	CCD Foundational Skills
EMPower Series Mathematics	2015
Lesson Schedule & Plans Seeking Patterns, Building Rules - Algebraic Thinking	
Operation Sense - Even more Fractions, Decimals, and Percents  Many Points Make a Point - Data and Graphs	

# JANUARY

Writing Emphasis - Apostrophes

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Week of 01.05 - 01.09	WINTER BREAK
Week of 01.12 - 01.16	WINTER BREAK
Week of 01.19 - 01.23	OPENING THE UNIT: SEEKING PATTERNS, BUILDING RULES KHAN ACADEMY
Week of 01.26 - 01.30	LESSON 1: GUESS MY RULE

# FEBRUARY

Writing Emphasis - Apostrophes

Willing Emphasis - Apostropi	ies —
Week of 02.02 - 02.06	LESSON 1: GUESS MY RULE
Week of 02.09 - 02.13	LESSON 2: BANQUET TABLES
Week of 02.16 - 02.20	LESSON 3: BODY AT WORK TABLES AND RULES
Week of 02.23 - 02.27	LESSON 3: BODY AT WORK TABLES AND RULES

## MARCH

Writing Emphasis - Subject + Verb Agreement

Week of 03.02 - 03.06	LESSON 4: BODY AT WORK GRAPHING THE INFORMATION
Week of 03.09 - 03.13	LESSON 5: BODY AT WORK PUSHING IT TO THE MAX
Week of 03.16 - 03.20	LESSON 5: BODY AT WORK PUSHING IT TO THE MAX
Week of 03.23 - 03.27	SPRING BREAK
Week of 03.30 - 04.03	LESSON 6: CIRCLE PATTERNS

# APRIL

Writing Emphasis - Modifiers

0 ,	
Week of 04.06 - 04.10	MIDPOINT ASSESSMENT: USING THE TOOLS OF ALGEBRA
Week of 04.13 - 04.17	LESSON 7: WHAT IS THE MESSAGE?
Week of 04.20 - 04.24	WEEK OF COABE CONFERENCE
Week of 04.27 - 05.01	LESSON 8: JOB OFFERS

# MAY

Writing Emphasis - Clauses + Phrases

+ Math Minute | Gathering Place

+ Math Minute   Gathering Flace	
Week of 05.04 - 05.08	LESSON 9: PHONE PLANS
Week of 05.11 - 05.15	LESSON 10: SIGNS OF CHANGE
Week of 05.18 - 05.22	LESSON 11: RISING GAS PRICES LESSON 12: THE PATIO PROJECT CLOSING THE UNIT: PUTTING IT ALL TOGETHER
Week of 05.25 - 05.29	WEEK OF MEMORIAL DAY - END OF SPRING CONTRACT

# JUNE

Writing Emphasis - Sentence Combining

+ Math Minute | Gathering Place

Week of 06.01 - 06.05	OPENING THE UNIT: OPERATION SENSE
Week of 06.08 - 06.12	OPENING THE UNIT: OPERATION SENSE
Week of 06.15 - 06.19	LESSON 1: EQUIVALENTS
Week of 06.22 - 06.26	LESSON 1: EQUIVALENTS
Week of 06.29 - 07.03	WEEK OF INDEPENDENCE DAY

## JULY

Writing Emphasis -

+ Math Minute | Gathering Place

Week of 07.06 - 07.10	LESSON 2: ADDITION - COMBINING
Week of 07.13 - 07.17	LESSON 2: ADDITION - COMBINING
Week of 07.20 - 07.24	LESSON 3: SUBTRACTION - TAKE AWAY, COMPARISON, AND DIFFERENCE
Week of 07.27 - 07.31	LESSON 3: SUBTRACTION - TAKE AWAY, COMPARISON, AND DIFFERENCE

## AUGUST

Writing Emphasis -

+ Math Minute | Gathering Place

1 Math Minute   Sathering 1 is	1 Math Minute   Gathering Flace	
Week of 08.03 - 08.07	LESSON 4: MULTIPLICATION - REPEATED ADDITION AND PORTIONS OF AMOUNTS	
Week of 08.10 - 08.14	LESSON 5: DIVISION - SPLITTING AND SHARING	
Week of 08.17 - 08.21	LESSON 6: DIVISION - HOW MANY IN ?	
Week of 08.24 - 08.28 (End of Summer Contract)	LESSON 7: MIXING IT UP	
Week of 08.31 - 09.04	CLOSING THE UNIT: PUTTING IT ALL TOGETHER  LABOR BREAK (NO CLASS SEPTEMBER 3 <sup>RD</sup> , 7 <sup>TH</sup> , OR 8 <sup>TH</sup> )	

# SEPTEMBER

Writing Emphasis - Types of Sentences

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	Week of 09.07 - 09.11	OPENING THE UNIT: MANY POINTS MAKE A POINT
	Week of 09.14 - 09.18	LESSON 1: COUNTRIES IN OUR CLOSETS
	Week of 09.21 - 09.25	LESSON 1: COUNTRIES IN OUR CLOSETS   LESSON 2: MOST OF US EAT
	Week of 09.28 - 10.02	LESSON 2: MOST OF US EAT

## OCTOBER

Writing Emphasis - Avoiding Fragments / Run-ons

Witting Emphasis - Avoiding Fragments / Run ons	
Week of 10.05 - 10.09	LESSON 3: DISPLAYING DATA IN A NEW WAY
Week of 10.12 - 10.16	LESSON 4: A CLOSER LOOK AT CIRCLE GRAPHS   MIDPOINT ASSESSMENT
Week of 10.19 - 10.23	LESSON 5: SKETCH THIS
(CAEPA Conference)	
Week of 10.26 - 10.30	LESSON 6: ROLLER-COASTER RIDES

# NOVEMBER

Writing Emphasis - Comma Rules

Week of 11.02 - 11.06	LESSON 6: CONTINUED
Week of 11.09 - 11.13	LESSON 7: A MEAN IDEA
Week of 11.16 - 11.20	LESSON 7: CONTINUED
Week of 11.23 - 11.27	THANKSGIVING BREAK
Week of 11.30 - 11.04	LESSON 8: MYSTERY CITIES
	LESSON 9: MEDIAN

## DECEMBER

Writing Emphasis - Comma Rules continued...

