

Math 6: 2009-2010

Instructor:

Mr. Ryan Randolph

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Contact Information:

Monday-Friday

7:45am-3:15pm

Conference Time:

1:30pm-2:20pm

Course Description

Students will perform, extend, and refine objectives from previous grades through discovery learning and hands-on activities. Additional concepts in number skills, operations, algebraic concepts, geometry, measurement, graphing, data analysis, estimation, and problem solving will be included among other areas to cover all grade-level indicators for the 6th grade as outlined in the Ohio Academic Standards for math.

Course Textbooks/Materials

McDougal Little Middle School Math: Course 1

Course Topics/Objectives

See the Ohio Academic Standards for math.

Course Policies

Tardiness:

Students must be in the classroom and in their seat at the start of class. Students in the classroom but not in their seat will still be counted as tardy. Students arriving more than fifteen (15) minutes late for class will be considered absent for that class period. After three (3) late arrivals to class, a student will be issued a detention as punishment for their tardiness. Late arrivals do accumulate from one grading period to the next.

Attendance:

All TSA courses require no more than eighteen (18) days of absence occur in a year for students to receive credit for that course. Students arriving more than fifteen (15) minutes late to their first class may be considered absent for that class. The school will notify the student and parent/guardian when ten (10) days of absence have occurred. The student and parent/guardian will be notified by the school of loss of credit at nineteen (19) days of absence and loss of credit for the course. If a student receives a notice of loss of credit, they may file a reinstatement petition with the principal.

Preparedness:

All students are expected to come to class fully prepared. This, at the very minimum, includes bringing all of the following items to class: Textbook(s), binders, loose-leaf paper, pencils (Four (4) sharpened by the start of class), pens (blue or black ink, additional red pens for corrections), and a student agenda book. Failure to come to class prepared will follow the same disciplinary process as tardies to class.

Basic Requirements for Assignments:

- 1) **ALL WORK IS TO BE DONE IN PENCIL.** No work done even partially in pen will be accepted. Work done in pen will be treated as a missing assignment, receiving a grade of zero (0) points. Students may turn in a re-done assignment in pencil for credit, per the rules for late work (See below).
- 2) **All assignments completed on student-supplied paper will be done on loose-leaf paper.** Papers ripped out from notebooks (unless cleanly done along a perforation) will not be accepted. Assignments not done on acceptable paper will be returned to the student to be redone for credit, following the rules for late work.
- 3) **Papers must be properly headed.** This should include the following: Name, period, date, (and assignment, if done on loose-leaf paper). Papers with no name on them will be immediately placed in the return box, leading to a grade of zero (0) on the assignment for the student who failed to put his/her name on their assignment. If it is returned with the student's name on it, it will receive credit following the procedures of a late assignment (see below). If any other specified information is missing, loss of points on the assignment can result.
- 4) **Assignments must reflect the student's best work, especially in neatness.** Any work done in a level of neatness not acceptable to the teacher will result in the assignment being handed back to the student to re-do. If the student fails to re-do the assignment to an acceptable level of neatness, the student will receive a grade of zero (0) for the assignment.

Late/Incomplete Work:

Assignments are due at the beginning of class on the due date. Any work turned in one day later will receive an automatic 75% reduction. Two (2) days late will receive an automatic 50% deduction. No work will be accepted beyond this. Homework that is partially completed will not be accepted. All missing/incomplete assignments will automatically receive zero (0) points. The only exceptions to this rule are in the cases of excused absences (as outlined below) and in extenuating circumstances on a case-by-case basis (i.e. legitimate personal or family emergencies). If you would need an extension, you must obtain permission and a signature from the teacher on the homework assignment itself. A detention will be issued for every three assignments missed or late. Three detentions will result in a blue slip (Office referral) and a meeting with the principal.

Make-up tests/quizzes/presentations:

Make-up tests/quizzes/presentations will be given during class the day the student returns to school (unless pertinent material is missed).

Make-up work:

You have the same number of days you were absent to turn in work. It is the student's responsibility to get the lesson plan from the day(s) he or she was absent from the teacher. (Ex. The student is absent on Monday and Tuesday. The assignments are due on Friday at the beginning of class.)

