**Unit Statement:** This unit investigates the relationships between lines and angles in a plane. Parallel and perpendicular line relationships are constructed and explored and their equations derived.

**Essential Outcomes:** (must be assessed for mastery)

*Problem solving and higher order thinking components are essential for ‘A’ level mastery. Each outcome can contain problem solving and higher order thinking components (as found in suggested text).*

1. **The Student Will** identify and solve parallel, perpendicular and skew line problems (3.1 pp 146 - 151).
2. **TSW** identify and solve the angles formed by two lines and a transversal (3.1 pp.146 - 151).
3. **TSW** prove and use theorems about the angles formed by parallel lines and a transversal (3.2 pp. 155 - 161).
4. **TSW** use the angles formed by a transversal to solve problems involving two parallel lines (3.3 pp. 162 - 169).
5. **TSW** prove and apply theorems about perpendicular lines (3.4 pp. 172 - 178).
6. **TSW** use slopes to identify parallel and perpendicular lines (3.5 pp. 182 - 187).
7. **TSW** graph lines and write their equations in slope intercept and point-slope form (3.6 pp. 190 - 197).
8. **TSW** classify lines as parallel, intersecting, or coinciding and find intersection points (3.6 pp. 190 - 197).

**Introduced and Practiced Outcomes:** (taught not assessed)

1. **The Student Will** use a protractor and straight edge to draw parallel lines (3.3 pp. 170-171).
2. **TSW** use a protractor and straight edge to construct a line perpendicular to a given line through a given point (3.4 p. 179).
3. **TSW** apply linear equation skills to graph and write equations for lines associated with data in scatter plot form (3.6 pp. 198-199).

**Key Terms and Concepts:**

- perpendicular lines
- parallel lines
- skew lines
- transversal
- corresponding angles
- alternate interior
- alternate exterior
- slope
- perpendicular bisector
- point-slope form
- slope-intercept form
**Suggested Assessment Tools and Strategies:**

Attached Rubric or teacher generated rubric that assesses **ALL** essential outcomes (TSWs).

**Suggested Resources:**

- Holt McDougal Geometry, Chapter 3, Sections 1 - 6.
- Holt McDougal Geometry, Problem Solving Workbook
- Holt McDougal Geometry, Practice Worksheets
- Holt McDougal Geometry, Reading Strategies
- Holt McDougal Geometry, Reteach Worksheets
- Holt McDougal Geometry, Challenge Worksheets
- Holt McDougal Geometry, Assessment Resources

**Technology Links:**

- Holt McDougal Geometry, Online Edition, 6-year subscription
- Holt McDougal Geometry, Interactive Answers and Solutions CD-ROM
- Holt McDougal Geometry, Lesson Tutorial Videos DVD-ROM
- Holt McDougal Geometry, Teacher One-Stop DVD
- On Core Mathematics Deluxe Eamview Grades 6-12 CD-ROM
- On Core Mathematics High School Activity Generator CD-ROM
- Follett Destiny WebPath Express (found on school’s automated library system)
- Tenmarks [www.tenmarks.com/](http://www.tenmarks.com/)
- Khan Academy [https://www.khanacademy.org/](https://www.khanacademy.org/)

**EVALUATION RUBRIC FOUND ON FOLLOWING PAGE…………………**
# UNIT EVALUATION RUBRIC

## Geometry

### Essential Unit 3 (E03)

- To receive a ‘B’, the student must show ‘B’ level mastery on all eight TSW’s.
- To receive an ‘A’, the student must show ‘A’ level mastery in at least 5 of the 8 available TSW’s and ‘B’ level mastery on all of the remaining TSW’s.

<table>
<thead>
<tr>
<th>TSW</th>
<th>‘A’ LEVEL</th>
<th>‘B’ LEVEL</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- identify and solve parallel, perpendicular and skew line problems.</td>
<td>The student can solve complex, multiple-step story problems involving parallel, perpendicular and skew lines.</td>
<td>The student is able to identify and solve parallel, perpendicular, and skew line problems.</td>
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<tr>
<td>2- identify and solve the angles formed by two lines and a transversal.</td>
<td>The student is able to recognize and investigate transversal angles in nature.</td>
<td>The student can identify and solve the angles formed by two lines and a transversal.</td>
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<tr>
<td>3- prove and use theorems about the angles formed by parallel lines and a transversal.</td>
<td>The student can create and solve their own original parallel line proofs.</td>
<td>The student can prove and use theorems about the angles formed by parallel lines and a transversal.</td>
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<tr>
<td>4- use the angles formed by a transversal to solve problems involving two parallel lines.</td>
<td>The student can use the angles formed by a transversal to prove that two lines are parallel.</td>
<td>The student can use the angles formed by a transversal to solve problems involving two parallel lines.</td>
<td></td>
</tr>
<tr>
<td>5- prove and apply theorems about perpendicular lines.</td>
<td>The student can extend the theorems to solve orthocenter problems by finding the perpendicular bisectors of the sides of a triangle.</td>
<td>The student is able to prove and apply theorems about perpendicular lines.</td>
<td></td>
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<tr>
<td>6. use slopes to identify parallel and perpendicular lines.</td>
<td>The student is able to use slopes to compare and contrast parallelograms and trapezoids.</td>
<td>The student can use slopes to identify parallel and perpendicular lines.</td>
<td></td>
</tr>
<tr>
<td>7. graph lines and write their equations in slope intercept and point-slope form.</td>
<td>The student can collect data on two distinct sets of related data and predict when the data sets will intersect in the future.</td>
<td>The student is able to graph lines and write their equations in slope intercept and point-slope form.</td>
<td></td>
</tr>
<tr>
<td>8. classify lines as parallel, intersecting, or coinciding and find intersection points.</td>
<td>The student can solve complex, multiple-step story problems involving intersecting lines.</td>
<td>The student is able to classify lines as parallel, intersecting, or coinciding and find intersection points.</td>
<td></td>
</tr>
</tbody>
</table>