Week of 12.07 - 12.11	LESSON 10: STOCK PRICES CLOSING THE UNIT: STOCK PICKS
Week of 12.14 - 12.18	END OF FALL CONTRACT
Week of 12.21 - 12.25	WINTER BREAK
Week of 12.28 - 01.01	WINTER BREAK

#### SEEKING PATTERNS, BUILDING RULES

# OPENING THE UNIT: SEEKING PATTERNS, BUILDING RULES

#### MATERIALS

o EMPower pages 1 - 6

### OBJECTIVES

- Share past experiences with algebra and existing notions of algebra
- Begin record of vocabulary useful to the study of algebra
- Look for patterns and relationships in a variety of representations
- Identify and represent a personal pattern in words and diagrams, graphs, or equations
- Understand the scope of the unit

#### VOCABULARY

Tier 2	<ul><li>Algebra</li><li>Pattern</li></ul>
Tier 3	0
Test Words	0

#### INTERACTIVE STRATEGY

О

### WRITING TOPIC

 "What Patterns were discussed today? How do you think understanding patterns will help you in your own life?"

#### WRITING PRACTICE

0

## BEFORE LESSON

#### **ACTIVITIES**

- I. Algebra Mind Map
- II. One of My Own Patterns
- III. Initial Assessment Patterns Problems

#### PRACTICE

None

#### **EXTENSION**

None

#### LESSON REVIEW

Test Practice page None

SEEKING PATTERNS, BUILDING RULES	LESSON 1: GUESS MY RULE
MATERIALS	BEFORE LESSON
o EMPower pages 7 - 20	
OBJECTIVES	ACTIVITIES
<ul> <li>Use In-Out tables as tools that show patterns and relationships between two variables</li> </ul>	<ul><li>I. Guess My Rule</li><li>II. Making Tables, Rules, and Equations</li></ul>
<ul> <li>Identify numerical patterns that involve</li> </ul>	PRACTICE
addition, subtraction, multiplication, division, or a combination of operation, and	Guess More Rules, p. 10 Writing Rules
represent them in words	Fill in the values, p. 13 Complete Tables
<ul> <li>Represent patterns in equations that use algebraic notation</li> </ul>	The Rule Story, p. 15 A cloze exercise
VOCABULARY	How Many Ways, p. 16 Multiplication Notation
o Equation	Four Ways to Write Division, p. 17 Practice with Division
Tier 2 o In-Out Table	EXTENSION
o Table o Variable	Building Table From Rules, p. 18 Start with equation and create table
Tier 3 o	l I
Test Words o	LESSON REVIEW
INTERACTIVE STRATEGY	Test Practice page 19
0	
WRITING TOPIC	
o "In this lesson you did a lot of work with in- out table. What hints about looking for patterns in tables do you want to remember?"	
WRITING PRACTICE	

SEEKING PATTERNS, BUILDING RULES	LESSON 2: BANQUET TABLES
MATERIALS  o EMPower pages 21 - 32	BEFORE LESSON
OBJECTIVES  OBJECTIVES  Use objects, diagrams, tables, and rules to understand and describe a pattern in a situation  Keep track of problem-related data in a table  VOCABULARY  Tier 2    Tier 3    Test Words    WRITING TOPIC  "What did you learn by working on the banquet tables problem? How did a diagram, table, rule, or equation help you predict?"  WRITING PRACTICE	ACTIVITIES  I. Banquet Tables  PRACTICE  Toothpick Row Houses, p. 26 Practice with Patterns Rules of Order, p. 28 Evaluating Expressions  EXTENSION  The importance of Order, p. 30 Compare and Contrast  LESSON REVIEW  Test Practice page 31
	I .

#### **LESSON 3: BODY AT WORK -- TABLES AND RULES** SEEKING PATTERNS, BUILDING RULES BEFORE LESSON MATERIALS o EMPower pages 33 - 50 OBJECTIVES **ACTIVITIES** o Describe the pattern in a situation with a Ι. Heart Rates at Rest verbal and symbolic rule 11. II. How Many Calories Am I Burning o Connect patterns in tables with generalized PRACTICE rules o Solve problems using the patterns Say It in Words and Fill in Tables, Translating Common represented in table data and rules Abbreviations p. 41 VOCABULARY Rules with Distance and Time Drawing at 50 mph, p. 42 Tier 2 Equations → Words, p. 44 | Algebraic Expressions Tier 3 o Substituting for x, p. 43 | Evaluating Expressions Test Words o **EXTENSION** INTERACTIVE STRATEGY A Friendly Reunion, p. 46 | More complicated Situations LESSON REVIEW WRITING TOPIC Test Practice page 48 o "What is important to remember about how to make connection between a table and a rule?" WRITING PRACTICE

#### SEEKING PATTERNS, BUILDING RULES

# LESSON 4: BODY AT WORK - GRAPHING THE INFORMATION

#### MATERIALS

o EMPower pages 51 - 64

### OBJECTIVES

- Identify and use features of graphs (origin, x-axis, y-axis, scale increments, points as order pairs of coordinates, slant of the line)
- Use information from tables or rules to generate graphs
- Connect tables and rules with corresponding graphs

#### VOCABULARY

Tier 2	<ul> <li>Coordinate Graph</li> <li>Increments</li> <li>Inverse Operation</li> <li>Labeling Points</li> <li>Origin</li> <li>X-Axis</li> <li>Y-Axis</li> </ul>
Tier 3	0
est Words	0

#### INTERACTIVE STRATEGY

0

#### WRITING TOPIC

o "Make a mind map of the word 'graph' to help you remember all the terms you learned today. How does a graph connect with a table and an equation?"

