Domain(s) – "Numbers/Operations in Base 10," "Operations and Algebraic Thinking"

Topic: 3rd grade – "Multiplication"

Essential Questions:

1. How is multiplication an extension of addition?

2. How can you use a variety of strategies and models to solve multiplication problems?

Clusters and Standards	Guided Questions	Learning Experiences	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
3.OA.1 3.OA.3 3.OA.4 3.OA.5 3.OA.7 3.OA.8 3.OA.9 3.NBT.3	How are addition and multiplication related? How is multiplying by 2 the same as doubles facts for addition? How is multiplying by 5 the same as skip counting by 5? What is an array? How can you use an array to show the commutative property of multiplication? How is multiplying by 3 the same as skip counting by 3 and/or doubles plus one? How do you know when a problem includes too much, too little, or just enough information? What are the identity and zero properties of multiplication? How do you use a multiplication table? How do you use a number line to find a pattern? How can I find missing factors using an array and multiplication table?	SWBAT: • Connect multiplication sentences to addition sentences and to draw arrays to represent multiplication sentences • Write multiplication facts with factors 0,1,2,3,4,5 using a variety of formats and strategies • Solve problems by using a skill such as evaluating too much, too little information • Use and explain the commutative property of multiplication • Use the area models, arrays, tables, patterns and doubling to provide meaning for multiplication • Develop fluency with single-digit multiplication facts (5X10 and below)	Tiles Grid paper dry erase board overhead math games: • Math Bingo • Bump – dice game • Playing cards – making numbers • Tic Tac Do Skittles Activity flash cards Times Table Math Beach Balls Math Wraps	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 156-191 Time:6 weeks: See Pre/Post March Doc. For unit lesson planning

Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com

Key Vocabulary: factors, product, multiply, array, commutative property of multiplication, rows, columns, multiple

Domain(s) – "Numbers/Operations in Base 10," "Measurement and Data," "Operations and Algebraic Thinking"

Addition and Subtraction & Time

Essential Questions:
1. How do you use a variety of strategies to add, subtract, estimate and solve real life problems?
2. How do you use time and money in everyday life?

Clusters and Standards	Guided Questions	Learning Experiences	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
3.NBT.1 3.NBT.2 3.MD.1 3.OA.9 3.OA.10 3.OA.11	How can you use rounding to estimate sums? How do you use rounding to estimate differences? How do you solve 3 and 4 digit addition and subtraction problems? What is the process for making a prediction and testing that prediction in problem solving? What keywords can be used to determine which operation to use in problem solving? What strategies can be used to solve word problems? How do you tell time? How is time used in your everyday life?	SWBAT: • Write estimates, sums, and differences of two to four digit numbers with and without regrouping • Solve problems by using the strategy of predict and test • Identify keywords to solve problems • Identify strategies to solve problems • Write expressions and complete number sentences using addition or subtraction • Solve problems using the strategy estimate or exact answer • Identify the time of day • Tell time to the minute and quarter past • Write elapsed time • Use a schedule and calendar	base 10 manipulatives dry erase board overhead math games: • Math Bingo • Bump – dice game • Playing cards – making numbers • Tic Tac Do Clock/Time manipulatives flash cards	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 66-152 **Time: 6 weeks: See Pre/Post March Doc. For unit lesson planning**

Connections to Technology: Harcourt Math Center

<u>Key Vocabulary:</u> estimate, expression, not equal to, number sentence, decimal point, equivalent, clockwise, counterclockwise, schedule, a.m./p.m., noon, midnight, timeline

Domain(s) – "Measurement and Data"

Topic: 3rd grade – "Data & Measurement"
Essential Questions: **1. How do we use measurement in everyday life?** **2. Why do we need to know how to collect and organize data?**

Clusters and Standards	**Guided Questions**	**Learning Experiences**	**Classroom Ideas (Instructional Strategies)**	**Assessment Ideas (Evidence of Learning)**
3.MD.2 3.MD.3 3.MD.4 3.MD.5 3.MD.6 3.MD.7	What is a survey? What is data? How can you collect and organize data in a table or graph format? How can you interpret the results of a survey? How can you use a table to group data in more than one way? How can you read and interpret data in tables and graphs? How do you use ordered pairs to locate points on a grid? How can you use inch and half inch to estimate length? How do you choose the appropriate unit to estimate and measure length, weight, and capacity?	SWBAT: • Collect, record, and classify data • Solve problems by using an appropriate strategy, such as making a table, making a graph • Read and interrupt data from a survey • Read, interrupt, and make pictographs and bar graphs • Locate points on a grid • Estimate and measure length, distance, capacity, and weight using appropriate customary units • Use a variety of methods to convert units within the customary system of measurement • Solve problems by estimating and/or measuring • Recognize that there are other systems of measurement (metric)	Rulers & Yardsticks Dry erase board Overhead Transparency Use estimation to predict answers Small group instruction & practice Objects for non-standard units measurement ****FOR "Learning Experieinces" NEED TO REVISIT w/ aid of TEXTBOOK (AREA & Perimeter…Metric…line plots)**	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 300-365 Time:3 weeks : See Pre/Post March Doc. For unit lesson planning
Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com, Brain Pop
Key Vocabulary: data, tally table, frequency table, survey results, classify, bar graph (vertical & horizontal), scale, grid, ordered pair, foot, yard, mile, capacity, cup, pint, quart, gallon, ounce, pound, centimeter, meter

