

| HPISD Curriculum: Geometry | | | | | | | | |
|---|---|---|-----------------------|---|---|---|---|---|
| Title | | Estimated Duration | 6 Weeks | | | | | |
| Unit 8: Transformations | | 2 weeks | 1 | 2 | 3 | 4 | 5 | 6 |
| Unit Overview | | | | | | | | |
| Use coordinate systems to represent geometric figures and use them to describe transformations. | | | | | | | | |
| Enduring Understandings | | | | | | | | |
| The student will understand that: | | <ul style="list-style-type: none"> • Translations consist of movement and patterns are represented by coordinate notation. • The coordinates of the vertices of a polygon change when translated and reflected, but the shape and size of the image are the same as that of the original. • The composition of two reflections could result in either a translation or a rotation. • After dilation there exists a relationship between a figure and its image represented by a scale factor. • A dilation is not an isometry. | | | | | | |
| Concepts | Guiding/Essential Questions | | | | | | | |
| <ul style="list-style-type: none"> • Transformation • Symmetry | <ul style="list-style-type: none"> • How would the translation of a point in coordinate notation be described? • How can it be explained that every combination of a translation and a reflection does not result in a glide reflection? • How does the location of the vertex affect the relationship between the original figure and its image? • How do you apply the basic properties of transformations? | | | | | | | |
| Learning Targets | | | | | | | | |
| <ul style="list-style-type: none"> • Use congruence transformations to make conjectures and justify properties of geometric figures. | | | | | | | | |
| Formative Assessments | | | Summative Assessments | | | | | |
| homework, quizzes | | | test | | | | | |

| TEKS: Readiness Standards | TEKS: Related Supporting Standards |
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| <p>G.2B Make conjectures about angles, lines, polygons, circles, and three dimensional figures and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.</p> | <p>G.2A Use constructions to explore attributes of geometric figures and to make conjectures about geometric relationships.</p> <p>G.5C Use properties of transformations and their compositions to make connections between mathematics and the real world, such as tessellations.</p> <p>G.7A Use one- and two-dimensional coordinate systems to represent points, lines, rays, line segments, and figures.</p> <p>G.10A Use congruence transformations to make conjectures and justify properties of geometric figures including figures represented on a coordinate plane.</p> <p>G.11A Use and extend similarity properties and transformations to explore and justify conjectures about geometric figures.</p> |
| Processes and Skills: What students should be able to DO | Facts: What students should KNOW |
| <ul style="list-style-type: none"> • Graph transformations (translations, reflections, rotations, dilations, and glide reflections) • Construct a line of reflection and a reflected image • Identify and describe the type of transformation using coordinate notation. • Develop a pattern or rule for reflections and rotations from given examples. | <ul style="list-style-type: none"> • Coordinate notation • Distance formula • Parent linear function $y = x$ • Properties of transformations |
| Topics | |
| <p>Translations Reflections</p> | <p>Rotations Glide Reflections</p> |
| <p>Dilations Reflections with Constructions</p> | |

| Language of Instruction | | |
|--|--------------------|---------------------------------|
| Composition | Glide Reflection | Rotation |
| Constructions of Reflections | Line of Reflection | Scale Factor |
| Coordinate Notation for Transformations | Line of Symmetry | Translation |
| Dilation | Reflection | |
| State Assessment Connections | | National Assessment Connections |
| | | |
| Resources | | |
| <p><u>Glencoe: Geometry</u> 9.1, 9.2, 9.3, 9.5</p> | | |