

Math Connects

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STANDARDS	PAGE REFERENCES
Fourth Grade Algebra Grade Standards, Supporting Skills, and Examples	
Indicator 1: Use procedures to transform algebraic expressions.	
<p>4.A.1.1. Students are able to simplify whole number expressions involving addition, subtraction, multiplication, and division.</p> <p>Examples: Simplify $3(2 \times 5)$</p>	<p>Student Edition: <i>Check What You Know</i> 194 #1-#3, 215 #1-#3 <i>Concepts and Skills Bank</i> R56 <i>Example</i> 194, 214 <i>Extra Practice</i> R12, R14 <i>Game Time</i> 217 <i>Practice and Problem Solving</i> 195 #9-#24, 216 #11-#19 <i>Study Guide and Review</i> 225 #8-#11, 229 #37-#40</p> <p>Teacher Edition: AE 194, 215</p>

STANDARDS	PAGE REFERENCES
<p>4.A.1.2. Students are able to recognize and use the commutative property of addition and multiplication.</p> <p>Example: What property is 3×4?</p> <ul style="list-style-type: none"> Use models to identify commutative property. <p>Example: area models (3×5 and 5×3)</p>	<p>Student Edition: <i>Check What You Know</i> 56 #3-#6 <i>Key Concept</i> 55, 150 <i>Practice and Problem Solving</i> 57 #9, #14-#19 <i>Real-World Example</i> 273</p> <p>Teacher Edition: ATS 56, 151; I 55, 150</p>
<p>4.A.1.3. Students are able to relate the concepts of addition, subtraction, multiplication, and division to one another.</p> <p>Examples: Solve for n.</p> <ol style="list-style-type: none"> $6 + n = 10$ $10 - n = 6$ $2 \times n = 12$ $12 \div n = 2$ 	<p>The concepts on the following page references can be expanded through teacher/class discussion to meet this standard.</p> <p>Student Edition: 145-149, 160-162</p>
<p>Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.</p>	
<p>4.A.2.1. Students are able to select appropriate relational symbols (<, >, =) to make number sentences true.</p> <p>Example: Complete the number sentence.</p> $15 + 23 \square 82 - 38$	<p>The concepts on the following page references can be expanded to meet this standard.</p> <p>Student Edition: 28-30, 193-195</p>
<p>4.A.2.2. Students are able to simplify a two-step equation using whole numbers.</p> <p>Example: Solve for n.</p> $6 + n = 15 + 8$	<p>The concepts on the following page references can be expanded to include two-step equations to meet this standard.</p> <p>Student Edition: 198-201</p>
<p>Indicator 3: Interpret and develop mathematical models.</p>	
<p>4.A.3.1. Students are able to write and solve number sentences that represent one-step word problems using whole numbers.</p> <p>Example: Bike Safety booklets are free at the Community Day Fair. Twenty-one booklets have been put into three equal groups. How many booklets are in each group?</p> <ul style="list-style-type: none"> Use multiple methods, such as physical models, tables and charts, the number line, and graphs. 	<p>Student Edition: <i>Check What You Know</i> 199 #7 <i>Explore</i> 197-198 <i>Real-World Example</i> 199 <i>Real-World Problem Solving</i> 200</p> <p>Teacher Edition: AE 199; IWO 198B; SGO 198B</p>

STANDARDS

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Indicator 4: Describe and use properties and behaviors of relations, functions, and inverses.

4.A.4.1. Students are able to solve problems involving pattern identification and completion of patterns.

Example: Complete the table.

Input	Output
2	4
6	8
8	

Example: What are the next two numbers in the sequence?

Sequence: 1, 3, 7, 13, ,

√ Describe a rule for given patterns.

Examples:

1) Describe the rule for the table below.

<i>Input</i>	<i>Output</i>
2	4
6	8

2) Describe the rule for the sequence below.

