## Jasper City Schools Curriculum Map

### Geometry B

#### Course Name: Geometry B

#### Unit Name: Unit 7 Ratios and Proportions

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Weeks 1-3</th>
</tr>
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</table>

#### Unit Standards

- E.1.c: Identify similar figures and use ratios and proportions to solve mathematical and real-world problems (e.g., finding the height of a tree using the shadow of the tree and the height and shadow of a person)
- E.1.d: Use the definition of similarity to establish the congruence of angles, proportionality of sides, and scale factor of two similar polygons
- E.1.h: Identify and give properties of congruent or similar solids

#### Unit Essential Questions

1. How can two objects be similar? Two objects could have similar designs, patterns, shapes, sizes, or color.
2. How does similarity in mathematics compare to similarity in everyday life? In mathematics, similarity has a more specific definition: objects or figures can be similar if they have the same shape.

#### Unit Essential Vocabulary

- 1. ratio
- 2. proportion
- 3. cross products
- 4. similar polygons
- 5. similar ratio
- 6. scale factor
- 7. midsegment of a triangle
- 8. dilation
- 9. similarity transformations
- 10. Scale factor of a dilation
- 11. Scale model
- 12. Scale drawing
- 13. scale

#### Resources

- Textbook
- Kuta Worksheet Builder
- Examview
- AMSTI

#### Assessment(s)

- Chapter 7 Test

#### Assessment Data:

**Chapter Test**

- A –
- B –
- C –
- D –
- F –
**Geometry B**

**Course Name:** Geometry B

**Unit Name:** Unit 8 Right Triangles and Trigonometry

**Time Frame:** Weeks 4-8

**Unit Standards**

- D.2.d: Solve problems involving the relationships formed when the altitude to the hypotenuse of a right triangle is drawn
- D.2.e: Apply the Pythagorean Theorem and its converse to triangles to solve mathematical and real-world problems (e.g., shadows and poles, ladders)
- D.2.f: Identify and use Pythagorean triples in right triangles to find lengths of the unknown side
- E.1.g: Determine the geometric mean between two numbers and use it to solve problems (e.g., find the lengths of segments in right triangles)
- H.1.a: Apply properties of 45°-45°-90° and 30°-60°-90° triangles to determine lengths of sides of triangles
- H.1.b: Find the sine, cosine, and tangent ratios of acute angles given the side lengths of right triangles
- H.1.c: Use trigonometric ratios to find the sides or angles of right triangles and to solve real-world problems (e.g., use angles of elevation and depression to find missing measures)

**Unit Essential Questions**

1. Why do we use mathematics to model real-world situations? To solve problems, understand phenomena, look for trends.

**Unit Essential Vocabulary**

1. geometric mean
2. Pythagorean triples
3. ordered triple
4. trigonometry
5. trigonometric ratio
6. sine
7. cosine
8. tangent
9. inverse sine
10. inverse cosine
11. inverse tangent
12. angle of elevation
13. angle of depression
14. law of sines
15. law of cosines

**Resources**

- Textbook
- Kuta Worksheet Builder
- Examview

**Assessment(s)**

- Chapter 8 Test

**Assessment Data:**

- Chapter Test
- A –
- B –
- C –
- D –
- F –
## Course Name: Geometry B

### Unit Name: Unit 10 Circles

### Time Frame: Weeks 12-15

### Unit Standards

- D.3.a: Identify and define line segments associated with circles (e.g., radii, diameters, chords, secants, tangents)
- D.3.b: Determine the measure of central and inscribed angles and their intercepted arcs
- D.3.c: Find segment lengths, angle measures, and intercepted arc measures formed by chords, secants, and tangents intersecting inside and outside circles
- D.3.d: Solve problems using inscribed and circumscribed polygons
- F.1.d: Find arc lengths and circumferences of circles from given information (e.g., radius, diameter, coordinates)
- G.1.d: Write equations for circles in standard form and solve problems using equations and graphs

### Unit Essential Questions

1. How can circles be used? Circles can be used for their shape, to model a circular object, or for their properties, or to model an equal distance around a certain point.

