Vacant Lots Vacant?
- 50. 400-Acre Wood
- 55. Planning The Ideal Community
- 67. How Big Is Your Tree?
- 80. Nothing Succeeds Like Succession

Benchmark 2: Students select and use the appropriate methods, tools, and units to solve problems involving angle measure, perimeter, circumference, area, and volume: Area of triangles, squares, rectangles, parallelograms, trapezoids, and circles; Surface area and volume of rectangular solids.

- 21. Adopt A Tree
- 28. Air Plants
- 47. Are Vacant Lots Vacant?
- 50. 400-Acre Wood
- 55. Planning The Ideal Community
- 66. Germinating Giants
- 67. How Big Is Your Tree-

Benchmark 3: Students make conjectures about geometric figures based on their knowledge of geometric transformations, congruence, and similarity.

PLT activities do not apply as written, but with modifications and adjustments, some activities may correlate with the benchmark.

Benchmark 4: Students use geometric formulas including the

Pythagorean theorem.

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CONTENT STANDARD: 3. MEASUREMENT

Students use a variety of tools and techniques of measurement in a problem-solving situation. Students communicate reasoning used in solving these problems.

Benchmark 1: Students measure length, weight/mass, capacity, and angle measure.

- 21. Adopt A Tree
- 28. Air Plants
- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 41. How Plants Grow
- 47. Are Vacant Lots Vacant?
- 48. Field, Forest And Stream
- 50. 400-Acre Wood
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 70. Soil Stories
- 77. Trees In Trouble
- 80. Nothing Succeeds Like Succession

Benchmark 2: Students measure two-and three-dimensional models using a variety of tools.

- 21. Adopt A Tree
- 28. Air Plants
- 41. How Plants Grow
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 77. Trees In Trouble
- 80. Nothing Succeeds Like Succession

Benchmark 3: Students convert units of measure within the metric system in problem-solving situations across content areas.

- 38. Every Drop Counts
- 66. Germinating Giants

CONTENT STANDARD: 4. ALGEBRAIC CONCEPTS AND RELATIONSHIPS

Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation. Students evaluate and communicate the reasoning used in solving these problems.

Benchmark 1: Students identify variables, expressions, inequalities, and equations.

PLT activities do not apply as written, but with modifications and adjustments, some activities may correlate with the benchmark.

Benchmark 2: Students translate in both directions words phrases and sentences to mathematical expressions.

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Benchmark 3: Students solve one-and-two-step linear equations and inequalities.

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Benchmark 4: Students evaluate algebraic expressions and formulas given the values for variables.

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Benchmark 5: Students understand and use the coordinate system.

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CONTENT STANDARD: 5. STATISTICS AND PROBABILITY

Students use statistics and probability to analyze given situations and the results of experiments. Students communicate the reasoning used in arriving at a conclusion.

Benchmark 1: Students systematically collect, organize, describe, analyze and represent data using tables, charts, and graphs.

- 16. Pass The Plants, Please
- 22. Trees As Habitats
- 25. Birds And Worms
- 27. Every Tree For Itself
- 36. Pollution Search
- 37. Talking, Trash, Not!
- 38. Every Drop Counts
- 41. How Plants Grow
- 48. Field, Forest And Stream
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 77. Trees In Trouble
- 80. Nothing Succeeds Like Succession

Benchmark 2: Students calculate measures of central tendency for data sets.

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Benchmark 3: Students predict, compare, and calculate probable outcomes of simple experiments or simulations.

- 27. Every Tree For Itself
- 29. Rain Reasons
- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 41. How Plants Grow
- 70. Soil Stories

CONTENT STANDARD: 6. TOOLS AND TECHNOLOGY

Students use appropriate tools and technologies to model, measure, and apply the results in a problem-solving situation. Students communicate the reasoning used in solving these problems.

Benchmark 1: Students use manipulatives and concrete models as tools to solve problems.

- 21. Adopt A Tree
- 22. Trees As Habitats
- 25. Birds And Worms
- 27. Every Tree For Itself
- 28. Air Plants
- 29. Rain Reasons
- 36. Pollution Search
- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 41. How Plants Grow
- 47. Are Vacant Lots Vacant
- 48. Field, Forest And Stream
- 50. 400-Acre Wood
- 55. Planning The Ideal Community
- 66. Germinating Giants
- 67. How Big Is Your Tree?
- 69. Forest For The Trees
- 70. Soil Stories
- 73. Waste Watchers
- 77. Trees In Trouble
- 80. Nothing Succeeds Like Succession
- 83. Reduce, Reuse, Recycle
- 85. Air To Drive

Benchmark 2: Students use a scientific calculator as a tool in problem-solving.

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Benchmark 3: Students use a computer to organize information and to research a mathematical situation.

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Benchmark 4: Students use application software (i.e., spreadsheets, microworlds, probeware, etc.) to assist in the problem-solving process.

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CONTENT STANDARD: 7. PROBLEM-SOLVING AND MATHEMATICAL REASONING
Students apply a variety of problem-solving strategies to investigate and solve problems from across the curriculum as well as from practical applications.

Benchmark 1: Students apply math skills, including mental-math, number sense, estimation and basic operations in problem-solving situations.

- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 50. 400-Acre Wood
- 66. Germinating Giants
- 73. Waste Watchers
- 77. Trees In Trouble

Benchmark 2: Students, given a problem to solve, choose a strategy, apply the strategy to find an acceptable solution, and communicate the process involved.

- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 50. 400-Acre Wood
- 66. Germinating Giants
- 73. Waste Watchers
- 77. Trees In Trouble

Benchmark 3: Students recognize and apply deductive and inductive reasoning to simple problem-solving situations.

- 37. Talking Trash, Not!
- 38. Every Drop Counts
- 50. 400-Acre Wood
- 66. Germinating Giants
- 73. Waste Watchers
- 77. Trees In Trouble

