Teacher Survey: K-12 Mathematics

COGNITIVE DEMAND LEVEL DEFINITIONS

Memorize/Recall: Level B

- Recite basic math facts
- Recall mathematics terms and definitions
- Recall formulas and computational procedures

Perform Procedures : Level C

- Use numbers to count, order, or denote
- Do computation procedures or algorithms
- Follow the steps in mathematical procedure or apply a formula
- Solve equations and routine word problems
- Follow procedures to organize or display data
- Read or produce graphs and tables
- Execute geometric constructions

Demonstrate/Communicate Understanding: Level D

- Communicate understanding of mathematical concepts
- Use representations to model mathematical concepts, relationships, and/or operations
- Explain findings and results from data analysis
- Develop and explain relationships between concepts and/or operations
- Show or explain relationships between models, diagrams, and/or other representations

Justify/Evaluate: Level E

- Determine the truth of a mathematical proposition
- Justify a mathematical solution, conclusion, or claim
- Write formal or informal proofs
- Identify faulty arguments or misrepresentations of data
- Make and investigate mathematical conjectures
- Reason inductively or deductively
- Determine the reasonableness of mathematical solutions (e.g. by using mental strategies or estimation)

Generalize: Level F

- Recognize, generate, or create patterns
- Find a mathematical rule to generate a pattern or number sequence
- Apply and extend mathematical properties to new contexts (e.g. extend understanding of whole-number addition to decimal addition; extend understanding of the distributive property in whole-number multiplication to multiplication of two binomials)

Apply to Real-World Problems: Level G

- Apply mathematics to solve non-routine, real-world problems
- Apply mathematics in contexts outside of mathematics

Level of Coverage & Cognitive Demand

Step 1: Indicate <u>level of coverage</u> for each topic.

Considering all of your Mathematics instruction over the last year, what level of coverage did you give to each of the following topics?

0	1	2	3	4	5	6
no coverage		**minor coverage**		**moderate coverage**		**major coverage**
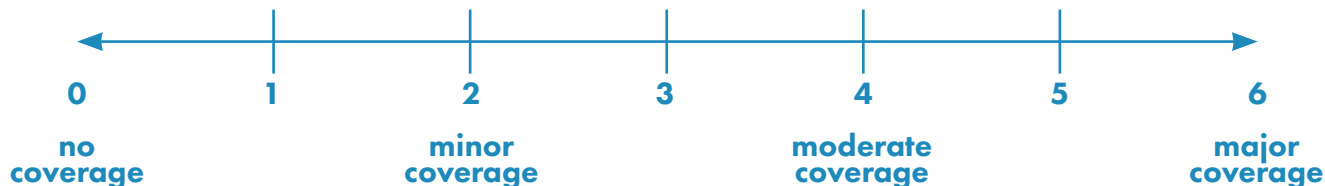
Step 2: Indicate <u>cognitive demand emphasis</u>

For each topic you covered, indicate the level of cognitive demand emphasis. (0=no focus, 1= minor focus, 2= moderate focus, 3 = major focus; **note: for each topic, only one value of 3 (major focus) may be selected**).

Example							
Level of Coverage		**Cognitive Demand Emphasis**					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	138. Add/subtract whole numbers and integers	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Meaning of addition	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Strategies and models for addition	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
Operations						
Whole number operations						
⓪①②③④⑤⑥ Add/subtract whole numbers and integers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Meaning of addition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Strategies and models for addition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Place value algorithm for addition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Standard algorithm for addition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Number facts for addition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Meaning of subtraction	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Strategies and models for subtraction	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Place value algorithm for subtraction	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Standard algorithm for subtraction	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Number facts for subtraction	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Multiply whole numbers and integers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Meaning of multiplication	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Strategies and models for multiplication	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Place value algorithm for multiplication	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Standard algorithm for multiplication	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Number facts for multiplication	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Divide whole numbers and integers	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Meaning of division	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Strategies and models for division	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Place value algorithm for division	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Standard algorithm for division	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Number facts for division	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Combinations of operations on whole numbers or integers (e.g., 14+25*7)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Order of operations	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
Fraction, decimal, and percent operations							
⓪ ① ② ③ ④ ⑤ ⑥	Equivalent and non-equivalent fractions	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥	Add/subtract fractions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Multiply fractions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Divide fractions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Combinations of operations on fractions (e.g., ½* ¾ + ¼)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Ratio and proportion	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Representations of fractions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Equivalence of decimals, fractions, and percents	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Add/subtract decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Multiply decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Divide decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Combinations of operations on decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Computing with percents	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Computing with exponents and radicals (e.g., square roots)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Absolute value	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
Number Sense/Properties/Relationships						
⓪①②③④⑤⑥ Place value	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Whole numbers and integers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Fractions as a number	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Percents	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Real and/or rational numbers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Exponents and scientific notation	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Factors, multiples, and divisibility	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Odd/even/prime/ composite/ square numbers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Estimation	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Rounding	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Comparisons of two or more whole numbers and/or integers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Number comparisons of fractions and/or decimals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥ Opposites, reciprocals, identities	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Compose and decompose whole numbers	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Compose and decompose fractions	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Compose and decompose decimals	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Relationships between operations (e.g., addition is inverse of subtraction)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Base-ten and non-base-ten systems	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Mathematical properties (e.g., distr. property)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Measurement

