



HCA HONORS MATH PROGRAM

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Program Goals

Honors Math provides an enriched and accelerated curriculum for our mathematically advanced students in grades 4-6 in a manner that encourages a life-long learning in the area of mathematics. The program is for students who demonstrate superior mathematical understanding, reasoning skills and problem solving abilities. These students are able to demonstrate their knowledge quickly and do not need a large amount of repetition. An Honors Math student has a complete knowledge of the basic facts from 1-12 without hesitation. This program will refine students' skills while introducing them to more complex concepts. Students in grades 7 & 8 will move into PreAlgebra and Algebra 1.

Criteria

Scantron Math scores in the Superior range.

Scantron Math scores in the Superior or Above Expectations range.

Consistent scores of 95 or higher in Mathematics on the report card

Teacher recommendation

Honors Math Curriculum

Cognitive Process

Cognitive processes include higher level, creative and critical thinking skills used to solve real-life problems

The student will be able to:

- Apply higher level critical thinking skills

- Generate, classify and evaluate ideas

- Make predictions

- Demonstrate creativity

- Analyze and evaluate data

- Illustrate solutions to real-life problems

Problem Solving

Problem solving includes identifying possible solutions, problem definition and evaluation and selection of the best solution.

The student will be able to:

- Show comprehension and application of the vocabulary of mathematics
- Be able to apply/carry out numeric procedures
- Organize and process pictures, objects, symbols, and shapes

Independent Learning

Independent learning includes the demonstration of self-directed study.

The student will be able to:

- Develop realistic and systematic plans for achievement
- Demonstrate the ability to work independently
- Willingly explore new ideas and concepts
- Initiate and pursue knowledge
- Make significant progress towards achieving goals

Study Skills

Study skills include sound organizational habits resulting in academic achievement

The student will be able to:

- Develop homework study habits
- Develop high standards for quality work
- Develop test-taking and note-taking skills and strategies
- Follow directions
- Set short term goals
- Organize time/materials wisely
- Complete assignments on time

Throughout the curriculum, students will be using problem solving skills to solve real life problems. Students will be required to know and use the correct mathematical language appropriate for the grade

Fourth Grade Curriculum

The curriculum allows for flexibility, permitting the teacher to arrange the order for teaching skills at each level as it best meets the needs of the class.

Students must be fluent with addition, subtraction, multiplication and division facts through 12. Students must know place value through ten-thousands place and be able to read and write these numbers.

Topics include but are not limited to:

Number and operations

- Rounding

- Reading and Writing numbers through the millions place

- Place value

- Addition, subtraction, multiplication, and division and their relationships with the other properties

- Multiples

- Factors

- Prime/Composite numbers

- Fractions

- Decimals

Geometry

- Shapes

- Area and perimeter

- Angles

- Lines

- Transformation

- Symmetry

- Congruency

- Graphing

- Classifying

Measurement

- Customary system

- Metric system

- Use of rulers, protractors and compasses

Problem Solving

Choosing appropriate methods/strategies

Using correct steps to solve

Fifth Grade Curriculum

The fifth grade Honors Math curriculum is built upon the skills introduced in the fourth grade Honors Math Program. It is also based on the skills introduced and mastered in kindergarten through fourth grades. In addition to the skills taught in fifth grade the following will be added:

- ▲ Relating and converting decimals to percents, percents to decimals
- ▲ Relating and converting fractions to percents, percents to fractions
- ▲ Identifying integers on a number line
- ▲ Adding, subtracting, multiplying and dividing integers
- ▲ Dividing up to 5- digit dividends with a 1- digit divisor using *short division*
- ▲ Using formulas to find area ,perimeter/circumference of shapes including triangles, polygons and circles
- ▲ Classifying triangles according to angles and sides
- ▲ Identifying, exploring and describing diameters, radii, angles, transversals and bisectors
- ▲ Using coordinates to find the distance between points and to graph and identify lines

Sixth Grade Curriculum

The sixth-grade Honors Math curriculum is based on the skills introduced in the previous Honors Math classes. Along with these skills, it is based on the skills introduced and mastered in grades kindergarten to fifth grade. The following is in addition to the skills taught in the sixth grade math curriculum.

- ▲ Identifying and representing integers on a number line
- ▲ Adding, subtracting, dividing, and multiplying integers
- ▲ Using exponents to express powers
- ▲ Converting numbers to exponential form
- ▲ Finding areas and perimeters/circumferences of circles and polygons
- ▲ Finding surface area and volume
- ▲ Using a compass to construct bisectors and identifying the measurements
- ▲ Representing and solving linear equations and inequalities