

Mercer County Schools



**PRIORITIZED
CURRICULUM**

Mathematics
Content Maps
Grade 8

Mercer County Schools



PRIORITIZED CURRICULUM

The Mercer County Schools *Prioritized Curriculum* is composed of West Virginia Content Standards and Objectives that have been identified as "Essential, Important, and Nice to Know." The Essential and Important objectives, which are aligned to the WESTEST, must be learned by the student in order to ensure his/her success. Therefore, the majority of instructional time (90% - 95%) must be devoted to the mastery of these objectives. To assist you with your instructional planning, the *Prioritized Curriculum* is divided into learning units (Content Maps) creating an instructional sequence and estimated time for delivering the intended/learned curriculum.

CONCEPT MAP

MATH - Grade 8

Suggested Sequence:

1. Number Operations
2. Number Relationships
3. Proportional Reasoning
4. Expressions, Equations and Inequalities
5. Geometry
6. Data Analysis and Probability

MATH (Grade 8) CONCEPT MAP

Key Concepts:

estimated days to complete - 15

Key Vocabulary:

Prerequisites:
Integers
Coordinate system

Topic: Number Operations
CSOs: 8.1.3 8.1.4 8.2.1

power

Exponents
Square Roots

exponent

base

Enduring Understanding:
There is a specific meaning to mathematical symbols and exponents and an order for the calculation of a numerical expression.

factor

Scientific Notation

perfect square

Essential Question(s):
Is there more than one correct answer to the same math problem?

principal square root
estimating square roots

Order of Operations
Absolute value

radical

scientific notation

Sequences

Examples:

Calculator
Checks

Manipulatives & Models

numerical expression

substitute
solution

Technology Activities

I-know website

open sentence
replacement set

sequence (arithmetic,
geometric, Fibonacci)

MATH (Grade 8) CONCEPT MAP

estimated days to complete - 15

Key Concepts:

Rational numbers
Fraction to decimal
Decimal to fraction

Decimal to percent
Percent to decimal
Fraction to percent
Percent to fraction

Finding percents
Percents & estimates

Compare & order fractions,
decimals, and percents

Apply fractions, decimals and
percents

Topic: Number Relationships
CSOs: 8.1.1 8.1.2 8.1.5 8.1.6 This is embedded throughout book and will need to be emphasized as needed.

Enduring Understanding:
A part of a whole can be expressed as a decimal, fraction, or percent.

Essential Question(s):
How many ways can you model parts of a whole?

Examples:

Shopping Activities

Manipulatives & Models

Calculator & Technology activities

I-Know website

Key Vocabulary:

place value

repeating

terminating

real / rational / irrational

integer/ whole / natural

simplify

fraction

decimal

percent

MATH (Grade 8) CONCEPT MAP

Key Concepts:

Ratio, rates, percents
(review)

Solve proportions
Create a proportion and solve

Percent of Change
Interest

Scale drawings and Models

Solving similar polygons
using proportions

estimated days to complete - 25

Topic: Proportional Reasoning
CSOs: 8.1.6 8.2.3 8.3.6

Enduring Understanding:

Proportions are a tool for calculating percents and finding missing pieces of information.

Essential Question(s):

Is there more than one way to solve a problem?

Examples:

Solving real world
application word problems

Calculator

I-know website

Key Vocabulary:

ratio

rate & unit rate

percent proportion

cross product

percent of increase / decrease

discount

interest

mark-up

sales tax

selling price

scale factor

similar

MATH (Grade 8) CONCEPT MAP

Key Concepts:

Creating Algebraic expressions

Linear Equations
Solve and Graph
Function tables/slope

Inequalities
Solve and Graph

Applications and Real-World Problems

Polynomials

Sequences
Generate a rule to represent the pattern

Estimated days to complete - 30

Topic: Expressions, Equations and Inequalities
CSOs: 8.1.7 8.2.2 8.2.4 8.2.5 8.2.6 8.2.7 8.2.8
8.2.9 8.2.10

Enduring Understanding:

Equations can be used to solve real world problems.

Essential Question(s):

How does Algebra relate to my life?

Examples:

Alge-blocks

I-know website

Manipulatives

Graphing calculators

Key Vocabulary:

Key words for
add,subtract,multiply,divide

Addition/subtraction property
of equality

Multiplication/division
property of equality

Symmetric property
Inverse Operations

linear / slope / $>$ \geq $<$ \leq

monomial & binomial

trinomial & polynomial

term & like terms

simplest form

arithmetic sequence

geometric sequence

Fibonacci sequence

MATH (Grade 8) CONCEPT MAP

Key Concepts:

Estimated days to complete - 30

Key Vocabulary:

Parallel Lines
Angles & Bisectors

Topic: Geometry
CSOs: 8.3.1 8.3.2 8.3.3 8.3.4 8.3.5 8.4.1 8.4.2
8.4.3 8.4.4

parallel lines

alternate interior angles
alternate exterior angles

corresponding angles
vertical angles/adjacent angles

supplementary angles
complementary angles

perpendicular & angle
bisector

regular polygon
names of polygons

polyhedra

congruent similar

base & altitude

converse

corresponding parts

hypotenuse / legs

Classifying Polygons
Congruent & Similar Figures

Enduring Understanding:

Geometry is a tool for representing relationships between structures and applying formulas to measure angles, lines, area, and volume.

Transformations
Perimeter & Area

Essential Question(s):

Have all geometric figures already been identified and their properties defined?

Pythagorean Theorem
Polyhedron

Examples:

3-D
Polyhedra

Solving real world
application word
problems

Surface Area

Volume

Calculator

I-know website

MATH (Grade 8) CONCEPT MAP

Estimated days to complete - 15

Key Concepts:

Data Displays

Central Tendency

Misleading Graphs & Statistics

Theoretical Probability
Compound Events

Make Predictions
Permutations & Combinations

Topic: Data Analysis & Probability
CSOs: 8.5.1 8.5.2 8.5.3 8.5.4 8.5.5

Enduring Understanding:
There are many ways to visually display relationships between variables.

Essential Question(s):
How can statistics (data) lie/mislead?
How well can we predict the outcomes of some future events?

Examples:

Graphing Calculators

Solving real world application word problems

I-know website

Excel spreadsheet

Key Vocabulary:

bar graph histogram

circle graph line plot

central tendency

box and whisker scatter plot

quartile inner quartile

variation outlier

sample outcome

factorial

compound events

independent/dependent

experimental/theoretical

permutations/combinations