Display 1A: Average Percent Correct on 1995 TIMSS Mathematics Items

Grade 3

Nation	Average
Korea	67
Japan	63
Singapore	62
District A	62
Hong Kong	59
Czech Republic	52
Netherlands	52
Slovenia	51
Australia	50
Austria	50
Hungary	49
United States	49
Ireland	48
Canada	47
International Mean	47
Latvia (LSS)	45
Scotland	45
England	45
New Zealand	41
Thailand	40
Cyprus	38
Greece	37
Portugal	37
Norway	36
Iceland	35
Iran, Islamic Republic	28

Grade 4

Nation	Average
Korea	76
Singapore	76
Japan	74
Hong Kong	73
District A	72
Netherlands	69
Czech Republic	66
Austria	65
Hungary	64
Slovenia	64
Australia	63
Ireland	63
United States	63
Canada	60
Israel	59
International Mean	59
Latvia (LSS)	59
Scotland	58
England	57
Cyprus	54
Norway	53
New Zealand	53
Greece	51
Thailand	50
Iceland	50
Portugal	48
Iran, Islamic Republic	38
Kuwait	32

Legend

Significantly Higher than the U.S.
Not Significantly Different from U.S.
Significantly Lower than the U.S.

Grade 7

Nation	Average
Singapore	73
Japan	67
Korea	67
Hong Kong	65
Belgium (Fl)	65
District A	60
Czech Republic	57
Austria	56
Netherlands	55
Bulgaria	55
Slovak Republic	54
Hungary	54
Belgium (Fr)	54
Switzerland	53
Slovenia	53
Russian Federation	53
Ireland	53
Australia	52
Canada	52
Thailand	52
France	51
International Mean	49
Germany	49
United States	48
Sweden	47
England	47
New Zealand	46
Norway	44
Denmark	44
Scotland	44
Latvia (LSS)	44
Iceland	43
Romania	43
Spain	42
Cyprus	42
Greece	40
Lithuania	38
Portugal	37
Iran, Islamic Republic	32
Colombia	26
South Africa	23

Grade 8

Nation	Average
Singapore	79
Japan	73
Korea	72
Hong Kong	70
Belgium (Fl)	66
Czech Republic	66
District A	64
Slovak Republic	62
Switzerland	62
Austria	62
Hungary	62
Slovenia	61
France	61
Netherlands	60
Bulgaria	60
Russian Federation	60
Ireland	59
Canada	59
Belgium (Fr)	59
Australia	58
Sweden	56
Israel	57
Thailand	57
International Mean	55
Germany	54
New Zealand	54
Norway	54
England	53
United States	53
Denmark	52
Scotland	52
Latvia (LSS)	51
Spain	51
Iceland	50
Greece	49
Romania	49
Lithuania	48
Cyprus	48
Portugal	43
Iran, Islamic Republic	38
Kuwait	30
Colombia	29
South Africa	24

Countries are grouped into 3 categories taking into account the standard error of the estimate for each country's mean performance. A statistically significant difference between the U.S. mean and another country's estimated mean performance is based on the standard error of both countries. In general, those with larger sample sizes yield smaller standard errors and, consequently, more precise estimates of their students' mean performance.

Display 1B: Average Percent Correct on 1995 TIMSS Mathematics Items

Grade 3

Nation	Average
Korea	67
Japan	63
Singapore	62
Hong Kong	59
Czech Republic	52
Netherlands	52
District B	**52**
Slovenia	51
Australia	50
Austria	50
Hungary	49
United States	**49**
Ireland	48
Canada	47
International Mean	*47*
Latvia (LSS)	45
Scotland	45
England	45
New Zealand	41
Thailand	40
Cyprus	38
Greece	37
Portugal	37
Norway	36
Iceland	35
Iran, Islamic Republic	28

Grade 4

Nation	Average
Korea	76
Singapore	76
Japan	74
Hong Kong	73
Netherlands	69
Czech Republic	66
Austria	65
Hungary	64
Slovenia	64
District B	**64**
Australia	63
Ireland	63
United States	**63**
Canada	60
Israel	59
International Mean	*59*
Latvia (LSS)	59
Scotland	58
England	57
Cyprus	54
Norway	53
New Zealand	53
Greece	51
Thailand	50
Iceland	50
Portugal	48
Iran, Islamic Republic	38
Kuwait	32

Grade 7

Nation	Average
Singapore	73
Japan	67
Korea	67
Hong Kong	65
Belgium (Fl)	65
Czech Republic	57
Austria	56
Netherlands	55
Bulgaria	55
Slovak Republic	54
Hungary	54
Belgium (Fr)	54
Switzerland	53
Slovenia	53
Russian Federation	53
Ireland	53
Australia	52
Canada	52
Thailand	52
France	51
District B	**50**
International Mean	*49*
Germany	49
United States	**48**
Sweden	47
England	47
New Zealand	46
Norway	44
Denmark	44
Scotland	44
Latvia (LSS)	44
Iceland	43
Romania	43
Spain	42
Cyprus	42
Greece	40
Lithuania	38
Portugal	37
Iran, Islamic Republic	32
Colombia	26
South Africa	23

Grade 8

Nation	Average
Singapore	79
Japan	73
Korea	72
Hong Kong	70
Belgium (Fl)	66
Czech Republic	66
Slovak Republic	62
Switzerland	62
Austria	62
Hungary	62
Slovenia	61
France	61
Netherlands	60
Bulgaria	60
Russian Federation	60
Ireland	59
Canada	59
Belgium (Fr)	59
Australia	58
Sweden	56
Israel	57
Thailand	57
International Mean	*55*
District B	**55**
Germany	54
New Zealand	54
Norway	54
England	53
United States	**53**
Denmark	52
Scotland	52
Latvia (LSS)	51
Spain	51
Iceland	50
Greece	49
Romania	49
Lithuania	48
Cyprus	48
Portugal	43
Iran, Islamic Republic	38
Kuwait	30
Colombia	29
South Africa	24

Legend

Significantly Higher than the U.S.
Not Significantly Different from U.S.
Significantly Lower than the U.S.

Countries are grouped into 3 categories taking into account the standard error of the estimate for each country's mean performance. A statistically significant difference between the U.S. mean and another country's estimated mean performance is based on the standard error of both countries. In general, those with larger sample sizes yield smaller standard errors and, consequently, more precise estimates of their students' mean performance.

Display 2A: Average Percent Correct on TIMSS 1995 End-of-Secondary Mathematics Literacy Test

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
District A - Grade 9	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
District A - Grade 10	61
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
District A - Grade 11	62
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
District A - Grade 12	62
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
Cyprus	40
South Africa	25

Significantly Higher than the U.S.
Not Significantly Different from U.S.
Significantly Lower than the U.S.

Display 2B: Average Percent Correct on TIMSS 1995 End-of-Secondary Mathematics Literacy Test

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
District B - Grade 9	40
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
District B - Grade 10	42
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
District B - Grade 11	44
Cyprus	40
South Africa	25

Nation	Average
Netherlands	68
Sweden	64
Denmark	64
Iceland	62
Switzerland	62
New Zealand	61
Norway	60
Australia	60
France	60
Canada	58
Austria	58
Slovenia	58
Germany	53
International Mean	*50*
Italy	50
Russian Federation	49
Lithuania	48
United States - Grade 12	46
Hungary	46
Israel	45
Czech Republic	45
District B - Grade 12	44
Cyprus	40
South Africa	25

Significantly Higher than the U.S.
Not Significantly Different from U.S.
Significantly Lower than the U.S.

# Display 3: Average % Correct on 1995 TIMSS 8th Grade Mathematics Items at Each Grade

Legend:
- ■ District A
- ◆ District B
- ● Top Achieving Countries

X-axis: Grade (7, 8, 9, 10, 11, 12)
Y-axis: % Correct (0–100)
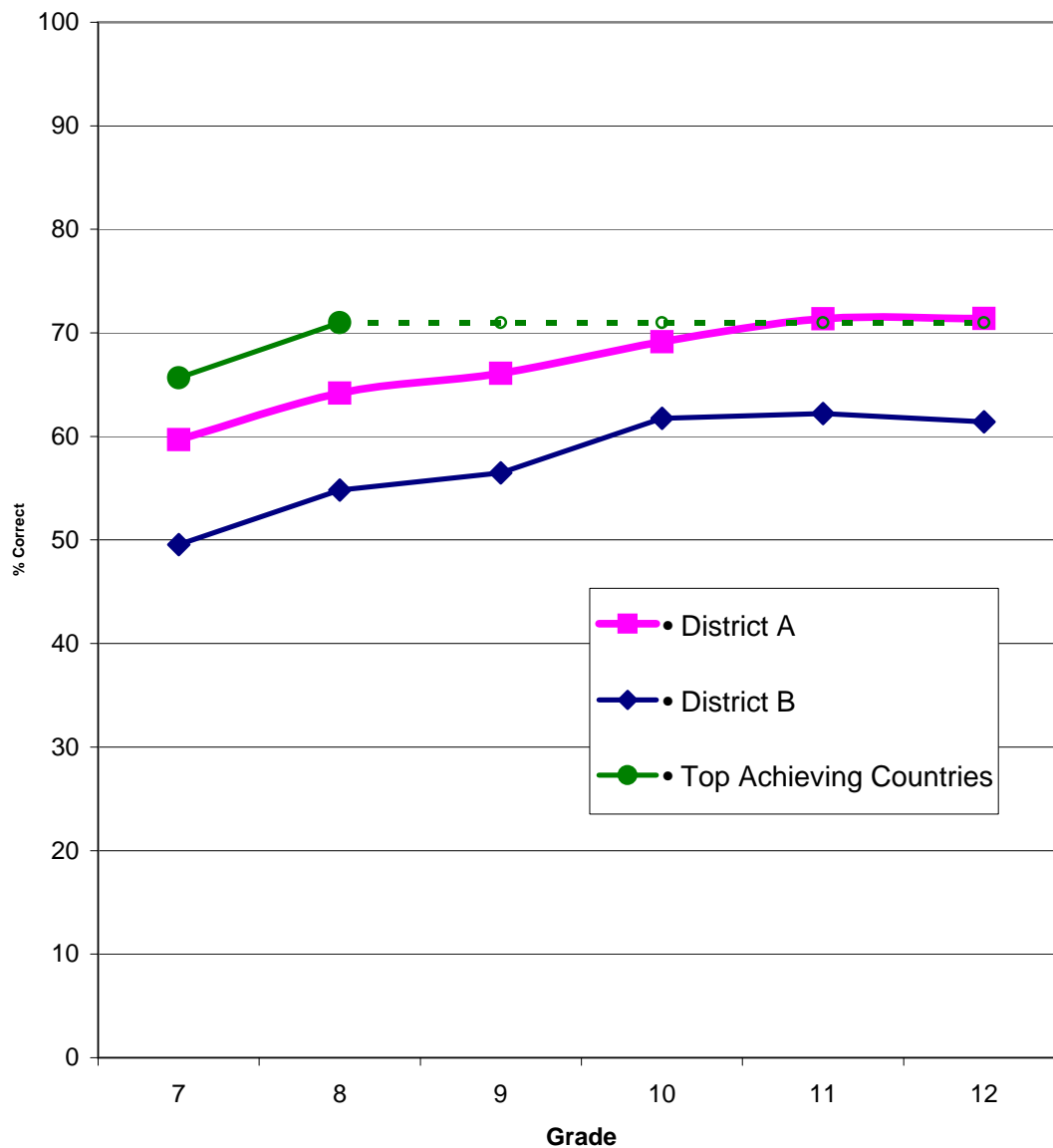
Display 4: Number of PROM/SE Districts in Relation to the 1995 TIMSS US Mean Mathematics Performance

