Gold Seal Lesson

Author(s): *Marsha Kucker*			*Lesson Title:* *In My Estimation*			
Grade Span			*ICLE Application Model*			
K-4 *X*	*5-8*	*9-12*	*A*	*B*	*C*	*D* *X*

Instructional Focus:

Number Operations and Concepts Students use number, number sense, and number 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
Reading Students read a variety of grade level materials, applying strategies appropriate to various situations.
Writing Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.
Listening Students listen for a variety of purposes appropriate to the grade level.
Speaking Students speak for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

Performance Task

Children in this age group have a difficult time making accurate estimations in measurement. It is difficult for them to conceptualize size in terms of height, weight, length, and width. This lesson provides hands-on experience with verifying the accuracy of their measurement estimations.

1. Begin the lesson by reading the students the story of 'Rapunzel'. Ask students how long Rapunzel's hair was? How tall the castle was? How far her window was from the ground?

2. Continue the discussion by talking about measurement and estimations.

3. Have the students work in pairs. Ask each student to estimate the height of his/her partner. Make a chart on the chalkboard to record these data.

4. Now, ask students in each pair to make the actual measurement of the height of each other. Various methods can be used to perform these measurements. You may want to give the students an actual method, or you may want them to select a method themselves. Record the actual measurements on the board corresponding with the estimated measures. Have students compare to see how close they came with their estimates. Allow the students to have a class discussion on this task. Have each student write a short paragraph or two using as a title "Estimation vs. Actual Measurement."

5. Ask students to estimate the length and width of their classroom. Then, have them measure the actual size. Again, have them compare to see how close their estimates were.

6. Have each pair of students select a few objects in the classroom to measure both ways. Have them do both the estimate and the actual measurement on one object at a time. Talk with each pair to see if their estimates are getting better as they have more experience.

7. Ask students to list some jobs or some places in their daily life where they may use the skills of estimation. (e.g., carpenters, construction workers, estimating the dimensions of their bedroom, etc.)

ICLE Essential Skills

Perform operations with signed (positive and negative) numbers, including decimals, ratios, percents, and fractions. (m1)
Use direct proof and indirect proof sequencing techniques to reach a conclusion. Direct proof uses the Laws of Reasoning to create an orderly arrangement of steps leading to a conclusion. Indirect proof uses an initial assumption that the conclusion is false, and through a series of logically sound reasoning steps the statement may be proved otherwise. (m32)
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)
Follow oral or written directions. (ela4)
Participate, sometimes leading, in group meetings by contributing, taking turns speaking, and working toward a common goal. (ela 20)
Listen, comprehend and summarize essential information from a variety of sources such as speeches, plays, commercials on radio and television, and political debates. (ela25)
Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences. (m5)
Gather information such as data, facts, ideas, concepts, and generalizations from oral sources. (ela51)
Participate in a one-on-one conference by relating essential information, asking questions on the topic, and using language to clarify information. (ela69)

Scoring Guide:

See attachment: In My Estimation Chart

Keywords

English Language Arts	Mathematics	Science
Reading	**Algebra** **Computation** **Estimation** **Math in daily life** **Problem solving**	**Earth Science**
Writing **Compare/Contrast** **Expository** **Journals** **Paragraphs**	**Geometry**	**Life Science**
Communications **Listening** **Discussion** **Communication** **Illustration**	**Statistics** **Measurement** **Data Analysis** **Data Collection** **Data Display** **Charts**	**Chemistry**
Literature	**Calculus**	**Physics**
Other	**Trigonometry**	**Other**
	Other	

Chart

3	**BEYOND**	Analyzed and readily understood the task. Developed an efficient and workable strategy. Showed explicit evidence of carrying out the strategy. Synthesized and generalized the conclusion.
2	**AT LEVEL**	Understood the task. Developed a workable strategy. Inferred (some evidence) but not always clear. Connected and applied the answer.
1	**NOT YET AT**	Partially understood the task. Appropriate strategy some of the time. Possible evidence of a plan – not clear. Partial connection of answer.
0		Totally misunderstood. Inappropriate, unworkable strategy. No evidence of carrying out a plan. No connections of answer. Blank.