Level of Coverage	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥ Use of measuring instruments	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Measurement theory (e.g., arbitrariness of measures, standard units, unit size)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Conversions	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Metric (SI) system	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Length and perimeter	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Area and volume	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Surface area	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Direction, location, and navigation	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Angle measure	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Circles (e.g., pi, radius, and area)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Mass (weight)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Time	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Temperature	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Money	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Derived measures (e.g., rate and speed)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Calendar	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Accuracy and precision in measurement	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
Consumer Applications							
⓪ ① ② ③ ④ ⑤ ⑥	Simple interest	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Compound interest	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Rates (e.g., discount and commission)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥ Spreadsheets	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Personal financial literacy	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Basic Algebra						
⓪①②③④⑤⑥ Use of variables	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Formulas, expressions, and equations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ One-step equations (e.g., 5x=10)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Coordinate planes	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Arithmetic or geometric patterns	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Multi-step equations (e.g., 5x+2 = 12)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Inequalities	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Linear and non-linear relations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Functions (e.g., meaning, functions as objects)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Operations on functions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Rate of change/slope	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Polynomials (e.g., meaning, functions as objects)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥	Operations on polynomials	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Factoring polynomials	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Operations on radicals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Rational expressions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Completing the square	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Quadratic formula	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Functions to model data/phenomena	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Advanced Algebra							
⓪①②③④⑤⑥	Computational algebra	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Quadratic equations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Systems of equations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Systems of inequalities	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Compound inequalities	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Matrices and determinants	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Conic sections	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Rational, negative exponents, or radicals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥ Rules for exponents	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Complex numbers	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Binomial theorem	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Factor/remainder theorem	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Field properties of real number system	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Multiple representations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Geometric Concepts						
⓪①②③④⑤⑥ Basic terminology	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Precise definitions of geometric objects and properties	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Logic, reasoning, and proof	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Points, lines, rays, segments, and planes	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Angles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Vectors	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Rigid transformations (i.e. slides/translations, flips/reflections, turns/ rotations)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥ Dilations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Defining congruence in terms of transformations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Congruence of triangles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Congruence of other figures	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Defining similarity in terms of transformations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Similarity of triangles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Similarity of other figures	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Parallel lines	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Classifying polygons (triangles, quadrilaterals, etc.)	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Triangles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Quadrilaterals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Other polygons	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Pythagorean theorem	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥ Right triangles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Circles (arc length and area)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Circles (chords, tangents, and secants)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	3-D relationships	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Classifying and describing 3-D figures	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Structure of 3-D figures (e.g., nets, cross-section)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Polyhedra	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Cylinders, cones, and spheres	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Geometric constructions	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Loci	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Analytic or coordinate geometry	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Symmetry	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Geometric modeling	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Geometric patterns (e.g., tessellations)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Non-Euclidian geometry	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Topology	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
Data Displays						
Data in a table or graph — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Bar graphs and histograms — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Pie charts and circle graphs — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Pictographs — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Line graphs — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Stem and leaf plots — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Scatter plots — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Box plots/ box and whisper plots — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Line plots/dot plots — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Classification and Venn diagrams — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Tree diagrams — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Statistics						
Mean, median, and mode — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Variability, standard deviation, and range — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Line of best fit — ⓪①②③④⑤⑥	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥	Quartiles and percentiles	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Bivariate distribution	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Confidence intervals	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Correlation	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Hypothesis testing	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Data transformation	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Central Limit Theorem	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Statistical/Empirical questions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Experimental studies	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Observational studies	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Probability

Level of Coverage		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥	Simple probability	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Compound probability	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Conditional probability	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Empirical/ experimental probability	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Sampling and sample spaces	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage	Cognitive Demand Emphasis					
	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥ Independent vs. dependent events	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Expected value	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Binomial distribution	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Normal curve	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Simulations (Monte Carlo methods)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Analysis

Level of Coverage	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥ Sequences and series	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Limits	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Continuity	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Rates of change	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Maxima, minima, and range	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Differentiation	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Integration	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Trigonometry

Level of Coverage	Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥ Basic ratios	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Radian measure	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥ Right-triangle trigonometry	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Law of Sines and Cosines	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Identities	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Trigonometric equations	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Polar coordinates	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Periodicity	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Amplitude	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Special Topics

Level of Coverage		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Sets	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Logic	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Mathematical induction	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Linear programming	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Networks	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Iteration and recursion	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Combinatorics (permutations, combinations, fundamental counting principles)	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Fractals	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪①②③④⑤⑥	History of math	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Functions							
⓪①②③④⑤⑥	Notation	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Relations	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Linear	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Quadratic	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Polynomial	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Rational	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Logarithmic	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Exponential	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Trigonometric and circular	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Inverse	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Composition	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Domain and range functions	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
Instructional Technology							
⓪①②③④⑤⑥	Use of calculators	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③
⓪①②③④⑤⑥	Use of graphing calculators	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③	⓪①②③

Level of Coverage		Cognitive Demand Emphasis					
		Memorize/ Recall	Perform Procedures	Demonstrate/ Communicate Understanding	Justify/ Evaluate	Generalize	Apply to Real-World Problems
⓪ ① ② ③ ④ ⑤ ⑥	Use of computer and the internet	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Computer programming	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Use of spreadsheets	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③
⓪ ① ② ③ ④ ⑤ ⑥	Use of software/ programs/applications	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③	⓪ ① ② ③

Instruction of ELLs and SWDs

Please answer the following questions.

