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Grade Span			ICLE Application Model			
K-4	5-8 X	9-12	A	B	C	D X

Instructional Focus:

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.

Algebraic Concepts and Relationships

Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation. Students evaluate and communicate the reasoning used in solving these problems.

Problem-Solving and Mathematical Reasoning

Students apply a variety of problem-solving strategies to investigate and solve problems from across the curriculum as well as from practical applications.

Performance Task

This activity will reinforce the use of the Pythagorean Theorem by having students layout the corners of a hypothetical building. Begin by reviewing the Pythagorean Theorem and doing a few practice problems.

Reinforce with the students that a 3-4-5 triangle, with 5 as the hypotenuse, is always a right triangle. Remind them that any multiple of 3-4-5 also works. Review the characteristics of rectangles, and explain to them that rectangles are “square”, meaning that all four corners or vertices are right or 90 degree angles.

Now, it’s time for the students to work. Have students work in teams of 2-4. Each team will need some masking tape and a tape measure. Tell the students that they have been asked to layout an area in their backyards where a new garden shed will be placed. The shed is to be in the shape of a rectangle. Students do not have to have a specific area to complete this task, but, if you wish, you may give each team the same or a different area to lay out. They must accurately lay out the four corners of the building and be sure that the building is “square”. This is best done in a large open area in the school where the masking tape can serve as the building’s corners.

ICLE Essential Skills

Understand the **angle relationships in triangles** (i.e., acute, obtuse, right, interior, and exterior). (M14)

Understand the **properties and classification triangles** by sides (i.e., scalene, isosceles, and equilateral). (M16)

Scoring Guide:

4 Points – The building is laid out accurately including the exact size and square corners. Students are able to measure the diagonals and demonstrate that the building layout is square. Students work well as a team and demonstrate a thorough understanding of the concepts.

3 Points – The building is very close to square and is reasonably accurate dimensionally. Students are able to measure the diagonals which, although not perfectly equal, are very close. Students worked well together and understand the concepts.

2 Points – The building is neither square nor accurate dimensionally. Students are able to measure the diagonals and demonstrate an understanding of the broad concepts. The students worked well together as a team and are making progress.

1 Point – The building is not square and the building measurements are not accurate. Students are not able to accurately measure the diagonals and do not demonstrate an understanding of the concepts. Teamwork is limited.

Keywords

English Language Arts	Mathematics	Science
Reading	Algebra	Earth Science
Writing	Geometry Angles, Algebra, Geometric Shapes, Geometry in daily Life, Manipulatives, Pythagorean Theory, problem Solving, Rectangles, Triangles	Life Science
Communications	Statistics	Chemistry
Literature	Calculus	Physics
Other	Trigonometry	Other
	Other	