



# Independent School District of Boise City

## Curriculum Map

### Accelerated Geometry

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#### Scope and Sequence Summary

Math Vocabulary	<i>Ongoing</i>
Introduction to Geometry	2 weeks
Basic Concepts and Proofs	3 weeks
Congruent Triangles	3 weeks
Lines in the Plane	3 weeks
Parallel Lines and Quadrilaterals	4 weeks
Lines and Planes in Space	1 week (optional)
Polygons	2 weeks
Similar Polygons	2 weeks
Pythagorean Theorem	4 weeks
Circles	3 weeks
Area	3 weeks
Surface Area and Volume	3 weeks
Coordinate Geometry	2 weeks

# **Accelerated Geometry**

## **Materials Needed for Common Final (EOC)**

**1<sup>st</sup> Semester**- Calculator

**2<sup>nd</sup> Semester** – Calculator

# Accelerated Geometry

## Scope and Sequence

Accelerated Geometry – Geometry, for Enjoyment and Challenge

Ch 1: Introduction to Geometry	Ch 8: Similar Polygons
Ch 2: Basic Concepts and Proofs	Ch 9: Pythagorean Theorem
Ch 3: Congruent Triangles	Ch 10: Circles
Ch 4: Lines in the Plane	Ch 11: Area
Ch 5: Parallel Lines and Quadrilaterals	**Ch 12: Surface Area and Volume
<b>*Ch 6: Lines and Planes in Space (optional)</b>	Ch 13: Coordinate Geometry
Ch 7: Polygons	Review Semester II and EOC (with calculator) Area, Surface Area, and Volume Formulas given on EOC
Review Semester and EOC (with calculator)	

**\*Suggestion ... Use week 1 as an Algebra Review. Course assumes students can factor, and solve systems of equations. Also, Mountain Math (Algebra) is a great ongoing review of Algebra to use throughout the year.**

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### Formulas – given on semester 2 EOC

#### AREA

$$\text{parallelogram} = bh$$

$$\text{regular polygon} = \frac{1}{2}ap$$

$$\text{circle} = \pi r^2$$

#### SA

$$\text{prism} = ph + 2B$$

$$\text{cylinder} = 2\pi rh + 2\pi r^2$$

$$\text{pyramid} = B + \frac{1}{2}pl$$

$$\text{cone} = \pi r^2 + \pi rl$$

$$\text{sphere} = 4\pi r^2$$

#### VOLUME

$$\text{cylinder} = \pi r^2 h$$

$$\text{prism} = Bh$$

$$\text{pyramid} = \frac{1}{3}Bh$$

$$\text{cone} = \frac{1}{3}\pi r^2 h$$

$$\text{sphere} = \frac{4}{3}\pi r^3$$

# Accelerated Geometry Terms

## Chapter 1

Acute  
Angle  
Bisector  
Collinear  
Conclusion  
Conditional Statement  
Congruent  
Contrapositive  
Converse  
Counterexample  
Hypothesis  
Intersection  
Line  
Line segment  
Midpoint  
Minute  
Negation  
Obtuse  
Postulate  
Ray  
Second  
Segment  
Straight angle  
Theorem  
Union  
Venn Diagram  
Vertex

## Chapter 2

Complementary angles  
Oblique lines  
Opposite rays  
Origin  
Perpendicular  
Supplementary angles  
Vertical angles

## Chapter 3

Altitude  
Base  
Base angles

Equiangular  
Equilateral  
Hypotenuse  
Included  
Isosceles triangle  
Leg  
Median  
Reflection  
Reflexive property  
Rotate  
Scalene triangle  
Slide  
Vertex angle

## Chapter 4

Alternate exterior angles  
Alternate interior angles  
Coplanar  
Corresponding angles  
Equidistant  
Parallel lines  
Perpendicular bisector  
Plane  
Slope  
Transversal

## Chapter 5

Convex  
Diagonal  
Indirect proof  
Isosceles trapezoid  
Kite  
Parallelogram  
Polygon  
Quadrilateral  
Rectangle  
Rhombus  
Square  
Trapezoid

## Chapter 6

(optional chapter)

Foot  
Skew

## Chapter 7

Decagon  
Dodecagon  
Exterior angle  
Heptagon  
Hexagon  
Interior angle  
Octagon  
Pentadecagon  
Pentagon  
Nonagon  
Regular polygon

