Course Name: Grade 7 Mathematics
Course Codes: M2702, M2707, M2708, M2709

Course Description:

The grades 6, 7, and 8 mathematics curriculum provides the equivalent of a first-year algebra program. The seventh grade mathematics program is an integrated curriculum where concepts are incorporated from numeration, operations, patterns, functions, algebra, geometry, measurement, probability, statistics and discrete mathematics. Units emphasize particular strands, though the strands are connected and integrated throughout the course.

Course Proficiencies: The following is a list of the proficiencies that describe what students are expected to know and be able to do as a result of successfully completing this course. The following proficiencies are the basis of the assessment of student achievement. The learner will demonstrate the ability to:

1. Compare, order, and represent equivalent forms of the same rational numbers. *7.EE.2*
2. Solve real-world problems using the four operations of rational numbers. *7.NS.3*
3. Solve multi-step real-world problems using ratio, proportion, and percent. *7.RP.3*
4. Add, subtract, multiply, and divide positive and negative rational numbers. *7.NS.1, 7.NS.2, 7.EE.3*
5. Create and evaluate algebraic expressions which model situations and patterns found in tables and graphs. *7.EE.2*
6. Represent proportional relationships as linear functions. *7.RP.2*
7. Apply properties of operations to factor and expand linear expressions with integer and rational coefficients. *7.EE.1*
8. Solve real-world problems by writing and solving linear equations and inequalities in one variable, containing integers and rational numbers. *7.EE.4*
9. Perform operations with numbers expressed in scientific notation. *8.EE.4*
10. Generate equivalent expressions involving integer exponents. *8.EE.1*
11. Apply the Pythagorean Theorem and distance formula to solve real-world problems involving perimeter and area. Use algebraic expressions and the coordinate system in the context of measurement. *8.G.7, 8.G.8*
12. Apply scale drawing to the coordinate system. *7.G.1*
13. Use the properties of polygons, angle pairs, and algebraic expressions to solve real-world problems. *7.G.2, 7.G.5*
14. Use the formulas for area and circumference of a circle to solve mathematical problems. *7.G.4*
15. Find the surface area of 3-dimensional figures. Relate the volume of rectangular prisms to surface area. *7.G.6*
16. Describe the plane sections, which result from slicing 3-D shapes. *7.G.3*

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17. Use random sampling to draw inferences about population. Represent data using line plots, histograms, circle graphs, and bar graphs. *7.SP.2*

Grade 7 Proficiencies – *cont'd.*

18. Compare two populations using graphical representations and measures of center. *7.SP.3, 7.SP.4*
19. Conduct simple simulations to compare theoretical and experimental probability. Express probability as a percent. *7.SP.6*
20. Represent sample spaces of compound events as organized lists, tables, and tree diagrams. *7.SP.8*
21. Apply mathematics in practical situations and in other disciplines.
22. Use critical thinking skills to make sense of problems, solve them, and communicate processes. *CRP 2, 4 & 8.*
23. Use technology to gather, analyze, and communicate mathematical information. *8.1.8.A.1, 8.1.8.F.1*

Assessment: At grade 7, student growth in mathematics is assessed in a variety of ways. These may include teacher observations of individual and small group activities as well as formal evaluations of independent student work. Observation of individual work and independent classroom activities provides ongoing information to guide instruction and to quickly provide information to children and parents regarding student progress. Observation of collaborative activities enables the teacher to assess students as they apply skills and abilities through a variety of strategies. Formal evaluations are made using quizzes, chapter tests, unit tests, projects, and homework. Students will be responsible for maintaining a notebook. The notebook will include students' individual record of performance. Annual progress assessment is conducted using both local assessments and standardized tests.

Board Adopted Materials:

Teaching Resources and Related Materials:

Title: **Connected Mathematics 3**
Developer: Michigan State University
Publisher: Pearson
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