



Course Outcome Summary

Course Information: Essential Math

Mathematics instruction in Wisconsin's alternate standards, the Essential Elements.

Description: Students in this course will learn math skills aligned with Essential Elements of learning, that will help them to function in their daily activities.

Instruction Level: Differentiated instructional levels based on student needs, skills and level of independence; as well as, the levels of the Common Core Essential Elements of Learning.

Prerequisites: Course will be differentiated based on student needs and ability levels.

Textbooks: No textbook required

Course Standards:

Grade 6

EE6.RP.1. Demonstrate a simple ratio relationship.

EE6.NS.1. Compare the relationships between two unit fractions.

EE6.NS.2. Apply the concept of fair share and equal shares to divide.

EE6.NS.5-8. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).

EE6.EE.1-2. Identify equivalent number sentences.

EE6.EE.3-4. Demonstrate understanding of equivalent expressions.

EE6.G.1-2. Demonstrate area.

EE6.SP.1-2. Display data on a graph or table that shows variability in the data.

EE6.SP.5. Summarize data distributions on a graph or table.

Grade 7

EE7.RP.1-3. Use a ratio to model or describe a relationship.

EE7.NS.3. Demonstrate the value of various money amounts using decimals.

EE7.EE.1-2. Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.

EE7.SP.3. Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.

EE7.SP.5-7. Describe the probability of events occurring as possible or impossible.

EE8.NS.1. Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.

Grade 8

EE8.NS.2. Represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100.

EE8.EE.7. Solve algebraic expressions using simple addition and subtraction.

EE8.F.4. Determine the values or rule of a function using a graph or a table.

EE8.F.5. Describe how a graph represents a relationship between two quantities.

EE8.G.9. Identify volume of common measures (cups, pints, quarts, gallons, etc.).

EE8.SP.4. Construct a graph or table from given categorical data and compare data categorized in the graph or table.

Unit

- 1. Time and Calendars**
- 2. Money**
- 3. Calculator**
- 4. Graphing**
- 5. Measurements**

Unit Outlines

1. Time and Calendar Skills

Reading a Calendar

- Days of the Week
 - Order of days
 - Practice spelling/recognizing each day and their abbreviations
 - Yesterday, today and tomorrow
 - Number of days in a week
- Months of the Year
 - Order of months
 - Practice spelling/recognizing each month and their abbreviations
 - Last month/next month
 - Number of days in a month and year
 - Reading a calendar
 - Special days/dates (holidays)
 - Adding information to a calendar
 - Important days/dates (birthdays, field trips, meetings, etc) orally, in writing or by other communication means.
 - Using information from a calendar
 - Looking at a calendar with important information filled in and being able to answer questions about that information orally, in writing or by other communication means.
 - Weather and Seasons

- Graphing the weather
- **Telling Time**
 - Types of and Parts of a Clock
 - Numbers on a clock
 - Recognize the numbers 1-12 for an analog clock and the number 0-59 for a digital clock.
 - O'clock, Half-past, quarter past hour, quarter to hour
 - Counting by 5's to be able to tell time on an analog clock.
 - Telling time
 - Telling time to the hour, half hour, and quarter hour
 - Elapsed time (addition and subtractions skills)

Standards:

EE6.NS.5-8. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero).

EE6.SP.1-2. Display data on a graph or table that shows variability in the data.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Organize data.

Level I

- Student attempts to perform the task with support:
 - Sort information into categories of same and different.

EE6.SP.5. Summarize data distributions on a graph or table.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Use a graph to determine which category has the most.

Level I

- Student attempts to perform the task with support:
 - Identify which has more or less.

EE8.EE.7. Solve algebraic expressions using simple addition and subtraction.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Solve simple addition and subtraction problems.

Level I

- Student attempts to perform the task with support:
 - Distinguish between a letter and a number.

EE8.EE.5-6. Graph a simple ratio using the x and y axis points when given the ratio in standard form (2:1) and convert to $\frac{2}{1}$.

Level I

- Student attempts to perform the task with support:
 - Place or locate data on a simple two-category graph.

EE8.F.5. Describe how a graph represents a relationship between two quantities.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Answer questions about data from a graph.

Level I

- Student attempts to perform the task with support:
 - Place data in a graph.