## Chapter 8

Arithmetic mean  
Dilation  
Geometric mean  
Proportion  
Ratio  
Reduction  
Similar

## Chapter 9

Altitude  
Angle of depression  
Angle of elevation  
Cosine  
Cube  
Diagonal  
Edge  
Face  
Pythagorean triple  
Rectangular solid  
Sine  
Slant height  
Tangent

# Accelerated Geometry Terms

## Chapter 10

Arc  
Central angle  
Chord  
Circle  
Circumcenter  
Circumference  
Circumscribed polygon  
Common external tangent  
Common internal tangent  
Concentric  
Incenter  
Inscribed angle  
Inscribed polygon  
Major arc  
Minor arc  
Secant  
Semicircle  
Tangent line

## Chapter 11

Apothem  
Median  
Sector  
Segment of a circle

## Chapter 12

Cone  
Cross section  
Cylinder  
Frustum  
Lateral edge  
Lateral face  
Lateral surface area  
Polyhedron  
Prism  
Pyramid  
Sphere  
Total surface area  
Volume

## Chapter 13

Boundary line  
General linear form  
Imaginary circle  
Intercept  
Point-slope form  
Slope-intercept form

# ACCELERATED GEOMETRY

## Content Overview

(for the teacher)

Syllabus is a guide only. Teachers may need more problems from sections A and B, and fewer from section “C”. Use “C” problems to review Algebra concepts (be selective).

### 1<sup>st</sup> Semester

**CHAPTER 1:** Basic introductory chapter. Need to emphasize that definitions, postulates, and theorems must be memorized throughout the year. Beginning proof is here. Make sure you start with the format and notations you would like to use throughout the year. Also, probability is not taught as a unit but is mixed into many chapters starting with 1.9. Do the clock problems p. 14. They are also in many chapters to come.

**CHAPTER 2:** Basic concepts and proofs. Algebraic Properties and much vocabulary. Emphasis on proof writing. Students find this a tough chapter, learning to write proof. Instruction is difficult, just keep practicing and encouraging the students. Mastery will come in Chapter 3.

**CHAPTER 3:** Congruent Triangles. Writing triangular proofs needs to be mastered here. Spending time here, maybe two days per lesson, will pay off later. Note: there are some flex days built into the calendar.

**CHAPTER 4:** Lines in a Plane. More proof. Section 4.2, drawing your own diagrams and setting up the proofs, is difficult for students. Use many examples.

**CHAPTER 5:** Parallel Lines and Related Figures. Indirect proof is here so it can be used in proving future theorems. Two-column proof still emphasized in this chapter. Nice summary for parallel line and transversal information on p. 227. Emphasize again that quadrilateral definitions and properties must be memorized! They may seem somewhat overwhelmed here.

**CHAPTER 6:** Lines and Planes in Space. If you are running short on time, ***this chapter may be skipped.***

Somewhere around Christmas, a straightedge/compass construction unit would be nice, time permitting. Be able to construct bisectors, copy angles, and points of concurrency. Ch. 14.5 and 14.6-good instructions

**CHAPTER 7:** Polygons. Formula and calculation chapter. Very little proof and a nice change. **Supplement vector topic here. Reference Heath Geometry book lesson 3.7 (vectors are on the EOC).**

## 2<sup>nd</sup> Semester

**CHAPTER 8:** Similar Polygons. Means-extremes product theorem for solving proportion problems (sec. 8.1) is used through out the rest of the book to solve problems.

**CHAPTER 9:** The Pythagorean Theorem. Sec. 1 does a radical and exact answer review. This is a long chapter that uses exact answers. If more practice is needed, fill in before starting the chapter. The circles sec.9.2 seems out of order-don't skip it. Sec. 9.3 on geometric mean needs much practice. This is extremely difficult for students. You must also emphasize the 30-60-90<sup>o</sup> and the 45-45-90<sup>o</sup>-they don't go away. Trig is the same way. Finding an apothem will involve both concepts in Ch. 11.

**CHAPTER 10:** Circles. This is the only math class that circles are covered in depth. This whole chapter is new material for all.

**CHAPTER 11:** Area. Again, basic shapes where memorizing formulas is the key to the calculations. Apothems (summarized nicely on p. 532.) in regular polygons will be the tough area. Ratios of areas are also difficult.