### WRITING PRACTICE

0

## ACTIVITIES

BEFORE LESSON

I. Four Graphs for Calories Burned

#### **PRACTICE**

Setting Up Coordinate Graph, p. 56	Vocabulary Review
Graphing Guess My Rule, p. 57	Draw and Compare Graphs
Graphing Banquet Tables p. 60	Represent Pattern from Lesson 2
Relating Multiplication and Division, p. 61	Equation Relationships

#### **EXTENSION**

None

### LESSON REVIEW

#### SEEKING PATTERNS, BUILDING RULES

# LESSON 5: BODY AT WORK -- PUSHING IT TO THE MAX

#### MATERIALS

o EMPower pages 65 - 76

### OBJECTIVES

- o Make graphs from tables
- Articulate how graphs, tables and rules relate to one another
- Compare representations of a situation in which y-values decrease as x-values increase with another in which both values increase together

#### VOCABULARY

Tier 2	0
Tier 3	0
Test Words	0

#### INTERACTIVE STRATEGY

0

#### WRITING TOPIC

o "For different situation, the graph slants in different directions. What two ways have you seen line graphs slant? What caused them to slant in different ways?"

#### WRITING PRACTICE

0

#### **ACTIVITIES**

BEFORE LESSON

- I. Average Maximum Heart Rates
- II. Comparing and Contrasting Situations

#### **PRACTICE**

Brick Piles, p. 70	Linear Relationships
Matching Equations, p. 72	Inverse operations + -

#### **EXTENSION**

Aerobic Target Heart Rate, p. 73 | Work with Percents

#### LESSON REVIEW

SEEKING PATTERNS, BUILDING RULES	LESSON 6: CIRCLE PATTERNS	
MATERIALS	BEFORE LESSON	
o EMPower pages 77 - 90		
OBJECTIVES	ACTIVITIES	
<ul> <li>Diagram and model physical   quantitative situations</li> </ul>	<ul><li>I. Journey Through the Center of the Earth</li><li>II. Measure, Calculate, and compare</li></ul>	
<ul> <li>Describe the approximate relationship between the diameter and circumference of</li> </ul>	PRACTICE	
circles <ul><li>Apply rules and formulas to solve a problem</li><li>Understand the meaning of PI</li></ul>	Graphing Circle Data, p. 83 Graph Circumference vs. Diameter	
KEY CONCEPT	How Much More Rubber? p. 84   Compare Circumferences	
O	$= or \approx or < or > or \neq ?$ Relationship Notation	
VOCABULARY	EXTENSION	
o Circumference o Diameter o Formula	Investigating Another Pattern in Geometry, p. 86 angles and sum of measures  LESSON REVIEW	
o Pi	Test Practice page 88	
Tier 3 o		
Test Words o		
INTERACTIVE STRATEGY		
0		
WRITING TOPIC		
<ul> <li>"Reflect on you experiences in class today.</li> <li>What seemed easy and what seemed difficult?"</li> </ul>		
WRITING PRACTICE		
0		

# SEEKING PATTERNS, BUILDING RULES MATERIALS o EMPower Teacher pages 183 - 189 OBJECTIVES o Produce other representations of a linear pattern, given a graph, table, or equation o Interpret linear graphs, tables, and equations, connecting them to the situations o Interpret and use algebraic symbols KEY CONCEPT 0 VOCABULARY Tier 2 o Tier 3 o Test Words o INTERACTIVE STRATEGY WRITING TOPIC WRITING PRACTICE 0

# MIDPOINT ASSESSMENT: USING THE TOOLS OF ALGEBRA

#### **BEFORE LESSON**

#### **ACTIVITIES**

I. Assessment Tasks

#### **PRACTICE**

Review Previous Lesson Pages | Review

#### **EXTENSION**

None

#### LESSON REVIEW

SEEKING PATTERNS, BUILDING RULES	LESSON 7: WHAT IS THE MESSAGE?
MATERIALS  o EMPower pages 91 - 101	BEFORE LESSON
<ul> <li>OBJECTIVES</li> <li>Translate equations in two variable into words and words into equations</li> <li>Generate a corresponding table, graph, diagram, and contextual situation, given an equation in two variable</li> <li>VOCABULARY</li> </ul>	I. Pass the Message II. What is the Message?  PRACTICE  Geometry Formulations, p. 95 Translating Equations into Words  Evaluating Geometric Formulas, p. 96 Geometry Formulas
Tier 3 o  Test Words o  INTERACTIVE STRATEGY  O  WRITING TOPIC  o "Math equations communicate information.	EXTENSION None LESSON REVIEW Test Practice page 98
What information do the two equations $y = x + 5$ and $y = 5x$ tell you?"  WRITING PRACTICE	

SEEKING PATTERNS, BUILDING RULES	LESSON 8: JOB OFFERS	
MATERIALS	BEFORE LESSON	
o EMPower pages 101 - 112		
OBJECTIVES	ACTIVITIES	
o Compare patterns in tables, equations,, and	I. Job Offers	
graphs in order to make decisions  o Connect the features of a graph with the	PRACTICE	
features of an equation, particularly the point of intersection, the y-intercept, the	The Race, p 104 New Contexts	
distance between the lines, and the rate at	Armand's Weeks, Not Pay, p. 105 Multiplication vs. Division	
which change occurs  VOCABULARY	Solve One-Step Equations, p. 107 Form $ax = b$ , $x + a = b$ , $x - a = b$ , $\frac{x}{a} = b$	
T. Control of the con		
Tier 2 O Point of Intersection O Y-Intercept	EXTENSION	
Tier 3 o	What If? p. 109 Several Scenarios using Graphs	
Test Words o	LESSON REVIEW	
INTERACTIVE STRATEGY	Test Practice page 110	
0		
WRITING TOPIC		
<ul> <li>"One of the job-offer line graphs started at the origin, and on started high on the y-axis. Why?"</li> <li>"Both line graphs intersected at one point. Why?"</li> </ul>		
WRITING PRACTICE		
0		

