Course Name: Grade 5 Mathematics
Course Codes: M2502, M2507, M2508, M2509

Course Description:

Instruction in mathematics for fifth grade students has been planned with careful consideration for the needs of students. Everyday experiences have been incorporated to allow students to experiment with mathematics and develop logical thinking in mathematics.

The fifth grade mathematics program is designed with a long range view for assuring that all students develop a "common sense" for mathematics. This understanding includes "number sense," "operation sense," and a "sense of measurement." These terms are used when we refer to the intuitive understanding and use of mathematical ideas. This intuitive understanding is essential when students are confronted with questions such as: What is a reasonable answer? Which numbers make sense in this situation? Is this answer on the calculator ridiculous or reasonable? Should the result of this operation be larger or smaller than the starting value? What should be measured in this situation? What range of values should result from these measurements? Is this data useful? How can this be applied in everyday problem solving?

A core component of fifth grade mathematics is the development of a set of "mathematical reflexes." These reflexes include the quick recall and use of: arithmetic facts, estimating and rounding, mental arithmetic including the use of powers of ten and squares through 15, approximate square roots for two, three, and five, equivalent fractions decimals, and percents, and symbol manipulation in equations and expressions.

In order to provide meaningful motivation for learning, applications of mathematics are used as themes for activities and unit planning. Themes include travel, data about the physical world, and occupations.

Motivation for and practice in using math skills is provided through math learning games. The goal of these games is to help students attain mastery through continual practice and use of skills.

Instruction is planned with a full awareness of the need for ongoing review. Students rarely learn something the first time they experience it. For this reason, repeated exposures to key ideas, usually in slightly different contexts, are built into instructional plans. Learning by doing is an integral part of the math program.

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 proficiencies are the basis of the assessment of student achievement. The learner will demonstrate the ability to:

1. Read, write, compare, and order whole numbers through trillions and decimals through thousandths. ***5.NBT.1, 3, & 4***
2. Understand and use a variety of strategies for addition, subtraction, and multiplication of multi-digit whole numbers. ***5.NBT.5***
3. Understand and use a variety of strategies for division of whole numbers by a 2-digit divisor. ***5.NBT.6, 5.NF.3***

Grade 5 Proficiencies – *cont'd.*

4. Use a factor list to determine divisibility of a number, classify numbers as prime or composite. ***6.NS.4***
5. Use numerical expressions with grouping symbols to solve problems. ***5.OA.1, 2***
6. Use models with variables to represent real-life scenarios. ***6.EE.2***
7. Understand and use a variety of strategies for addition, subtraction, multiplication, and division of decimals through hundredths. ***5.NBT.7***
8. Solve problems involving calculations with money. ***5.NBT.7***
9. Use a fraction to represent a ratio. ***6.RP.1***
10. Understand and use a variety of strategies for addition, subtraction, and multiplication of fractions and mixed numbers. ***5.NF.1, 2, & 6***
11. Understand and use a variety of strategies for division of unit fractions by whole numbers and vice versa. ***5.NF.7***
12. Use a rule to generate an input/output table and represent the entries as ordered pairs. ***5.OA.3***
13. Graph points on a coordinate system. ***5.G.1, 2***
14. Convert units of measurement to larger or smaller units and apply unit conversions to problem-solving. ***5.MD.1***
15. Use a line plot to display whole and fractional data and use it to identify the minimum, maximum, mean, mode, and median. ***5.MD.2***
16. Name, draw, label, and classify quadrangles. ***5.G.3, 4***
17. Understand and use the concept of volume. ***5.MD.3, 4***
18. Apply a formula to calculate volume of prisms. ***5.MD.5***
19. Find the perimeter and area of polygons using whole and fractional measurements. ***5.NF.4***
20. Make charts and graphs to display and interpret data. ***5.MD.2***
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. ***8.1.5.A.1, 8.1.5.F.1***

Assessment: At grade five, student growth in mathematics is assessed in a variety of ways. These may include teacher observation of individual and small group activities as well as formal evaluations of independent student work. Observation of individual work and independent classroom activities provides on-going information to guide instruction and to quickly provide information to students 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 unit assessments, independent journal activities, math boxes, and teacher made quizzes and tests. Results are shared through written progress reports, parent conferences, and occasional/informal communication. In addition to annual state testing, the NWEA MAP Growth assessment will be administered three times a year in mathematics. The purpose of MAP Growth is to determine what students know and are ready to learn next. It is designed to measure student achievement in the moment and growth over time.

Board Adopted Materials:

Teaching Resources and Related Student Materials:

Title:	Everyday Mathematics
Author:	University of Chicago School Mathematics Project
Publisher:	McGraw-Hill Companies, Inc.
Copyright:	2020