Warren County School District

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Mathematics – Grade 2

Course Number:____08223_____

Course Description and Prerequisites: Completion of Mathematics – Grade 1

      This course will allow students to connect and strengthen previously learned mathematical concepts to new skills and real world applications. Students will be engaged in activities that focus on problem solving, number exploration, and data use. Math activities will provide students with the opportunity to develop and practice newly learned skills as they apply to real world experiences.

Suggested Grade Level: Second Grade

Length of Course: ____One Semester _X_ Two Semesters _____Other

Units of Credit: ____N/A_____

PDE *Certification and Staffing Policies and Guidelines (CSPG)* Required Teacher Certification(s) Elementary

Certification verified by WCSD Human Resources Department:
   __X__Yes ____No

Board Approved Textbooks, Software, Materials:
Title:
Publisher:
ISBN #:
Copyright Date:
Date of WCSD Board Approval:

BOARD APPROVAL:

Date Written:___Spring of 2006_____

Date Approved:_____

Implementation Year:_____

Suggested Supplemental Materials:
Clock, thermometer, ruler, pattern blocks, geometric shapes, attribute blocks, geoboard, color tiles, snap cubes, counters, tangram pieces, number cubes, spinner, coins & dollar bills, hundred chart, and base ten blocks.

Course Standards

PA Academic Standards:
2.1   Numbers, Number Systems and Number Relationships
2.2   Computation and Estimation
2.3   Measurement and Estimation
2.4   Mathematical Reasoning and Connections
2.5   Mathematical Problem Solving and Communication
2.6   Statistics and Data Analysis
2.7   Probability and Predictions
2.8   Algebra and Functions
2.9   Geometry
2.10 Trigonometry
2.11 Concepts of Calculus

WCSD Academic Standards: None

Industry or Other Standards: None

WCSD EXPECTATIONS

WCSD K-12 Expectations for instruction in writing, reading, mathematics and, technology have been developed and revised annually. The teacher will integrate all WCSD Expectations into this planned instruction

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (I.E.P.) or Gifted Individual Education Plan (G.I.E.P.).

REQUIRED COURSE SEQUENCE AND TIMELINE

Content Sequence	Dates
Measurement	Entire school year
Exploring Numbers and Patterns	
Addition	September
Subtraction	October
Patterns and numbers to 100	November
Geometry, fractions, & probability	December
Addition of two-digit numbers	January
Money & Time	February
Subtraction of two-digit numbers	March
Exploring numbers and patterns to 1000	April
Addition & subtraction of three-digit numbers	May/June
Division & multiplication	May/June

WRITING TEAM:

Christine Duell	Marcia Harrington	Donna Holding
Sue Kafferlin	Jamie Lee	Kristina Renninger
Nicole Trembley		

A yearly review will be done following the PDE release of the annual Eligible Content. Our goal is to keep the math planned instruction updated and effective.

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination? ____ Yes   __X__ No

2. Does this course issue a mark/grade for the report card?

   __X__ Yes____ No

3. Does this course issue a Pass/Fail mark?   ____ Yes   __X_ No

4. Is the course mark/grade part of the GPA calculation?

   ____ Yes   __X__ No

5. Is the course eligible for Honor Roll calculation?____ Yes   __X__ No

6. What is the academic weight of the course?

    __X_ No weight/Non credit   ____ Standard weight

    ____ Enhanced weight   (Describe)_____

SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS AND ELIGIBLE CONTENT WHERE APPLICABLE

* The checklist is for teacher use and not for individual student assessment.

2.1 Numbers, Number Systems and Number Relationships

x – Performance assessed during the year

	Performance Indicator	X	Assessment
A.	• Recognize and write numbers to 1000. • Count by 2's, 5's, 10's, 25's, 100's .		Formative Assessments: • Observation • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving • Create an illustration • Develop a model using manipulatives • Hands on representation • Evaluate oral response • Self-evaluations • SuccessMaker • K-W-L • Homework Summative Assessments: • Portfolio • Test • Performance assessment
B.	Interpret whole numbers and fractions to represent quantities.		
C.	Write or represent numbers using manipulative such as hundred chart, base ten blocks, or number board.		
D.	Equate correct number of fractional parts to a whole number using manipulatives and drawings.		
E.	• Recognize and count pennies, nickels, dimes, quarters and one dollar bill. • Count and write a given amount of money up to $1.00 using different coin combinations. • Select coins to match a given amount of money. • Solve money problems using cent and dollar symbols.		
F.	Recognize even and odd numbers.		
G.	• Use concrete objects such as base ten blocks to represent numbers 1 through 1000.		
H.	Demonstrate one to one correspondence to 1000.		
I.	• Recognize numbers in ones, tens, and the hundreds place value. • Order numbers from least to greatest and greatest to least. • Write numbers in expanded form.		
J.			
K.			