#### **LESSON 9: PHONE PLANS** SEEKING PATTERNS, BUILDING RULES BEFORE LESSON MATERIALS o EMPower pages 113 - 124 OBJECTIVES **ACTIVITIES** o Match graphs, tables, equations, and verbal Ι. Phone Plans rules by identifying the related features in П. It Would Depend on the Person each representation PRACTICE o Connect the flatness of a horizontal line on a graph to a situation in which there is no I am Changing the Rules!, p. 117 Adjust One of the Plans Rules change over time Greater Than, Less Than, p. 119 | Inequality Notation o Use information from tables, graphs, rules, and equations to support consumer Solving Two-Step Equations, p. Form ax + b = cdecisions VOCABULARY **EXTENSION** o Flat-Line Graph Looking at Four Graphs, p. 122 Reasoning Based on Graphs o Line Steepness LESSON REVIEW Tier 3 Test Practice page 123 Test Words o INTERACTIVE STRATEGY WRITING TOPIC o "You examined tables, graphs, and equations for various phone plans today, and then you matched them. List the parts of the tables, graphs, and equations you used to match the phone plans."

WRITING PRACTICE

SEEKING PATTERNS, BUILDING RULES		SON 10: SIGNS OF CHANGE	
MATERIALS  o EMPower pages 125 - 134		BEFORE LESSON	
<ul> <li>OBJECTIVES</li> <li>Locate indicators of a constant rate of change in graphs, tables, and equations of linear relationships</li> <li>Compare rates of change in a variety of</li> </ul>		of Change	
linear representations  VOCABULARY	Watching Money Grow in a Table, p 129	_	
	Who's Total Earnings Change the Fastest?, p. 130		
· 	Solving More Two-Step Equations, p. 132	$Form ax \pm b = c, \frac{x}{a} \pm b = c$	
	EXTENSION		
Test Words   o INTERACTIVE STRATEGY			
0			
WRITING TOPIC o "How can you tell which pattern has a faster rate of change when looking at two tables, two graphs, or two equations?" WRITING PRACTICE			
1 t	tant rate of nd equations of a variety of ee of Change onship	tant rate of nd equations of na variety of na variety of ne of Change onship  Ele of Change onship  EXTENSION  BEFORE LESSON  ACTIVITIES  I. Seeing the Constant Rate II. Ranking Rates of change PRACTICE  Watching Money Grow in a Table, p 129  Who's Total Earnings Change the Fastest?, p. 130  Solving More Two-Step Equations, p. 132  EXTENSION  None  LESSON REVIEW  Test Practice page 133	

SEEKING PATTERNS, BUILDING RULES	LESSON 11: RISING GAS PRICES	
MATERIALS	BEFORE LESSON	
o EMPower pages 135 - 146		
OBJECTIVES	ACTIVITIES	
<ul> <li>Produce and examine tables for linear and nonlinear patterns to answer the question:</li> </ul>	<ul><li>I. Patterns of Change</li><li>II. Sky-High Gas Prices</li></ul>	
Are values changing are a constant rate?  o Produce and examine graphs for linear and	PRACTICE	
nonlinear patterns to answer the question:  Does this depict a constant rate of change?  Predict for specific cases, using derived	More Patterns of Change, p. 140	Check for linearity and nonlinearity
rules  VOCABULARY	Investigation A - Expanding Squares, p 141	Compare Rates at which Perimeter and Area Grow
o Exponent	Investigation B - What is Behind the Door?, p. 142	Choose the Better Deal on Game Show
Tier 2	Investigation C - What Size is That Copy?, p. 143	Examine Effect of Enlarging and Reducing a Dollar Bill
Tier 3 o	Squaring Numbers, p. 144	
Test Words o	Using Exponents, p. 145	
INTERACTIVE STRATEGY	EXTENSION	
0	None	
WRITING TOPIC	LESSON REVIEW	
<ul> <li>"Linear and nonlinear patterns look different when you see them in a table or graph them. Explain why, using diagrams and words?"</li> </ul>	Test Practice page 146	
WRITING PRACTICE		

SEEKING PATTERNS, BUILDING RULES	LESSON 12: THE PATIO PROJECT
MATERIALS	BEFORE LESSON
<ul><li>EMPower pages 147 - 150</li><li>Black Master 8, 9</li></ul>	A CTIVITIES
OBJECTIVES	I. The Patio Project
<ul> <li>Apply algebraic tools (diagrams, tables, graphs, rules, and equations) to solve a</li> </ul>	PRACTICE
problem	None
VOCABULARY	EXTENSION
Tier 2 o	None
Tier 3 o	LESSON REVIEW
Test Words o	Test Practice page None
INTERACTIVE STRATEGY	
0	
WRITING TOPIC	
o "Think about how you and your partner solved the patio projects problem today. What worked well; what did not work well? Faced with a similar problem, what would you do the same and what would you do differently?"	
WRITING PRACTICE	
0	

