**Mathematics C: Geometry**

**What’s My Angle?**

**Idaho Content Standards- Science (ICSS):**

* PS2-5-1 Support an argument that the gravitational force exerted by Earth on objects is directed down.

**Math Common Core State Standards (Math-CCSS):**

* 4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absences of angles of specified size. Recognize right triangles as a category, and identify right triangles.
* 4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
* 5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

**Next Generation Science Standards (NGSS):**

* 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.

**English Language Arts Common Core State Standards (ELA-CCSS):**

* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

**What’s Up Dock?**

**ICSS:**

* n/a

**Math-CCSS:**

* 3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.
* 3.MD.C.7 Relate area to the operations of multiplication and addition.
* 3.MD.C.7.A. Find the area of a rectangle with whole-number sides by tiling it, and show that the area is the same as would be found by multiplying side lengths.
* 3.MD.C.7.B Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
* 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
* 5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
* 5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.
* 6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

**NGSS:**

* n/a

**ELA-CCSS:**

* RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words.
* RF.5.4 Read with sufficient accuracy and fluency to support comprehension.
* RF.5.4.A Read on-level text with purpose and understanding.
* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
* SL.5.4 Report on a topic or text or present an opinion sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
* L.5.4 Determine or clarify the meaning of unknown and multiple-meaning words, and phrases choosing flexibly from a range of strategies.
* L.5.4.B Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).

**Fly on the Ceiling**

**ICSS:**

* n/a

**Math-CCSS:**

* 5.G.A.1Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and*y*-coordinate).
* 5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

**NGSS:**

* n/a

**ELA-CCSS:**

* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.4 Report on a topic or text or present an opinion sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

**Robo Putt-Putt**

**ICSS:**

* n/a

**Math-CCSS:**

* 4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
* 4.MD.C.5.A An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.
* 4.MD.C.5.B An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.
* 4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

**NGSS:**

* n/a

**ELA-CCSS:**

* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
* SL.5.4 Report on a topic or text or present an opinion sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

**Does Your Robot Measure Up?**

**ICSS:**

* n/a

**Math-CCSS:**

* 3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.
* 3.MD.C.7 Relate area to the operations of multiplication and addition.
* 3.MD.C.7.B Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
* 4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; L, mL; h, min, sec.
* 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
* 5.MD.C.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
* 5.MD.C.3.B A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
* 5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
* 5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
* 5.MD.C.5.B Apply the formulas V=l x w x h and V= b x h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

**NGSS:**

* n/a

**ELA-CCSS:**

* RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words.
* RF.5.4 Read with sufficient accuracy and fluency to support comprehension.
* RF.5.4.A Read on-level text with purpose and understanding.
* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
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