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Grade 5 Mathematics-5
2010-11 School Year

Course Description

Fifth grade mathematics uses the Singapore national curriculum. Guided by their understanding of place value, students practice whole number and decimal arithmetic. Arithmetic with fractions includes addition and subtraction of fractions with unlike denominators, the product of fractions, and division of a fraction by a whole number. In reducing fractions and computing their product, students learn to see a number as a product of its factors. Students work with ratio, percentage, average, rate, and line graphs. They apply the unique method of Singapore bar diagrams to solve the word problems that play an essential role in the development of each topic. Students study the geometry of angles, the triangle, parallelogram, rhombus, trapezoid, cubes, and cuboids. They find the area of triangles and the volumes of cuboids.

Core Goals

- Complete the elementary exploration and understanding of place value and formalize that understanding in algorithms for multiplication and division of whole numbers and decimal fractions.
- Complete the elementary exploration and understanding of the sum, difference, and product of common fractions.
- Understand that a number can be expressed in equivalent forms, acquire facility in making such equivalent expressions, and judge which form is the most useful in a given context.
- Acquire the inclination and ability to see a composite number as a product of its factors.
- Learn to reason deductively by solving problems involving triangles and selected quadrilaterals.
- Begin to use Singapore bars to work word problems and as a medium in which to explain, question, and discuss solutions to such problems.
- Appreciate that the objects of geometry are ideals and that knowledge of these objects is arrived at by deduction rather than by, for example, measurement.

Expectations

In mathematics class, every important point is made *both* audibly in spoken words *and* visually in words, symbols, and drawings that go on the board. When you take notes on a solution, derivation, or proof, you do the mathematics along with your teacher. It is like climbing a mountain step by step with an experienced guide, rather than merely hearing or seeing some directions. Taking notes raises your thinking to a higher level, because you interpret, judge, evaluate, and organize what you are seeing and hearing in class while it is happening.

Mathematics is *not* a grab bag of facts, procedures, techniques, and tricks. Knowing mathematics means using a few basic ideas with skill, insight, and understanding. It means you can often solve a problem seemingly *unlike* any you have already done or seen done.

You improve in mathematics through thoughtful and purposeful practice and discussion. Watching someone else do mathematics and feeling like you get it is no guarantee that *you* can do it on your own. Jump in! Question, discuss, argue, and practice!

In mathematics, your learning depends on your thoughtfully preparing assignments in time for the next class, in which we will discuss your comments and answer your questions about the assignment you completed. This is the best way to prepare for exams and to understand new material as it is presented in class. Expect to spend about 2 hours per week outside of class working on mathematics. If you slack off and fall behind, it will be extremely hard to catch up.

Textbook & Resources

Primary Mathematics 5A and 5B (third edition) and workbooks 5A and 5B. Although the textbook and the workbook are bound separately, never bring home your workbook without also bringing home your textbook. You will get greater benefit from homework if you have the textbook to review as you do workbook problems.

Web

I will maintain a simple web site at www.math.mnrt.net . I hope that parents and students will make use of this. If you are absent, you can get the day's assignment and any handouts from class at this site. I update the site every weekday almost always by 5:30 PM.

Here you will find

- the current assignment and all past assignments,
- copies of everything handed out in class including problem sets, and solutions to selected problems, but not including in-class exams and quizzes,
- my notes when the day's topic was especially complex,
- links to sites of mathematical interest.

This is not intended as a substitute for keeping an assignment notebook, which you are required to do. If you are absent from class, check here for the day's assignment and any handouts given during class. Parents will find the definitive answer to the question: "Do you have any mathematics homework?"

Required Materials

An organized 1-1/2 in. three-ring binder with five divider tabs. Pencils. High quality erasers that do not smudge. Red correcting pencils. Small plastic protractor, 6-in. plastic see thru ruler, 2 Red single subject notebooks college ruled.

Course Outline

Consult Table of Contents in the course textbooks. We follow it exactly.

Grading & Evaluation

Your trimester mastery grade is determined by full period exams, brief quizzes, and any graded assignments. Your scores on quizzes will make up 20% of your trimester grade. Exams and graded assignments will make up 80%. Exams and quizzes will have strict time limits, because they seek to assess your level of proficiency with the material that we recently covered. Proficiency often means that you can work a problem in a couple of minutes using the recent material we covered, rather than suffering 15 minutes of furious labor because you were unfamiliar with the recent material we covered.

> **Homework, although not graded, is the single most important factor in determining your grade on examinations and quizzes, and therefore your trimester grade.**

A quiz may be given at any time without prior announcement, although you can expect a short quiz about once per week. Your lowest quiz score will be dropped. Exams will be announced well in advance and will require a full class period to complete.

In sports, music, and theater you play or perform like you practice. Sloppy practice, sloppy performance. Just as you would insist on doing your personal best when practicing a sport at which you desire to excel, so too you should insist on your best when you practice mathematics.

Absence Policy

If you are absent for a quiz or an exam, *you* are expected to arrange to make it up. If you miss a class meeting, do borrow another student's notes to copy. Discussing those notes with the other student will further benefit both you and your kind classmate.

Late Work Policy

Homework is considered practice, so you will not be graded on it. If homework is not-completed, I will ask you to report to the library during lunch where you will have the opportunity to complete it. Speaking as both a teacher and as a student of mathematics, I assure you that unless you attend to homework when it is assigned, you will not score as high as you might have on exams and quizzes. That is because you will not have learned the material as well as you would have by keeping up with assignments.

Getting Help

Please seek my help outside of class. I teach because I love to do mathematics with you. The student who makes the extra effort to get help when needed makes a very good impression on the teacher. Do not expect the impossible, though. If you have not kept up with assignments, meeting with me for an hour as the exam date approaches is not going to do you much good. If that was all it would take for you to do well, I would not be giving all these assignments in the first place. Remember that asking specific questions rather than saying, "I don't get it" will bring you the most useful help as well as evidence the effort you made in trying to master the material.

Mathematics classes at MCDS are highly student centered. Practically, this means that exactly what transpires in class depends upon the students' responses to the teacher and to each other. Consequently, two sections of fifth grade mathematics will rarely be at the same place in the

book at the same time. It would be a mistake to conclude that whichever section happens to be behind the other in the textbook is behind the other in the learning of mathematics; in fact, the opposite may be true. Each section will finish the textbook by the end of the school year.

Signature

I have read and discussed this syllabus with my child _____
Parent's Signature

I have read and discussed this syllabus with my parent(s) _____
Student's Signature