

MATHEMATICS – Geometry and Spatial Sense

<p>Grade 1 identify common two-dimensional shapes and three-dimensional figures and sort and classify them by their attributes.</p> <p>Grade 2 identify two-dimensional shapes and three-dimensional figures and sort and classify them by their geometric properties.</p> <p>Grade 3 compare two-dimensional shapes and three-dimensional figures and sort them by their geometric properties.</p>	<p>During our geometry unit, <i>[Name]</i> was able to identify, sort and classify two-dimensional shapes (such as triangles and rectangles) and three-dimensional figures (such as cylinders and spheres).</p> <p><i>[Name]</i> can identify different kinds of shapes and figures, and sort them by their properties. <i>[He/She]</i> demonstrated this by <i>[specific task, such as building shapes using marshmallows and toothpicks]</i>.</p>	<p><i>[Name]</i> can identify these shapes: <i>[list specific shapes]</i> but experiences difficulty with identifying others, including <i>[specific shapes]</i>. To assist <i>[Name]</i> in identifying shapes, <i>[she/he]</i> could practice identifying various shapes at home.</p> <p><i>[Name]</i> can identify some shapes. <i>[He/She]</i> needs to work on sorting and classifying them by their properties (such as how many sides, points, etc.)</p>
<p>Grade 4 identify quadrilaterals and three-dimensional figures and classify them by their geometric properties, and compare various angles to benchmarks.</p> <p>Grade 5 identify and classify two-dimensional shapes by side and angle properties, and compare and sort three-dimensional figures.</p> <p>Grade 6 classify and construct polygons and angles.</p>	<p><i>[Name]</i> can identify various types of four-sided shapes (e.g., rectangle, trapezoid, etc.) and sort them by their geometric properties (e.g., sides of equal length, parallel sides, etc.).</p> <p><i>[Name]</i> can identify various two-dimensional shapes and sort them according to their properties.</p>	<p>To improve <i>[his/her]</i> understanding of symmetry, <i>[Name]</i> could complete the paper folding activities provided as enrichment.</p> <p><i>[Name]</i> needs to continue practicing how to measure and draw angles using a protractor. <i>[He/She]</i> should also apply the appropriate words to describe different types of angles (e.g., acute, right, obtuse, straight).</p>
<p>Grade 7 construct related lines, and classify triangles, quadrilaterals, and prisms.</p> <p>Grade 8 demonstrate an understanding of the geometric properties of quadrilaterals and circles and</p>	<p>Using <i>[specific tool, such as a mira, paper folding, ruler, compass, protractor, Geometer’s Sketch Pad or other dynamic geometry software]</i>, <i>[Name]</i> constructed parallel and perpendicular lines and lines that intersected at a given degree. <i>[He/she]</i> was able to classify triangles, quadrilaterals and prisms by looking at their properties (e.g., symmetry, angles).</p>	<p>Practicing the skill of <i>[specific skill, such as constructing parallel and perpendicular lines]</i> by completing a few extra questions from the text will help <i>[Name]</i> to be able to construct these lines accurately.</p> <p>By completing a few extra questions from the text, <i>[Name]</i> should be able to identify more</p>

<p>the applications of geometric properties in the real world.</p>	<p>Through <i>[specific strategy, such as hands on investigations using geoboards, dynamic software or concrete materials]</i>, <i>[Name]</i> showed <i>[his/her]</i> understanding of the geometric properties of quadrilaterals and circles.</p>	<p>properties of quadrilaterals and circles. Checking in class to be sure <i>[he/she]</i> is on the right track with those extra questions is necessary.</p>
<p>Grade 1 compose and decompose common two-dimensional shapes and three-dimensional figures.</p> <p>Grade 2 compose and decompose two-dimensional shapes and three-dimensional figures.</p> <p>Grade 3 describe relationships between two-dimensional shapes, and between two-dimensional shapes and three-dimensional figures.</p>	<p><i>[Name]</i> can create two-dimensional and three-dimensional shapes of <i>[his/her]</i> own. <i>[He/She]</i> demonstrated this when <i>[specific task, such as we made shape pictures from construction paper]</i>.</p> <p><i>[Name]</i> can confidently describe the relationship between two- and three-dimensional shapes such as how two-dimensional shapes are the faces in three-dimensional figures (i.e., two circles can be found in a cylinder).</p>	<p><i>[Name]</i> is encouraged to practice composing shapes using various materials. <i>[He/She]</i> could make pictures using shapes to help develop this skill.</p> <p><i>[Name]</i> still needs to understand the relationship between two and three-dimensional shapes. At home, <i>[Name]</i> could take apart cereal boxes or other shapes to see the two-dimensional shapes that make them up.</p>
<p>Grade 4 construct three-dimensional figures, using two-dimensional shapes.</p> <p>Grade 5 identify and construct nets of prisms and pyramids.</p> <p>Grade 6 sketch three-dimensional figures, and construct three-dimensional figures from drawings.</p>	<p><i>[Name]</i> used connecting cubes to demonstrate <i>[his/her]</i> understanding of various three-dimensional figures, including a rectangular prism.</p> <p><i>[Name]</i> successfully constructed nets (i.e., patterns that can be folded to create a three-dimensional figure) of a prism and a pyramid.</p>	<p><i>[Name]</i> could improve <i>[his/her]</i> understanding of the relationship between two-dimensional shapes and three-dimensional figures by using various tools (e.g., toothpicks and marshmallows, drinking straws) to create the skeletons of three-dimensional figures, and then drawing a sketch of the skeleton.</p>
<p>Grade 7 develop an understanding of similarity, and distinguish similarity and congruence.</p> <p>Grade 8 develop geometric relationships involving lines, triangles, and</p>	<p><i>[Name]</i> understands and explains what is different and what is common between objects that are similar and those that are congruent.</p> <p>When <i>[specific task, such as using Geometer's Sketch pad or</i></p>	<p><i>[Name]</i> needs to improve <i>[his/her]</i> understanding of the differences and commonalities of objects that are similar and those that are congruent. <i>[He/she]</i> should take advantage of <i>[specific task, such as teacher assistance at recess, homework room or math club]</i> to help clarify these concepts.</p>