Legend:
- Significantly Higher
- No Different
- Significantly Lower

Categories: Grade 4, Grade 8, Grade 12
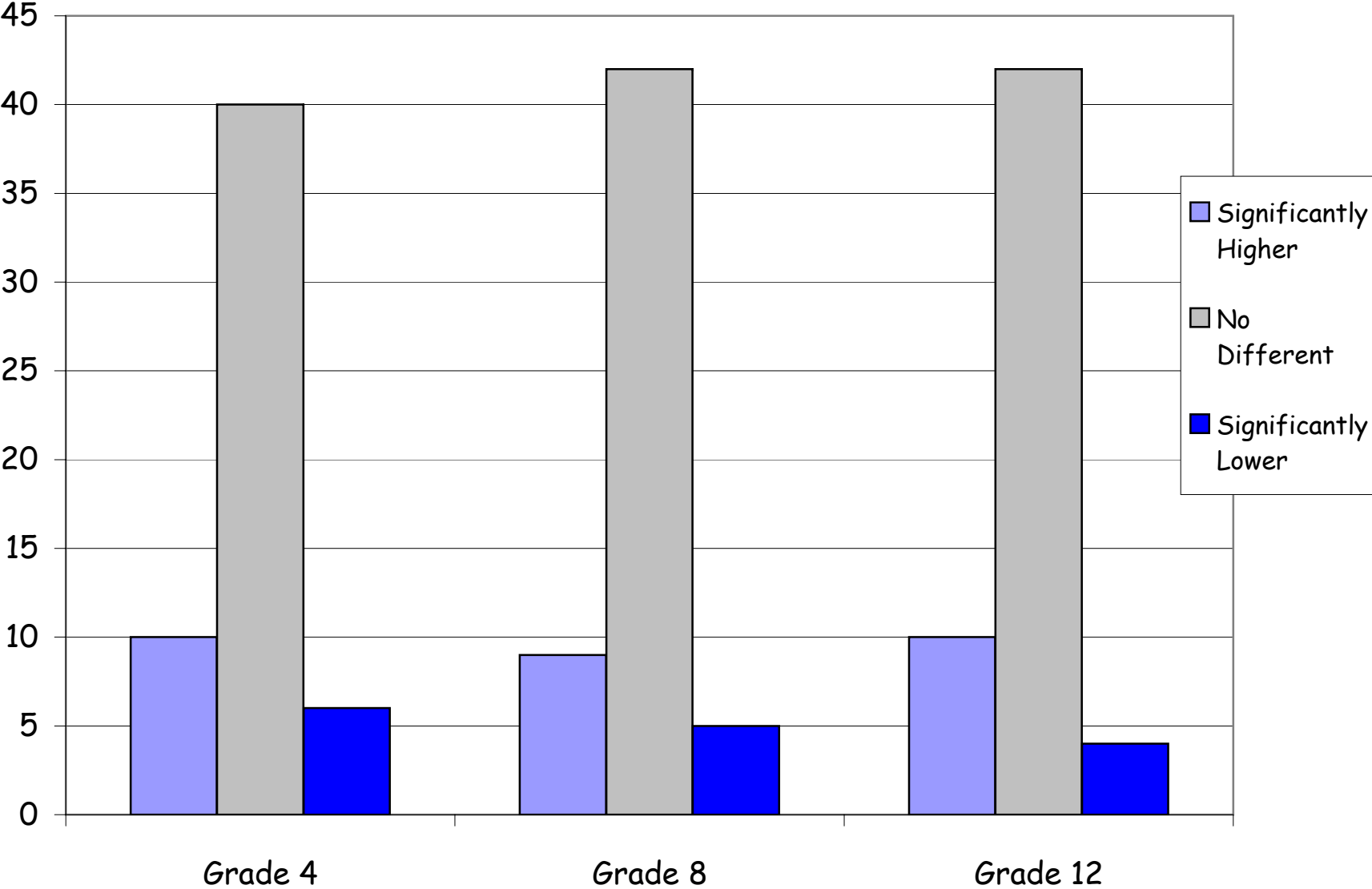
Display 5: Boxplots of Average Percent Correct Across all PROM/SE Mathematics Items for All PROM/SE Districts at Each Grade

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.

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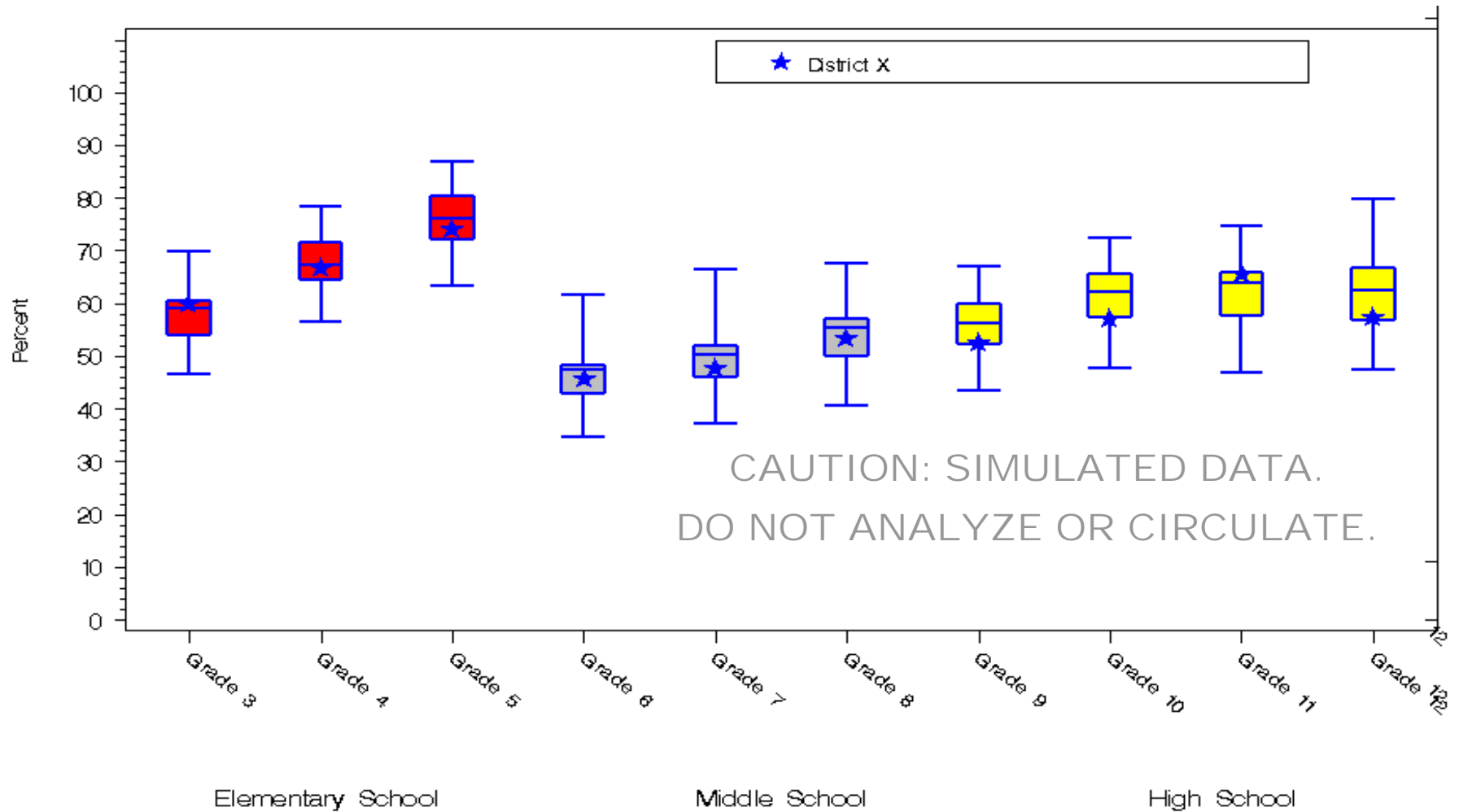
Display 6: Boxplots of Average Percent Correct Across all PROM/SE Mathematics Items for All PROM/SE Schools at Each Grade

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.

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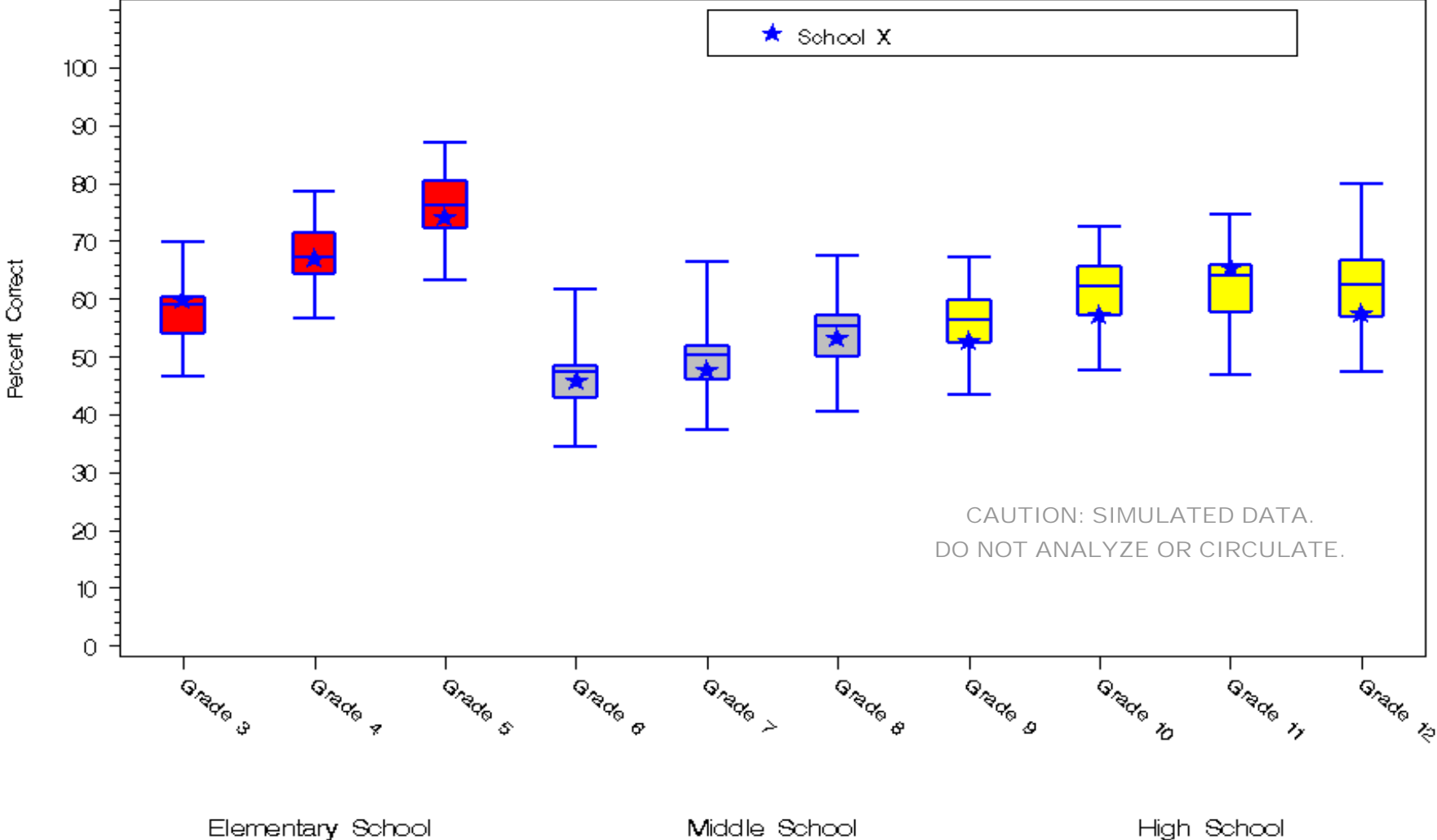
Display 7: Boxplots of Average Percent Correct on Select PROM/SE Elementary Mathematics Strands for All PROM/SE Schools at Each Grade