SEEKING PATTERNS, BUILDING RULES	CLOSING THE UNIT: PUTTING IT ALL TOGETHER	
MATERIALS	BEFORE LESSON	
0		
O B J E C T I V E S	ACTIVITIES	
0	I.	
VOCABULARY	PRACTICE	
Tier 2 o		
Tier 3 o		
Test Words o		
INTERACTIVE STRATEGY		
0	EXTENSION	
WRITING TOPIC		
0	LESSON REVIEW	
WRITING PRACTICE	Test Practice page	
0	l cott radiio page	

OPERATION SENSE	OPENING THE UNIT: OPERATION SENSE
MATERIALS  • EMPower pages 1 - 6	BEFORE LESSON
<ul> <li>Initial Assesment</li> <li>OBJECTIVES</li> <li>Identify fractions, decimals, and percents in print materials</li> <li>Demonstrate ability to solve problems involving benchmark numbers ½, 1/10</li> <li>Demonstrate current conceptual understanding of operations involving fractions or decimals</li> </ul>	ACTIVITIES  I. Newspaper and Magazine Search II. Four Problems III. Initial Assessment  PRACTICE
VOCABULARY  o Benchmark o Decimal	EVTENCION
o Fraction o Percent  Tier 3 o	LESSON REVIEW
Test Words   o	Test Practice page
<ul> <li>WRITING TOPIC</li> <li>What problems did you know how to solve?</li> <li>What challenged you?</li> </ul>	
WRITING PRACTICE  o	

OPERATION S	ENSE		LESSON 1: EQUIVALENTS
decimals, a o Compare ar percents	laster 1, 2  Sout the equivalence of fractions, and percents and order fractions, decimal, and	BEFORE LESSON  ACTIVITIES  I. Watch Out! II. Those Zeros and Points III. Two Ways to See It IV. Target 1  PRACTICE	
	,	Percent Names, p. 16  When Can I Ignore Zero, p. 17	Changing fractions or decimals to percents  Deciding when a zero can or
Tier 2	<ul> <li>Conversion</li> <li>Denominator</li> <li>Digit</li> <li>Equivalent</li> <li>Numerator</li> </ul>	Fraction-Decimal-Percent Conversion, p. 20	Calculator
Tier 3	0	EXTENSION	
	° VE STRATEGY	Just How Many Drugs p. 21	Reading graphs and using fractions and percents to describe information
	strategies you use to compare of any two fractions or decimals. examples.	LESSON REVIEW Test Practice page 23	

OPERATION SENSE	LESSON	2: ADDITION - COMBINING
MATERIALS	BEFORE LESSON	
<ul><li>EMPower pages 25 - 42</li><li>Blackline Master 3, 4</li></ul>	ACTIVITIES	
OBJECTIVES	I. Watch Out!	
<ul> <li>Judge the reasonableness of answers to addition problems involving fractions, decimals, and percents</li> <li>Connect addition of fractions, decimals, or</li> </ul>	II. How Many More is that? III. Target 10 IV. Combining Pattern Blocks	
percents to combining quantities	PRACTICE	
<ul> <li>Connect a picture or situation with the math symbols</li> </ul>	Where is the point, p. 36	Decimal addition
<ul> <li>Pay attention to place value in addition of fractions and decimals</li> </ul>	Right or Wrong? p. 37	Whether or not addition strategies are correct
VOCABULARY	Are We There Yet? p. 38	Addition of fraction and decimals in context of time
<ul><li>Equation</li><li>Hexagon</li><li>Parallelogram</li></ul>	Adding Fraction and Decimals, p 39	Calculator
<ul><li>Trapezoid</li><li>Triangle</li></ul>	EXTENSION	
Tier 3 o	Measurement Conversions, p. 40	Measurement conversion
Test Words o	LESSON REVIEW	
INTERACTIVE STRATEGY	Test Practice page 41	
0		
WRITING TOPIC		
<ul> <li>How did pattern blocks or drawing help you to see fraction addition?</li> <li>Describe your strategy for adding fractions.</li> <li>Describe your strategy for adding decimals.</li> </ul>		
WRITING PRACTICE		
0		

#### **OPERATION SENSE**

# LESSON 3: SUBTRACTION - TAKE AWAY, COMPARISON, AND DIFFERENCE

#### MATERIALS

- o EMPower pages 43 60
- o Blackline Master 3, 6

## OBJECTIVES

- Interpret a subtraction problem in three ways: as a take-away situation, as a distance between two numbers, and as an absolute comparison of two amounts
- Use a number line to demonstrate the distance between two numbers and absolute comparisons

#### VOCABULARY

Tier 2	<ul><li>Common Denominator</li><li>Number Line</li></ul>
Tier 3	0
Test Words	0

#### INTERACTIVE STRATEGY

0

#### WRITING TOPIC

- Write two things you learned about subtraction of fractions and two things you learned about subtractions of decimals.
- o How are subtraction and addition related?

#### WRITING PRACTICE

0

## BEFORE LESSON

#### **ACTIVITIES**

- I. Show me...
- II. Watch Out!
- III. Fractions and Decimals on the Line
- IV. Target 1, 1/2, 1/4, and 0

#### **PRACTICE**

Where is the Point? p. 53	Reasoning about place value
Where on the Line? p. 54	Locating points
Subtracting Fractions and Decimals, p.57	Calculator

#### **EXTENSION**

How Much More? p. 58

## LESSON REVIEW

#### **OPERATION SENSE**

# LESSON 4: MULTIPLICATION - REPEATED ADDITION AND PORTIONS OF AMOUNTS

#### MATERIALS

o EMPower pages 61 - 80

## OBJECTIVES

- Demonstrate understanding of multiplication using pictures and stories
- Connect whole number multiplication as repeated addition to fraction and decimal multiplication
- Distinguish among multiplication by 1, by numbers less than 1, and by numbers greater than 1

#### VOCABULARY

Tier 2	<ul><li>Factor</li><li>Multiple</li><li>Product</li></ul>
Tier 3	0
Test Words	0

#### INTERACTIVE STRATEGY

0

### WRITING TOPIC

- Multiplication can sometimes be seen as repeated addition. Give an example, using fractions or decimals.
- Multiplication can sometimes be seen as finding a portion of an amount. Give an example, using fraction or decimals.