**CHAPTER 12:** Surface Area and Volume. *Formulas for these 3-d shapes are provided on the EOC.*

**CHAPTER 13:** Coordinate Geometry Extended. Nice algebra review. Applications here and not much new information.

## Accelerated Geometry

Shorten or lengthen assignments as you get comfortable with the course and your students.

Often 4 or 5 proofs given on an assignment is enough for practice, without getting discouraged

		<b>Accelerated Geometry</b>		<b>Semester One</b>	
Date	Event	Lecture/Discussion Topics		Assignment	
8/23/2010					
8/24/2010					
8/25/2010		Intro to course	1/2 day for students		
8/26/2010			Algebra Review : Solving Equations		
8/27/2010			Algebra Review : Fact/Solve by Factor		
30-Aug			Algebra Review : Fact/Solve by Factor		
31-Aug			Algebra Review : Solving systems		
1-Sep			Algebra Topics Quiz		
2-Sep		Chapter 1	1.1 Getting Started	Page 7 (1-12)	
3-Sep			1.2 Meas. Of Segs and Angles	Page 14 (1-7)	
6-Sep	Labor Day		No School		
7-Sep			1.2	Page 14 (8-11, 13, 14, 16, 20, 21)	
8-Sep			1.3 Collinearity, Betweenness, Assume	Page 20 (1, 3-15)	
9-Sep			1.4 Beginning Proofs	Page 26 (2-7, 9-11, 14,15)	
10-Sep			Proof Practice/Quiz Review		
13-Sep			Quiz 1.1-1.4		
14-Sep			1.5 Division of Segs/Angles	Page 32 (1-9)	
15-Sep			1.5	Page 34 (11-17odd, 18, 19, 21)	
16-Sep			1.6 Paragraph Proofs	Page 37 ( 2-6, 9, 10, 11a)	
17-Sep			Flex Day		
20-Sep			1.7 Deductive Structure	Page 42 ( 1-5, 7-12, 14)	
21-Sep			1.8 Statements of Logic	Page 47 ( 1-10 )	
22-Sep			1.9 Probability	Page 51 ( 1-10, 14, 15)	
23-Sep			Chapter 1 review	Page 54 – 59	

24-Sep			Chapter 1 Review Cont.	
27-Sep			Chapter 1 Test	
28-Sep		Chapter 2	2.1 Perpendicularity	Page 64 (1-5, 7, 9-11, 13, 14)
29-Sep			2.2 Compl/Suppl angles	Page 69 (1-5,7,9,10,11)
30-Sep			2.2	Page 69 (8, 12, 16, 18-24)
1-Oct			2.3 Drawing Conclusions	Page 74 (1-10, 12, 14)
4-Oct			2.4 Congruent Suppl/Compl	Page 79 (1-7)
5-Oct			2.4	Page 79 8-14 Even, 15-19
6-Oct			2.5 Addition and Subtraction Prop	Page 86 (1-7, 9-17)
7-Oct		State Workshop	No School	
8-Oct		State Workshop	No School	
11-Oct			Quiz 2.1-2.5	
12-Oct			2.6 Multipl/Div Properties	Page 92 (1, 3, 4, 9, 10, 11, 12, 14)
13-Oct			2.7 Transitive and Substitution Prop	Page 97 (1-4, 8-12, 14)
14-Oct			2.8 Vertical Angles	Page 102 (1-14)
15-Oct			Review	Page 104 - 109
18-Oct			Continue Review	Page 104 - 109
19-Oct			Chapt. 2 test	
20-Oct		Chapter 3	3.1 Congruent Figures	Page 114 (1-5)
21-Oct			3.2 Proving Triangles Congruent	Page 120 (1-11)
22-Oct			3.2	Page 121 12-19, 24)
25-Oct			3.3 CPCTC and Circles	Page 127 (1-3, 5-8)
26-Oct			3.3	Page 128 (11, 12, 17-20)
27-Oct			Quiz 3.1-3.3	
28-Oct			3.4 Beyond CPCTC	Page 135 (1-10)
29-Oct	End of 1st		3.5 Overlapping Triangles	Page 139 (1-4, 6, 8, 9, 12)
1-Nov			3.6 Types of Triangles	Page 144 (1-7, 9, 10, 12)
2-Nov			3.7 Angle Side Theorems	Page 152 1-3, 7, 8, 10-14)
3-Nov			Quiz 3.4-3.7	
4-Nov			3.8 HL Postulate	Page 158 (1-5, 6, 8, 10, 12, 13, 15)
5-Nov	Building In-		No School	

