

CPS Benchmark Assessment - Spring 2008 - Grade 8

This table is a resource created to expand students' understanding of the concepts covered by the CPS Benchmark Assessment. Benchmark questions and related concepts are listed in columns 1 and 2. Column 3 displays the state learning goal related to the concept. Column 4 displays the path students follow at <http://countdown.luc.edu> to access movies relevant to the concept covered by the question. Instructional movies can be viewed FREE of charge as many times as a student desires. (NCTM standards are in the left margin of the Countdown homepage → their categories show underneath → these link to lists of movie titles.)

Question #	Concept	State Learning Goal #	NCTM Standard → Category → Movie Title
1	Percent	6	<ul style="list-style-type: none"> • Number & Operations → Proportion & Percent → Calculating Percent • Number & Operations → Proportion & Percent → Word Problem Calculating Original Price
2	Pythagorean theorem	9	<ul style="list-style-type: none"> • Algebra → Variables → Countdown Activity: Pythagorean Theorem* • Algebra → Variables → Pythagorean Theorem Computation • Algebra → Variables → Pythagorean Theorem Defined • Algebra → Variables → Pythagorean Theorem: Equations • Algebra → Variables → Pythagorean Theorem Illustrated* • Algebra → Variables → Pythagorean Theorem: Intro • Algebra → Variables → Pythagorean Theorem Puzzle*
3	Algebraic expressions	8	<ul style="list-style-type: none"> • Algebra → Variables → Countdown Challenge: The Language of Algebra* • Algebra → Variables → Translating English to Algebra • Algebra → Variables → Generating Equations: Part 1 • Algebra → Variables → Generating Equations: Part 2 • Algebra → Variables → Generating Equations: Part 3
4	Measurement instrument	7	<i>No movie available at this time</i>
5	Algebraic expressions	6	<ul style="list-style-type: none"> • Algebra → Variables → Countdown Challenge: The Language of Algebra* • Algebra → Variables → Translating English to Algebra • Algebra → Variables → Generating Equations: Part 1 • Algebra → Variables → Generating Equations: Part 2 • Algebra → Variables → Generating Equations: Part 3
6	Ratio	6	<ul style="list-style-type: none"> • Number & Operations → Ratio → Writing Ratios: Intro* • Number & Operations → Ratio → Writing Ratios • Number & Operations → Ratio → Solving Ratio Problem • Number & Operations → Proportion & Percent → Proportions: Solving for n

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7	Parallelogram, Coordinate Plane, Transformations	9	
8	Substitution	8	<ul style="list-style-type: none"> • Algebra → Variables → Substitution Principle: Part 1* • Algebra → Variables → Substitution Principle: Part 2* • Algebra → Variables → Substitution Practice*
9	Scatter plots	10	<ul style="list-style-type: none"> • Data Analysis & Probability → Graphs → Scatter Plot: Creating* • Data Analysis & Probability → Graphs → Scatter Plot: Decoding
10	$Y=mx+b$	6	<ul style="list-style-type: none"> • Algebra → Equations & Graphing → Y Intercept & Slope* • Algebra → Equations & Graphing → Using $y=mx+b$: Runner 1* • Algebra → Equations & Graphing → Using $y=mx+b$: Runner 2*
11	Simplification of algebraic fractions	8	<ul style="list-style-type: none"> • Algebra → Algebra 1 → Simplifying Algebraic Fractions: Binomials Part 1 • Algebra → Algebra 1 → Simplifying Algebraic Fractions: Binomials Part 2 • Algebra → Algebra 1 → Simplifying Algebraic Fractions: Binomials Part 3 • Connections → Literature → Finding Square Roots • Connections → Literature → Perfect Square Numbers • Connections → Literature → Square Roots on the Computer
12	Irrational numbers	6	<ul style="list-style-type: none"> • Number & Operations → Integers → Irrational Numbers on the Computer
13	Number sequence	8	<ul style="list-style-type: none"> • Algebra → Patterns → Geometric Sequence Whole Number • Number & Operations → Whole Numbers → Working with Patterns*
14	Fundamental counting principle	6	<ul style="list-style-type: none"> • Number & Operations → Number Theory → Fundamental Counting Principle on the Computer: Tree Diagram
15	Cube numbers	8	<ul style="list-style-type: none"> • Algebra → Patterns → Cube Number Sequence* • Algebra → Patterns Number → Sequences Part 2: Computer
16	Median	10	<ul style="list-style-type: none"> • Data Analysis & Probability → Statistics → Vocabulary Median • Data Analysis & Probability → Statistics → Median • Data Analysis & Probability → Statistics → Median: Part 2
17	Proportion with a circle	7	<ul style="list-style-type: none"> • Measurement → Circles & Angles → Exploring Angles Using a Clock • Measurement → Circles & Angles → Circumference Problems • Number & Operations → Proportion & Percent → Using Proportions

