Gold Seal Lesson:

Copernicus Education Gateway

Author(s): **Ben Lindeman**			*Lesson Title:* **A Home for the Birds**			
Grade Span			***ICLE Application Model***			
K-4	***5-8*** ***XX***	***9-12***	***A***	***B***	***C***	***D*** ***XX***

Instructional Focus:

Number Operation and Concepts Students use number, number sense, and number relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.
Geometry Students apply geometric concepts, properties, and relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.
Measurement Students use a variety of tools and techniques of measurement in a problem-solving situation. Students communicate the reasoning used in solving these problems.
Writing Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

Performance Task

Rita's mother is a very avid bird watcher. She loves to have different birds live and feed in their backyard. Rita decided that she would make a birdhouse to give to her mother for her birthday. Your task is to design and make a three dimensional model of a bird-house for Rita to make. You are also to write out a set of directions for Rita to follow in making the birdhouse. In your directions, include a list of materials needed to build it. Make any decorations to the birdhouse as you desire.

Part I: The design should include a scale drawing of the floor, the front and back of the birdhouse, the two sides, and one or two roof panels. Any angle measurements should be included. The design should be made to an appropriate scale that you decide.

Part II: Make a three-dimensional model of your birdhouse using cardboard, heavy-stock paper, or any other material that your teacher approves. Indicate the scale used for your model. It may be different that the scale used for the scale drawings that you made in Part I.

Part III: Write out a clear set of directions that Rita can use in making the actual birdhouse, including the materials needed to construct it.

You will be graded, not only only on the quality of your product, but also on effort, interest, and the management of your time.

Note to the teacher: **There are many bird activities that you can do in conjunction with this activity. You may want to do this activity as part of a science unit on nature. You might also take a bird walk to see what birds are in the school's neighborhood. If a student wishes, they might actually build the birdhouse. In that case, you might want to have the students do a cost analysis of the actual building of the birdhouse.**

ICLE Essential Skills

Perform ***operations with signed*** (positive and negative) ***numbers***, including decimals, ratios, percents, and fractions (m1)
Use the technique of ***dimensional analysis*** to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis (m33)
Understand the characteristics and terminology of ***angles,*** e.g., degree measure, classification of angles by measure (acute, right, obtuse, and straight), supplementary and complementary angles, and vertical angles (m4)
Understand the ***properties and classification of polygons*** (e.g., triangle, quadrilaterals, pentagon, hexagon, etc.) as well as knowledge of geometric shapes (m26)
Use the ***Pythagorean theorem*** to compute side lengths of right triangles (m21)
Understand the nature of informational and/or technical texts (ela71)

Scoring Guide:

Score each part on a 4 to 0 basis, where 4 = Meets or Exceeds Expectations 3 = High Quality, but Some Expectations are Not Met 2 = Satisfactory, but Falls Slightly Short of Meeting All Expectations 1 = Minimum Acceptable Performance, but is Far Below Expectations 0 = Does Not Complete Task or Does Not Meet Minimum Expectations	**SCORE**
Part I Scale drawing of all faces of the birdhouse Appropriate scale used and indicated Measurements are accurate All measurements, including angles, are placed on the scale drawing Scale drawing is neat and drawn with a ruler and pencil	_____
Part II Model is complete an accurately made Model is attractive and looks like the actual birdhouse Scale for model is indicated	_____
Part III Directions are clear and sequential Materials needed to construct the actual birdhouse are indicated	_____
Other Effort put into assignment	_____
Interest shown in assignment	_____
Management of time	_____

Keywords

English Language Arts	Mathematics	Science
Reading	**Algebra** Computation	**Earth Science**
Writing Sequencing Technical Writing	**Geometry** Angles Calculators Geometric Shapes Geometry in Daily Life Polygons Relationships Pythagorean Theory Rectangles Spatial Sense Three-Dimensional Objects Two-Dimensional Objects	**Life Science**
Communications Audience Communication	**Statistics**	**Chemistry**
Literature	**Calculus**	**Physics**
Other	**Trigonometry**	**Other**
	Other Scale Modeling Design	