

Mathematics Grade 10

Expectation	<i>Module, PLT activity</i>
Number and Number Relations	
1. Simplify and determine the value of radical expressions (N-2-H) (N-7-H)	
2. Predict the effect of operations on real numbers (e.g., the quotient of a positive number divided by a positive number less than 1 is greater than the original dividend) (N-3-H) (N-7-H)	
3. Define <i>sine</i> , <i>cosine</i> , and <i>tangent</i> in ratio form and calculate them using technology (N-6-H)	<i>Forest Ecology, Casts of Thousands</i>
4. Use ratios and proportional reasoning to solve a variety of real-life problems including similar figures and scale drawings (N-6-H) (M-4-H)	<i>Forests of the World, Analyzing Patterns of Forest Change Places We Live, Green Space Forest Ecology, Adopt a Forest Forest Ecology, Casts of Thousands Forest Ecology, Story of Succession</i>
Algebra	
5. Write the equation of a line of best fit for a set of 2-variable real-life data presented in table or scatter plot form, with or without technology (A-2-H) (D-2-H)	<i>Municipal Solid Waste, Recycling and Economics</i>
6. Write the equation of a line parallel or perpendicular to a given line through a specific point (A-3-H) (G-3-H)	
Measurement	
7. Find volume and surface area of pyramids, spheres, and cones (M-3-H) (M-4-H)	
8. Model and use trigonometric ratios to solve problems involving right triangles (M-4-H) (N-6-H)	<i>Forest Ecology, Cast of Thousands</i>
Geometry	
9. Construct 2- and 3-dimensional figures when given the name, description, or attributes, with and without technology (G-1-H)	
10. Form and test conjectures concerning geometric relationships including lines, angles, and polygons (i.e., triangles, quadrilaterals, and n -gons), with and without technology (G-1-H) (G-4-H) (G-6-H)	
11. Determine angle measurements using the properties of parallel, perpendicular, and intersecting lines in a plane (G-2-H)	
12. Apply the Pythagorean theorem in both abstract and real-life settings (G-2-H)	
13. Solve problems and determine measurements involving chords, radii, arcs, angles, secants, and tangents of a circle (G-2-H)	
14. Develop and apply coordinate rules for translations and reflections of geometric figures (G-3-H)	
15. Draw or use other methods, including technology, to illustrate dilations of geometric figures (G-3-H)	
16. Represent and solve problems involving distance on a number line or in the plane (G-3-H)	

17. Compare and contrast inductive and deductive reasoning approaches to justify conjectures and solve problems (G-4-H) (G-6-H)	
18. Determine angle measures and side lengths of right and similar triangles using trigonometric ratios and properties of similarity, including congruence (G-5-H) (M-4-H)	
19. Develop formal and informal proofs (e.g., Pythagorean theorem, flow charts, paragraphs) (G-6-H)	
Data Analysis, Probability, and Discrete Math	
20. Show or justify the correlation (match) between a linear or non-linear data set and a graph (D-2-H) (P-5-H)	
21. Determine the probability of conditional and multiple events, including mutually and non-mutually exclusive events (D-4-H) (D-5-H)	<i>Focus on Risk, What is Risk?</i> <i>Focus on Risk, Chances Are...</i> <i>Focus on Risk, Risk Assessment: Tools of the Trade</i>
22. Interpret and summarize a set of experimental data presented in a table, bar graph, line graph, scatter plot, matrix, or circle graph (D-7-H)	<i>Municipal Solid Waste, Recycling and Economics</i> <i>Municipal Solid Waste, Where Does Your Garbage Go?</i> <i>Forests of the World, Making Consumer Choices</i> <i>Forests of the World, Making Global Connections</i> <i>Places We Live, Green Space</i> <i>Focus on Forests, Who Owns America's Forests?</i>
23. Draw and justify conclusions based on the use of logic (e.g., conditional statements, converse, inverse, contrapositive) (D-8-H) (G-6-H) (N-7-H)	
24. Use counting procedures and techniques to solve real-life problems (D-9-H)	<i>Focus on Risk, Chances Are...</i> <i>Focus on Risk, Risk Assessment: Tools of the Trade</i> <i>Municipal Solid Waste, The Waste Stream</i> <i>Municipal Solid Waste, Recycling and Economics</i> <i>Municipal Solid Waste, Where Does Your Garbage Go?</i> <i>Forests of the World, Analyzing Patterns of Forest Change</i> <i>Forests of the World, Making Consumer Choices</i> <i>Forests of the World, Making Global Connections</i> <i>Places We Live, Green Space</i> <i>Forest Ecology, Adopt a Forest</i> <i>Forest Ecology, Casts of Thousands</i> <i>Forest Ecology, Story of Succession</i>
25. Use discrete math to model real life situations (e.g., fair games, elections) (D-9-H)	<i>Focus on Risk, Risk Assessment: Tools of the Trade</i> <i>Municipal Solid Waste, The Waste Stream</i> <i>Municipal Solid Waste, Recycling and Economics</i> <i>Forests of the World, Analyzing Patterns of Forest Change</i> <i>Forests of the World, Making Consumer Choices</i> <i>Forests of the World, Making Global Connections</i> <i>Forest Ecology, Adopt a Forest</i> <i>Forest Ecology, Casts of Thousands</i> <i>Forest Ecology, Story of Succession</i>
Patterns, Relations, and Functions	
26. Generalize and represent patterns symbolically, with and without technology (P-1-H)	<i>Focus on Risk, Risk Assessment: Tools of the Trade</i> <i>Municipal Solid Waste, The Waste Stream</i> <i>Municipal Solid Waste, Recycling and Economics</i> <i>Municipal Solid Waste, Where Does Your Garbage Go?</i> <i>Forests of the World, Analyzing Patterns of Forest Change</i> <i>Forest Ecology, Adopt a Forest</i> <i>Forest Ecology, Casts of Thousands</i> <i>Forest Ecology, Story of Succession</i> <i>Focus on Forests, Who Owns America's Forests?</i>
27. Translate among tabular, graphical, and symbolic representations of patterns in real-life situations,	<i>Focus on Risk, Risk Assessment: Tools of the Trade</i> <i>Municipal Solid Waste, The Waste Stream</i>

with and without technology (P-2-H) (P-3-H) (A-3-H)	<i>Municipal Solid Waste, Recycling and Economics</i> <i>Municipal Solid Waste, Where Does Your Garbage Go?</i> <i>Forests of the World, Analyzing Patterns of Forest Change</i> <i>Forest Ecology, Adopt a Forest</i> <i>Forest Ecology, Casts of Thousands</i> <i>Forest Ecology, Story of Succession</i> <i>Focus on Forests, Who Owns America's Forests?</i>
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