

DES - Math Instructional Plan
Grade: Second

| Month | Topic |
|------------------|---|
| September | <ul style="list-style-type: none">• Number Sense & Operations |
| October | <ul style="list-style-type: none">• Number Sense & Operations Cont'd.• Addition |
| November | <ul style="list-style-type: none">• Addition With & Without Regrouping |
| December | <ul style="list-style-type: none">• Subtraction |
| January | <ul style="list-style-type: none">• Subtraction with Regrouping• Mixed Review Addition & Subtraction With & Without Regrouping |
| February | <ul style="list-style-type: none">• Money |
| March | <ul style="list-style-type: none">• Time• Data |
| April | <ul style="list-style-type: none">• Geometry• Patterns |
| May | <ul style="list-style-type: none">• Measurement |
| June | <ul style="list-style-type: none">• Yearly Review• Intro. to multiplication & fractions |

Topic: Problem Solving Strategies

Essential Questions: What math strategy will you use to solve real life problems?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills SWBAT: | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|--|--|---|--|---|
| 2.N.1 2.N.22 2.S.3 2.PS.9 | <ul style="list-style-type: none"> • How do you make reasonable estimates? • How can you find and use a pattern to solve a problem? • How can you use a model to solve a problem? • How do you use data from a graph to solve a problem? • How do you draw a picture to solve a problem? • How do you write a number sentence to solve a word problem? • How do you make a model to show the action of a problem? • When do you choose an operation to solve a problem? How do you know which operation to choose? | <ul style="list-style-type: none"> • Skip count to 100 by 2's, 5's, 10's • Estimate the number in a collection to 100 and then compare by counting the actual items in the collection • Display data in pictographs and bar graphs using concrete objects or a representation of the object • Use drawings/pictures to model the action in problems • Recognize real world situations in which an estimation (rounding) is more appropriate. | <ul style="list-style-type: none"> • Manipulatives • Drawing pictures • Computer Learning: Harcourt Mega Math Compass Learning • Teaching key words • Pocket hundreds chart • Estimating in various jars • Make class pictographs • Using environmental print (i.e. store flyer) • Problem of the day | <ul style="list-style-type: none"> • Teacher observation • Chapter Tests • Homework • Daily Work/Group Work • Unit Test • Math journals |

Connections to Text (Resources): Harcourt Math

Time: Ongoing

Connections to Technology: Harcourt Mega Math, Compass Learning, Math Games

Key Vocabulary: estimate, pattern, model, graph, data, operation, prediction, table, logical, logical reasoning

Topic: 2 Digit Addition and Subtraction

Essential Questions: What strategies will you use to add and subtract 1 and 2 digit numbers?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills (SWBAT): | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|---|--|---|---|---|
| 2.N.15 2.N.16 2.N.17 2.N.18 2.N.19 2.N.8 | How can you show how to model addition and subtraction? How do you use addition to check subtraction? | <ul style="list-style-type: none"> • Determine sums and differences of number sentences by various means (e.g., doubles, doubles plus one, estimating, drawing a picture, counting on/back) • Use a variety of strategies to solve addition and subtraction problems using one- and two-digit numbers with and without regrouping • Demonstrate fluency and apply addition and subtraction facts up to and including 18 • Use doubling to add 2-digit numbers • Use compensation to add 2-digit numbers • Understand and use the commutative property of addition | <ul style="list-style-type: none"> • Math Centers • Math Journals • Number line • Hundreds chart • Around the World • Addition/Subtraction Bingo, Quizmo • Transparency & Base Ten Blocks • Math Facts Speed Quiz • Math Facts Flashcards Homework | <ul style="list-style-type: none"> • Teacher observation • Unit tests • Chapter tests • Daily work • Completed homework assignments • Speed Tests |

Connections to Text (Resources) Unit 1 (Chapters 5 & 6), Unit 2 (Chapters 7-11)

Time: Mid Oct.-Mid Jan.

Connections to Technology: MegaMath, Compass Learning, Harcourt on line

Key Vocabulary: count on, sum, doubles, doubles plus one, regroup, count on/count back, model, difference, fact family, add, subtract, addends

Topic: Geometry

Essential Questions: How do you identify, name, put together, sort, take apart, and group two-dimensional figures? What are the outcomes of two-dimensional figures as they slide, flip, or turn?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills: SWBAT: | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|--|--|--|--|---|
| 2.G.1 2.G.2 2.G.3 2.G.4 2.G.5 2.G.6 | <ul style="list-style-type: none"> • What are the characteristics of circles, squares, rectangles, and triangles? • How do you slide, flip, and turn a two-dimensional shape? • How do you combine and separate plane shapes to make new shapes? • How do you group objects by like properties? • When exploring two-dimensional shapes, how do you predict the outcome of a slide, flip, or turn? • How do you identify a line of symmetry? | <ul style="list-style-type: none"> • Identify and appropriately name two-dimensional shapes: circle, square, rectangle, and triangle (both regular and irregular) • Experiment with slides, flips, and turns to compare two-dimensional shapes • Compose(put together) and decompose(break apart) two-dimensional shapes • Group objects by like properties (congruent, size, shape, sides, & vertices) • Explore and predict the outcome of slides, flips, and turns of two-dimensional shapes • Explore line of symmetry | <ul style="list-style-type: none"> • Use manipulatives: plane shapes (paper, plastic, & wooden) • Create an art project using two-dimensional shapes • Math centers • Computer Learning • Teaching key words • Use die-cuts to find the line of symmetry • Practice flipping, sliding, and turning with manipulatives (dotted paper optional) • Whole class charting activity- group shapes by like properties | <ul style="list-style-type: none"> • Teacher observation • Unit test • Chapter test • Homework assignments • Class work assignments • Group work/center activities • Art project |