8-Nov			Review	pg 162 1-10, 12, 15-17 pg 165 1-5, 18, 23
9-Nov			Jeopardy Review	
10-Nov			Chapter 3 Exam	
11-Nov		Chapter 4	4.1 Detours and Midpoints	Page 172 (1,3-6, 8, 9, 11)
12-Nov			4.2 Missing Diagram Problems	Page 178 (1, 2, 4, 6, 8, 9, 11)
15-Nov			4.3 Right Angle Theorem	Page 182 (1-6, 11, 14)
16-Nov			4.4 Equidistance Theorem	Page 187 (1, 2, 4, 7, 8, 9, 12, 14)
17-Nov			Quiz 4.1-4.4	
18-Nov			4.5 Into to Parallel Lines	Page 196 (1-5)
19-Nov			4.6 Slope	Page 202 (1-13)
22-Nov			No School-Thanksgiving Break	
23-Nov			No School-Thanksgiving Break	
24-Nov			No School-Thanksgiving Break	
25-Nov			No School-Thanksgiving Break	
26-Nov			No School-Thanksgiving Break	
29-Nov			Review	Page 206 - 209
30-Nov			Chapter 4 TEST	
1-Dec		Chapter 5	5.2 Proving Parallel Lines	Page 219 (1-5)
2-Dec			5.2 Proving Parallel Lines	Page 219 (8, 9, 12-16)
3-Dec			5.3 Parallel Lines & Congruent $\angle$ 's	Page 229 (1-8)
6-Dec			5.3	Page 229 (9-13, 16-20, 22)
7-Dec			5.4 Four Sided Polygons	Page 237 (1-9, 11, 12, 16- 19)
8-Dec				<b>Students can make</b>
9-Dec			5.5 Prop of Quadrilaterals	Page 244 (1-3, 5-7, 11, 12, 19)
10-Dec			Quiz 5.1-5.5	
13-Dec			5.6 Proving Quad is a Parallelogram	Page 251(1, 4, 6-11, 16)
14-Dec			5.7 Proving Special Quadrilaterals	Page 258(1-8, 10)
15-Dec			Chapter 5 Review	pg 264
16-Dec			Chapter 5 Exam	
17-Dec	Early	Release		

20-Dec			Christmas Holiday	
21-Dec			Christmas Holiday	
22-Dec			Christmas Holiday	
23-Dec			Christmas Holiday	
24-Dec			Christmas Holiday	
27-Dec			Christmas Holiday	
28-Dec			Christmas Holiday	
29-Dec			Christmas Holiday	
30-Dec			Christmas Holiday	
31-Dec			Christmas Holiday	
3-Jan	Chapter 7	7.1	Triangle Application Theorems	Page 298(1-12, 15, 16)
4-Jan		7.2	Two Triangle Theorems	Page 304 1, 2, 4, 6, 8, 9, 11, 16)
5-Jan		7.3	Formulas for Polygons	Page 309 (1-7, 10, 11, 13-15)
6-Jan			Quiz 7.1-7.3	
7-Jan		7.4	Regular Polygons	Page 316(1-7, 9-13)
10-Jan		Review		Page 320
11-Jan			Chapter 7 Test	
12-Jan			EOC REV	
13-Jan			EOC REV	
14-Jan			EOC REV	
			Notice: Chapter 6 is optional	If you have time you can insert Chapter 6 (3 lessons)
17-Jan		MLK Day	No School	
18-Jan			EOC Review	
19-Jan			Semester Tests	
20-Jan			Semester Tests	
21-Jan			Semester Tests	
			<b>Semester 2</b>	<b>Accelerated Geometry</b>
<b>Date</b>	<b>Exam</b>	<b>Lecture/Discussion Topics</b>		<b>Assignments</b>
24-Jan	In-service	No School		
25-Jan		Chapter 8	8.1 Ratio and Proportions	Page 329 (1-17, 22, 26)