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18	Substitution	8	<ul style="list-style-type: none"> • Algebra → Variables → Substitution Principle: Part 1* • Algebra → Variables → Substitution Principle: Part 2* • Algebra → Variables → Substitution Practice*
19	Line graph, Y-intercept and slope	8	<ul style="list-style-type: none"> • Data Analysis & Probability → Graphs → Pictogram, Bar & Line* • Algebra → Equations & Graphing → Y Intercept & Slope* • Algebra → Equations & Graphing → Using $y=mx+b$: Runner 1* • Algebra → Equations & Graphing → Using $y=mx+b$: Runner 2*
20	Similar figures, proportion	6	<ul style="list-style-type: none"> • Measurement → Area & Perimeter → Area and Perimeter* • Number & Operations → Proportion & Percent → Proportions: Similar Figures* • Geometry → Congruence & Similarity → Similar Figures: Explanation • Geometry → Congruence & Similarity → Similar Figures: Proof • Number & Operations → Ratio → Writing Ratios: Intro* • Number & Operations → Ratio → Writing Ratios • Number & Operations → Ratio → Solving Ratio Problem • Number & Operations → Proportion & Percent → Proportions: Solving for n
21	Similar figures, proportion	6	<ul style="list-style-type: none"> • Measurement → Area & Perimeter → Area and Perimeter* • Number & Operations → Proportion & Percent → Proportions: Similar Figures* • Geometry → Congruence & Similarity → Similar Figures: Explanation • Geometry → Congruence & Similarity → Similar Figures: Proof • Number & Operations → Ratio → Writing Ratios: Intro* • Number & Operations → Ratio → Writing Ratios • Number & Operations → Ratio → Solving Ratio Problem • Number & Operations → Proportion & Percent → Proportions: Solving for n
22	Express as variable	8	<ul style="list-style-type: none"> • Algebra → Equations & Graphing → Using the Addition Property of Equality
23	Commutative	8	<ul style="list-style-type: none"> • Algebra → Variables → Variables: Equivalents • Algebra → Variables → Variables: Properties
24	Congruent angles	9	<ul style="list-style-type: none"> • Geometry → Lines & Angles → Congruent Angles • Geometry → Lines & Angles → Complementary/Supplementary Angles: Measuring • Geometry → Lines & Angles → Complementary/Supplementary Angles: Computation • Geometry → Lines & Angles → Congruent Angles

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25	Two-step word problem	6	<ul style="list-style-type: none"> Number & Operations → Whole Numbers → Computation Vocabulary*
26	Graph basics	10	<ul style="list-style-type: none"> Data Analysis & Probability → Graphs → Graph Basics
27	Surface area of cylinder	7	<ul style="list-style-type: none"> Measurement → Solids → Volume: Cylinders & Prisms* Measurement → Solids → CDC: Volume of Cylinders and Cones Measurement → Solids → Volume & Surface Area* Measurement → Area & Perimeter → Formula: Area of a Rectangle Part 1 Measurement → Circles & Angles → Area of a Circle*
28	Sum of interior angles of polygons	9	<ul style="list-style-type: none"> Geometry → Two Dimensional Shapes → Sum of Interior Angles: Triangles Part 1 Geometry → Two Dimensional Shapes → Sum of Interior Angles: Triangles Part 2 Geometry → Two Dimensional Shapes → Sum of Interior Angles: Polygons Geometry → Two Dimensional Shapes → Sum of Interior Angles: Quadrilaterals
29	Perimeter, Circumference	7	<ul style="list-style-type: none"> Measurement → Area & Perimeter → Area and Perimeter* Measurement → Circles & Angles → Circumference of a Circle Measurement → Circles & Angles → Circumference Problem
30	Simplifying polynomials	8	<ul style="list-style-type: none"> Algebra → Simplification → Simplification 1* Algebra → Simplification → Defining Algebraic Expressions Algebra → Simplification → Matching Coefficients
31	Proportions	6	<ul style="list-style-type: none"> Measurement → Scale → Using Proportions for Scale Drawings
32	Solving Inequalities	8	<ul style="list-style-type: none"> Algebra → Inequalities & Graphing → Algebraic Intro to Inequalities Algebra → Inequalities & Graphing → Solution Set: $-3 \leq x < 3$ Algebra → Equations & Graphing → Solving: $x + 4 > 6$
33	Rules of exponents	8	<i>No movies available at this time</i>
34	Venn diagram	6	<ul style="list-style-type: none"> Extended Response → Number & Operations → Venn Diagrams
35	Percent	6	<ul style="list-style-type: none"> Number & Operations → Proportion & Percent → Calculating Percent Number & Operations → Proportion & Percent → “Percent of.” Part 1 Number & Operations → Proportion & Percent → “Percent of.” Part 2 Number & Operations → Proportion & Percent → Proportions: Solving for n