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR

Whole Number Operations   Equations & Formulas

Fractions: Concepts   Fractions: Ordering

Fractions: Add/Substract   Basic Geometry

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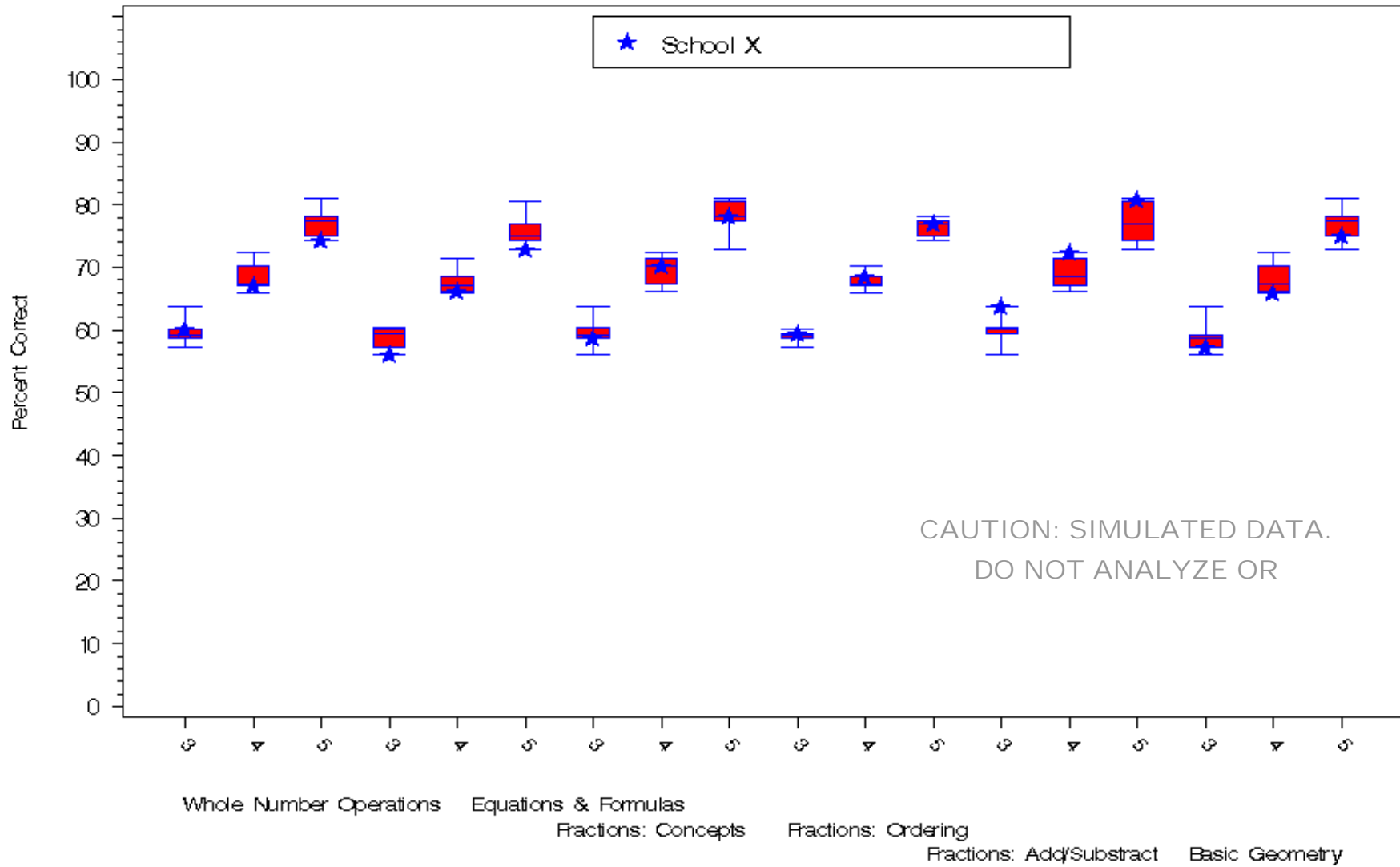
Display 8: Boxplots of Average Percent Correct on Select PROM/SE Middle School Mathematics Strands for All PROM/SE Schools at Each Grade

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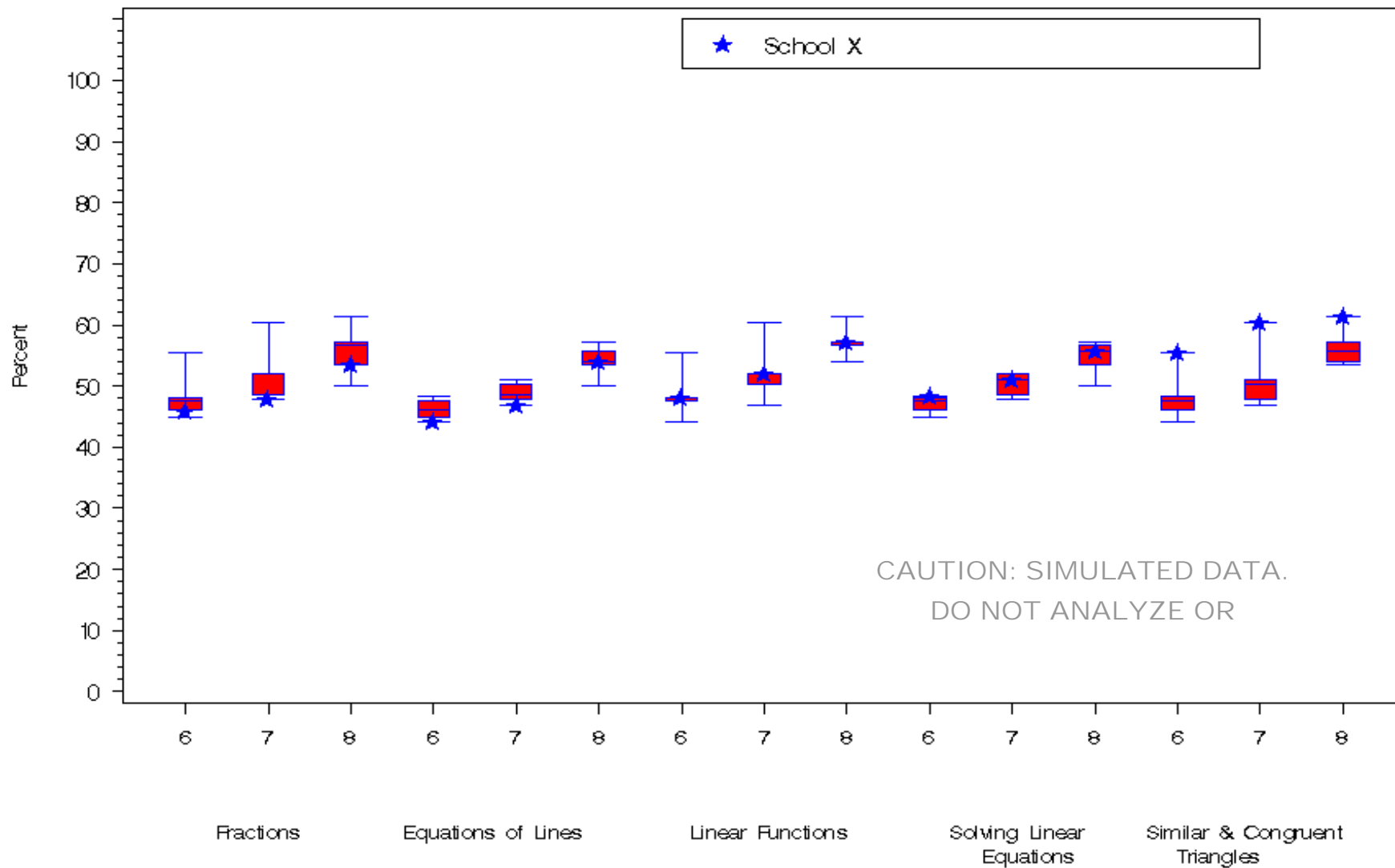
Display 9: Boxplots of Average Percent Correct on Select PROM/SE High School Mathematics Strands for All PROM/SE Schools at Each Grade
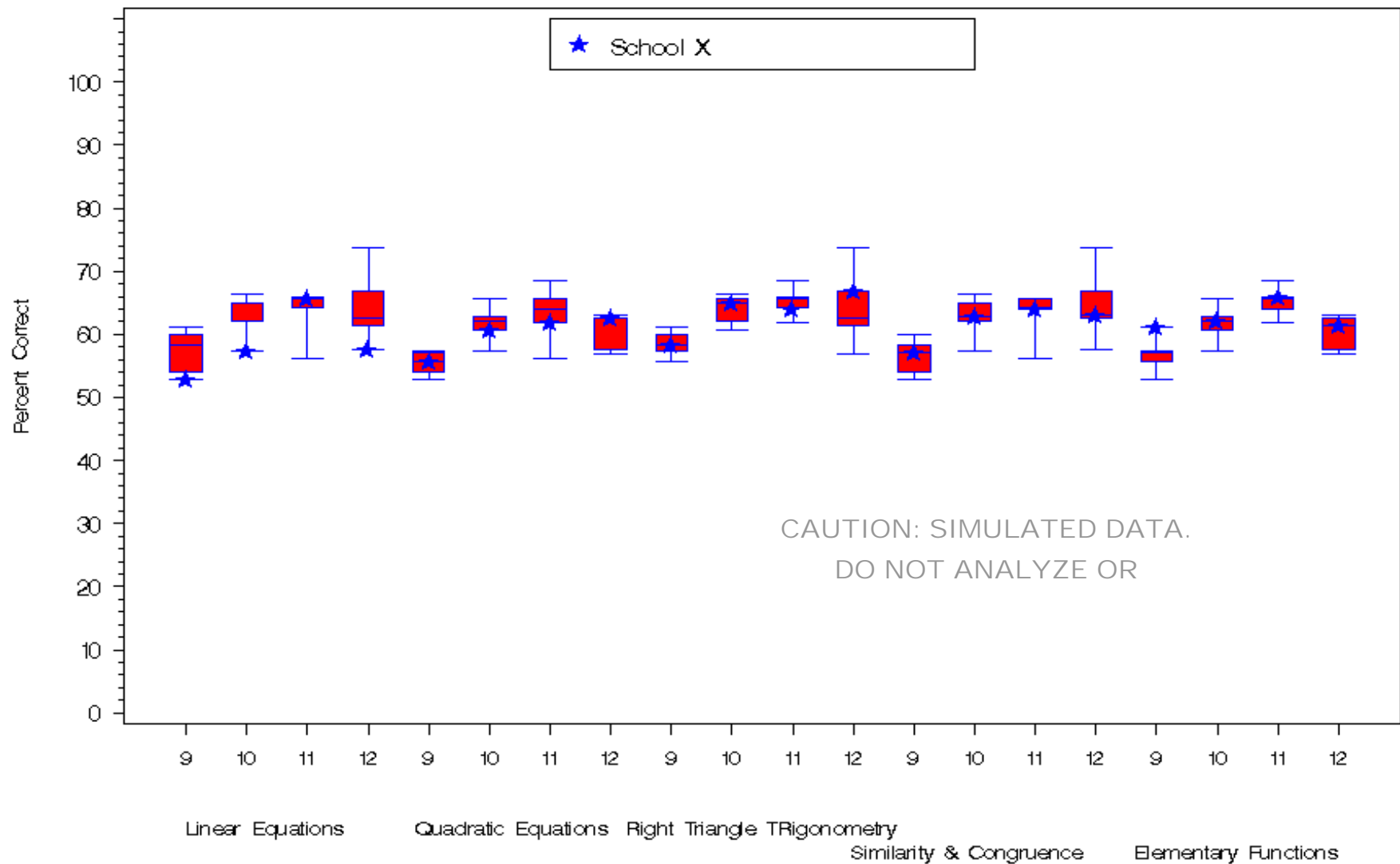
Display 10: Number of Mathematics Topics Intended at Each Grade

- Gray bars show how many mathematics topics were intended to be covered at each grade in the 1995 TIMSS countries.

