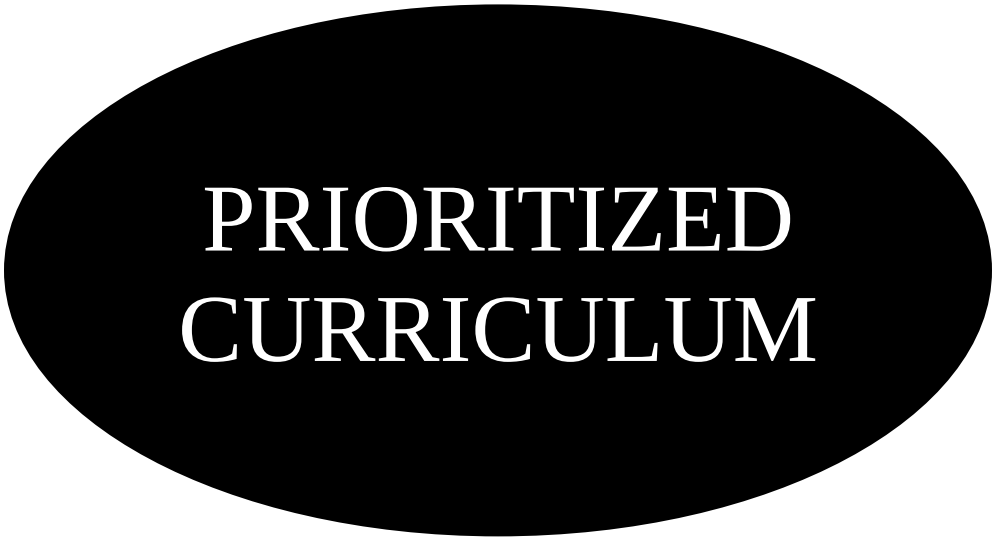
Mercer County Schools

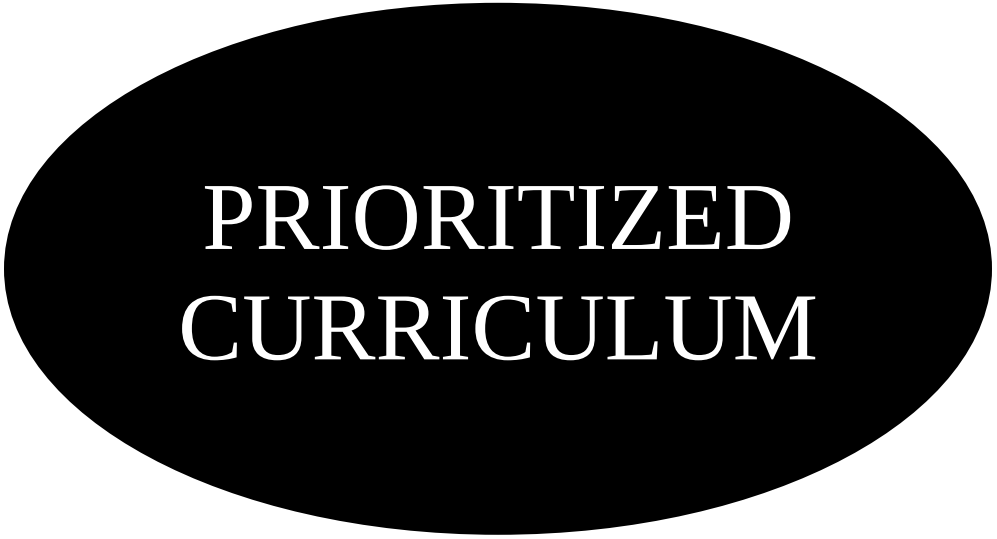


Mathematics

Content Maps

Third Grade

Mercer County Schools



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.

C O N C E P T M A P

MATH – Grade 3

Suggested Sequence:

1. Operations
2. Number Sense
3. Problem Solving Strategies
4. Basic Measurement
5. Measurement of Time
6. Money
7. Multiplication/Division
8. Geometry
9. Graphing
10. Algebra
11. Fractions and Decimals
12. Probability

MATH (3) CONCEPT MAP

Estimated days to Complete: 25

Key Concepts:

Basic facts:
Add, subtract (E)

2- to 3-digit addition with and without regrouping (E)

2- to 3-digit subtraction with and without regrouping (E)

Topic:

Operations

CSO's: MA 3.1.10; 3.1.16; 3.2.2;

Enduring Understanding:
Numbers enable us to use the four operations to combine and separate quantities

Essential Question(s):
Why is memorizing basic facts better than finger counting?
Why is your thinking about the process as important as the answer?
Why is it possible to get the same answer using different numbers or operations?

