



Grade 5 Mathematics Honors Syllabus, 2017-2018 School Year

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Mathematics 5 Honors Syllabus 2017-18 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 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.
- 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

Take notes. 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 think through the mathematics along with your teacher. Taking notes raises your understanding to a higher level, because you interpret, judge, evaluate, and organize what you are seeing and hearing in class.

Do homework. Your success in this course 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. Since each class builds upon the previous one, missing an assignment will leave you less prepared to follow and understand the material presented in the next class. This cascading effect once begun is hard to stop.

Participate in class. You will understand the ideas of mathematics more quickly and more deeply by participating in class discussion. When your teacher or another student asks you to elaborate on an idea you have expressed, you have a wonderful opportunity to explore your own thoughts and practice articulating them clearly. Clarity of expression and clarity of thought develop together. The give and take of classroom discussion, though messy, is an essential and irreplaceable element in building your understanding of mathematics.

If, as described above, you take notes, do homework, and participate, then you may find your understanding so solid and your skill so proficient that you will not need to study for exams.

Grading & Evaluation

Student progress will be assessed through a variety of methods: short and long quizzes based on homework problems, oral presentations of solutions, and full-period unit tests. The mastery of essential skills and the development of mathematical thinking take time. Therefore, students' progress will be reported in terms of skills development throughout the year. For example, if a student struggles with a concept in the fall but masters it in the spring, the final report will recognize that fact rather than the difficulties experienced earlier in the year. Skills from first semester, therefore, may be re-assessed in the second semester.

Important goals for the year are noted below.

First Semester	Second Semester
Understand decimal notation for whole numbers	Understand decimal notation for fractions and mixed numbers
Multiply and divide whole numbers by a 2-digit whole number	Multiply decimal fractions by a 2-digit whole number
Round whole numbers, approximate and estimate values	Multiply or divide decimal fractions by tens, hundreds, or thousands
Evaluate expressions that involve the four arithmetic operations and parenthesis	Add, subtract, multiply, and divide with decimal fractions
Understand the relationship of common fractions and division	Understand percentage and work practical problems that involve percentage
Use factors and multiples write equivalent fractions	Interchange percents, common fractions, and decimal fractions.
Multiply common fractions and divide a fraction by a whole number	Find the arithmetic mean, median, and mode of a data set
Add and subtract common fractions	Use geometric facts to deduce the size of unknown angles in 3-sided and 4-sided figures
Identify height and compute area of every type of triangle.	Solve rate problems that involve direct proportion
Use Singapore bars to communicate complete solutions that are clear and well organized	Find the volume of cuboids
	Use Singapore bars to communicate complete solutions that are clear and well organized

Grading Scale:

- 1 - Beginning
- 2 - Developing
- 3 - Secure
- 4 - Exceeds

Homework, although not graded, is the single most important factor in your progress. Please take the time to complete it carefully and bring questions to class. Then do complete corrections at home, even when you have already corrected the problems in class.

Textbook & Resources

Textbook. Primary Mathematics 5A and 5B, textbook/workbook. Ministry of Education, Singapore. Textbooks belong to MCDS. You must return in good condition the same textbook you were issued. The workbooks are yours to keep.

Web. I maintain an easy to use website www.math.mnrt.net that requires no log-in and is mobile device friendly. At my web site you will find::

- The current assignment and all past assignments
- PDF copies of every item handed out in class
- Notes, if the day's topic was especially complex
- Occasional photograph of chalk board
- Links to sites of mathematical interest

To reach my web site, please go www.math.mnrt.net or follow the link at Google Classroom. You are *not* required to check my website. You *are* required to check Google Classroom.

Google Classroom

Homework assignments, announcements, and any items handed out in class will be posted on Google Classroom. You are expected to check Google Classroom daily. Parents can be added as guardians to their child's account in order to be informed on updates made through Google Classroom.

Google Classroom Class ID: **j807t3**

NetClassroom

Grades and comments written at the end of each quarter will be available through the student and parent portals. All other class information will be directed through Google Classroom.

Required Materials

You are expected to bring your planner, 3-ring binder, textbook, and workbook to class each day. You will also need a pen or pencil and a red correcting pen. Most daily assignments will be done in the workbook.

Course Outline

- Whole Numbers
- Multiplication and Division by a 2-digit Whole Number
- Fractions
- Area of Triangle
- Ratio
- Angles
- Decimals
- Percentage
- Average

- Rate
- Graphs
- Triangles
- 4-sided Figures
- Tessellations
- Volume

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, borrow another student's notes to copy. Discussing those notes with the other student will further benefit both you and your kind classmate. If you want to do some homework, you might check on-line. I sometimes post assignments during the day, instead of at the end of the day, in case an absent student feels like doing homework. I definitely do not expect you do homework while you are ill.

Late Work Policy

Homework is considered practice, so you will not be graded on it. There may be some graded assignments. The MCDS Middle School late work policy will apply to graded assignments. This policy states that for each day work is late, 10% will be deducted from the grade, down to 50%. If the work is never turned in, it will count as zero.

Technology Policy

In accordance with the Student/Family Handbook , the following policies regarding technology usage apply to my classroom:

- Cell Phones - should be turned off and kept in student lockers during the school day. Use of cell phones during the day without adult permission will result in the device being confiscated.
- Internet Use – is limited to school-related work. Students may use the Internet when appropriate and with my permission.
- Chromebooks – are limited to school-related work and may be used in class with my permission. It is the student's responsibility to come to class with their computer charged each day.

For more specific guidelines regarding technology usage, please refer to the Technology Contract in the Student/Family Handbook (Appendix D) and the Chromebook Policy (Appendix E).

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.

Math Elective also provides an excellent opportunity to seek individual help. Please be sure your regular elective teacher knows that you will be attending Math Elective.