Essential Question:

Students will be able to answer the following question(s):

- Use the knowledge gained throughout this unit to read/understand a calendar, including:
 - Order of days of the week
 - Order of months of the year
 - Number of days in a week, month and year.
 - Yesterday, today and tomorrow
 - Parts of a calendar
 - Month
 - Number of days in each month
 - Holidays
 - Seasons
 - Adding important information to a calendar (i.e. appointments, birthdays, meetings, etc).
- Use the knowledge gained throughout this unit to complete a calendar
- Distinguish between an analog and a digital clock
- What number are on a clock and what do they represent (hour, half-past, quarter past, etc)
- Count by 5's
- Use the knowledge gained throughout unit to tell time to the hour, half hour and quarter hours.
- Use the knowledge gained in this unit to tell elapsed time.

Essential Knowledge:

What are the key concepts/vocabulary/ideas that students will have mastery of by the completion of the unit?

Vocabulary

- Months
- Days
- Year
- Date
- Seasons
- Holidays
- Digital clock
- Analog clock
- Clock face
- Minute hand, hour hand, second hand
- O'clock, half past hour, quarter past hour, quarter to hour

Key Concepts

- Number recognition 0-59
- Numerical Order
- Counting by 5's to 60
- Telling time to the hour, half-hour, and quarter hour
- What is a calendar and how do you use it
- Weather and seasons as they relate to the calendar and as they relate to how we dress, if we can go outside for recess and traveling conditions.
- Reading and using a schedule
 - Word and/or picture based schedule
- Putting information into a graph
- Reading a graph to answer questions

2. Money

- The Value of Money
 - Money and how we use it?
 - Earning money
 - Goods and services
 - Classroom store
- Recognize coins and bills
 - Identify the measurable and visual attributes of various coins to express differences
 - Demonstrate the use of physical attributes when classifying, comparing, contrasting, and ordering coins and groups of coins
 - Penny
 - Nickel
 - Dime
 - Quarter
 - Half dollar
 - Dollar
 - Cents
 - One, five, and ten dollar bills
- What is a decimal point and why is it there?
 - Can be used when only showing amounts of coins equal less than a dollar
 - Used to separate dollars from cents
 - Writing money values using the decimal point
- Values of coins
 - Match coins to their values
 - Match bills and their values
- Relationships of coin values (i.e. 5 pennies = 1 nickel, 2 nickels = 1 dime, etc.).
- Learn touch points on coins and bills to count and add money
- Introduce adding and subtracting money using the decimal point

- Using several interactive examples; demonstrate how the decimal point is placed when writing amounts of money (include separating dollars and cents and writing amounts of money less than a dollar).

Standards:

Grade 6

EE6.RP.1. Demonstrate a simple ratio relationship.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Use a ratio to describe a relationship using numbers and objects.

Level III

- Student demonstrates the content knowledge and skills:
 - Demonstrate a simple ratio relationship.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Complete a pattern given a simple ratio.

Level I

- Student attempts to perform the task with support:
 - Identify a one-to-one relationship.

EE6.EE.1-2. Identify equivalent number sentences.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Generate a two-step math sentence using appropriate numbers and symbols.

Level III

- Student demonstrates the content knowledge and skills:
 - Identify equivalent number sentences.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Match number sentence with the correct picture representation.

Level I

- Student attempts to perform the task with support:
 - Identify math symbol “=” as meaning equal to.

EE6.EE.3-4. Demonstrate understanding of equivalent expressions.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Solve equivalent expressions to illustrate that they are equivalent.

Level III

- Student demonstrates the content knowledge and skills:
 - Demonstrate understanding of equivalent expressions.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Recognize different displays of the equal quantities.

Level I

- Student attempts to perform the task with support:
 - Match different displays of the same quantity.

EE6.EE.5-8. Match an equation to a real-world problem in which variables are used to represent numbers.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Using a variable, generate an equivalent equation that represents a real-world problem.

Level III

- Student demonstrates the content knowledge and skills:
 - Match an equation to a real-world problem in which variables are used to represent numbers.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Determine what is unknown in an equation.

Level I

- Student attempts to perform the task with support:
 - Identify the letter in a mathematical sentence.
 - Identify math symbol “=” as meaning equal to.