Examples:

Input/output boxes

Computer lab

Math games:
Around the World
Bingo
Math Wars

Key Vocabulary:

Sum

Addend

Difference

Fact Family

Regrouping

Commutative Property

Associative Property

MATH (3) CONCEPT MAP

Estimated days to Complete: 15

Key Concepts:

Numbers to 10,000 (E)

Order and compare to 10,000 (E)

Place value using expanded and standard form to 10,000 (E)

Estimate & Round Numbers to 10,000 (I)

Topic:

Number Sense

CSO's: MA 3.1.1; 3.1.3; 3.1.4

Enduring Understanding:
Numbers enable us to use place value of digits to comprehend quantities, sequences, and estimation.

Essential Question(s):
Why should we order numbers?
How is expanded form related to place value?
When and how do we use rounding?

Examples:

Computer lab

Estimation jars

Key Vocabulary:

Place/Value

Digit

Standard Form/Expanded Form

Cardinal/Odinal

Rounding/Estimating

< , > , =

MATH (3) CONCEPT MAP

Estimated days to Complete: 5

Key Concepts:

Story problems (E)

Strategies & Techniques (E)

Topic:
Problem Solving – Strategies and Techniques
CSO's: MA 3.1.16

Enduring Understanding:
Heuristics are strategies that can aid problem solving (e.g., breaking complex problems into chunks, creating a visual representation, working backward from the desired result, guess and check)

Essential Question(s):
What strategies do I find most useful in solving problems?
How do we solve difficult problems?
What should we do when we're stuck?
What do you already know? How does that help you?

Examples:

Students represent problems visually

Choosing strategies to solve particular problems EX. Key words

Computer

Paired children write, solve and discuss problems

Key Vocabulary:

Working backwards

Guess and check

Sequencing

Pictures (visual) Diagrams

Graphic Organizer

MATH (3) CONCEPT MAP

Key Concepts:

Length (E)

Mass/weight (I)

Temperature (I)

Volume (I)

Conversions (I)

Topic:

Basic Measurement

CSO's 3.4.1; 3.4.2; 3.4.4; 3.4.5

Enduring Understanding:
Measurement helps us understand and describe our world.
We measure our world in order to determine its boundaries and limits.

Essential Question(s):
Why do we need standard units of measurement?
How does <u>what</u> we measure influence <u>how</u> we measure?

Examples:

Manipulating a variety of measurement tools

Converting inches to feet, ounces to pounds, etc.

Key Vocabulary:

Inches/Feet/Yards

Ounces/Pounds

Centimeter/Meter/Kilometer

Celsius

Fahrenheit

Grams/Kilograms

Temperature

Standard Measurement

Metric Measurement

MATH (3) CONCEPT MAP

Estimated days to Complete: 7

Key Concepts:

Elapsed time to quarter hour (E)

Analog/Digital clocks (E)

Intervals of time (E)

Topic:

Measurement of Time

CSO's 3.4.6; 3.4.7

Enduring Understanding:
The need for measurement precision varies based upon the requirements of the task/situation. Standard units of measure enable people to interpret results or data in the same way.

Essential Question(s):
How does time influence the events in our daily lives?
Why are time intervals important at home, school, etc.?

Examples:

Analog and digital clocks – telling time

Story problems/schedules

Key Vocabulary:

Elapsed time

Analog/Digital

Quarter-hour

Interval

Schedules

MATH (3) CONCEPT MAP

Estimated days to Complete: 8

Key Concepts:

Value (E)

Making Change to $10.00 (E)

Topic:
Money
CSO's 3.4.8; 3.4.9

Enduring Understanding:
All money has a specific, definite value
Any given amount of money may be attained by a variety of combinations of denominations

Essential Question(s):
Why do we need to know the value of money?
How does being able to make change help us in daily life?

Examples:

Role play with manipulatives

Read and write amounts of dollars to $100.00

Make change to $10.00

Key Vocabulary:

Decimal point

Dollar sign

Cent sign

Change

MATH (3) CONCEPT MAP

Estimated days to Complete: 45

Key Concepts:

Multiplication as repeated addition (E)

Division as repeated subtraction (E)

Patterns/Rules (E)

Problem solving strategies (E)

Fact Family (I)

Topic:

Multiplication/Division

CSO's: MA 3.1.11; 3.1.12; 3.1.13; 3.1.14; 3.1.15; 3.1.16; 3.2.3; 3.2.4

Enduring Understanding:
Multiplication is repeated addition, related to division, and can be used to solve story problems

Essential Question(s):
When should we multiply/divide?
How is multiplication related to division?
What are key words to indicate multiplication/division?
How do we relate multiplication & division through fact families?