- The bars extend from the 25th percentile to the 75th percentile.

- The black line indicates the median number of topics at each grade.

- ● = U.S. Composite
- ▲ = District A
- ◆ = District B
- ■ = Top Achieving Countries' Composite
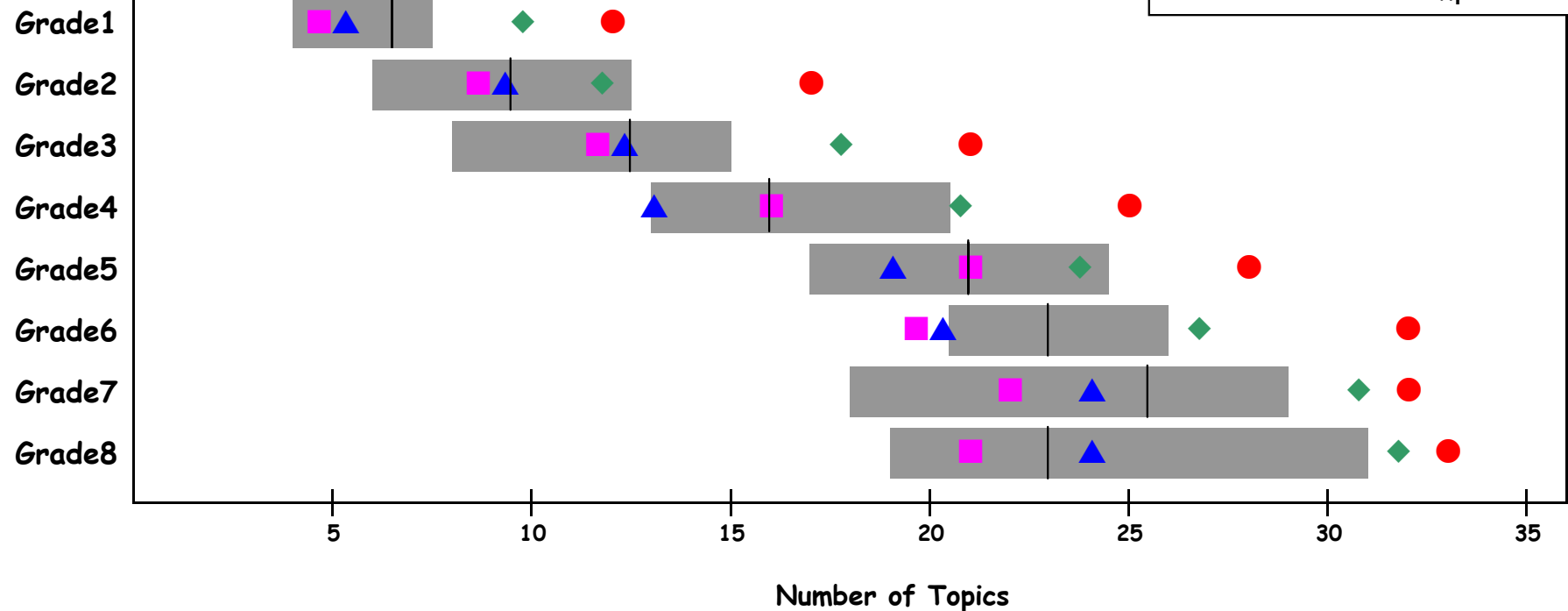
Number of Topics

Display 11: Mathematics Topics Intended at Each Grade by Top-Achieving Countries

Topic	Grade 1	2	3	4	5	6	7	8
Whole Number: Meaning	■	■	■	●	●			
Whole Number: Operations	■	■	■	■	●			
Measurement Units	▲	■	■	■	■	■	●	
Common Fractions			▲	■	■	●		
Equations & Formulas			▲	●	●	●	■	■
Data Representation & Analysis			▲	▲	●	●		▲
2-D Geometry: Basics			▲	●	●	●	■	■
2-D Geometry: Polygons & Circles				●	●	●	■	■
Measurement: Perimeter, Area & Volume				●	●	●	●	▲
Rounding & Significant Figures				●	●			
Estimating Computations				●	●	●		
Whole Numbers: Properties of Operations				▲	●			
Estimating Quantity & Size				▲	▲			
Decimal Fractions				●	■	●		
Relation of Common & Decimal Fractions				●	■			
Properties of Common & Decimal Fractions					●	●		
Percentages					●	●		
Proportionality Concepts					●	●	●	▲
Proportionality Problems					●	●	■	■
2-D Geometry: Coordinate Geometry					▲	▲	●	●
Geometry: Transformations						●	●	●
Negative Numbers, Integers, & Their Properties						▲	●	
Number Theory							●	▲
Exponents, Roots & Radicals							●	●
Exponents & Orders of Magnitude							▲	▲
Measurement: Estimation & Errors							▲	
Constructions Using Straightedge & Compass							■	▲
3-D Geometry							●	■
Geometry: Congruence & Similarity								■
Rational Numbers & Their Properties								▲
Patterns, Relations & Functions								▲
Proportionality: Slope & Trigonometry								▲
# of additional topics covered at grade level, on average	2	6	5	1	1	3	6	3
# of possible topics from which additional topics may be selected	4	7	8	1	2	5	10	7

Intended by 4 out of the 6 top-achieving countries ▲

Intended by all but *one* of the top-achieving countries (5 out of 6). ●

Intended by *all* of the top-achieving countries. ■

Display 12A: Mathematics Topics Intended at Each Grade in District A's State Content Standards

Topic	1	2	3	4	5	6	7	8
Whole Number: Meaning	●	●	●	●	●	●	●	
Whole Number: Operations	●	●	●	●				
Measurement Units	●	●	●	●	●	●	●	●
Common Fractions					●	●	●	
Equations & Formulas	●	●	●	●	●	●	●	●
Data Representation & Analysis	●	●	●	●	●	●		●
2-D Geometry: Basics	●	●	●	●	●	●	●	●
2-D Geometry: Polygons & Circles	●	●	●	●	●	●	●	●
Measurement: Perimeter, Area & Volume					●	●	●	●
Rounding & Significant Figures	●	●	●	●	●	●	●	●
Estimating Computations	●	●	●	●	●	●	●	●
Whole Numbers: Properties of Operations	●	●	●	●				
Estimating Quantity & Size	●	●	●	●	●	●		
Decimal Fractions	●	●	●	●	●	●		
Relation of Common & Decimal Fractions	●	●	●	●	●	●	●	
Properties of Common & Decimal Fractions					●	●	●	
Percentages					●	●	●	
Proportionality Concepts					●	●	●	●
Proportionality Problems								
2-D Geometry: Coordinate Geometry	●	●	●	●	●	●	●	●
Geometry: Transformations	●	●	●	●	●	●	●	●
Negative Numbers, Integers, & Their Properties								
Number Theory					●	●	●	●
Exponents, Roots & Radicals								●
Exponents & Orders of Magnitude								
Measurement: Estimation & Errors	●	●	●	●	●	●	●	
Constructions Using Straightedge & Compass	●	●	●	●	●	●	●	●
3-D Geometry	●	●	●	●	●	●	●	●
Geometry: Congruence & Similarity	●	●	●	●	●	●	●	●
Rational Numbers & Their Properties					●	●	●	
Patterns, Relations & Functions	●	●	●	●	●	●	●	●
Proportionality: Slope & Trigonometry								
Number of additional topics intended	2	2	2	2	2	2	2	3

Intended in the State's Content Standards ●

Top-achieving countries' intended-topics profile ▊

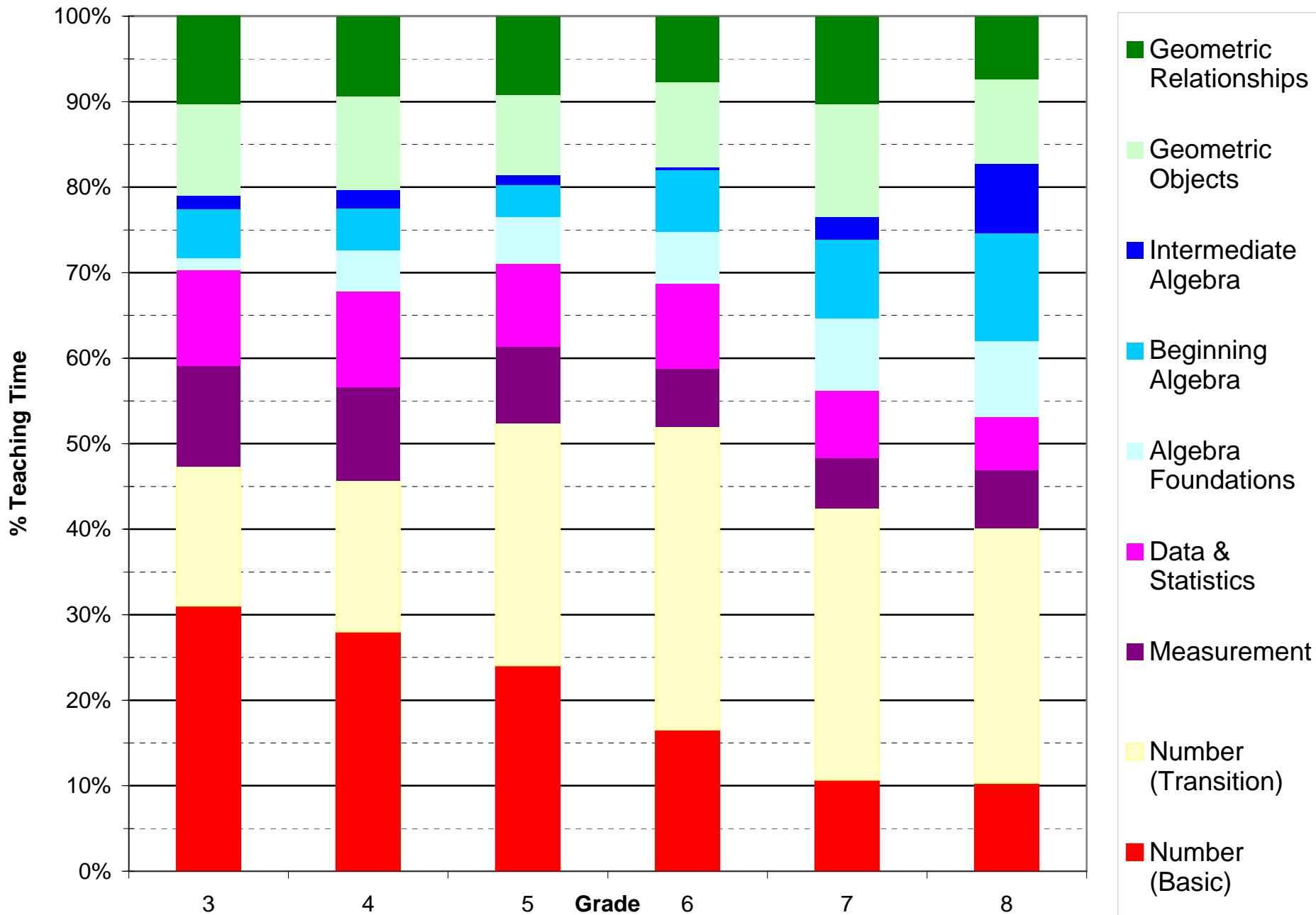# Display 12B: Mathematics Topics Intended at Each Grade in District B's State Content Standards