### Unit Essential Vocabulary

| 1. center       | 9. Central angle    | 17. Inscribed angle |
| 2. circle       | 10. arc             | 18. Intercepted arc |
| 3. chord        | 11. Minor arc       | 19. tangent         |
| 4. diameter     | 12. Major arc       | 20. Point of tangency|
| 6. concentric circles | 14. Congruent arcs | 22. secant          |
| 7. circumferences | 15. Adjacent arcs  | 23. External secant segment |

### Resources

- Textbook
- Kuta Worksheet Builder
- Examview

### Assessment(s)

- Chapter 10 Test

### Assessment Data:

- **Chapter Test**
  - A –
  - B –
  - C –
  - D –
  - F –
**Course Name:** Geometry B

**Unit Name:** Unit 11 Areas of Polygons and Circles

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Weeks 10-11</th>
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<tbody>
<tr>
<td><strong>Unit Standards</strong></td>
<td></td>
</tr>
<tr>
<td>E.1.f: Apply relationships between perimeters of similar figures, areas of similar figures, and volumes of similar figures, in terms of scale factor, to solve mathematical and real-world problems</td>
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<tr>
<td>F.1.a: Find the perimeter and area of common plane figures, including triangles, quadrilaterals, regular polygons, and irregular figures, from given information using appropriate units of measurement</td>
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<tr>
<td>F.1.b: Manipulate perimeter and area formulas to solve problems (e.g., finding missing lengths)</td>
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<tr>
<td>F.1.c: Use area to solve problems involving geometric probability</td>
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<tr>
<td>F.1.d: Find arc lengths and circumferences of circles from given information (e.g., radius, diameter, coordinates)</td>
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<tr>
<td>F.1.e: Find the area of a circle and the area of a sector of a circle from given information (e.g., radius, diameter, coordinates)</td>
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<tr>
<td><strong>Unit Essential Questions</strong></td>
<td>1. How can decomposing and recomposing shapes help us build our understanding of mathematics? By doing so, you can visualize how different formulas are developed; you can solve problems involving composite figures.</td>
</tr>
</tbody>
</table>
| **Unit Essential Vocabulary** | 1. base  
2. height  
3. perimeter  
4. area  
5. parallelogram  
6. triangle  
7. sector of a circle  
8. apothem | 9. Center of a regular polygon  
10. Radius of a regular polygon  
11. Composite figure |
| **Resources** | Textbook  
Kuta Worksheet Builder  
Examview  
AMSTI |
| **Assessment(s)** | Chapter 11 Test |
| **Assessment Data:** | Chapter Test  
A –  
B –  
C –  
D –  
F – |
### Course Name: Geometry B

#### Unit Name: Unit 12 Surface Area and Volume

**Time Frame:** Weeks 16-17

#### Unit Standards

- D.4.a: Identify and classify prisms, pyramids, cylinders, cones, and spheres and use their properties to solve problems
- D.4.b: Describe and draw cross sections of prisms, cylinders, pyramids, and cones
- E.1.h: Identify and give properties of congruent or similar solids
- F.2.a: Find the lateral area, surface area, and volume of prisms, cylinders, cones, and pyramids in mathematical and real-world settings
- F.2.b: Use cross sections of prisms, cylinders, pyramids, and cones to solve volume problems
- F.2.c: Find the surface area and volume of a sphere in mathematical and real-world settings

#### Unit Essential Questions

1. How are two-dimensional figures and three-dimensional figures related? The faces and bases of three-dimensional figures are two-dimensional figures. For example, a pyramid has faces that are triangles and a base that is a polygon.

#### Unit Essential Vocabulary

1. right solid  
2. oblique solid  
3. isometric view  
4. cross section  
5. lateral face  
6. lateral edge  
7. base edge  
8. altitude  
9. height  
10. Lateral area  
11. axis  
12. Composite solid  
13. Regular pyramid  
14. Slant height  
15. Right cone  
16. Oblique cone  
17. prisms  
18. pyramid  
19. cylinders  
20. hemisphere  
21. Similar solids  
22. Congruent solids

#### Resources

- Textbook
- Kuta Worksheet Builder
- Examview

#### Assessment(s)

- Chapter 12 Test

**Assessment Data:**

<table>
<thead>
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<th>Chapter Test</th>
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