Sequence: 1, 3, 7, 13, ,

Student Edition:

Chapter Test 231 #15, #16

Check What You Know 209, 221

Extra Practice R14, R15

Practice and Problem Solving 210, 222

Real-World Example 209, 220, 221

Real-World Problem Solving 210, 222

Study Guide and Review 228, 230 #48, #49

Test Practice 211, 223, 232 #4, #7-#9, #11, #12

Teacher Edition:

AE 209, 221; ATS 209, 221; SGO 208B, 220B

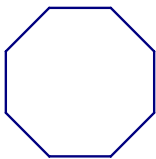
Fourth Grade Geometry
Grade Standards, Supporting Skills, and Examples**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**

4.G.1.1. Students are able to identify the following plane and solid figures: pentagon, hexagon, octagon, pyramid, rectangular prism, and cone.

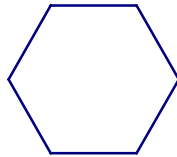
Example:

Identify each polygon.

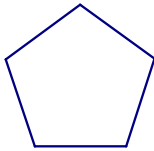
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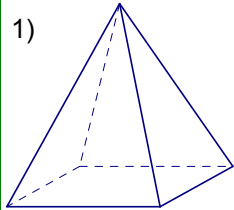


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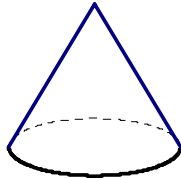
**Example:**

Identify each solid figure.

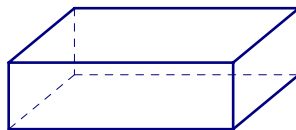
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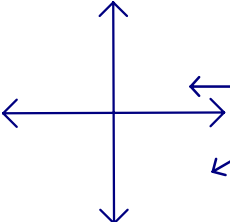
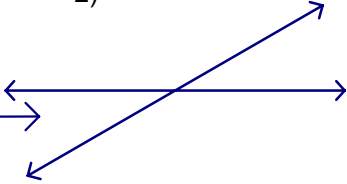
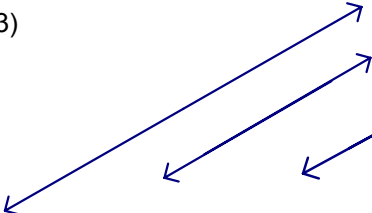
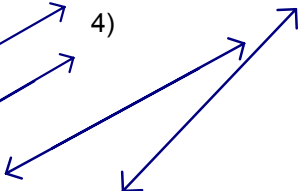
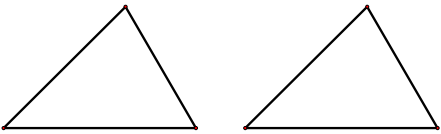
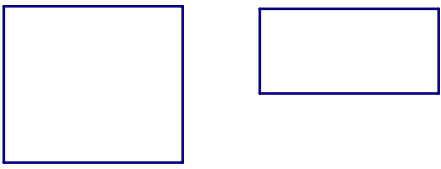


2)



3)

**Student Edition:***Check What You Know* 360, 363*Extra Practice* R23*Key Concept* 359, 362*Practice and Problem Solving* 361, 364*Real-World Example* 359, 362*Start Smart* 10-11*Study Guide and Review* 385*Test Practice* 390 #7, #8**Teacher Edition:**AE 360, 363; ATS 363; ELL 362B; IWO 359B;
TOD 361