Domain(s) – "Operations and Algebraic Thinking"

Topic: 3rd grade – "Division"

Essential Questions:

1. How is division an inverse operation of multiplication?
2. How can you use a variety of strategies and models to solve division problems?
3. How can I use division in everyday life?

Clusters and Standards	Guided Questions	Learning Experiences	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
3.OA.1 3.OA.2 3.OA.3 3.OA.4 3.OA.5 3.OA.6 3.OA.7 3.OA.8 3.OA.9	What is division? When do I use division? How are division and subtraction related? What is repeated subtraction? How can you draw a picture to show/solve division? How do you use a number line to divide? How are multiplication and division related? How could you use manipulatives to show division (with and without remainders)? How do you use a multiplication table to solve a division problem? What key words will tell when and what to divide? How do you know when a problem includes too much, too little, or just enough information? What are different strategies you could use to solve division word problems?	SWBAT: • Develop fluency with single-digit multiplication facts • Demonstrate fluency and apply single –digit division facts • Use tables , patterns, halving, and manipulatives to provide meaning for division • Develop strategies for selecting the appropriate computational and operational method in problem solving situations	Tiles Counters Dry erase board Overhead Transparency math games: • Math Bingo • Tic Tac Do M&Ms Activity Number lines flash cards Times Table Math Beach Balls "Playground Method" Math Wraps Use estimation to predict answers	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 236-289/ 616-631 Time:6 weeks: See Pre/Post March Doc. For unit lesson planning

Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com, Brain Pop

Key Vocabulary: divide, dividend, divisor, quotient, inverse operation, fact family, remainder

Domain(s) – "Numbers and Operations – Fractions"

Topic: 3rd grade – "Fractions" Process Strands: ***Problem Solving, Reasoning and Proof, Communication, Connections, Representation***

Essential Questions:

1. How do you use fractions in everyday life?

2. How can you use a variety of strategies and models to solve fraction problems?

Clusters and Standards	Guided Questions	Learning Experiences	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
3.NF.1 3.NF.2a 3.NF.2b 3.NF.3a 3.NF.3b 3.NF.3c	What is a fraction? What is the denominator? What is a numerator? How do you write a fraction? How does a fraction represent parts of a whole or parts of a group? What does equivalent mean? In what ways can you represent equivalent fractions? How can you draw a picture or make a model to show/solve fraction problems? How does a number line help us compare and order fractions? How could you use manipulatives to show, compare, order fractions - and find equivalent fractions? How do you know when a problem includes too much, too little, or just enough information? What are different strategies you could use to solve word problems?	SWBAT: • Develop an understanding of fractions as part of a whole unit and as parts of a collection • Use manipulatives, visual models, and illustrations to name and represent unit fractions(1/2, 1/3, ¼, 1/5, 1/6, and 1/10) as part of a whole or a set of objects • Explore equivalent fractions (1/2, 1/3, ¼) • Understand and recognize the meaning of numerator and denominator in the symbolic form of a fraction • Compare and order unit fractions (1/2,/1/3, ¼) and find their appropriate location on a number line • Use the symbols <, >, = (w/ or w/o the use of a number line) to compare whole numbers and unit fractions (1/2, 1/3, ¼, 1/5, 1/6, and 1/10)	Fraction Bars/tiles Fraction circles Fraction Chart Graph paper Counters Dry erase board Overhead Transparency math games: • Math Bingo • Dice Game • Pizza Game Number lines flash cards Trade books Edible items Math Wraps Use estimation to predict answers Small group instruction & practice	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 514-534 **Time:6 weeks : See Pre/Post March Doc. For unit lesson planning**

Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com, Brain Pop

Key Vocabulary: fraction, numerator, denominator, equivalent, compare, order, half, third, fourth

Domain(s) – “Measurement and Data,” “Geometry”

Topic: 3rd grade – “Geometry”
Essential Questions: **1. How do we use geometry in everyday life?** **2. How is geometry used in the real world?**