Grade 7

EE7.RP.1-3. Use a ratio to model or describe a relationship.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Complete the ratio using numbers to show relationships.

Level III

- Student demonstrates the content knowledge and skills:
 - Use a ratio to model or describe a relationship.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Demonstrate a simple ratio relationship.

Level I

- Student attempts to perform the task with support:
 - Identify one item as it relates to another.

EE7.NS.3. Demonstrate the value of various money amounts using decimals.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Determine the total value of money written as a decimal given real-world situations.

Level III

- Student demonstrates the content knowledge and skills:
 - Demonstrate the value of various money amounts using decimals.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Identify the decimal value of various coins.

Level I

- Student attempts to perform the task with support:
 - Identify money.

EE7.EE.1-2. Use the relationship within addition and/or multiplication to illustrate that two expressions are equivalent.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Use the relationship within addition to illustrate that two expressions are equivalent.

Level I

- Student attempts to perform the task with support:
 - Understand that different displays of the same quantity are equal.

Grade 8

EE8.NS.2. Represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Distinguish between a part represented by a decimal and a whole number without decimals.

Level I

- Student attempts to perform the task with support:
 - Identify a part of a whole in concrete real-world objects.

EE8.EE.7. Solve algebraic expressions using simple addition and subtraction.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Solve simple addition and subtraction problems.

Level I

- Student attempts to perform the task with support:
 - Distinguish between a letter and a number.

Essential Question:

Students will be able to use the knowledge gained in this unit to:

- Model problem solving skills and number sense in real life situations.
- Understand what money is and how we use it?
- Recognize coins and bills.
- Know the values of coins and be able to
 - Match coins to their values
 - Match bills and their values
 - Learn touch points on coins and bills to count and add money
 - Express the relationships of coin values (i.e. 5 pennies = 1 nickel, 2 nickels = 1 dime, etc.).
- Understand what the purpose of the decimal point is in money (i.e. separates dollars for cents).
- Understand how to add and subtract money using touch points
- Understand the difference between having a enough money to purchase and item and not having enough money to purchase an item
- Understand where to place the decimal point in values of money.

Essential Knowledge:

What are the key concepts/vocabulary/ideas that students will have mastery of by the completion of the unit?

Key Concepts

- Understand the importance of money and how to use it
- Recognize the various coins and their values
- Use touch-point counting to add different coins and bills
- Understand what a decimal is and how to use it when expressing values of money
- Match different displays of the same quantity of money

- Number recognition 0-100
- Numerical Order
- Counting by 5's to 100

Key Vocabulary

- Penny
- Nickel
- Dime
- Quarter
- Half dollar coin
- Dollar coin
- One, five, and ten dollar bills
- Coins
- Dollars
- Cents
- Goods and services
- Total

3. Calculator Skills

- Introduction to the calculator
 - Introduce the unit by displaying a calculator
 - Students discuss what a calculator is and what it is used for.
 - Explain that both calculators do the same thing -- quickly add, subtract, and perform other calculations with numbers, especially very large numbers.
 - Provide students with an individual calculator or display a calculator using some form of technology (i.e. computer, SmartBoard, Ipad, etc.)
 - Discuss with students the numbers on the calculator.
 - Discuss with students the symbols on the calculator and what each symbol is used for.
- Explore using a calculator
 - Model addition and subtraction on a large interactive calculator
- Introduction to using the calculator for life skills
 - Adding and subtraction money
 - Introduce students to the decimal button on the calculator.
 - Teach students how to use it in adding and subtracting money
- Introduce students to the money calculator
 - Use interactive examples to demonstrate how to use the calculator when adding and subtracting money
 - Provide students with several opportunities to use the money calculator for life skills.

Standards:

EE6.RP.1. Demonstrate a simple ratio relationship.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Use a ratio to describe a relationship using numbers and objects.

Level III

- Student demonstrates the content knowledge and skills:
 - Demonstrate a simple ratio relationship.

Level II

- Student demonstrates the content knowledge and skills:
 - Complete a pattern given a simple ratio.

Level I

Student attempts to perform the task with support:

- Identify a one-to-one relationship.

Student demonstrates some of the content knowledge and skills:

EE6.EE.3-4. Demonstrate understanding of equivalent expressions.