#### WRITING PRACTICE

0

# BEFORE LESSON

#### **ACTIVITIES**

- I. Show Me...
- II. Headbands
- III. Paycheck Multiplication
- IV. Target 1, 10, 100

#### **PRACTICE**

Seeing Patterns, p. 71	Patterns when multiplying
Compare p. 73	Fraction multiplication in story problems
What Does It Mean? p. 75	Decimal multiplication
How Much More or Less? p.76	Fraction multiplication and finding how much more or less than a given number
Decimals, Decimals, p. 77	Calculator

#### **EXTENSION**

Guess My Number, p. 78 Given the product to find factors

#### LESSON REVIEW

#### **LESSON 5: DIVISION - SPLITTING AND SHARING OPERATION SENSE** MATERIALS BEFORE LESSON o EMPower pages 81 - 98 OBJECTIVES **ACTIVITIES** o Extend understanding of the model for Ι. Weekly Expenses integer division as an act of splitting or П. What is the Message? dealing out an amount, to include fraction Target Practice 0.1 III. and decimal amounts PRACTICE o Match verbal language and symbolic notation for division as splitting to a Four Ways to Write Division, p. 88 Writing division concrete model Which is Not the Same? p. 89 Division notation o Compare and contrast a/b with b/a Show Me... p. 91 Connecting pictures or a situation VOCABULARY to division Tier 2 o Where's the Point? p. 92 Estimating division Tier 3 Multiplication and Division Seeing the connection between Test Words o Patterns, p. 93 multiplication by 1/a and division by a INTERACTIVE STRATEGY Division Patterns, p. 94 Computational patterns 0 Fraction and Decimal Division, p. Calculator WRITING TOPIC 96 o Describe an example of what you EXTENSION understand division by sharing or splitting to mean. Mirror Frames, p. 97 | Multiplication and division o Explain why 5 / 2 is the same as 5 x 1/2 perimeter WRITING PRACTICE LESSON REVIEW

Test Practice page 98

#### LESSON 6: DIVISION - HOW MANY IN ? **OPERATION SENSE** BEFORE LESSON MATERIALS o EMPower pages 99 - 114 o Blackline Master 4 **ACTIVITIES** OBIECTIVES 1. Show Me... o Extend understanding of the quotitive 11. Pattern Block Division modal of division to the domain of fractions III. Making Do and decimals Target 100 IV. o Use mathematical symbols and diagrams to PRACTICE express and visualize the action of division o Relate division to multiplication On a diet, p. 109 Challenging problems fractions VOCABULARY Can You See It? p. 110 Visualizing division o Circle Thin Metric, p. 111 | Metric conversion o Circumference A Mixed Bag, p. 112 Calculator o Diameter o Rectangle **EXTENSION** Tier 3 o Geometric Formulas, p. 113 Geometric formulas Test Words o LESSON REVIEW INTERACTIVE STRATEGY Test Practice page 114 0 WRITING TOPIC Write about the difference between division as splitting or dealing or dealing out and division as how many --- in --- ? WRITING PRACTICE

OPERATION SENSE		LESSON 7: MIXING IT UP
MATERIALS	BEFORE LESSON	
o EMPower pages 115 - 128		
OBJECTIVES	ACTIVITIES	
<ul> <li>Compare the four operations with fractions, decimals, and percents</li> <li>Relate the operations to one another</li> </ul>	<ul><li>I. Going Places with the Four Operations</li><li>II. Broken Calculators</li><li>III. Number of the Day, 0.1</li></ul>	
VOCABULARY	PRACTICE	
o Area	Room Measurements, p. 123	Formulas: perimeter and area
Tier 2	Running Track Measures, p. 125	Formulas: circumference
O Volume	Squaring Fractions and Decimals, p. 127	Fraction and decimal multiplication
Test Words o		<u>'</u>
INTERACTIVE STRATEGY	EXTENSION	
0		
WRITING TOPIC	LESSON REVIEW	
<ul><li> What did you learn when you used a broken calculator?</li><li> How are multiplication and division related?</li></ul>	Test Practice page 128	
WRITING PRACTICE		
0		

MANY POINTS MAKE A POINT	OPENING THE UNIT: MANY POINTS MAKE A POINT
MATERIALS  o EMPower pages	BEFORE LESSON
OBJECTIVES o	ACTIVITIES
V O C A B U L A R Y	PRACTICE
Tier 2 o	
Tier 3 o	
Test Words o	
INTERACTIVE STRATEGY	
0	EXTENSION
WRITING TOPIC	
0	LESSON REVIEW
WRITING PRACTICE  o	Test Practice page

#### **LESSON 1: COUNTRIES IN OUR CLOSETS** MANY POINTS MAKE A POINT BEFORE LESSON MATERIALS o EMPower pages 7 -18 OBJECTIVES **ACTIVITIES** o Use a frequency graph to organize data Ι. Organizing the Data o Identify the story that the data tell П. Statements about Data o Compare data from various samples III. Changing the Categories o Change the categories and articulate the PRACTICE change in the story Clothes by Continent | Practice sorting data VOCABULARY Reporting Data 1 and 2 Practice seeing what effect o Data collapsing data has on the story o Frequency graph Tier 2 o Mode Categorically Speaking Practice analyzing how things in Category our life are organized Tier 3 Test Words o **EXTENSION** INTERACTIVE STRATEGY Taking Inventory Practice collecting new data, then sorting, categorizing, and 0 reorganizing WRITING TOPIC LESSON REVIEW What does a person need to pay attention to when organizing data? Test Practice page 17 o A student once said, "When we change the categories, we keep losing information." Five an example of that she meant. o What are the three components of a frequency graph? WRITING PRACTICE