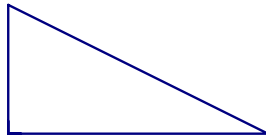
STANDARDS	PAGE REFERENCES
<p>4.G.1.2. Students are able to identify parallel, perpendicular, and intersecting lines.</p> <p>Example: Identify the following lines as parallel, perpendicular, or neither.</p> <p>1) </p> <p>2) </p> <p>3) </p> <p>4) </p>	<p>Student Edition: <i>Check What You Know</i> 402 <i>Example</i> 401 <i>Key Concept</i> 401 <i>Practice and Problem Solving</i> 402 <i>Study Guide and Review</i> 429 #12-#15 <i>Test Practice</i> 403 #23, 435 #1, #3</p> <p>Teacher Edition: AE 401; ATS 401; IWO 400B; SGO 400B</p>
<p>Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.</p>	
<p>4.G.2.1. Students are able to compare geometric figures using size, shape, orientation, congruence, and similarity.</p> <p>Example: Which pair is congruent?</p> <p>(a) </p> <p>(b) </p>	<p>Student Edition: <i>Chapter Test</i> 433 #8, #9 <i>Check What You Know</i> 410 <i>Concepts and Skills Bank</i> R65 <i>Example</i> 418 <i>Extend</i> 421 <i>Extra Practice</i> R27 <i>Get Ready to Learn</i> 418 <i>Practice and Problem Solving</i> 420 <i>Real-World Example</i> 418 <i>Study Guide and Review</i> 432 #29-#31</p> <p>Teacher Edition: AE 419; ATS 419; SGO 418B</p>

STANDARDS**PAGE REFERENCES**

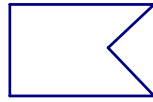
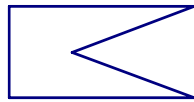
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4.G.2.1. Students are able to compare geometric figures using size, shape, orientation, congruence, and similarity.**Example:** Which pair is similar?

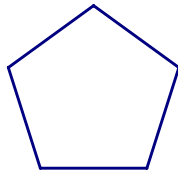
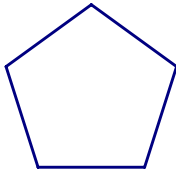
(a)



(b)

**Example:** Label the following figures as similar or congruent.

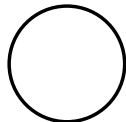
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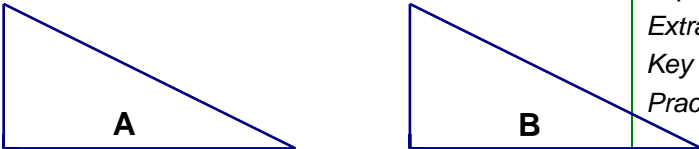


√ Identify lines of symmetry in rectangles, squares, and triangles.

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Student Edition:*Chapter Test* 433 #8, #9*Check What You Know* 410*Concepts and Skills Bank* R65*Example* 418*Extend* 421*Extra Practice* R27*Get Ready to Learn* 418*Practice and Problem Solving* 420*Real-World Example* 418*Study Guide and Review* 432 #29-#31**Teacher Edition:**

AE 419; ATS 419; SGO 418B

STANDARDS	PAGE REFERENCES
<p>4.G.2.2. Students are able to identify a slide (translation) of a given figure.</p> <p>Example: Tell how the triangle was moved from Position A to Position B.</p>  <p>✓ Identify Flips and Turns</p>	<p>Student Edition: <i>Check What You Know</i> 414 <i>Example</i> 412, 413 <i>Explore</i> 410-411 <i>Extra Practice</i> R26 <i>Key Concept</i> 413 <i>Practice and Problem Solving</i> 414</p> <p><i>Real-World Example</i> 413</p> <p>Teacher Edition: AE 413; ATS 413; IWO 412B; SGO 412B</p>

**Fourth Grade Measurement
Grade Standards, Supporting Skills, and Examples**


Indicator 1: Apply measurement concepts in practical applications.