Level II

- Student demonstrates the content knowledge and skills:
 - Recognize different displays of the equal quantities.

Level I

- Student attempts to perform the task with support:
 - Match different displays of the same quantity.

EE6.NS.1. Compare the relationships between two unit fractions.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Demonstrate an amount of $\frac{1}{2}$.

Level I

- Student attempts to perform the task with support:
 - Distinguish between more or less.

EE6.EE.1-2. Identify equivalent number sentences.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Generate a two-step math sentence using appropriate numbers and symbols.

Level III

- Student demonstrates the content knowledge and skills:

- Identify equivalent number sentences.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Match number sentence with the correct picture representation.

Level I

- Student attempts to perform the task with support:
 - Identify math symbol “=” as meaning equal to.

EE6.EE.3-4. Demonstrate understanding of equivalent expressions.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Solve equivalent expressions to illustrate that they are equivalent.

Level III

- Student demonstrates the content knowledge and skills:
 - Demonstrate understanding of equivalent expressions.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Recognize different displays of the equal quantities.

Level I

- Student attempts to perform the task with support:
 - Match different displays of the same quantity.

EE6.EE.5-8. Match an equation to a real-world problem in which variables are used to represent numbers.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Determine what is unknown in an equation.

Level I

- Student attempts to perform the task with support:
 - Identify the letter in a mathematical sentence.

Essential Question:

Students will be able to use the knowledge gained in this unit to:

- Use a calculator to add and subtract numbers less than 10
- Use a calculator to add and subtract numbers greater than 10
- Use a calculator to represent amounts of money
- Use a calculator to add and subtract money

- Use a money calculator to add and subtract money

Essential Knowledge:

Key Concepts:

- Understand the function of a calculator
 - display numbers
 - add and subtract numbers and quantities or amounts
- Understand how to use a calculator to:
 - Add and subtract numbers less than 10
 - Add and subtract numbers greater than 10
 - Add and subtract money

Key Vocabulary:

- Calculator
- Add
- Subtract
- Equals
- Decimal point

4. Graphing

- Data analysis
 - The student will collect and organize data to make it useful for interpreting information. The student is expected to:
 - collect, sort, and organize data into two or three categories
 - use data to create real-object and picture graphs
 - draw conclusions from real-object and picture graphs
 - Students will learn how to record information using bar graphs and tally marks.
- Interpreting a graph
 - Student will be able to draw a picture graph and a bar graph to represent a data set with more than two categories.
 - Solve one- and two-step "how many more" and "how many less" problems using information presented in bar graphs.
 - Students will make use of News 2 You articles to
 - Graph information from the article into a bar graph.
 - Retrieve and report information from a graph.

Standards:

EE6.SP.5. Summarize data distributions on a graph or table.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Use a graph to determine which category has the most.

Level I

- Student attempts to perform the task with support:
 - Identify which has more or less.

EE7.SP.3. Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.

Level III

- Student demonstrates the content knowledge and skills:
 - Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Summarize data on a graph or table in one way.

Level I

- Student attempts to perform the task with support:
 - Read data from one given source.

EE8.F.4. Determine the values or rule of a function using a graph or a table.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Navigate, read, use, or apply a graph or table.

Level I

- Student attempts to perform the task with support:
 - Identify the different parts of a graph or a table.

EE8.F.4. Determine the values or rule of a function using a graph or a table.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Navigate, read, use, or apply a graph or table.

Level I

- Student attempts to perform the task with support:
 - Identify the different parts of a graph or a table.

Essential Question:

Students will be able to answer the question(s):

- What is a graph and how can we use it to find and record information?

Essential Knowledge:

What are the key concepts/vocabulary/ideas that students will have mastery of by the completion of the unit?

- Data analysis
 - The student will collect and organize data to make it useful for interpreting information.
 - Students will learn how to record information using bar graphs and tally marks.
- Interpreting a graph
 - Student will be able to draw a picture graph and a bar graph to represent a data set with more than two categories.
 - Solve one- and two-step "how many more" and "how many less" problems using information presented in bar graphs.