MANY POINTS MAKE A POINT	L	ESSON 2: MOST OF US EAT
MATERIALS	BEFORE LESSON	
<ul><li>EMPower pages 19 - 34</li></ul>		
OBJECTIVES	ACTIVITIES	
<ul> <li>Organize data into consistent categories</li> <li>Organize data into categories to suit a purpose</li> <li>Make numerical statements about data</li> </ul>	<ul><li>I. Frequently eaten foods</li><li>II. Consistent Categories</li><li>III. Describing the Data</li><li>IV. Who to Ask?</li></ul>	
VOCABULARY	PRACTICE	
o Sample o Audience o Benchmark	Take a sample	Practice choosing a representative sample
Tier 3 o	Thirsty and Ouch!	Practice organizing information and making statements
Test Words o		
INTERACTIVE STRATEGY		
0	EXTENSION	
WRITING TOPIC	Friends and Family Drink Too	
<ul> <li>What does a person need to pay attention to when organizing data?</li> <li>Which skills do you want to improve (for</li> </ul>	Data Collection	Students begin recording data for later projects
example, organizing, categorizing, or making statements about data)?	LESSON REVIEW	
WRITING PRACTICE	Test Practice page 32	
0		

MANY POINTS	MAKE A POINT	LESSON 3: DISPLA	AYING DATA IN NEW WAYS
MATERIALS		BEFORE LESSON	
o EMPower p	ages 35 - 46		
OBJECTIVE	S	ACTIVITIES	
	graphs vertical axis intervals for bar	I. Constructing a bar graph II. Constructing a circle graph	
graphs o Construct a	circle graph from a bar graph	PRACTICE	
	nd construct bar graph and circle	Label that y-axis	Practice determining the y-axis
VOCABULAI		Bar-graph details	Practice labeling the y-axis using appropriate scales
	<ul><li>Bar Graph</li><li>Circle Graph</li></ul>	Bar graph to Circle Graph	Practice creating circle graphs from bar graphs
Tier 2	<ul><li>Vertical Axis</li><li>Horizontal Axis</li><li>Y-Axis</li><li>X-Axis</li></ul>	EXTENSION	
Tier 3	0	Foods You Eat in a week	Walk students through the steps to report data
Test Words	0	Net Gains and Losses	Practice exploring negative
INTERACTI	VE STRATEGY		values
0		LESSON REVIEW	
WRITING T	OPIC	Test Practice page 45	
circle graph	ou know about bar graphs and ns. u still wonder about?		
WRITING P	RACTICE		
0			

#### **LESSON 4: A CLOSER LOOK AT CIRCLE GRAPHS** MANY POINTS MAKE A POINT BEFORE LESSON MATERIALS o EMPower pages 47 - 62 OBJECTIVES **ACTIVITIES** o Construct circle graphs to show how parts Ι. How Many of Each? of the data set relate to the total П. Cheat Sheet o Apply an understanding of benchmark Three Possible Answers III. percents to estimate the size of "slices of PRACTICE pie" o Interpret circle graphs Estimating Percents and Parts of the Whole VOCABULARY Serve Up the Pie Practice creating circle graphs o Benchmark Percents o Benchmark Fractions Tier 2 Making Predictions 0 100% Tier 3 **EXTENSION** Test Words o The Computer Make the Graph | Using Excel INTERACTIVE STRATEGY Search for Circle Graphs | Find and Interpret circle graphs 0 LESSON REVIEW WRITING TOPIC Test Practice page 61 What do you know now about circle graphs that you did not know before?

o What are important questions to ask when

looking at circle graphs?

WRITING PRACTICE

MANY POINTS MAKE A POINT		LESSON 5: SKETCH THIS
MATERIALS	BEFORE LESSON	
o EMPower pages 63 - 74		
OBJECTIVES	ACTIVITIES	
<ul> <li>Sketch a line graph based on a narrative</li> <li>Demonstrate an Understanding of how the</li> </ul>	I. Sketch This II. Label This	
shape of a line provides information about what is happening over time	PRACTICE	
<ul> <li>Improve precision in describing change over time by adding words to students'</li> </ul>	Candy Bars	Practice arranging graphs
working vocabulary	How Does It Go?	Practice sketching graphs
VOCABULARY	Looking at the Entire Graph	Practice telling a story
o Line Graph	Labeling Graphs	
Tier 2 o Increase o Decrease	Telling a Story	Practice inventing a story
Tier 3 o	EXTENSION	
Test Words o	The Shape of a Line from Your Life	
INTERACTIVE STRATEGY	Elevator Traffic	
0	LESSON REVIEW	I
WRITING TOPIC	Test Practice page 72	
<ul> <li>What do you want to remember about how line graphs tell a story?</li> </ul>	root raottoo pago	
WRITING PRACTICE		
0		

MANY POINTS MAKE A POINT	LESSON 6	6: ROLLER-COASTER RIDES
MATERIALS	BEFORE LESSON	
o EMPower pages 75 - 88		
O B J E C T I V E S	ACTIVITIES	
<ul> <li>Use new terms to describe graphs that show change over time</li> </ul>	I. Amusement Park Attendance II. Stations	
<ul> <li>Isolate and describe pivotal points in a graph of change over time</li> </ul>	PRACTICE	
<ul> <li>Refine ability to sketch line graphs based on oral information</li> <li>Distinguish between true and false</li> </ul>	National Park Visitors	Practice reading and analyzing graphs
statements about a line graph  VOCABULARY	Salary History	Practice graphing a line and answering questions
	More Practice with Intervals	Practice changing scale
<ul><li>Change Over Time</li><li>Tier 2</li><li>Scale</li></ul>	EVTENCION.	
Tier 3 o	EXTENSION	
Test Words o	Dropping Below Zero	
INTERACTIVE STRATEGY	LESSON REVIEW	
o	Test Practice page 87	
WRITING TOPIC		
<ul> <li>Make a list titled, "What I practiced today."</li> <li>When are some time you might see and use information from a line graph? Who do you know who could talk to you about line graphs?</li> </ul>		
WRITING PRACTICE		
0		