<p>polyhedra, and solve problems involving lines and triangles,</p>	<p><i>geoboards</i>] <i>[Name]</i> develops geometric relationships (e.g., angle relationships for intersecting lines and for parallel lines and transversals). <i>[He/she]</i> solves problems involving lines and triangles.</p>	<p><i>[Name]</i> struggles to develop geometric relationships (e.g., angle relationships for intersecting lines and for parallel lines and transversals). <i>[He/she]</i> should take advantage of <i>[specific task, such as teacher assistance at recess, homework room or math club]</i> to help clarify these relationships.</p>
<p>Grade 1 describe the relative locations of objects using positional language.</p> <p>Grade 2 describe and represent the relative locations of objects, and represent objects on a map.</p> <p>Grade 3 identify and describe the locations and movements of shapes and objects.</p>	<p><i>[Name]</i> uses positional language appropriately (e.g., over, under, above, below, in front of, behind, inside, outside, beside, between, along).</p>	<p><i>[Name]</i> is encouraged to work on how to describe the positions of objects, using words such as over, under, below, in front of, etc. Further practice at home will help <i>[Name]</i> develop this skill.</p>
<p>Grade 4 identify and describe the location of an object, using a grid map, and reflect two-dimensional shapes.</p> <p>Grade 5 identify and describe the location of an object, using the cardinal directions, and translate two-dimensional shapes.</p> <p>Grade 6 describe location in the first quadrant of a coordinate system, and rotate two-dimensional shapes.</p>	<p><i>[Name]</i> can describe the location of an object using a grid system.</p> <p><i>[Name]</i> created an effective design by reflecting, translating and rotating shapes.</p>	<p><i>[Name]</i> is encouraged to practice identifying the location of objects on maps that use a simple grid system.</p> <p><i>[Name]</i> could improve <i>[his/her]</i> understanding of how to locate objects using a grid system by playing games such as <i>Battleship</i>.</p>
<p>Grade 7 describe location in the four quadrants of a coordinate system, dilate two-dimensional shapes, and apply transformations to create and analyse designs.</p> <p>Grade 8 represent transformations using the Cartesian coordinate plane,</p>	<p>When <i>[specific task, such as drawing shapes on a grid]</i> <i>[Name]</i> can describe the location in the four quadrant grid. <i>[He/she]</i> dilates (i.e., enlarges or reduces) and applies transformations (i.e., rotates, slides, flips) to two-dimensional shapes. Using <i>[specific evidence, such as pieces of art by M.C. Escher and Picasso in Visual Arts]</i> <i>[Name]</i> effectively analysed designs.</p>	<p><i>[Name]</i> describes the location of a two-dimensional object in the four quadrant grid, but has difficulty dilating (i.e., enlarging or reducing) and applying transformations (i.e., rotating, sliding, flipping) those shapes. Spending some time at home using computer resources, or taking advantage of in school resources <i>[such as math club or homework room]</i> would be of help.</p>

<p>and make connections between transformations and the real world.</p>	<p><i>[Name]</i> can represent transformations of two-dimensional shapes using the Cartesian plane (which includes positive and negative numbers on the axis). <i>[He/she]</i> makes connections between transformations and the real world, as shown when <i>[specific evidence, such as we examined pieces of architecture from around the world]</i>.</p>	<p><i>[Name]</i> had difficulty representing transformations (i.e., rotations, slides, flips) of two-dimensional shapes using the Cartesian plane (which includes positive and negative numbers on the axis). Spending some time at home using computer resources or taking advantage of in school resources <i>[such as math club or homework room]</i> would be of help.</p>
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