Topic	Grade							
	1	2	3	4	5	6	7	8
Whole Number: Meaning	●	●	●	●	●	●	●	●
Whole Number: Operations	●	●	●	●	●	●	●	●
Measurement Units	●	●	●	●	●	●	●	●
Common Fractions	●	●	●	●	●	●	●	●
Equations & Formulas	●	●	●	●	●	●	●	●
Data Representation & Analysis	●	●	●	●	●	●		●
2-D Geometry: Basics	●	●	●	●	●	●	●	●
2-D Geometry: Polygons & Circles	●	●	●	●	●	●	●	●
Measurement: Perimeter, Area & Volume	●	●	●	●	●	●	●	●
Rounding & Significant Figures	●	●	●	●	●	●	●	●
Estimating Computations	●	●	●	●	●	●	●	●
Whole Numbers: Properties of Operations	●	●	●	●			●	●
Estimating Quantity & Size	●	●	●	●	●	●	●	●
Decimal Fractions	●	●	●	●	●	●	●	●
Relation of Common & Decimal Fractions	●	●	●	●	●	●	●	●
Properties of Common & Decimal Fractions	●	●	●	●	●	●	●	●
Percentages					●	●	●	●
Proportionality Concepts	●	●	●	●	●	●	●	●
Proportionality Problems	●	●	●	●	●	●	●	●
2-D Geometry: Coordinate Geometry	●	●	●	●	●	●	●	●
Geometry: Transformations	●	●	●	●	●	●	●	●
Negative Numbers, Integers, & Their Properties	●	●	●	●	●	●	●	●
Number Theory	●	●	●	●	●	●	●	●
Exponents, Roots & Radicals	●	●	●	●	●	●	●	●
Exponents & Orders of Magnitude	●	●	●	●	●	●	●	●
Measurement: Estimation & Errors	●	●	●	●	●	●	●	●
Constructions using Straightedge & Compass	●	●	●	●	●	●	●	●
3-D Geometry	●	●	●	●	●	●	●	●
Geometry: Congruence & Similarity	●	●	●	●	●	●	●	●
Rational Numbers & Their Properties	●	●	●	●	●	●	●	●
Patterns, Relations & Functions	●	●	●	●	●	●	●	●
Proportionality: Slope & Trigonometry	●	●	●	●	●	●	●	●
Number of additional topics intended	9	9	9	9	10	10	10	10

Intended in the State's Content Standards ●

Top-achieving countries' intended-topics profile ▮

Display 13A: Mathematics Topics Intended at Each Grade by District A

Topic	Grade 1	2	3	4	5	6	7	8
Whole Number: Meaning	●	●	●	●	●			
Whole Number: Operations	●	●	●	●	●	●	●	●
Measurement Units		●	●	●	●	●	●	●
Common Fractions		●	●	●	●	●	●	
Equations & Formulas							●	●
Data Representation & Analysis	●	●	●	●	●	●	●	●
2-D Geometry: Basics						●	●	●
2-D Geometry: Polygons & Circles					●	●	●	●
Measurement: Perimeter, Area & Volume		●	●		●			
Rounding & Significant Figures								
Estimating Computations	●	●	●	●	●	●	●	●
Whole Numbers: Properties of Operations								●
Estimating Quantity & Size								
Decimal Fractions			●	●	●	●	●	
Relation of Common & Decimal Fractions			●	●	●	●	●	●
Properties of Common & Decimal Fractions								●
Percentages					●	●	●	●
Proportionality Concepts							●	
Proportionality Problems							●	●
2-D Geometry: Coordinate Geometry			●	●	●	●	●	●
Geometry: Transformations		●				●	●	●
Negative Numbers, Integers, & Their Properties			●	●	●	●	●	●
Number Theory			●	●	●	●	●	●
Exponents, Roots & Radicals						●	●	●
Exponents & Orders of Magnitude					●	●	●	●
Measurement: Estimation & Errors								
Constructions Using Straightedge & Compass								
3-D Geometry					●		●	●
Geometry: Congruence & Similarity					●	●	●	●
Rational Numbers & Their Properties								
Patterns, Relations & Functions	●	●	●	●	●	●	●	●
Proportionality: Slope & Trigonometry					●	●	●	●

● Intended in District A's Content Standards

▮ Top-achieving countries' intended-topics profile

Display 13B: Mathematics Topics Intended at Each Grade by District B

Topic	Grade 1	2	3	4	5	6	7	8
Whole Number: Meaning	●	●	●	●	●			
Whole Number: Operations	●	●	●	●	●	●		
Measurement Units	●	●	●	●	●	●	●	●
Common Fractions	●	●	●	●	●	●	●	●
Equations & Formulas	●	●	●	●	●	●	●	●
Data Representation & Analysis	●	●	●	●	●	●		●
2-D Geometry: Basics				●	●	●	●	●
2-D Geometry: Polygons & Circles	●		●	●	●	●	●	●
Measurement: Perimeter, Area & Volume				●	●	●	●	●
Rounding & Significant Figures			●	●	●	●	●	●
Estimating Computations		●	●	●	●	●	●	●
Whole Numbers: Properties of Operations			●	●	●		●	●
Estimating Quantity & Size	●	●	●	●	●		●	
Decimal Fractions				●	●	●	●	●
Relation of Common & Decimal Fractions				●	●	●	●	●
Properties of Common & Decimal Fractions					●	●	●	●
Percentages					●	●	●	●
Proportionality Concepts						●	●	●
Proportionality Problems						●	●	●
2-D Geometry: Coordinate Geometry			●		●	●	●	●
Geometry: Transformations		●	●	●	●	●	●	●
Negative Numbers, Integers, & Their Properties						●	●	●
Number Theory					●	●	●	●
Exponents, Roots & Radicals							●	●
Exponents & Orders of Magnitude						●	●	●
Measurement: Estimation & Errors			●	●	●	●	●	●
Constructions using Straightedge & Compass					●		●	●
3-D Geometry						●	●	●
Geometry: Congruence & Similarity			●	●	●	●	●	●
Rational Numbers & Their Properties						●	●	●
Patterns, Relations & Functions	●	●	●			●	●	●
Proportionality: Slope & Trigonometry								●

● Intended in District B's Content Standards

Top-achieving countries' intended-topics profile

PD Report Examples.xls: D13B

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Display 14A: Percent Teaching Time in Nine Broad Mathematics Areas at Each Grade in District A

% Teaching Time (y-axis: 0% to 100%)

Grade (x-axis: 3, 4, 5, 6, 7, 8)

Legend:
- ■ Geometric Relationships
- ■ Geometric Objects
- ■ Intermediate Algebra
- ■ Beginning Algebra
- ■ Algebra Foundations
- ■ Data & Statistics
- ■ Measurement
- ■ Number (Transition)
- ■ Number (Basic)
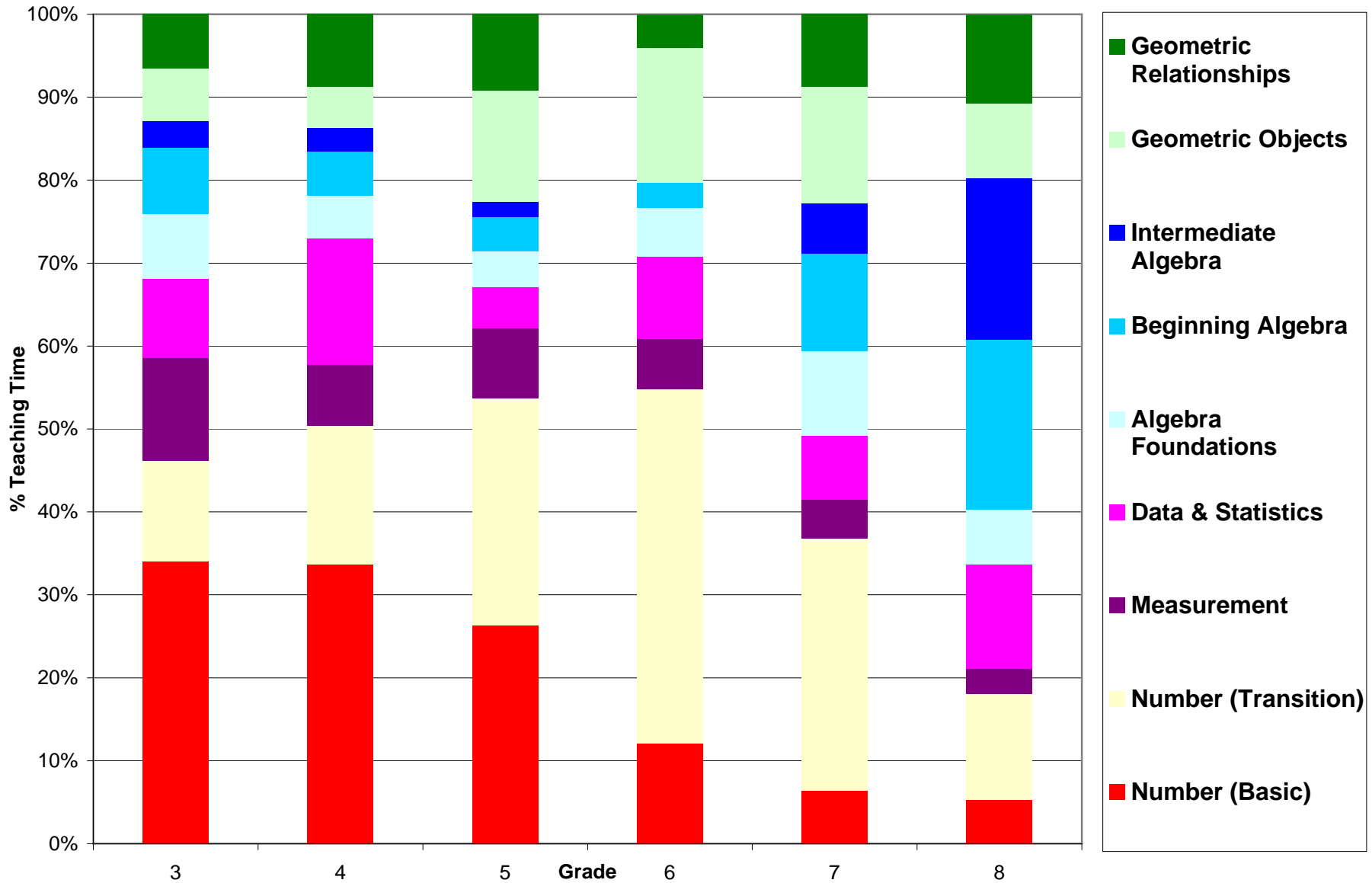
Display 14B: Percent Teaching Time in Nine Broad Mathematics Areas at Each Grade in District B

% Teaching Time (y-axis: 0% to 100%)

Grade (x-axis: 3, 4, 5, 6, 7, 8)

Legend:
- Geometric Relationships
- Geometric Objects
- Intermediate Algebra
- Beginning Algebra
- Algebra Foundations
- Data & Statistics
- Measurement
- Number (Transition)
- Number (Basic)

Display 16A: Percent Teaching Time in Nine Broad Mathematics Areas at 7th and 8th Grade for the USA, Top-Achieving Countries, and District A

Legend:
- Geometric Relationships
- Geometric Objects
- Intermediate Algebra
- Beginning Algebra
- Algebra Foundations
- Data & Statistics
- Measurement
- Number (Transition)
- Number (Basic)

