

# Mercer County Schools



**PRIORITIZED  
CURRICULUM**

Mathematics  
Content Maps  
Grade 7

# 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 7

Suggested Sequence:

1. Number Theory
2. Number Relationships
3. Integers
4. Expressions and Equations
5. Proportional Reasoning
6. Geometric Relationships
7. Measurement
8. Analyzing Data
9. Probability

# MATH (Grade 7) CONCEPT MAP

## Key Concepts:

estimated days to complete - 15

## Key Vocabulary:

Powers  
Square Roots  
Exponents

Topic: Number Theory  
CSOs: 7.1.2 7.1.6 7.2.4 7.2.8

powers

square roots

exponents

Order of Operations  
Properties of Numbers  
GCF

order of operations

properties of numbers

LCM  
Scientific Notation  
Prime Factorization

prime and composite numbers

prime factorization GCF

Sequences

**Enduring Understanding:**  
There are many ways to represent the same number.

scientific notation LCM

**Essential Question(s):**  
How can you represent the same number in different ways?  
Why is it useful for us to be able to represent the same number differently?

positive exponents  
negative exponents

**Examples:**  
Use of technology

“I-know” site

factor tree

Word problems

Cooperative Groups

divisibility

arithmetic and geometric sequences

# MATH (Grade 7) CONCEPT MAP

estimated days to complete - 15

## Key Concepts:

Estimations  
LCM/GCF

Fraction to Decimal  
Decimal to Fraction

Decimal to %  
% to Decimal

Fraction to %  
% to Fraction

Compare and order fractions,  
decimals and/or percents

Rational #  
Sequencing

**Topic: Number Relationships**  
**CSOs: 7.1.1 7.1.4 7.1.6 7.1.7**

## **Enduring Understanding:**

Numbers may be represented in different forms to enable people to use them in real life situations.

## **Essential Question(s):**

How can we mean the same thing but use different mathematical forms?

How should you decide in what form to put a number?

## **Examples:**

Manipulatives

Word problems

Excel Software to apply  
real world situations

“I-know” site

## Key Vocabulary:

numerator

denominator

terminating decimal

repeating decimal

bar notation

place value

rational #

sequence (arithmetic and  
geometric)

fraction  
simplify

decimal

percent

rounding

# MATH (Grade 7) CONCEPT MAP

Estimated days to complete - 15

## Key Concepts:

Location  
Graphing

Absolute value  
Comparing

Ordering  
Operations

Additive inverse  
Coordinate system

Transformations

Topic: Integers  
CSOs: 7.1.1 7.1.3 7.1.5 7.2.11 7.3.6

**Enduring Understanding:**  
The value of a number is determined by its position.

**Essential Question(s):**  
When does placement (position) matter?

## **Examples:**

Manipulatives

Number lines

Computer and calculator

“I-know” site

## Key Vocabulary:

Integer      positive

negative      opposite

absolute value

additive inverse

coordinate system      origin

x-axis / x-coordinate

y-axis / y-coordinate

quadrant

ordered pair

transformation

reflection

translation

# MATH (Grade 7) CONCEPT MAP

estimated days to complete - 20

## Key Concepts:

Order of Operations  
Evaluate  
Solve Equations

Write Expressions  
Two-step Equations  
Simple Equations

Inequalities  
Graphing on Number Line  
Variable

Sequences (algebraic)  
Monomials  
Coordinate Plan

Slope  
Input/Output Functions

Topic: Expressions and Equations  
**CSOs: 7.2.1 7.2.2 7.2.3 7.2.4 7.2.5 7.2.9 7.2.11**

**Enduring Understanding:**  
Equations depict patterns of change.

**Essential Question(s):**  
Are there things or relationships for which equations can't be used?

## **Examples:**

Algeblocks

Models and manipulatives

Computer  
"I-know" site

Calculators

## Key Vocabulary:

order of operations

evaluate inverse operations

expression equation

inequalities variable

linear equations  
algebraic expressions

monomials coordinate plan

slope functions coefficient

2-step equations simplify

combine like terms T-chart

numerical expression

algebraic expression

like terms number systems  
properties of equalities

# MATH (Grade 7) CONCEPT MAP

Estimated days to complete - 15

## Key Concepts:

Rates  
Ratio

Proportions  
Percent

Create proportions  
Solve proportions

Sales Tax  
Discount

Scale drawings  
Similar figures

Topic: Proportional Reasoning  
CSOs: 7.1.7 7.1.8 7.2.6 7.2.13 7.3.7

**Enduring Understanding:**  
Students will understand that proportional reasoning can be useful in solving real life situations.