Clusters and Standards	**Guided Questions**	**Learning Experiences**	**Classroom Ideas (Instructional Strategies)**	**Assessment Ideas (Evidence of Learning)**
3.MD.8 3.G.1 3.G.2	What are lines, line segments, points, rays, and angles? What are intersecting perpendicular and parallel lines? What are the differences between polygons: quadrilateral, hexagon, octagon, and pentagon? How do you describe different triangles? How do you describe different quadrilaterals? What are plane figures? What are solid figures? What is congruence? What is symmetry? What is a face… edge…vertex? How can you find the perimeter and area of an object?	SWBAT: • Identify and compare lines, line segments, line relationships, rays, and angles • Identify describe and classify polygons, triangles, and quadrilaterals • Draw a diagram and/or make a model to solve a problem • Identify and draw congruent and similar figures, lines of symmetry, and transformations of polygons • Identify solid figures and there properties…and relationship to plane figures • Combine plane figures to form patterns • Draw polygons using line segments • Estimate and measure perimeter and area using standard and non-standard measurements	Rulers Dry erase board Overhead Transparency Use estimation to predict answers Small group instruction & practice Solid figure blocks Plane figure cut outs Grid paper	Informal observations of students’ use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 382-449 Time:3 weeks : See Pre/Post March Doc. For unit lesson planning
Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com, Brain Pop
<u>Key Vocabulary:</u> line, point, line segment, ray angle, right angle, degree, acute angle, obtuse angle, intersecting, lines, perpendicular lines, parallel lines, polygon, quadrilateral, pentagon, octagon, hexagon, trapezoid, parallelogram, rhombus, congruent, symmetry, line of symmetry, similar, face, edge, vertex, perimeter, square unit, area

Process Strands: ***Problem Solving, Reasoning and Proof, Communication, Connections, Representation***

Topic: 3rd grade – "Money & Decimals"

Essential Questions:

1. How do you use decimals with money in everyday life?

2. How can you use a variety of strategies and models to solve decimal and money problems?

Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
3.M.7 4.N.10 4.N.24 3.PS.20	What is a decimal? What is a decimal point? Why do we need a decimal point when working and representing money? How do you read a decimal point?	SWBAT: • Count and represent combined coins and dollars, using currency symbols ($0.00) • Foundation for grade 4 – develop an introduction of decimals as part of a whole • Determine what information is needed to solve a problem	Play money Counters Dry erase board Overhead Transparency Number lines Place Value Chart Use estimation to predict answers Small group instruction & practice	Informal observations of students' use of manipulatives Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 556 - 587 **Time:3 weeks : See Pre/Post March Doc. For unit lesson planning**

Connections to Technology: Harcourt Math Center, A+Math. Cool Math.com, Brain Pop

Key Vocabulary: decimal, tenths, hundredths, dime, nickel, penny, quarter, decimal point, dollar sign, digits, place value

Process Strands: ***Problem Solving, Reasoning and Proof, Communication, Connections, Representation***

Topic: 3rd grade – "Understanding Numbers and Operations"

Essential Questions:

1. How does the moving of digits in place values control the value of numbers?

2. How can numbers be put together, compared, and taken apart to solve different types of problems?

Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas (Instructional Strategies)	Assessment Ideas (Evidence of Learning)
Review 2.N.15 3.PS.16 3.N.6 3.N.9 Review 2.N.16 3.N.24 3.N.5 3.N.3 3.N.16 3.N.2 3.A.2 3.N.3 3.N.26	What are Fact Families? How are missing addends identified? How do the properties of addition help to solve problems with 2 or 3 addends? What are the sums and differences of two digit numbers with/without regrouping? How do you use problem solving strategies of choose the operation, logical reasoning, and using a bar graph to solve word problems? What are even and odd numbers? How does the value of a digit change within the different place values based on its place through 9,999? What are number patterns and how do you use them? How can you compare and order numbers to 9,999? How do you estimate numbers to the nearest 10, 100, and 1000?	SWBAT: • Write addition and subtraction facts using fact families • Identify and write missing addends • Write sums of 2 or 3 addends by using commutative, associative, and identity properties of addition • Write sums and differences of two digit numbers with/without regrouping • Solve problems by using the strategies: logical Reasoning, using a bar graph, choose the operation • Identify even and odd numbers • Read, write, identify the values of whole numbers through 9,999 • Identify, extend, and develop number patterns • Compare and order numbers through 9,999 • Round numbers to the nearest 10, 100. and 1,000	base 10 manipulatives dry erase board overhead math games: • Math Bingo • Bump – dice game • Playing cards – making numbers hundreds chart flash cards	Informal observations Math Journal Practice Book End of Chapter Test (multiple choice and short response) NYS practice tests

Connections to Text (Resources) Harcourt pages 2-65 **Time:7 weeks: See Pre/Post March Doc. For unit lesson planning**

Connections to Technology: eHarcourt

Key Vocabulary: fact families, inverse operations, identity property, commutative property, associative property, even, odd, digits, standard form, expanded form, word form, pattern, benchmark numbers, compare, greater than, less than, equal to, rounding