Categories: USA Grade 7, District A Grade 7, Top-Achieving Countries Grade 7, USA Grade 8, District A Grade 8, Top-Achieving Countries Grade 8
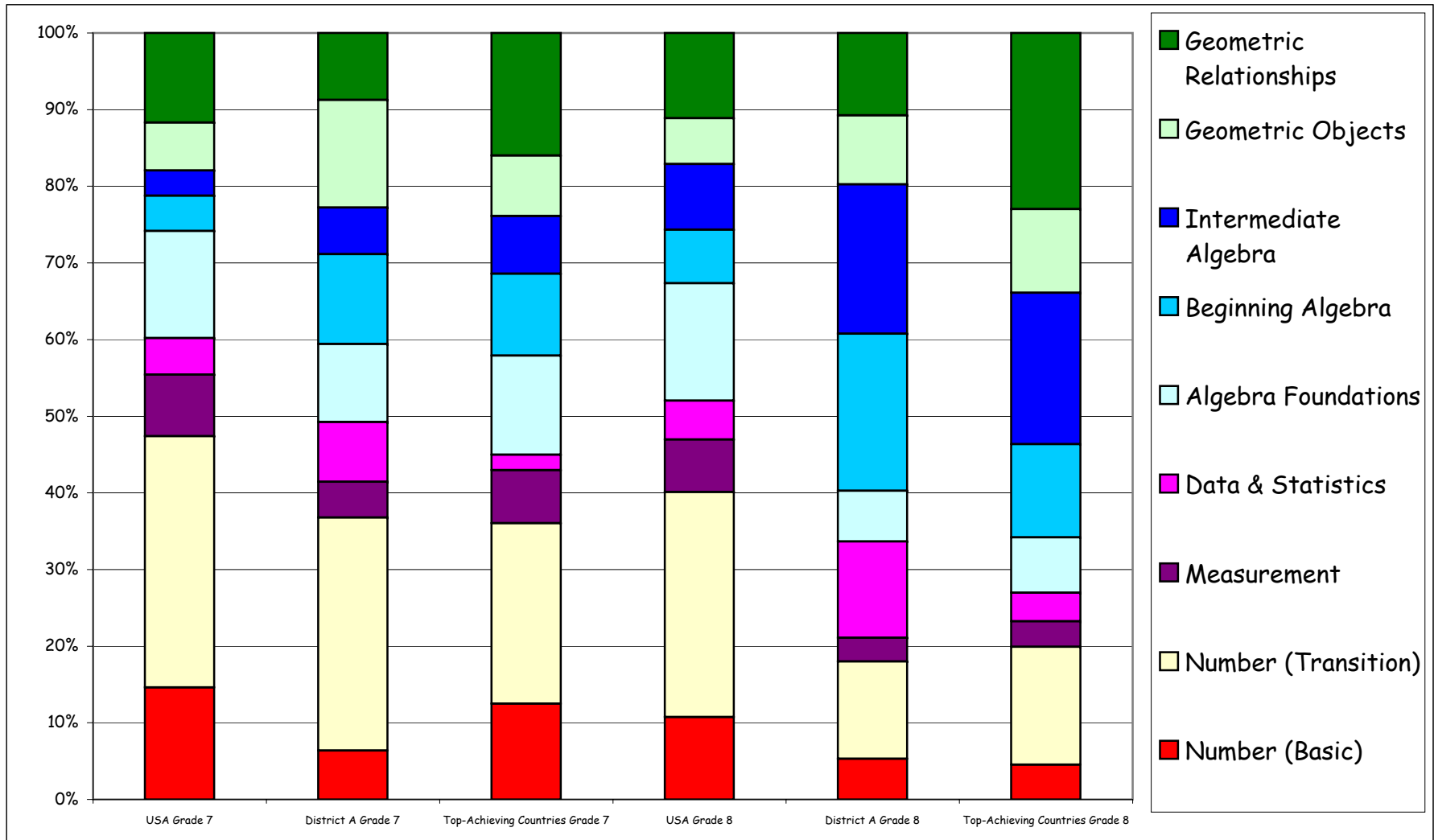
Display 16B: Percent Teaching Time in Nine Broad Mathematics Areas at 7th and 8th Grade for the USA, Top-Achieving Countries, and District B
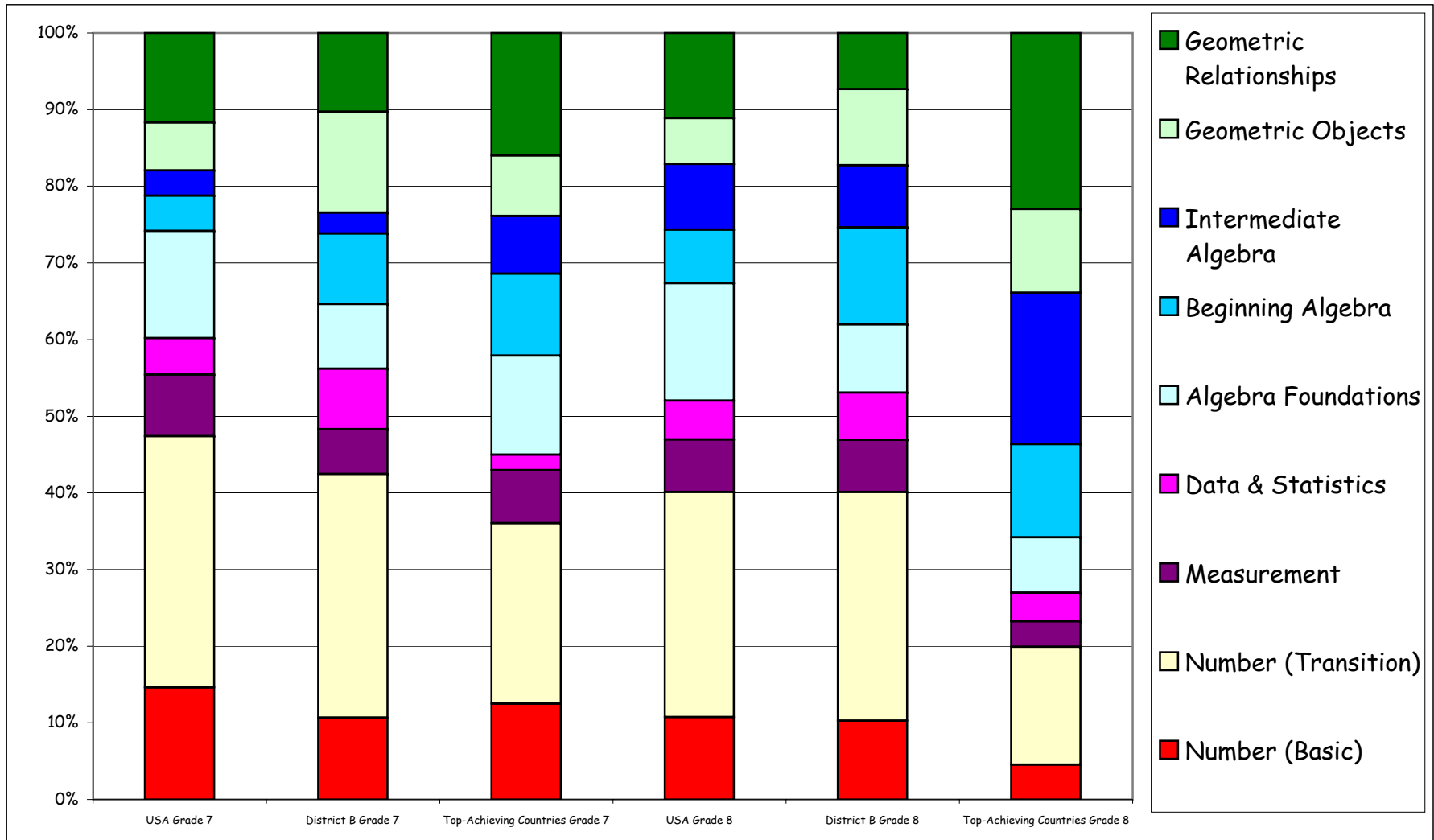
Display 17: Boxplots of Percent Teaching Time for Whole Numbers Across Teachers at Each Grade for District A

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.
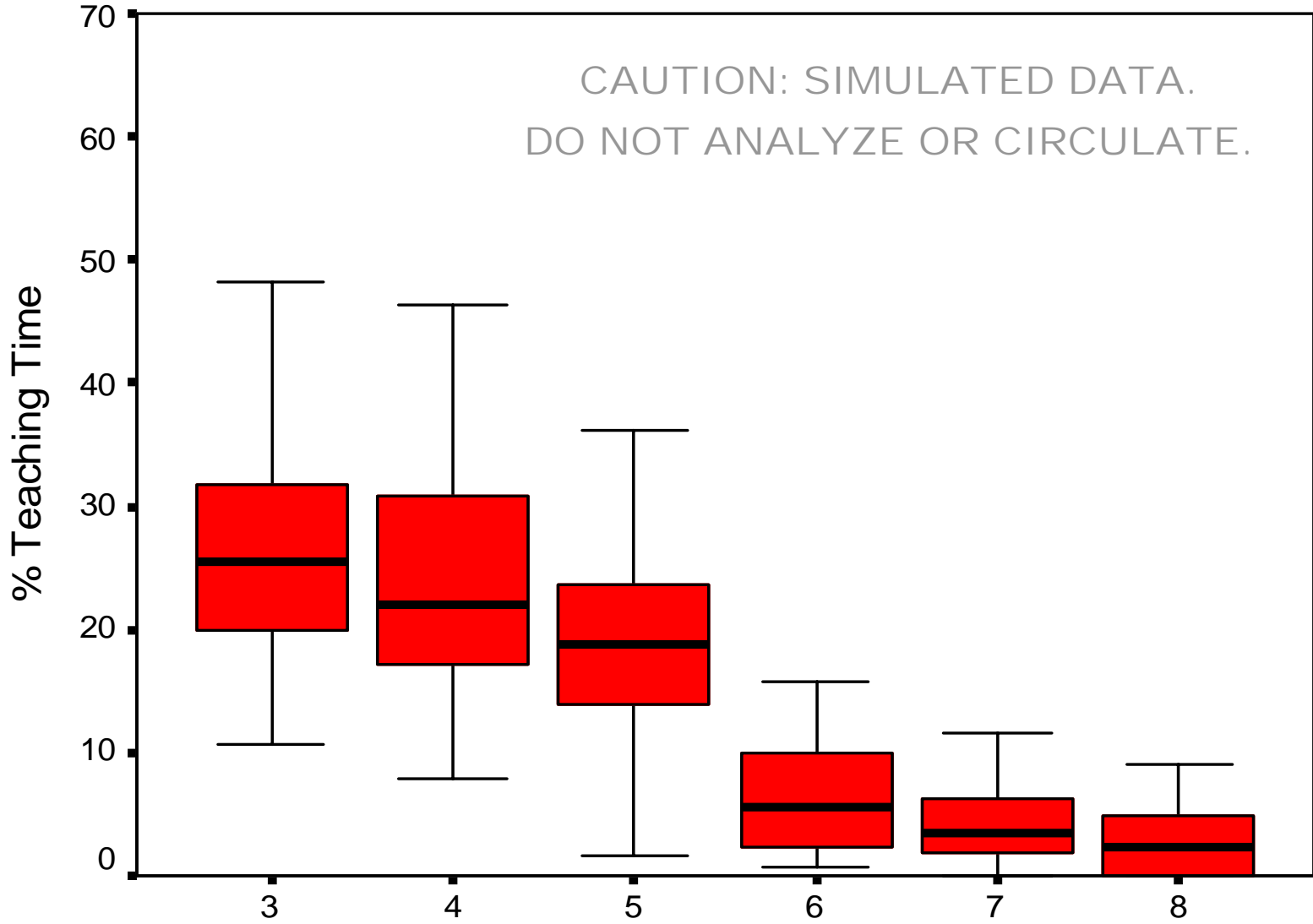
Display 18: Boxplots of Percent Teaching Time for Common Fractions Across Teachers at Each Grade for District A

