Gold Seal Lesson:

Author(s): **Ben Lindeman**			*Lesson Title:* **Television Watching**			
Grade Span			***ICLE Application Model***			
K-4	***5-8***	***9-12*** ***XX***	***A***	***B***	***C***	***D*** ***X***

Instructional Focus:

Statistics and Probability
Students use statistics and probability to analyze given situations and the results of experiments. Students communicate the reasoning used in arriving at a conclusion.

Tools and Technology
Students use appropriate tools and technologies to model, measure, and apply the results 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

Note to the teacher: This is a full class activity. Each student is to record the number of hours of television that they watch each day for a period of 7 days. They are then to find the average number of hours of television that they watched per day for that week. Collect the students' averages and, with the help of the students, organize it into a class data set, "*Television Watching.*" Give each student a copy of the data.

Choose and use the appropriate technology to complete the task below.

Using the class data set for "*Television Watching,*"

a. Find the mean and standard deviation for the average number of hours of television watched per day by your class.
b. Use your knowledge of standard deviation to write a brief summary of the data and make any conclusions and/or inferences that you can.
c. Separate the data into "BOYS" and "GIRLS" and construct a box plot for each. Compare the two box plots, write a description of your comparison, and make any conclusions and/or inference that you can.

ICLE Essential Skills

Understand the best procedures for statistical ***data collection, organization, and display*** including making estimates and predictions and drawing inferences**.** (m5)

Understand the characteristics of ***measures of central tendency*** (i.e., mean, median, and mode). (m15)

Understand the characteristics of ***measures of dispersion*** (i.e., range, mean deviation, variance, and standard deviation). (m36)
Understand the concepts and applications of ***quartiles*** (i.e., distributing groups into four equal frequencies) ***and percentiles*** (i.e., distributing individuals into one-hundred groups of equal frequency). (m42)
Use expository writing skills in subjects other than English language arts. (ela58)

Scoring Guide:

4	The student demonstrates a thorough knowledge of how statistics can be used to collect, organize, display, and analyze data. He/she is competent with the various measures of central tendencies and variation. Work is error free and very neat. The student makes reasonable and appropriate conclusions/inferences from the data. He/she knows how to construct box plots and how to use them to compare two sets of data. The student selects and uses appropriate technology to complete the task.
3	The student demonstrates necessary knowledge of how statistics can be used to collect, organize, display, and analyze data. He/she needs some, but minimal, assistance in finding the correct measures of central tendencies and variation. Work may contain minor, but not significant, errors. The work is relatively neat and well organized. The student has some difficulty in constructing box plots and using them to compare two sets of data. The student's conclusions/inferences are either incomplete or not well supported. He/she only partially selects and uses appropriate technology to complete the task.
2	The student demonstrates only minimal knowledge of how statistics can be used to collect, organize, display, and analyze data. He/she needs considerable assistance in finding the correct measures of central tendencies and variation. Work may contain one or more significant errors. The work is not very neat nor well organized. The student's conclusions/inferences are incomplete and poorly supported. He/she does not select or use appropriate technology to complete the task.
1	Even with considerable assistance, the student does not complete the task. He/she does not demonstrates knowledge of how statistics can be effectively used to collect, organize, display, and analyze data. The student does not understand the correct use of measures of central tendencies or variation. Work contains significant errors. It is messy and poorly organized. The student does not make any meaningful conclusions/inferences. He/she does not select or use appropriate technology to do the task.

Keywords

English Language Arts	Mathematics	Science
Reading	**Algebra** Computation Graphing Calculators	**Earth Science**
Writing Integration	**Geometry**	**Life Science**
Communications	**Statistics** Charts Central Tendency Data Analysis Data Collection Data Display Inference Prediction Standard Deviation Statistics in Daily Life Surveys Tables Technology	**Chemistry**
Literature	**Calculus**	**Physics**
Other	**Trigonometry**	**Other**
	Other	