	L.	Demonstrate knowledge of basic addition and subtraction of facts to 20.		

2.2 Computation and Estimation

		Performance Indicator	X	Assessment
A.		• Apply addition and subtraction in everyday situations to 1000. • Solve story problems using concrete objects.		Formative Assessments: • Observation • Evaluate written work • Performance assessment
B.		• Solve two and three digit addition and problems with and without regrouping. • Solve two and three digit subtraction problems with and without regrouping.		• Tests/quizzes • Problem-solving • Create an illustration • Develop a model using manipulatives
C.		Demonstrate the concept of multiplication as repeated addition using 2's, 5's and 10's.		• Hands on representation • Evaluate oral response • Self-evaluations
D.		Demonstrate the concept of division as repeated subtraction and as sharing 50.		• SuccessMaker • Interview • K-W-L
E.				• Homework
F.		Use estimation to determine the reasonableness of calculated answers to 1000.		Summative Assessments: • Portfolio • Test
G.		Describe the process used to solve a problem.		• Performance assessment

2.3 Measurement and Estimation

		Performance Indicator	X	Assessment
A.		• Compare measurable progression of time to the hour, ½ hour, ¼ hour and five-minute intervals. • Record and graph temperature.		Formative Assessments: • Observation • Evaluate written work • Performance assessment
B.		Determine and measure objects with standard and non-standard units.		• Tests/quizzes • Problem-solving
C.		Determine and compare elapsed time.		• Create an illustration • Develop a model using manipulatives
D.		Read and represent time to the nearest ½ hour, ¼ hour, and five minutes using an analog and digital clock.		• Hands on representation • Evaluate oral response • SuccessMaker
E.		Determine the appropriate unit of measure.		• Homework
F.				

G.	Estimate and verify measurement.		Summative Assessments: • Test • Performance assessment

2.4 Mathematical Reasoning and Connections

	Performance Indicator	X	Assessment
A.	Make and verify predictions of real life objects.		Formative Assessments: • Observation
B.	Use measurement in everyday situations in the classroom.		• Evaluate written work • Performance assessment Summative Assessments: • Performance assessment

2.5 Mathematical Problem Solving and Communication

	Performance Indicator	X	Assessment
A.	• Create addition and subtraction word problems using real life situations, then solve. • Solve addition and subtraction word problems using charts and graphs. • Use appropriate problem-solving strategies to solve word problems.		Formative Assessments: • Observation • Evaluate written work • Performance assessment • Problem-solving • Create an illustration • Develop a model using manipulatives
B.	Represent the solution to a word problem with manipulatives.		• Hands on representation • Evaluate oral response
C.			Summative Assessments: • Test • Performance assessment

2.6 Statistics and Data Analysis

	Performance Indicator	X	Assessment
A.	• Gather data by observing with tallies, pictures, and counting. • Organize and display data using charts, bar graphs and pictographs.		Formative Assessments: • Observation • Evaluate written work • Problem-solving • Create an illustration
B.	Formulate and answer questions based on data shown on graphs.		• Hands on representation
C.			Summative Assessments:
D.			• Performance assessment

2.7 Probability and Predictions

	Performance Indicator	X	Assessment
A.	Predict the measure of likelihood of events.		Formative Assessments:
B.	• Gather data using a spinner and record. • Recognize and explain a fair or unfair spinner.		• Observation • Evaluate written work • Performance assessment • Create an illustration • Hands on representation
C.			• Evaluate oral response
D.	Gather, compare and analyze data using probability concepts and phrases like most often and least often.		Summative Assessments: • Test • Performance assessment

2.8 Algebra and Functions

	Performance Indicator	X	Assessment
A.	Identify, describe, and continue a simple number or shape pattern with attribute blocks.		Formative Assessments: • Observation • Evaluate written work
B.	• Solve number sentences using concrete objects. • Solve number sentences with missing addends.		• Performance assessment • Tests/quizzes • Problem-solving • Create an illustration
C.			• Develop a model using manipulatives
D.	Demonstrate, explain, and solve story problems using addition or subtraction.		• Hands on representation • Evaluate oral response
E.	Use and interpret symbols such as ‹, ›, & = to model addition and subtraction.		• SuccessMaker • Interview • K-W-L
F.			
G.			Summative Assessments:
H.	Analyze and interpret data on a table or chart.		• Portfolio • Test
I.			• Performance assessment
J.	Locate points on a simple grid.		