Examples:

Patterns

Solving problems

Repeated addition

Key Vocabulary:

Factor

Product

Fact Family

Inverse Operation

Strategy

Dividend

Divisor

Quotient

MATH (3) CONCEPT MAP

Estimated days to Complete: 15

Key Concepts:

- Polygons and Patterns (E)
- Solid Figures (I)
- Symmetry (E)
- Lines, Rays, Angles (I)
- Ordered pair (I)

Topic:

Geometry

CSO's: MA 3.3.1; 3.3.2; 3.3.4; 3.3.5; 3.3.7; 3.3.8; 3.2.1

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

Essential Question(s):
How do the shapes of objects affect the way we use them?
Where do we daily use and see geometric shapes?

Examples:

- Children determine the shape of everyday objects
- Mirror math
- Children complete the other half of a symmetrical figure
- Children use pattern blocks to create patterns

Key Vocabulary:

- Names of Polygons
- Vertices/Faces/Edges
- Plane & Solid Figures
- Angles (Right, Obtuse, Acute)
- Grid/Ordered Pair
- Lines/Rays/Line Segments
- Symmetry
- Finding Area
- Flip, slide and turn/Mirror Image

MATH (3) CONCEPT MAP

Estimated days to Complete: 10

Key Concepts:

Data (N)

Various Graphs/Tables/Charts/ Diagrams (E)

Topic:
Graphing
CSO's: MA 3.5.1; 3.5.2; 3.5.4

Enduring Understanding:
Graphical displays can show a variety of possible relationships between two variables
Different graphs can be incorporated to best show information gathered

Essential Question(s):
How can we best show data collected?
Which graph would best represent the information gathered?
Do all graphs and tables represent information in the same way?

Examples:

Collecting data

Interpreting data

Reading graphs

Key Vocabulary:

Experiment

Survey

Results

Key

Scale

Timelines

Pie graph

Bar Graph

Line Graph

Pictopraph

MATH (3) CONCEPT MAP

Key Concepts:

Patterns (E)

Rules of patterns (I)

Numerical expressions (E)

Variables/symbols (N)

Input/output models (I)

Topic:

Algebra

CSO's 3.2.2; 3.2.3; 3.2.4; 3.2.5; 3.2.6

Enduring Understanding:
Equations depict patterns of change
A pattern of change can be described through a function

Essential Question(s):
Why use algebraic equations?
How do we determine a pattern using given information?

Examples:

I – Know
Compass

Key Vocabulary:

Function

Model

Input/Output

Symbol

Equation

Algebra

MATH (3) CONCEPT MAP

Estimated days to Complete: 20

Key Concepts:

Part of a whole (E)

Part of a group (E)

Addition and subtraction (E)

Equivalency (I)

Compare and order (N)

Topic:

Fractions and Decimals

CSO's: MA 3.1.2; 3.1.5; 3.1.6; 3.1.8; 3.1.10

Enduring Understanding:
Parts of a whole can be represented with different mathematical forms, such as fractions and decimals

Essential Question(s):
How do we show a part of something?
What is the relationship between fractions and decimals?

Examples:

Divide an apple representing any given fraction

Children use fraction bars to compare and contrast

Given 2 rectangles: divide on equally and the other unequally. Volunteer tells which rectangle shows fractions because the parts are equal.

Key Vocabulary:

Equivalent

Numerator

Denominator

Compare & Order

Mixed numbers

Decimals

Decimal point

Tenths

Hundredths

MATH (3) CONCEPT MAP

Estimated days to Complete: 5

Key Concepts:

Predicting Possible Outcomes (E)

Topic:

Probability

CSO's: MA 3.5.3

Enduring Understanding:
Probability describes the likelihood of an event taking place

Essential Question(s):
In what way does probability affect our everyday decisions?
How did we use probability today?

Examples:

Children will draw different colored cubes from a bag and determine probability of drawing a certain color

Children determine the probability of a spinner landing on a certain color.

Create fair and unfair spinners.

Given a selection of matching clothing, children list possible outcomes.

Key Vocabulary:

- Probability
- Outcomes
- Event
- Certain
- Not likely/Likely
- Impossible