“Whatever” Passes:

Three “whatever” passes will be given at the beginning of each grading period. You may use this pass to use the restroom, retrieve homework from your locker, or any other valid reason for leaving the room. Students have four minutes between classes to use the restroom. If there is a special concern (i.e., medical condition), the parent or guardian needs to contact the nurse or the instructor of this course.

Students must present a “whatever pass” and an agenda book with his or her name to leave the classroom. Agendas with folded or torn pages will not be accepted.

Drinking/Eating:

There will be no food or drinks allowed in the classroom, unless explicit permission is given. A detention will be issued as immediate punishment to any student bringing any food or beverage into the classroom without permission, whether it is sealed or not.

Communication:

Students are expected to treat every member of the school community with respect. Proper grammar should be used during instruction time and on all assignments. Students and parents are encouraged to communicate with the instructor by phone, E-mail, letter, or in person (which must be scheduled in advance).

Expectations for the Students:

1. Be on time and bring all necessary materials to class.
2. Be respectful and polite to class members, faculty, staff, and visitors
3. Follow all instructions after the first time that they are given.
4. Raise your hand to speak (unless instructed otherwise).

Course Requirements/Statement of Expected Mastery

Students are expected to attend class regularly (see attendance policy). Loss of credit could occur for any student that does not meet the attendance policy. In addition, loss of credit will result when any student receives a year average of 64% or below.

Grading Scale					
A+	98-100%	C+	80-82%	F	0-64%
A	95-97%	C	77-79%		
A-	92-94%	C-	74-76%		
B+	89-91%	D+	71-73%		
B	86-88%	D	68-70%		
B-	83-85%	D-	65-67%		

Grading System

The grading system is based on a point system. Each assignment is assigned a point value, and the accumulated points are then converted into a percentage. Grades will not be “weighted” or “curved”.

To calculate the semester and final yearly averages:

Each six-week grading period is worth 30% of the total semester grade, with the semester exam being worth 10% of the total semester grade. The average of the two semester grades is taken to determine the final yearly grade. This can also be interpreted as each semester exam being worth 5% of the final yearly grade, with each six-week grading period being worth 15% of the final yearly grade.

Assessment Procedures:

All students are expected to follow the Toledo School for the Arts academic honesty policy. Students who violate this policy will receive a loss of credit on the assignment. Students will be assessed using a variety of methods. Rubrics will be used to assess achievement on most oral and written assignments. Tests and quizzes will be used to assess achievement on reading assignments. "Partial" credit will not be given for specific assignments or the course.

Ohio Academic Content Standards – Math

Grade Six

Number, Number Sense and Operations Standard

Number and Number Systems

1. Decompose and recompose whole numbers using factors and exponents (e.g., $32 = 2 \times 2 \times 2 \times 2 \times 2 = 2^5$), and explain why “squared” means “second power” and “cubed” means “third power.”
2. Find and use the prime factorization of composite numbers. For example:
 - a. Use the prime factorization to recognize the greatest common factor (GCF).
 - b. Use the prime factorization to recognize the least common multiple (LCM).
 - c. Apply the prime factorization to solve problems and explain solutions.
3. Explain why a number is referred to as being “rational,” and recognize that the expression $\frac{a}{b}$ can mean a parts of size $\frac{1}{b}$ each, a divided by b , or the ratio of a to b .
4. Describe what it means to find a specific percent of a number, using real-life examples.
5. Use models and pictures to relate concepts of ratio, proportion and percent, including percents less than 1 and greater than 100.

Meaning of Operations

6. Use the order of operations, including the use of exponents, decimals and rational numbers, to simplify numerical expressions.
7. Use simple expressions involving integers to represent and solve problems; e.g., if a running back loses 15 yards on the first carry but gains 8 yards on the second carry, what is the net gain/loss?
8. Represent multiplication and division situations involving fractions and decimals with models and visual representations; e.g., show with pattern blocks what it means to take $2\frac{2}{3} \div \frac{1}{6}$.
9. Give examples of how ratios are used to represent comparisons; e.g., part-to-part, part-to-whole, whole-to-part.
10. Recognize that a quotient may be larger than the dividend when the divisor is a fraction; e.g., $6 \div \frac{1}{2} = 12$.

Computation and Estimation

11. Perform fraction and decimal computations and justify their solutions; e.g., using manipulatives, diagrams, mathematical reasoning.
12. Develop and analyze algorithms for computing with fractions and decimals, and demonstrate fluency in their use.