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36	Pythagorean Theorem	9	<ul style="list-style-type: none"> • Algebra → Variables → Countdown Activity: Pythagorean Theorem* • Algebra → Variables → Pythagorean Theorem Computation • Algebra → Variables → Pythagorean Theorem Defined • Algebra → Variables → Pythagorean Theorem: Equations • Algebra → Variables → Pythagorean Theorem Illustrated • Algebra → Variables → Pythagorean Theorem: Intro • Algebra → Variables → Pythagorean Theorem Puzzle*
37	Making a circle graph	10	<ul style="list-style-type: none"> • Data Analysis & Probability → Graphs → Reading Circle Graphs* • Data Analysis & Probability → Graphs → Naming Angles on a Circle Graph • Data Analysis & Probability → Graphs → Calculating Angles for a Circle Graph
38	Tree Diagrams	10	<ul style="list-style-type: none"> • Number & Operations → Number Theory → Fundamental Counting Principle on the Computer: Tree Diagram
39	Functions	8	<ul style="list-style-type: none"> • Algebra → Algebra 1 → Function Tables • Algebra → Algebra 1 → Countdown Challenge: Functions
40	Probability of successive events	10	<ul style="list-style-type: none"> • Data Analysis & Probability → Probability → Successive Dependent Events • Data Analysis & Probability → Probability → Countdown Challenge: Successive Events - Independent
41	Complementary and supplementary angles	9	<ul style="list-style-type: none"> • Geometry → Lines & Angles → Complementary/Supplementary Angles: Definition • Geometry → Lines & Angles → Complementary/Supplementary Angles: Measuring • Geometry → Lines & Angles → Complementary/Supplementary Angles: Computation
42	Sum of interior angles of polygons	9	<ul style="list-style-type: none"> • Geometry → Two Dimensional Shapes → Sum of Interior Angles: Triangles Part 1 • Geometry → Two Dimensional Shapes → Sum of Interior Angles: Triangles Part 2

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43	Mean, Median, Mode, Range	10	<ul style="list-style-type: none"> • Data Analysis & Probability → Statistics → Vocabulary Mean* • Data Analysis & Probability → Statistics → Mean* • Data Analysis & Probability → Statistics → Mean: Part 2 • Data Analysis & Probability → Statistics → Vocabulary Median • Data Analysis & Probability → Statistics → Median • Data Analysis & Probability → Statistics → Median: Part 2 • Data Analysis & Probability → Statistics → Vocabulary Mode • Data Analysis & Probability → Statistics → Mode • Data Analysis & Probability → Statistics → Mode: Part 2 • Data Analysis & Probability → Statistics → Vocabulary Range • Data Analysis & Probability → Statistics → Range • Data Analysis & Probability → Statistics → Range: Part 2
44	Comparing area	7	<ul style="list-style-type: none"> • Measurement → Games & Puzzles → Comparing Area • Measurement → Circles & Angles → Using a Formula for the Area of a Circle
45	Spatial visualization	9	<ul style="list-style-type: none"> • Geometry → Three Dimensional Shapes → Spatial Visualization: Part 1 • Geometry → Three Dimensional Shapes → Spatial Visualization: Part 2 • Geometry → Three Dimensional Shapes → Spatial Visualization: Part 3 • Geometry → Three Dimensional Shapes → Spatial Visualization: Part 4