MANY POINTS MAKE A POINT		LESSON 7: A MEAN IDEA
MATERIALS  o EMPower pages 89 - 98	BEFORE LESSON	
<ul> <li>OBJECTIVES</li> <li>Use at least two strategies to determine the mean</li> <li>Define the word "average" as mean</li> </ul>	ACTIVITIES  I. The TV is On II. A Mean Score	
VOCABULARY  o Average	PRACTICE  Mental Mean	Practice finding the mean without pen and paper
Tier 2 o Mean o Outlier	Among Friends	Practice finding the mean and using it for comparisons
Tier 3 o Test Words o		Preparation for Lesson 8
INTERACTIVE STRATEGY	EXTENSION	
° WRITING TOPIC	The Nurse's Mean	Practice using mean to communicate a point
<ul> <li>List some ways to find the mean.</li> <li>What words will help you remember the idea of mean?</li> <li>When would you use a mean?</li> </ul>	LESSON REVIEW Test Practice page 97	
WRITING PRACTICE		

MANY POINTS MAKE A POINT	LESSON 8: MYSTERY CITIES
MATERIALS	BEFORE LESSON
o EMPower pages 99 - 110	
O B J E C T I V E S	ACTIVITIES
Read and interpret two sets of data on one graph  Match tout describing transle over time with	I. Reading Climate Graphs II. Mystery Cities
<ul> <li>Match text describing trends over time with graphs of the same phenomena</li> </ul>	PRACTICE
<ul> <li>Compare data across graphs of different scales</li> </ul>	Incomplete Climate Graphs Practice completing graphs
VOCABULARY	
Tier 2 o Climate Graph o Precipitation	
Tier 3 o	EXTENSION
Test Words o	Quality of Life 1 and Quality of Practice creating a graph with two Life 2 kinds of information
INTERACTIVE STRATEGY	
0	LESSON REVIEW
WRITING TOPIC	Test Practice page 109
<ul> <li>What do you want to remember about graphs that show two learned in math class that helped you read climate graphs?</li> </ul>	
WRITING PRACTICE	
0	

MANY POINTS MAKE A POINT	LESSON 9: MEDIAN
MATERIALS	BEFORE LESSON
o EMPower pages 111 - 120	
O B J E C T I V E S	ACTIVITIES
<ul> <li>Find the median for a data set with an odd number of data points</li> </ul>	I. Line Up II. At the Party
<ul> <li>Find the median for a data set with an even number of data points</li> </ul>	PRACTICE
<ul> <li>Present a possible data set given the median</li> </ul>	Finding the Median
VOCABULARY	
Tier 2 o Median	
Tier 3 o	
Test Words o	EXTENSION
INTERACTIVE STRATEGY	The Average Wage Practice contrasting the mean and median wages
0	Mean or Median
WRITING TOPIC	LESSON REVIEW
<ul> <li>What are three main points to remember about the median?</li> <li>How is the median different from the mean?</li> <li>How is the median different from the mode?</li> </ul>	Test Practice page 118
WRITING PRACTICE	
0	

MANY POINTS MAKE A POINT		LESSON 10: STOCK PRICES
MATERIALS	BEFORE LESSON	
o EMPower pages 121 - 132		
OBJECTIVES	ACTIVITIES	
<ul> <li>Use tables and graphs to understand complex information</li> </ul>	I. Three Companies II. Altering Scale	
<ul> <li>Apply an understanding of scale to compare information about different companies</li> </ul>	PRACTICE	
<ul> <li>Use information from graphs to create tables</li> </ul>	More Stocks	From graphs to table
V O C A B U L A R Y	From Graphs to Stories	Stock prices
o Stocks o Shares Tier 2 o Stock Market o Approximate o Table  Tier 3 o  Test Words o  INTERACTIVE STRATEGY o  WRITING TOPIC o What new information did you learn about the stock market?	EXTENSION  What Is New with the Stock Market?  LESSON REVIEW  Test Practice page 131	Practice doing research
<ul><li>What are you curious about?</li><li>WRITING PRACTICE</li></ul>		
0		

MANY POINTS MAKE A POINT	CLOSING THE UNIT: STOCK PICKS
MATERIALS	BEFORE LESSON
o EMPower pages 133 - 140	
O B J E C T I V E S	ACTIVITIES
<ul> <li>Evaluate information and make recommendations</li> <li>Make an oral presentation demonstrating</li> </ul>	I. Stock Picks II. Review Session III. Final Assessment
an understanding of change over time and the usefulness of tables and graphs, text,	PRACTICE
<ul><li>and scale to analyze data</li><li>Read and solve problems involving data and graphs</li></ul>	
VOCABULARY	
Tier 2 o	
Tier 3 o	EXTENSION
Test Words o	
INTERACTIVE STRATEGY	LESSON REVIEW
0	Test Practice page
WRITING TOPIC	
0	
WRITING PRACTICE	
0	

MATERIALS	BEFORE LESSON
0	
O B J E C T I V E S	ACTIVITIES
0	
VOCABULARY	PRACTICE
Tier 2 o	
Tier 3 o	
Test Words o	
INTERACTIVE STRATEGY	
0	EXTENSION
WRITING TOPIC	
0	LESSON REVIEW
WRITING PRACTICE	
0	Test Practice page