13. Estimate reasonable solutions to problem situations involving fractions and decimals; e.g., $\frac{7}{8} + \frac{12}{13} \approx 2$ and $4.23 \times 5.8 \approx 25$.
14. Use proportional reasoning, ratios and percents to represent problem situations and determine the reasonableness of solutions.
15. Determine the percent of a number and solve related problems; e.g., find the percent markdown if the original price was \$140, and the sale price is \$100.

Measurement Standard

*Measurement
Units
Use Measurement
Techniques and
Tools*

1. Understand and describe the difference between surface area and volume.
2. Use strategies to develop formulas for finding circumference and area of circles, and to determine the area of sectors; e.g., $\frac{1}{2}$ circle, $\frac{2}{3}$ circle, $\frac{1}{3}$ circle, $\frac{1}{4}$ circle.
3. Estimate perimeter or circumference and area for circles, triangles and quadrilaterals, and surface area and volume for prisms and cylinders by:
 - a. estimating lengths using string or links, areas using tiles or grid, and volumes using cubes;
 - b. measuring attributes (diameter, side lengths, or heights) and using established formulas for circles, triangles, rectangles, parallelograms and rectangular prisms.
4. Determine which measure (perimeter, area, surface area, volume) matches the context for a problem situation; e.g., perimeter is the context for fencing a garden, surface area is the context for painting a room.
5. Understand the difference between perimeter and area, and demonstrate that two shapes may have the same perimeter, but different areas or may have the same area, but different perimeters.
6. Describe what happens to the perimeter and area of a two-dimensional shape when the measurements of the shape are changed; e.g. length of sides are doubled.

Geometry and Spatial Sense Standard

Characteristics and Properties

1. Classify and describe two-dimensional and three-dimensional geometric figures and objects by using their properties; e.g., interior angle measures, perpendicular/parallel sides, congruent angles/sides.
2. Use standard language to define geometric vocabulary: vertex, face, altitude, diagonal, isosceles, equilateral, acute, obtuse and other vocabulary as appropriate.
3. Use multiple classification criteria to classify triangles; e.g., right scalene triangle.
4. Identify and define relationships between planes; i.e., parallel, perpendicular and intersecting.

Spatial Relationships

5. Predict and describe sizes, positions and orientations of two-dimensional shapes after transformations such as reflections, rotations, translations and dilations.

Transformations and Symmetry

6. Draw similar figures that model proportional relationships; e.g., model similar figures with a 1 to 2 relationship by sketching two of the same figure, one with corresponding sides twice the length of the other.

Visualization and Geometric Models

7. Build three-dimensional objects with cubes, and sketch the two-dimensional representations of each side; i.e., projection sets.

Patterns, Functions and Algebra Standard

Use Patterns, Relations and Functions

1. Represent and analyze patterns, rules and functions, using physical materials, tables and graphs.
2. Use words and symbols to describe numerical and geometric patterns, rules and functions.

Use Algebraic Representations

3. Recognize and generate equivalent forms of algebraic expressions, and explain how the commutative, associative and distributive properties can be used to generate equivalent forms; e.g., perimeter as $2(l + w)$ or $2l + 2w$.
4. Solve simple linear equations and inequalities using physical models, paper and pencil, tables and graphs.
5. Produce and interpret graphs that represent the relationship between two variables.

6. Evaluate simple expressions by replacing variables with given values, and use formulas in problem-solving situations.

Analyze Change

7. Identify and describe situations with constant or varying rates of change, and compare them.
8. Use technology to analyze change; e.g., use computer applications or graphing calculators to display and interpret rate of change.

Data Analysis and Probability Standard

Data Collection

1. Read, construct and interpret line graphs, circle graphs and histograms.
2. Select, create and use graphical representations that are appropriate for the type of data collected.
3. Compare representations of the same data in different types of graphs, such as a bar graph and circle graph.

Statistical Methods

4. Understand the different information provided by measures of center (mean, mode and median) and measures of spread (range).
5. Describe the frequency distribution of a set of data, as shown in a histogram or frequency table, by general appearance or shape; e.g., number of modes, middle of data, level of symmetry, outliers.

Probability

6. Make logical inferences from statistical data.
7. Design an experiment to test a theoretical probability and explain how the results may vary.