26-Jan			8.2 Similarity	Page 336 (1-15)
27-Jan			8.3 Proving Triangles Similar	Page 341 (1, 4, 5, 8-10, 12, 13, 16, 22)
28-Jan			8.4 Congruence and Proportions	Page 347 (1-3, 5, 7-9, 11, 17, 19-20)
31-Jan			8.1-8.4 Quiz	
1-Feb			8.5 3 Proportion Theorems	Page 354 (1-8, 10, 14-16, 20)
2-Feb			Review	Page 361 – 364
3-Feb			Continue Review	Page 361 - 364
4-Feb			Chapter 8 Exam	
7-Feb		Chapter 9	9.1 Radicals and Quad Equations	Page 368 (1-12)
8-Feb			9.2 Into to Circles	Page 374 (1-16)
9-Feb			9.3 Altitude –on-Hyp Theorems	Page 379 (1-5, 8-11)
10-Feb			9.3	Page 380 (12, 13, 14, 16, 17, 19)
11-Feb			9.1-9.3 Quiz	
14-Feb			9.4 Pythagorean Theorem	Page 387 (1-3, 5, 8, 9, 12, 14, 17)
15-Feb			9.5 Distance Formula	Page 394 (1-6, 10, 11, 14-16, 22)
16-Feb			Review 9.1-9.5	
17-Feb			9.1-9.5 EXAM	
18-Feb			9.6 Families of Rt. Triangles	Page 401: (1, 2, 4, 5, 7, 8, 10-13, 16)
21-Feb	President's Day		No School	
22-Feb			9.7 Special Rt Triangles	Page 408 (1, 2, 4, 5, 8-10, 14-18, 20, 22)
23-Feb			9.8 Pythagoras. Theorem in 3-D	Page 414 (1-3, 5, 7-13, 15)
24-Feb			Quiz 9.6-9.8	
25-Feb				
28-Feb			9.9 Into to Trig	Page 420 (1-3, 5, 7, 9, 10, 12, 14, 16)
1-Mar			9.10 Trig Ratios	Page 425 (1, 2, 5-12, 15, 16)
2-Mar			Review	Page 429 – 433
3-Mar			Review	
4-Mar			Chapter 9 EXAM	
7-Mar			10.1 The Circle	Page 443 (2, 5, 7, 9-12, 14, 17)
8-Mar			10.2 Congruent Chords	Page 448 (1-5, 6, 7, 9, 11-13)
9-Mar			10.3 Arcs of Circles	Page 455 (1-6, 8-11, 13, 15, 16, 18, 19)

10-Mar			10.4 Secants and Tangents	Page 463 (1, 2, 4-11, 13, 16, 17, 19)
11-Mar			Work on 10.4 assignment	
14-Mar			10.5 Angles related to a Circle	Page 473 (1-16, 18, 19)
15-Mar			Work on 10.5 Assignment	
16-Mar			10.5 Wkst	
17-Mar			Quiz 10.1-10.5	
18-Mar			10.6 More Angle-Arc Theorems	Page 481 (2-4, 6-9, 11-17, 19)
21-Mar			10.7 Inscribed and Circumscribed	Page 489 (1-6, 9, 10, 14-16, 19, 20)
22-Mar			10.8 Power Theorems	Page 495 (1-6, 8-11, 14, 16)
23-Mar			10.9 Circum and Arc Length	Page 501 (1, 3, 5-9, 12-14, 16)
24-Mar			Review	Page 506 – 508
25-Mar	End of 3rd		Chapter 10 Exam	
28-Mar	Spring Break	No School		
29-Mar	Spring Break	No School		
30-Mar	Spring Break	No School		
31-Mar	Spring Break	No School		
1-Apr	Spring Break	No School		
4-Apr		Chapter 11	11.1 Understanding Area	Page 513 (1-6, 8, 10, 12, 16)
5-Apr			11.2 Area of Parallelograms and Trian	Page 519 3, 8, 14-18, 21-26, 30)
6-Apr			11.3 Area of Trapezoids	Page 525 (1-3, 6-8, 10-12, 15, 16, 17)
7-Apr			11.4 Areas of Kites	Page 529 (1-10)
8-Apr			Quiz 11.1-11.4	
11-Apr			11.5 Areas of Regular Polygons	Page 533 (1-6, 12-15, 17)
12-Apr			11.6 Areas of Circles, Sectors, Segs	Page 539 (1-7)
13-Apr			11.6	Page 540 (9, 11-15)
14-Apr			11.7 Ratios of Areas	Page 547 (1,2, 4, 5, 7-13, 15-17)
15-Apr			Quiz 11.5-11.7	
18-Apr			11.8 Hero & Brahmagupta	Page 551 (1cd, 3cd, 4, 7, 9-12)
19-Apr			Review	Page 554-559
20-Apr			Review	
21-Apr			Chapter 11 Exam	