<p>4.M.1.1. Students are able to identify equivalent periods of time and solve problems.</p> <p>Example: Identify relationships among days, months, and years; hours and minutes; a.m. and p.m.</p> <ol style="list-style-type: none"> 1) How many days are there in a year? 2) How many minutes are there in an hour? 3) How many months are there in three years? <ul style="list-style-type: none"> • Measure time using fractions to $\frac{1}{4}$. <p>Example: Identify fractions of an hour and fractions of a year.</p> <ol style="list-style-type: none"> 1) How many months equal a $\frac{1}{4}$ of a year? 2) How many minutes equal $\frac{1}{4}$ of an hour? 3) It is a quarter to four. Write the time in digital form. 	<p>Student Edition: <i>Check What You Know</i> 274 #7 <i>Concepts and Skills Bank</i> R63 <i>Real-World Example</i> 252</p>
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STANDARDS	PAGE REFERENCES
<p>4.M.1.2. Students are able to solve problems involving money including unit conversion.</p> <ul style="list-style-type: none"> Use of proper notation. Example: Roberta had six quarters, three dimes, and fourteen pennies. How much money did she have in all? <p>√ <i>Determine total costs as a function of the number of units and the per unit cost.</i> <i>Example: What is the total cost of 3 pencils that cost 5 cents each?</i></p>	<p>See <i>Math Connects Grade 3</i> © 2009</p> <p>Student Edition: 52-55, 82-85, 616-621</p>
<p>4.M.1.3. Students are able to use scales of length, temperature, capacity, and weight.</p> <ul style="list-style-type: none"> Select and use the most appropriate U.S. Customary units for given measurement situations. Examples: Use a ruler to find the length of the line segment below to the nearest quarter inch. <p style="text-align: center;">_____</p>	<p>Student Edition: <i>Activity</i> 469 <i>Check What You Know</i> 442, 470 #1, #2, 487, 499 <i>Explore</i> 485, 496-497 <i>Extra Practice</i> R28 <i>Key Concept</i> 441 <i>Practice and Problem Solving</i> 443, 470 #7-#12, 488, 500 <i>Real-World Example</i> 441, 442, 468, 486, 487, 498, 499</p> <p>Teacher Edition: AE 442, 487, 499; ATS 469, 487, 499; IWO 441B, 468B; SGO 441B, 498B</p>
<p>4.M.1.4. Students are able to measure length to the nearest quarter inch.</p> <ul style="list-style-type: none"> Estimate length to the nearest inch. <p>√ <i>Measure to the nearest centimeter.</i></p>	<p>Student Edition: <i>Check What You Know</i> 442 <i>Explore</i> 439-440 <i>Practice and Problem Solving</i> 443</p> <p>Teacher Edition: A 443; ATS 442</p>

STANDARDS	PAGE REFERENCES
Fourth Grade Number Sense Grade Standards, Supporting Skills, and Examples	
Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	
<p>4.N.1.1. Students are able to read, write, order, and compare numbers from .01 to 1,000,000.</p> <ul style="list-style-type: none"> Read and write word names and the appropriate symbols in mathematical sentences. Use expanded form notation. 	<p>Student Edition: 18 <i>Check What You Know</i> 18, 23, 29, 33, 591 <i>Example</i> 18, 591 <i>Explore</i> 20-21 <i>Game Time</i> 35 <i>Practice and Problem Solving</i> 19, 24, 30, 34, 592 <i>Real-World Example</i> 22, 23, 28, 29, 32, 33, 590</p> <p>Teacher Edition: ATS 23, 29, 33, 591; IWO 32B, 590B; SGO 28B, 32B, 590B</p>
<p>4.N.1.2. Students are able to find multiples of whole numbers through 12.</p> <p>√ <i>Factors of the numbers (1-24).</i></p>	<p>Student Edition: 177 <i>Chapter Test</i> 187 #15, #16 <i>Check What You Know</i> 177 #5-#8 <i>Example</i> 177 <i>Extra Practice</i> R12 <i>Practice and Problem Solving</i> 178 #19-#26 <i>Study Guide and Review</i> 186 #64-#67</p>
<p>4.N.1.3. Students are able to use a number line to compare numerical value of fractions or mixed numbers (fourths, halves, and thirds).</p> <ul style="list-style-type: none"> Identify improper fractions, proper fractions, and mixed numbers. <p>√ <i>Demonstrate that a mixed number is a whole number plus a fraction.</i></p>	<p>Student Edition: <i>Check What You Know</i> 555 <i>Example</i> 555 <i>Practice and Problem Solving</i> 536 <i>Real-World Example</i> 554</p>
<p>4.N.1.4. Students are able to interpret negative integers in temperature.</p>	<p>The concepts on the following page references can be expanded to meet this standard.</p> <p>Student Edition: 468-471</p>