**Essential Question(s):**  
What couldn't we do if we didn't use numbers?

## **Examples:**

Use unit rates to compare prices of different brands and/or products

Sales and/or advertisements

Real life application problems.

Computer and/or calculator "I-know" site

## Key Vocabulary:

unit rate

rate

ratio

proportion

cross products

equivalent ratios

scale

scale drawing

percent proportion

discounts

sales tax

similar



# MATH (Grade 7) CONCEPT MAP

estimated days to complete-20

## Key Concepts:

Identify  
Classify  
Formulas (interior sum)

Angle pairs  
Polygons  
Symmetry (nice to know)

2 Dimensional  
3 Dimensional  
Interior angles

Scale drawings  
Similar figures  
Angle bisector

Perpendicular bisectors  
Angle bisectors  
Construct (nice to know)

**Topic: Geometric Relationships**  
**CSOs: 7.3.1 7.3.2 7.3.3 7.3.4 7.3.5 7.3.6 7.3.7**

**Enduring Understanding:**  
Both the real and the man-made world are designed using geometric figures.

**Essential Question(s):**  
Where is geometry in the man-made world?  
Where is geometry in the natural world?

## **Examples:**

Manipulatives

Vocabulary Word Wall

Real life application problems

Computer Software  
"I-know" site

## Key Vocabulary:

angles            angle pairs

polygon (names of polygons)

interior angles  
angle bisectors

perpendicular bisector  
similar

congruent        2-dimensional

3-dimensional    formulas

types of angles

transformations

rotations        reflections

translations

# MATH (Grade 7) CONCEPT MAP

Estimated days to complete - 15

## Key Concepts:

Formulas  
Perimeter  
Area

Surface Area  
Distance  
Temperature

Volume  
Prisms  
Cylinders

Customary units  
Metric system  
Pythagorean theorem

Topic: Measurement  
CSOs: 7.4.1 7.4.2 7.4.3 7.4.4

**Enduring Understanding:**  
Measurement helps us understand and describe our world.

**Essential Question(s):**  
Why do we measure?  
How does what we measure influence how we measure?

## **Examples:**

Manipulatives

Real life application problems

Calculator

Computer  
"I-know" site

## Key Vocabulary:

formula

perimeter

area

surface area

distance

temperature

Celsius

Fahrenheit

prisms      pyramids

cylinders      metric units

customary units

Pythagorean theorem

# MATH (Grade 7) CONCEPT MAP

estimated days to complete - 20

## Key Concepts:

Graph construction

Graph interpretation

Mean, media, mode

Misleading statistics

Topic: Analyzing Data  
CSOs: 7.5.3 7.5.4

**Enduring Understanding:**  
Graphical displays can show a variety of possible relationships between variables.

**Essential Question(s):**  
How can we best show data?

## **Examples:**

Graphing calculators

Real life application problems

Computer "I-know" site

## Key Vocabulary:

range scale

frequency table

interval line graph

bar graph scatter plot

line plot cluster

stem and leaf plot stem leaf  
back to back stem & leaf plots

box and whisker plot

upper/lower quartile

upper/lower extreme

interquartile range

outlier –mean median - mode

average

# MATH (Grade 7) CONCEPT MAP

## Key Concepts:

Experimental  
Probability

Theoretical  
Probability

Listing  
Tree Diagrams  
Combinations

Estimated days to complete - 15

**Topic: Probability**  
**CSOs: 7.5.1 7.5.2**

**Enduring Understanding:**  
Probability describes the likelihood of phenomena occurring in a population.

**Essential Question(s):**  
What is the best way of predicting an outcome?

## **Examples:**

Manipulatives

Calculator

Real life application  
problems

Computer  
"I-know" site

## Key Vocabulary:

outcome

sample space

theoretical probability

experimental probability

tree diagram

fair game

permutation

factorial

combination