22-Apr				
25-Apr		Chapter 12	12.1 Surface Areas of Prisms	Page 563 (1-8)
26-Apr			12.2 Surface Areas of Pyramids	Page 567 (1-5, 7,8)
27-Apr			12.3 Surface Areas of Circular Solids	Page 572 (1-8, 10)
28-Apr			Review Surface Area	
29-Apr			12.1-12.3 Quiz	
2-May			12.4 Volumes of Prisms and Cylinders	Page 579 (1-5, 8-13, 15-17, 19)
3-May			12.5 Volumes of Pyramids and Cones	Page 585 (1-5, 7-8, 11-14, 16)
4-May			12.6 Volumes of Spheres	Page 590 (1-12)
5-May			Review	Page 594 – 597
6-May			Test	
9-May		Chapter 13	13.1 Graphing Equations	Page 607 (1, 3, 5-9, 12-15, 1, 18, 20, 23)
10-May			13.2 Equations of Lines	Page 615 (1, 4, 5-9, 14-17, 19, 21)
11-May			13.3 Systems of Equations	Page 620 (1, 3, 5, 8, 10, 14)
12-May			Quiz 13.1-13.3	
13-May			13.4 Graphing Inequalities	Page 624 (1-5, 7a, 8)
16-May		optional	13.5 3 Dimensional Graphing	Page 630 (1, 2, 5, 6, 8, 10, 12)
17-May			13.6 Circles	Page 635 (1-12)
18-May			13.7 Coordinate Geometry Practice	Page 638 (1-20)
19-May			Work on 13.7	
20-May			Students Present Solutions to 13.7	
23-May			Review	Page 644-647
24-May			Review	
25-May			Chapter 13 Exam	
26-May			EOC REVIEW	
27-May			EOC REVIEW	
30-May	Memorial			
31-May			EOC REVIEW	
1-Jun	<b>Semester</b>			
2-Jun	<b>Semester</b>			
3-Jun	<b>Semester</b>			

***If time allows, add a constructions unit. Simple compass/ruler constructions such as bisecting a segment/angle, perpendicular bisector, equilater:				

al triangle, etc.

**Accelerated Geometry  
Similar Problem List (EOC)  
Semester 1**

*(The number of review questions does not reflect the number of test questions)*

Accelerated Geometry                      Semester 1

page	problems
7	1,3,4,5
11	classification of angles
20	1
22	15
40	read/identify hypothesis-conclusion
46	chain rule
48	5
51	5
55	8
65	14
69	2,5
88	14
101	Theorem 18
103	12
103	13
106	13,28
118	1-4/examples
120-22	1,2,4,6,17
135	1
139	1
141	9
144	1,10
153	7,8
157	example 1
173	4
196	1
202	1
219	1,2,3
222	17
227	bullets on bottom
236	read & know
237	1-3,8,9
241	read and know properties
270	read and know
296	theorem 51
297	samples 1 & 2
298	1,2
309	1
316	1

(The number of review questions does not reflect the number of test questions)

**Accelerated Geometry Semester 2**

page problems

329		3
330		11,22
336		2
341		1,8
354		1,2,3
361		4
379		1,3
385		theorem 70 extension
387		1,8,22
394		1
407		samples 3 &4
408		1,4,6
420		1
425		2,7
441		theorem, 74-76
455		3
460		definitions and theorems
464		6
465		16
474		3,5
477		23.24
475		6-12
501-2		3,6,8
505-6		2,8
520		10-11
525		1,2,4
532		sample 2
533-4		2,5,12,15
539		5
541		13,14
563		1
567		1,3
572-3		2,7,8
579-80		1,2,3,9
586		3,5,8,9
590-1		3,9
615		6,8
635		1,2,3