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.
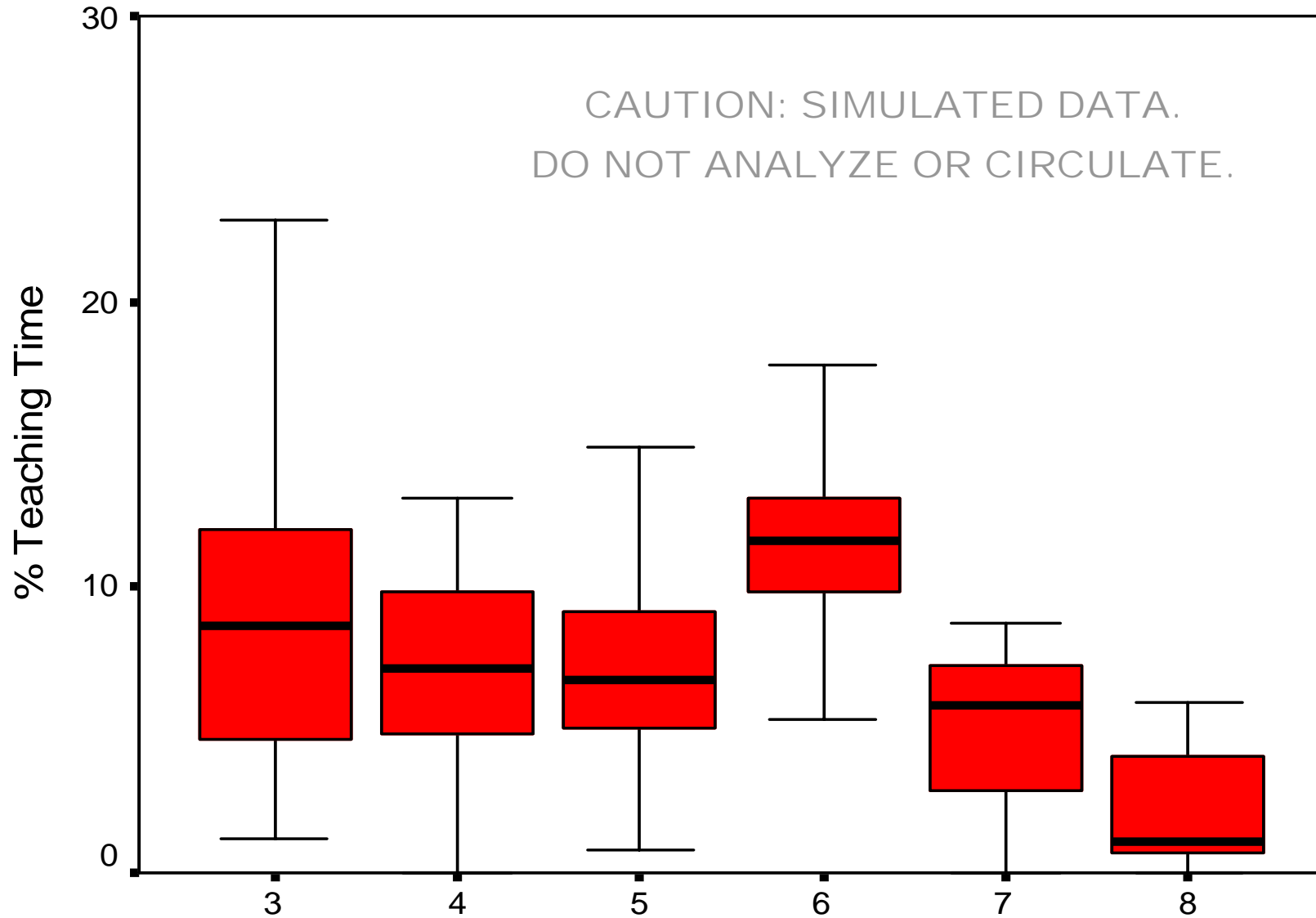
% Teaching Time

Display 19: Boxplots of Percent Teaching Time for Number (Basic) Across Teachers at Each Grade for District A

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.
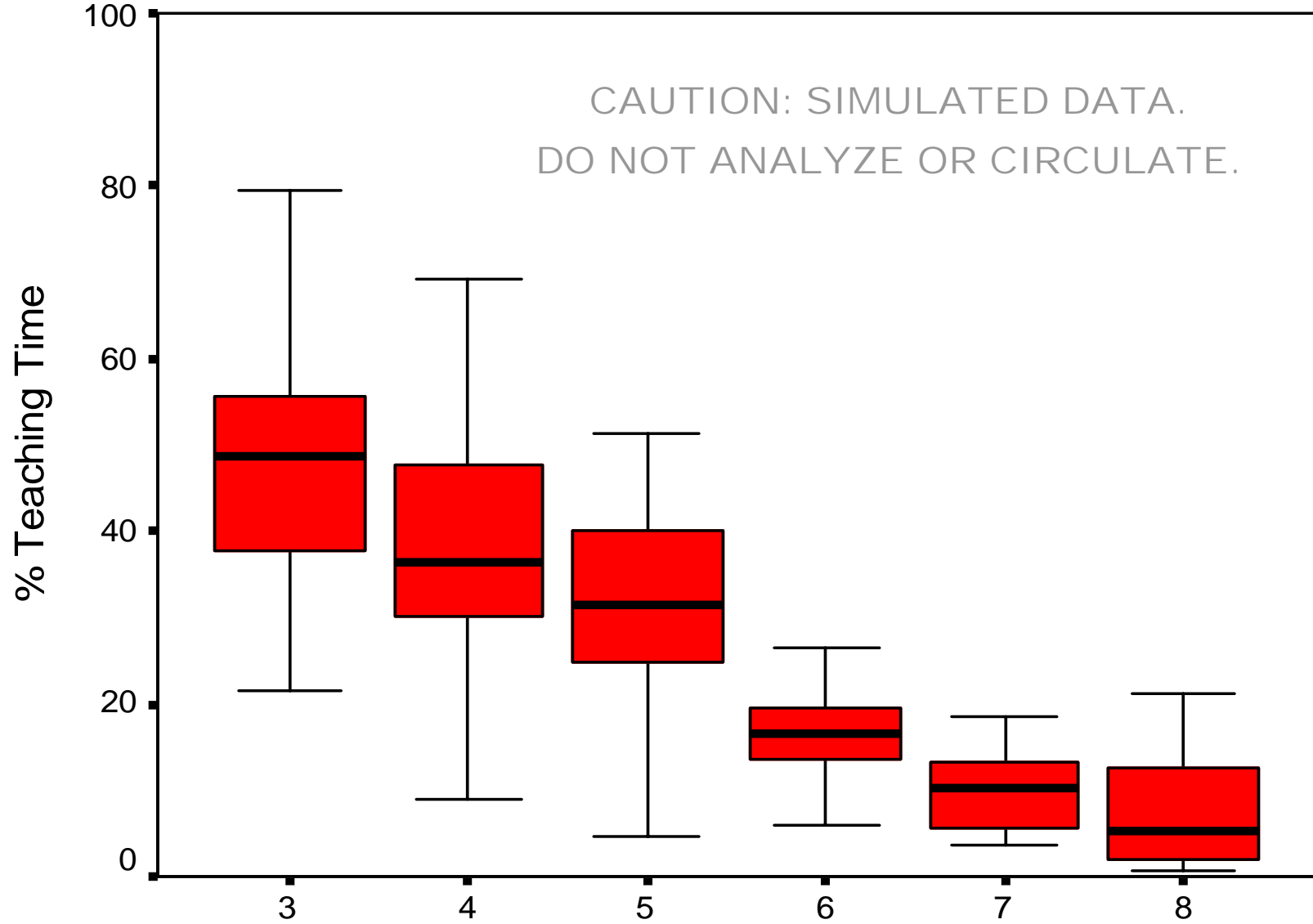
Display 20: Boxplots of Percent Teaching Time for Geometric Relationships Across Teachers at Each Grade for District A

CAUTION: SIMULATED DATA.
DO NOT ANALYZE OR CIRCULATE.
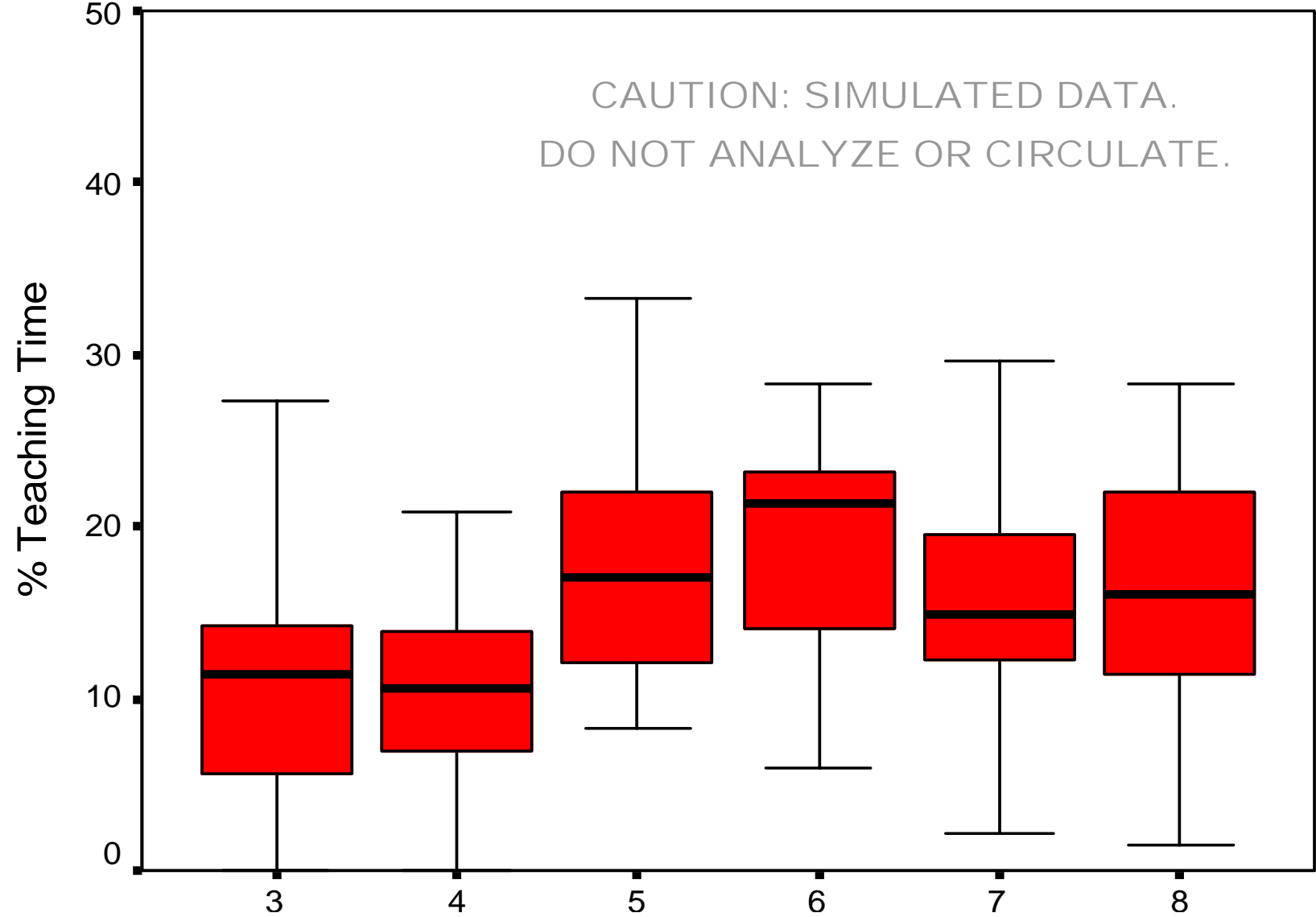
Displays 14-16: Elementary Mathematics Areas Key