STANDARDS	PAGE REFERENCES
Indicator 2: Apply number operations within the set of real numbers.	
<p>4.N.2.1. Students are able to find the products of two-digit factors and quotient of two natural numbers using a one-digit divisor.</p> <ul style="list-style-type: none"> Recall and apply multiplication and division facts through the 12s. 	<p>Student Edition: <i>Check What You Know</i> 285, 328 <i>Extra Practice</i> R18, R21 <i>Practice and Problem Solving</i> 286, 328 <i>Real-World Example</i> 284, 285, 326, 327 <i>Study Guide and Review</i> 303 #25-#33, 349 #32-#37</p> <p>Teacher Edition: AE 285, 327; ATS 285, 327; IWO 284B; SGO 284B, 326B</p>
<p>4.N.2.2. Students are able to add and subtract decimals with the same number of decimal places.</p>	<p>Student Edition: <i>Check What You Know</i> 631, 639 <i>Explore</i> 628-629, 636-637 <i>Extra Practice</i> R40, R41 <i>Mid-Chapter Check</i> 633 #14-#16 <i>Practice and Problem Solving</i> 632, 640 <i>Real-World Example</i> 630, 631, 638, 639 <i>Study Guide and Review</i> 647 #28-#32, 648</p> <p>Teacher Edition: AE 631, 639; ATS 631, 639; IWO 630B; SGO 630B</p>
Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	
<p>4.N.3.1. Students are able to estimate sums and differences in whole numbers and money to determine if a given answer is reasonable.</p>	<p>Student Edition: <i>Check What You Know</i> 59, 623 <i>Example</i> 58, 59 <i>Key Concept</i> 622, 623 <i>Practice and Problem Solving</i> 60, 524 <i>Real-World Example</i> 58, 622, 623 <i>Study Guide and Review</i> 85 #11-#16</p> <p>Teacher Edition: AE 59; ATS 59, 623; IWO 58B; SGO 58B, 622B</p>

STANDARDS	PAGE REFERENCES
Fourth Grade Statistics & Probability Grade Standards, Supporting Skills, and Examples	
Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.	
<p>4.S.1.1. Students are able to interpret data from graphical representations and draw conclusions.</p> <p>Examples: bar graph, line graph, pictograph, line plot.</p>	<p>Student Edition: <i>Check What You Know</i> 105, 109 <i>Example</i> 108, 109 <i>Practice and Problem Solving</i> 106, 110 <i>Real-World Example</i> 104 <i>Real-World Problem Solving</i> 106</p> <p>Teacher Edition: AE 105, 109; ATS 109; IWO 108B; SGO 104B</p>
<p>4.S.1.2. Given a small ordered data set of whole number data points (odd number of points), students are able to identify the median, mode, and range.</p> <p>Example: Given the following data set, determine the median, mode, and range. 1, 1, 2, 3, 5</p>	<p>Student Edition: 98 <i>Check What You Know</i> 99 <i>Practice and Problem Solving</i> 100 <i>Real-World Example</i> 98 <i>Test Practice</i> 101</p> <p>Teacher Edition: AE 99; ATS 99; SGO 98B</p>
Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.	
<p>4.S.2.1. Students are able to determine the probability of simple events limited to equally likely and not equally likely outcomes.</p> <p>Example: Is it equally likely or not equally likely the spinner will land on black?</p> 	<p>Student Edition: 128 <i>Check What You Know</i> 129 <i>Example</i> 128 <i>Extra Practice</i> R9 <i>Practice and Problem Solving</i> 130 <i>Real-World Example</i> 129</p> <p>Teacher Edition: ATS 129; IWO 128B; SGO 128B</p>