Connections to Text (Resources): Unit 4 (Chapter 18 & 20)

Time: April

Connections to Technology: Harcourt Mega Math & Compass Learning

Key Vocabulary: *plane shapes, square, rectangle, triangle, circle, side, angle, square corner, vertex, congruent, symmetry, slide, flip, turn, reflection*

Topic: Measurement**Essential Questions:** How can you use measurement in your everyday life?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|---|---|---|---|---|
| 2.M.1 2.M.2 2.M.3 2.M.4 2.M.5 2.M.10 | <ul style="list-style-type: none"> • How can you compare in order objects by length or distance? • How can you use an inch ruler to measure length? • What is an inch? What is a foot? • How can you tell which objects are heavier and which are lighter? • Can you name items that we could measure for each unit of measurement? • How can you use a real life object to estimate measurement? | <ul style="list-style-type: none"> • Use non-standard and standard units to measure both vertical and horizontal lengths. • Use a ruler to measure standard units (including whole inches and whole feet) • Compare and order objects according to the attribute of length. • Recognize mass as a qualitative measure (an example: which is heavier and which is lighter). • Compare and order objects, using lighter than and heavier than. • Select and use standard (customary) and non-standard units to estimate measurements. | <ul style="list-style-type: none"> • Student Math game pg. 396 • Measure classroom objects with rulers and yard sticks • Use balance scales to measure which is heavier and lighter • Use thermometer to measure temperature and make charts, etc. • Use connecting cubes as a non-standard unit to estimate measurement • Measure distances in the school • Make pictographs • Estimate the capacity of a container • Student Math game pg.412 • Mr. Gallon • M&M Student Created Bar Graph | <ul style="list-style-type: none"> • Teacher observation • Chapter test • Daily work • Final projects • Group work |

Connections to Text (Resources): Unit 5 (Ch. 22 & 23), Measuring Penny by Loreen Leedy, The Morning Rush by Rosanne Lanczak**Time:** May**Connections to Technology:** Harcourt Mega Math Shapes Ahoy & Made to Measure**Key Vocabulary:** *inch, foot, yard, temperature, cup, pint, quart, gallon, ounce, pound,*

Topic: Money, Time, & Data

Essential Questions: How do you use money, time, and data in your everyday life?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|--|--|--|--|--|
| 2.M.6 2.M.8 2.N.16 2.A.1 2.M.9 1.M.9 2.M.10 2.S.3 2.S.4 2.PS.2 2.S.2 | <ul style="list-style-type: none"> • What are the values and names of each coin and bill? • How can you use coins to show one dollar? • What strategies can you use to solve 1 and 2-digit addition and subtraction problems? • What symbol do you use to compare whole numbers up to 100? • How do you tell time to the half hour and nearest five minutes using different clocks? • What are the days of the week and months of the year in sequence? • How do you know which units to use (standard or non-standard) to estimate measurements? • How do you use standard and non-standard units to estimate measurements? • How do you make a pictograph or a bar graph? • What is alike or different in the quantity of data in the graph? • What information do you need to solve the problem? • Which strategies could you use to solve the problem? • How do you use tally marks to collect and record data? | <ul style="list-style-type: none"> • Know and recognize coins(penny, nickel, dime, quarter, and bills (\$1,\$5,\$10, and \$20) • Identify equivalent combinations to make one dollar • Use a variety of strategies to solve addition and subtraction problems using 1 and 2-digit numbers with and without regrouping • Use the symbols $>$, $<$, $=$ (with and without the use of a number line) to compare whole numbers up to 100 • Tell time to the half hour and five minutes using both digital and analog clocks • Know the days of the week and months of the year in sequence • Select and use standard (customary) and non-standard units to estimate measurements • Display data in pictographs and bar graphs using concrete objects or a representation of the object • Compare and interpret data in terms of describing quantity (similarity or differences) • Interpret information correctly, identify the problem, and generate possible solutions • Collect and record data (using tallies) related to the question | <ul style="list-style-type: none"> • Manipulatives (coins, bills, analog & digital clocks) • Judy clocks • Money & Time BINGO • Calendar • Student real life demonstrations (shopping, schedules, etc.) • Overhead manipulatives • Money puzzles • Flashcards • Memory Money Game • Monopoly • Class pictographs, bar graphs, tally table • Birthday graph • Problem of the day • Cross-curricular connections | <ul style="list-style-type: none"> • Teacher observation • Unit tests • Chapter tests • Daily work • Completed homework assignments • Group Work/Center Activities |