2.9 Geometry

	Performance Indicator	X	Assessment
A.	Classify and label two- and three-dimensional geometric shapes.		Formative Assessments: • Observation • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving • Create an illustration • Develop a model using manipulatives • Hands on representation • Evaluate oral response • SuccessMaker • Interview Summative Assessments: • Test • Performance assessment
B.	Build geometric shapes using concrete objects.		
C.	Draw two-dimensional geometric shapes.		
D.	Find and describe geometric figures in real life.		
E.	Identify and draw lines of symmetry in geometric figures.		
F.			
G.			
H.			
I.	Predict and represent the number of pieces required to cover a shape or figure using tangrams.		

2.10 Trigonometry

	Performance Indicator	X	Assessment
A.	Identify right angles in the environment.		Formative Assessments: • Observation • Evaluate oral response Summative Assessments: • Performance assessment
B.	Identify right angles and triangles using concrete objects.		

2.11 Concepts of Calculus

	Performance Indicator	X	Assessment
A.	• Place whole numbers in order from least to greatest. • Use › or ‹ to depict greater than and less than.		Formative Assessments: • Observation • Evaluate oral response • Evaluate written work • Create an illustration Summative Assessments: • Performance assessment
B.	Identify greatest and least values of data presented in data and graphs.		
C.			
D.	Identify and extend repeating and continuing patterns.		

Specific Educational Objectives to be Taught:

I. Numbers, Number Systems and Number Relationships
- Recognize and write numbers to 1000
- Demonstrate one-to-one correspondence
- Count by 2's, 5's, 10's, 25's, 100's
- Recognize even and odd numbers
- Order numbers from greatest to least, or least to greatest
- Identify and continue a simple pattern (colors/objects)
- Recognize >, <, =
- Go over calculator keys

II. Statistics and Data Analysis
- Gather, organize and display data
- Analyze data (comparing)
- Display data using pictures, tallies, charts, bar graphs and pictographs
- Formulate and answer questions based on data shown

III. Computation and Estimation (± 12)
- Adding and subtracting to 12
- Fact families to 12
- Solving simple story problems $\pm$
- Solve number sentences including missing addends
- Show $\pm$ sentences to solve graphing problems
- Given the number sentence, come up with story problems--orally
- Using appropriate terms--sum, difference
- Solve simple $\pm$ problems using calculators

IV. Computation and Estimation (2 digit $\pm$)
- Recognize the numbers in l's, 10's place
- Write numbers using manipulative representation
- Write numbers in expanded form

V. Computation and Estimation (± 20)
- Add and subtract to 20
- Fact families to 20
- Solving story problems ± 20
- Solve number sentences including missing addends
- Show $\pm$ sentences to solve graphing problems
- Create $\pm$ story problems to 20
- Solve and explain story problem

VI. Computation and Estimation (2 digit $\pm$)
- Add 2-digit problems (no regrouping)
- Subtract 2-digit problems (no regrouping)

- Solve story problems with 2-digit addition/subtraction (no regrouping)
- Add 2-digit problems (regrouping)
- Subtract 2-digit problem (regrouping)
- Solve story problems with 2-digit addition/subtraction (regrouping)

VII. Time
- Tell time to the hour, 1/2 hour, 1/4 hour and 5 minute intervals
- Determine elapsed time
- Recognize time in various forms

VIII. Money
- Recognize and count different coins
- Count and write a given amount of money up to $1.00 using different coin combinations
- Select the correct number of different coins to match a given amount of money
- Solve money problems ±

IX. Geometry
- Use drawings, diagrams or models to show the concept of fractions--wholes, halves, thirds, fourths, fifths, sixths
- Name the appropriate fractions 1/3, 2/3, 1/2, etc.
- Name and label the geometrical shapes in 2 and 3 dimensions.
- Build geometric shapes using concrete objects
- Draw 2 dimensional geometric shapes
- Find and describe geometric figures in real life
- Identify and draw lines of symmetry in geometric figures
- Use correct geometric terminology (parallel, perpendicular, symmetry)

X. Measurement and Estimation
- Determine appropriate unit of measure
- Measure objects--length (inches)
- Estimate and verify measurements (weight/temperature)
- Record and graph temperatures
- Predict measurement

XI. Multiplication/Division
- Demonstrate the concept of multiplication as repeated addition using 2's, 5's, and 10's
- Demonstrate the concept of division as repeated subtraction and as sharing 50

XII. Using three digits *Optional*
- Addition without regrouping
- Subtraction without regrouping

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments: The teacher will develop and use standards-based assessments throughout the course.

Portfolio Assessment: ____ Yes   _X_ No

District-wide Final Examination Required: ____ Yes   _X_ No

Course Challenge Assessment: N/A