Vocabulary

- Picture Graph

- Bar Graph
- Data
- More
- Less

5. Measurements

- Concept of Measurement
 - What does it mean to measure something
 - Why do we use measurements
 1. Cooking
 2. Building
 3. Exercising or traveling
 - More, Less & Equal
 - Distinguishing between which measurement is more and which measurement is less in real world applications.
 - Determining equal amounts or measurements
- Types of measurement
 - Length
 - Volume
 - Area
 - Distance
- B. Application of measurements
 - Cooking
 - Using measurements in cooking
 1. Measuring ingredients
 - a. Cups, pints, gallons
 - b. What is a fraction
 - i. Part of a whole
 - ii. $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{4}$ etc.
 - Building
 - Using measurements to complete a construction project
 1. Using a ruler
 2. Area
 - Measuring distance
 - Exercising
 1. Measuring steps taken from one part of school to another
 - Traveling
 1. Distance from home to school
 2. Distance traveled on a vacation

Standards:

Grade 6

EE6.NS.1. Compare the relationships between two unit fractions.

Level II

- Student demonstrates some of the content knowledge and skills:

- Demonstrate an amount of $\frac{1}{2}$.

Level I

- Student attempts to perform the task with support:
 - Distinguish between more or less.

EE6.NS.2. Apply the concept of fair share and equal shares to divide.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Solve a division problem using the concept of equal shares.

Level III

- Student demonstrates the content knowledge and skills:
 - Apply the concept of fair share and equal shares to divide.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Identify the concept of division using fair and equal shares.

Level I

- Student attempts to perform the task with support:
 - Replicate equal sets.

EE6.G.1-2. Demonstrate area.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Determine what the larger area is.

Level I

- Student attempts to perform the task with support:
 - Indicate the inside of a space.

Grade 7

EE7.NS.1. Add fractions with like denominators (halves, thirds, fourths, and tenths) so the solution is less than or equal to one.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Use models to add halves, thirds, and fourths.

Level I

- Student attempts to perform the task with support:
 - Use models to identify the whole and find the missing pieces of a whole.

EE7.G.5. Find the perimeter of a rectangle given the length and width.

Level IV

- Student demonstrates the content knowledge and skills at a higher level of complexity than described in Level 3:
 - Solve simple perimeter problems with rectangles.

Level III

- Student demonstrates the content knowledge and skills:
 - Find the perimeter of a rectangle given the length and width.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Identify the length and width of a rectangle.

Level I

- Student attempts to perform the task with support:
 - Outline the perimeter of an object.

EE7.G.6. Find the area of a rectangle given the length and width using a model.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Identify the length and width (dimensions) of a rectangle.

Level I

- Student attempts to perform the task with support:
 - Duplicate the area of a rectangle (square).

Grade 8

EE8.NS.1. Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.

Level II

- Student demonstrates some of the content knowledge and skills:
 - Use models to subtract halves, thirds, and fourths.

Level I

- Student attempts to perform the task with support:
 - Use models to identify the whole and find the missing pieces of a whole using halves.

EE8.NS.2. Represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100

Level I

- Student attempts to perform the task with support:
 - Identify a part of a whole in concrete real-world objects.

EE8.G.9. Identify volume of common measures (cups, pints, quarts, gallons, etc.).

Level III

- Student demonstrates the content knowledge and skills:
 - Identify volume of common measures (cups, pints, gallons, etc.).

Level II

- Student demonstrates some of the content knowledge and skills:
 - Identify which is more or less.

Level I

- Student attempts to perform the task with support:
 - Experience volume.

Essential Question:

Students will be able to answer the question(s):

- A. What is measurement?
- B. How do we use measurement in our daily lives?
- C. Which measurements are greater than, less than or equal to each other?

Essential Knowledge:

What are the key concepts/vocabulary/ideas that students will have mastery of by the completion of the unit?

Key Concepts

- Understand how measurement is used in daily living skills
- Use measurement to practice daily living skills
 - Cooking
 - Creating projects with area
 - Measure distance during exercise or travel
- Recognize a fraction as part of a whole
 - Recognize fractions in cooking ($1/2$, $1/4$, $1/3$, etc.)

Vocabulary

- Measurements
- Length
- Width
- Volume
- Area
- Distance
- Greater Than
- Less Than
- Equal
- Cups
- Pints

- Gallons
- Fraction
- Whole