Connections to Text (Resources): Harcourt Math Ch. 12-17(Unit 3), *Alexander Who Used to Be Rich Last Sunday* by Judith Viorst **Time:** Feb. - March

Connections to Technology: MegaMath, Compass Learning, Harcourt on line

Key Vocabulary: half dollar, dollar sign, decimal point, one dollar, change, minute, hour, half hour, calendar, month, year, day, date, week, bar graph, range, median, mode, grid, point, line graph, outcome, event, certain, impossible, likely, unlikely, more likely, less likely, most likely, least likely, equally likely

Topic: Number Sense and Operations

Essential Questions: How do you make connections between numbers and real world models?

| Performance Indicators | Guided Questions | Essential Knowledge & Skills | Classroom Ideas (Instructional Strategies) | Assessment Ideas |
|---|--|---|--|---|
| 2.N.6 2.N.7 2.N.9 2.N.1 2.N.14 2.N.11 2.A.1 2.N.5 2.S.2 2.S.4 2.S.3 | <ul style="list-style-type: none"> How do you make a group of ten using ones? How do you make a hundred using tens? How do you make a thousand using hundreds? How do you make a two-digit number using tens and ones? What is the value of each digit in a two-digit number? How do you read and write numbers to 100? How do you count forward and backward with and without the use of a number line or hundreds chart? How do you skip count by 2's, 3's, 4's, 5's, and tens verbally or using a hundreds chart? How do you model even and odd numbers? What does it mean in an ordinal position? How can you compare two-digit numbers using $>$, $<$, or $=$? What strategies do you use to order numbers to 100? How do you count by tens forward and backward from any given number less than 100? How do you take a survey and record the results in a tally table? How do you use recorded data to make predictions? How do you make and interpret various graphs? When and how do you round numbers? | <ul style="list-style-type: none"> Develop an understanding of the base ten system (10 ones = 1 ten, 10 tens = 1 hundred, 10 hundreds = 1 thousand) Use a variety of strategies to compose and decompose two digit numbers Name the number before and the number after a given number, and name the number(s) between two given numbers up to 100 (with and without the use of a number line or a hundreds chart) Skip count to 100 by 2's, 3's, 4's, 5's, and 10's Use concrete materials to justify a number as odd or even Read written ordinal terms (first-ninth) and use them to represent ordinal relations Use the symbols $<$, $>$, $=$ (with and without the use of a number line) to compare whole numbers up to 100 Compare and order numbers to 100 Collect and record data(using tallies) related to the question Compare and interpret data in terms of describing quantity(similarities or differences) Display data in pictographs, bar graphs using concrete objects or a representation of the object Round one and two-digit numbers to the nearest ten. | <ul style="list-style-type: none"> Hundreds chart Number lines Pictographs, bar graphs, tally tables, survey taking Calendars Manipulatives (i.e. base ten blocks) Overhead transparencies & overhead manipulatives Student demonstrations (i.e. ordinal numbers, odd & even) Connecting cubes Harcourt math games Centers | <ul style="list-style-type: none"> Teacher observation Unit tests Chapter tests Daily work Completed homework assignments oGroup work |

Connections to Text (Resources): Harcourt math Ch.1-4, Even Steven and Odd Todd by Kathryn Cristaldi, One Hundred Hungry Ants by Eleanor J. Pinczes, Math Curse by Jon Scieszka and Lane Smith
Time: September – mid October (6 weeks)

Connections to Technology: MegaMath, Compass Learning, Harcourt on line

Key Vocabulary: tens, ones, digits, odd, even, ordinal number, is greater than, is less than, is equal to, round, survey, tally table, concrete graph, pictograph, bar graph

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| Topic: Patterns |
| Essential Questions: How do you identify, make, and extend patterns? |

| Performance Indicators | Guided Questions | Essential Knowledge & Skills | Classroom Ideas (Instructional Strategies) | Assessment Ideas (Evidence of Learning) |
|-------------------------------|---|---|--|--|
| 2.A.2 | <ul style="list-style-type: none"> • What is this pattern and why? • How do you extend an increasing or decreasing sequence or pattern? | <ul style="list-style-type: none"> • Identify patterns • Describe and extend increasing or decreasing (+,-) sequences and patterns (numbers or objects up to 100) | <ul style="list-style-type: none"> • Pattern blocks • Pattern charts • Art projects • Problem of the Day • Sound patterns | <ul style="list-style-type: none"> • Teacher observation • Chapter test • Daily work • Student made patterns • Group work |

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| Connections to Text (Resources) Unit 4 (Ch. 21), <u>Kente Colors</u> by Debbie Chocolate | Time: April |
| Connections to Technology: Harcourt Mega Math | |
| Key Vocabulary: <i>pattern unit</i> | |