A. How many students are in the target class?

English Language Learners (ELL) refers to the subset children who have been identified as not fully English proficient on the **(*insert name of ELP assessment used in the state*)** and receive ESL or bilingual education support provided by you or another teacher. When we ask questions about ELLs, answer only for these students (Please do **not** answer for students who have never been or are no longer identified as ELLs as per ***insert name of ELP assessment used in the state***).

B. How many students in the target class are English language learners?

[If the number of ELLs is one or more, answer ELL questions 1-3.]

1. How many of these students do you expect will meet the majority of the mathematics standards for your grade-level by year's end?

2. When you provide mathematics instruction to these ELLs, to what extent do you provide each of the following instructional supports to improve access to the CCR standards?

		I do not provide this	Occasionally provided	Often provided	Always provided
a.	Provide extended time	1	2	3	4
b.	Allow student to read quietly aloud to him/herself	1	2	3	4
c.	Simplify the language of the assignment	1	2	3	4
d.	Preview of academic vocabulary	1	2	3	4
e.	Use of sentence frames	1	2	3	4
f.	Connect to prior knowledge	1	2	3	4
g.	Provide home language support	1	2	3	4
h.	Use of visuals	1	2	3	4
i.	Use of realia	1	2	3	4
j.	Use of graphic organizers	1	2	3	4
k.	Modeling learning strategies	1	2	3	4

3. How often do you coordinate your instruction with the ELL teacher who provides supports for these ELLs?

		Never	Rarely	Sometimes	Often
a.	Joint lesson planning	1	2	3	4
b.	Co-teaching	1	2	3	4
c.	Consultation	1	2	3	4
d.	Monitoring individual student's progress	1	2	3	4

In this survey, **students with disabilities (SWDs)** refers to students with IEPs who participate in the regular state assessment (with or without accommodations). Please do not answer for students who participate in the alternate assessment.

4. Given this definition, how many students in your class are SWDs?

[If the number of SWDs is one or more, then answer questions 5-10.]

5. How many of these students have IEP goals in mathematics?

6. How many of these students do you expect will meet the majority of the mathematics standards for your grade level by year end?

7. When you provide mathematics instruction to these SWDs, how much do you emphasize grade-level standards versus foundational-level skills (i.e., skills at a lower-grade level)? Distribute 100 points to indicate your emphasis (your total must equal 100).

	Percent
Grade-level standards:	
Foundational-level skills:	
Total	100%

8. When you provide mathematics instruction to SWDs, to what extent do you provide the following test accommodations?

		I do not provide this	Occasionally provided	Often provided	Always provided
a.	Provision of extended time	1	2	3	4
b.	Provision of an adult reader (i.e., adult reads text to students)	1	2	3	4
c.	Provision of a scribe (to record students' responses)	1	2	3	4
d.	Provision of Braille or large font	1	2	3	4

9. When you provide mathematics instruction to SWDs, to what extent do you provide the following instructional supports (i.e., adaptations or scaffolding)?

		I do not provide this	Occasionally provided	Often provided	Always provided
a.	Teach the same content using simpler numbers.	1	2	3	4
b.	Teach the foundational-level skills that SWD have not yet mastered; then have SWD apply newly learned skills in the context of the grade-level content standards.	1	2	3	4
c.	Model explanations and have the SWD practice those explanations to communicate (verbally and in writing) about math.	1	2	3	4
d.	Simplify text that contextualizes math problems.	1	2	3	4
e.	Read to the student text that contextualizes math problems.	1	2	3	4

		I do not provide this	Occasionally provided	Often provided	Always provided
f.	Explicitly connect hands-on materials to pictorial representations and to symbolic representations of problems.	1	2	3	4
g.	When multiple strategies or algorithms apply, focus primarily on the one that's easiest for the SWD to use.	1	2	3	4

10. How often do you coordinate your instruction with the SWD teacher who provides supports for these SWDs in your class?

		Never	Rarely	Sometimes	Often
a.	Joint lesson planning	1	2	3	4
b.	Co-teaching	1	2	3	4
c.	Consultation	1	2	3	4
d.	Monitoring individual student's progress	1	2	3	4

Math Practices

Thinking about this year, did you require students to... (If so, provide a 1-2 sentence example for each, describing what you did to implement this practice.):

1. Apply mathematics to the real world?

2. Select and use mathematical tools strategically?

3. Create and use mathematical representations?

4. Develop mathematical persistence?

5. Analyze/critique mathematical work of others?

6. Use precision in communicating and reasoning?

7. Reason mathematically (e.g. quantitatively, algebraically, spatially, statistically)?