

## Standards for Mathematical Practice

[MP.1.](#) Make sense of problems and persevere in solving them.  
[MP.2.](#) Reason abstractly and quantitatively.  
[MP.3.](#) Construct viable arguments and critique the reasoning of others.  
[MP.4.](#) Model with mathematics.

[MP.5.](#) Use appropriate tools strategically.  
[MP.6.](#) Attend to precision.  
[MP.7.](#) Look for and make use of structure.  
[MP.8.](#) Look for and express regularity in repeated reasoning.

| Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Clarifications                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>KY.8.G.1</b> Verify experimentally the properties of rotations, reflections and translations:</p> <ul style="list-style-type: none"> <li>• Lines are congruent to lines.</li> <li>• Line segments are congruent to line segments of the same length.</li> <li>• Angles are congruent to angles of the same measure.</li> <li>• Parallel lines are congruent to parallel lines.</li> </ul> <p><b>Alternate Assessment Target:</b><br/> <i>No limitations. All parts of the Kentucky Academic Standard are eligible to be included as an assessment item.</i></p>                                                                                                                                                                   | <p>Emphasis is congruence transformations preserve corresponding congruent lines, segments and angles.</p> <p><b>Alternate Assessment Clarification:</b><br/> <i>Students discover through experience that the transformation (moving the position through rotation, reflection, and translation) of a line, line segment, or an angle will not change the measurement. The position may change but the measurement remains the same (congruent).</i></p> |
| Connections to Math Practices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Coherence/Foundational Understandings                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>MP.5</b> Use appropriate tools strategically. (Use tools to make sense of math*)<br/>           With the aid of physical models, transparencies and geometry software, students in grade eight gain an understanding of transformations and their relationship to congruence of shapes.</p> <p><b>MP.6</b> Attend to precision. (Communicate precisely.*)<br/> <b>Key Vocabulary:</b> corresponding, congruence, line segment, angle, line, reflection, rotation, prime, parallel lines, parallel, image, pre-image, x-axis<br/>           y-axis, rigid motion</p> <p>Click here to see more about what teachers and students do to build the math practices: <a href="#">Engaging the Math Practices and Question Stems</a></p> | <p><b>Pre-requisite Skills</b></p> <ul style="list-style-type: none"> <li>• Use of a measuring instrument</li> <li>• Coordinate graphing KY.5.G.1 graphing points on a coordinate plane</li> </ul> <p style="text-align: right;">KY.HS.G.2 C</p> <p>Coherence KY.8.G.1 → KY.HS.G.3(+)</p> <p><a href="#">Kentucky Academic Standards for Mathematics</a></p>                                                                                              |

\*Clarification to the [math practices by Robert Kaplinsky](#).

**Instructional Considerations****Possible Areas of Difficulties/Misconceptions**

- Students with spatial visualization may. have difficulty therefore they need more practice.
- Locating corresponding sides and angles after a transformation has occurred is difficult without use of labeling and notations of points and segments.
- Color coding may help students identify the corresponding parts so they may discover the idea of congruence.
- Students also may transform themselves within a large floor coordinate grid made from masking tape.

**Suggested Tools/Visual Aids -**

- [KY Alternate Assessment Resource Guide](#) (General terms pps 6-11 ; Math terms pps 22-26)
- Mira, Mirror
- Patty paper/tracing paper
- [Virtual manipulatives](#) [Polypad](#)
- Large graph poster paper, or floor graphs
- Concrete 2-D objects
- Transparencies
- Wallpaper patterns
- Large Floor grid
- Geoboards