Class periods taught this year
(Check One Only)

Key	Whole Numbers, Fractions, & Number Concepts	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Number (Basic)	**1) Whole number meaning** – place value & numeration; ordering & comparing; operations & properties of operations	☐	☐	☐	☐	☐	☐
	2) Operations & Properties – addition, subtraction, multiplication, division, mixed operations; associative, commutative, identity, distributive, & other properties	☐	☐	☐	☐	☐	☐
Number (Transition)	**3) Common Fractions** – meaning, representation, uses, computations; computations with mixed numbers	☐	☐	☐	☐	☐	☐
	4) Decimal Fractions – meaning, representation, uses, computations	☐	☐	☐	☐	☐	☐
	5) Relationships Between Common & Decimal Fractions – equivalence, conversions & ordering	☐	☐	☐	☐	☐	☐
	6) Percentages – concepts, problems, & computations	☐	☐	☐	☐	☐	☐
	7) Properties of Common & Decimal Fractions – commutative, distributive, identity, inverse, etc.	☐	☐	☐	☐	☐	☐
Algebra Foundations	**8) Number Sets & Concepts** – integers (negative & positive); rational, realy, and other number sets	☐	☐	☐	☐	☐	☐
	9) Other Number Topics – binary arithmetic; bases other than ten; exponents, roots, & radicals: complex numbers	☐	☐	☐	☐	☐	☐
	10) Number Theory – primes, factorizations; complex numbers; permutations & systematic counting	☐	☐	☐	☐	☐	☐
Number (Basic)	**11) Estimation & Number Sense** – estimating quantity & size; rounding, significant figures, & estimating computations (and deciding if solutions are reasonable; scientific notation	☐	☐	☐	☐	☐	☐

Measurement

Key	Measurement	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Measurement	**12) Units & Processes** – ideas of measurement and units; standard non-standard units (e.g., inches, liters, paper clips); common measures of length, area, time, temperature, money, mass, etc.; miles/hour, miles/gal., etc.; use of measurement instruments	☐	☐	☐	☐	☐	☐
Geometric Relationships	**13) Perimeter, Area, & Volume** – computations, formulas, & properties (including surface area)	☐	☐	☐	☐	☐	☐
Measurement	**14) Estimation & Measurement Errors** – precision, accuracy, & errors of measurement	☐	☐	☐	☐	☐	☐

Geometry

Key	Geometry	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Geometric Objects	**15) Basics** – number lines, coordinate system; graphs in two dimensions; lines, segments, rays; angles; equations of straight lines; parallelism & perpendicularity	☐	☐	☐	☐	☐	☐
Geometric Relationships	**16) Two Dimensional Figures** – classification & properties of polygons & circles; Pythagorean theorem	☐	☐	☐	☐	☐	☐
Geometric Objects	**17) Three Dimensional Geomery** – 3-D coordinate systems, spatial visualization; shapes & surfaces, planes, vectors; constructions with straightedge & compass	☐	☐	☐	☐	☐	☐
	18) Transformations – patterns, tessellations, friezes; symmetry, rotation, & reflections	☐	☐	☐	☐	☐	☐
Geometric Relationships	**19) Congruence & Similarity** – properties of congruence & similarity	☐	☐	☐	☐	☐	☐

Proportionality, Functions & Equations

Key	Proportionality, Functions & Equations	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Number (Transition)	**20) Proportionality Concepts** – meaning of ratio & proportion; direct & inverse proportion	☐	☐	☐	☐	☐	☐
	21) Proportionality Problems – scales, maps, models, proportional equations	☐	☐	☐	☐	☐	☐
Intermediate Algebra	**22) Slope & Trigonometry** – slope & interpolation; sines & cosines	☐	☐	☐	☐	☐	☐
Beginning Algebra	**23) Patterns, Relations, & Functions** – number patterns, relations, properties, uses, & graphs of functions; types of functions, relations of functions and equations	☐	☐	☐	☐	☐	☐
	24) Linear Equations & Formulas – representing linear numberical stiuations; formulas, informal and formal solutions of simple linear equations	☐	☐	☐	☐	☐	☐
Intermediate Algebra	**25) Other Equations & Inequalities** – representing other numberical situations; informal and formal solutions for inequalities & more complex equations; use of algebraic expressions & inequalities	☐	☐	☐	☐	☐	☐

Data Representation, Probability, & Analysis

Key	Data Representation, Probability, & Analysis	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Data & Statistics	**26) Representing & Interpreting Data** – tables, charts, graphs; mean, median, mode, & sampling	☐	☐	☐	☐	☐	☐
	27) Probability & Uncertainty – concepts of "more likely" & "less likely"; contingency tables, confidence intervals, hypothesis testing	☐	☐	☐	☐	☐	☐

Displays 14-16: Middle School Mathematics Areas Key

Class periods taught this year

Key	Whole Numbers, Fractions, & Number Concepts	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Number (Basic)	**1) Whole numbers** – place value & numeration; ordering & comparing; operations & properties of operations	☐	☐	☐	☐	☐	☐
Number (Transition)	**2) Common Fractions** – meaning, representation, uses, computations; computations with mixed numbers	☐	☐	☐	☐	☐	☐
	3) Decimal Fractions – meaning, representation, uses, computations	☐	☐	☐	☐	☐	☐
	4) Relationships Between Common & Decimal Fractions – equivalence, conversions & ordering	☐	☐	☐	☐	☐	☐
	5) Percentages – concepts, problems, & computations	☐	☐	☐	☐	☐	☐
	6) Properties of Common & Decimal Fractions – commutative, distributive, identity, inverse, etc.	☐	☐	☐	☐	☐	☐
Algebra Foundations	**7) Negative, Rational, & Real Numbers** – meanings, operations, & properties	☐	☐	☐	☐	☐	☐
	8) Other Number Topics – binary arithmetic; bases other than ten; exponents, roots, radicals; primes, factorizations; complex numbers; permutations & systematic counting	☐	☐	☐	☐	☐	☐
Number (Basic)	**9) Estimation & Number Sense** – estimating quantity & size; rounding; significant figures; est. computations	☐	☐	☐	☐	☐	☐

Measurement

Key	Measurement	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Measurement	**10) Units** – standard non-standard units (e.g., inches, liters, paper clips); common measures of length, area, time, temperature, money, mass, etc.; miles/hour, miles/gal., etc.; use of measurement instruments	☐	☐	☐	☐	☐	☐
Geometric Relationships	**11) Perimeter, Area, & Volume** – computations, formulas, & properties (including surface area)	☐	☐	☐	☐	☐	☐
Measurement	**12) Estimation & Measurement Errors** – measurement estimation; precision & accuracy of measurements	☐	☐	☐	☐	☐	☐

Geometry

Key	Geometry	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Geometric Objects	**13) Coordinates & Lines** – number lines, graphs; segments, rays; angles; equations of lines; parallelism & perpendicularity	☐	☐	☐	☐	☐	☐
Geometric Relationships	**14) Polygons & Circles** – classification, formulae, properties, & theorems of circles, triangles, & other polygons	☐	☐	☐	☐	☐	☐
Geometric Objects	**15) Three Dimensional** – spatial visualization; 3-D coordinate systems; vectors; constructions with straightedge & compass	☐	☐	☐	☐	☐	☐
	16) Transformations – patterns, tessellations, friezes; symmetry, rotation, & reflections	☐	☐	☐	☐	☐	☐
Geometric Relationships	**17) Congruence & Similarity** – properties of congruence & similarity	☐	☐	☐	☐	☐	☐

Proportionality, Functions & Equations

Key	Proportionality, Functions & Equations	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Number (Transition)	**18) Proportionality Concepts** – ratio & proportion; direct & inverse proportion	☐	☐	☐	☐	☐	☐
	19) Proportionality Problems – scales, maps, models, proportional equations	☐	☐	☐	☐	☐	☐
Intermediate Algebra	**20) Slope & Trigonometry** – slope & interpolation; sines & cosines	☐	☐	☐	☐	☐	☐
Beginning Algebra	**21) Patterns and Relations** – number patterns, mathematical relations and their properties	☐	☐	☐	☐	☐	☐
Intermediate Algebra	**22) Functions** – types and properties of functions, operations on functions, relationship of functions & equations, interpretation of function graphs	☐	☐	☐	☐	☐	☐
Beginning Algebra	**23) Expressions & Simple Equations** – representing numerical situations; informal solutions; factorization & simplification; substitution into formulas	☐	☐	☐	☐	☐	☐
	24) Linear Equations & Inequalities – formal solutions for such equations, inequalities and their graphical representation	☐	☐	☐	☐	☐	☐
Intermediate Algebra	**25) Other Equations & Inequalities** – quadratics, polynomial equations, logarithmic and exponential equations, equation solution methods (e.g., successive approximation), systems of equations & inequalities	☐	☐	☐	☐	☐	☐

Data Representation, Probability, & Analysis

Key	Data Representation, Probability, & Analysis	0	1 or <1	2 - 5	6 - 10	11 - 15	>15
Data & Statistics	**26) Representing & Interpreting Data** – tables, charts, graphs; mean, median, mode, & sampling	☐	☐	☐	☐	☐	☐
	27) Probability & Uncertainty – concepts of "more likely" & "less likely"; contingency tables, confidence intervals, hypothesis testing	☐	☐	☐	☐	☐	☐

Glossary of Terms

***p* value**: The percent correct for an item across all subjects in the sample.

Standard Error (Mean): The standard error of the mean indicates how much the mean of a sample may differ from the true mean for the population. In general, the larger the sample drawn from a population, the smaller the standard error.

Mean: The mean is the sum of all scores divided by the total number of scores.

Median: The median is the middle of a distribution. One half of the scores lie below the median and one half lie above.

Interquartile Range: The Interquartile range is a measure of spread or dispersion. It is the range of scores from the 25th to the 75th percentiles.

Percentile: A percentile is a value below which lie *p* % of the values in the sample.

25th Percentile: The value where below this point lies the *lowest* ¼ (25%) of scores.

75th Percentile: The value where above this point lies the *highest* ¼ (25%) of scores.

Box and Whisker Plots: A box plot provides a visual summary of many important aspects of a distribution. The box stretches from the 25th Percentile to the 75th percentile, thus containing the middle half of the scores in the distribution. The Median, or 50th percentile, is shown as a line across the box. The whiskers stretch from the 25th and 75th percentiles to the 5th or the 95th percentiles, respectively. [Note: Other criteria are sometimes used to define the "whiskers".]

95th Percentile

75th Percentile

Interquartile Range

50th Percentile (Median)

25th Percentile

5th Percentile
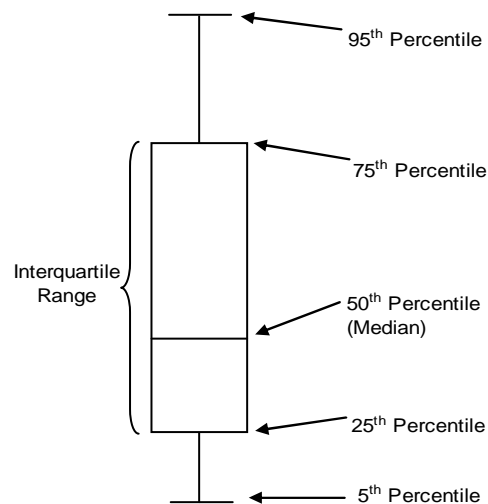
Distribution of Scores: A visual or numerical description of the ranking of scores from lowest to highest often incorporating the relative frequencies of occurrence of each score.

Sample: A sample is a subset of a population.

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