



Gold Seal Lesson

Author(s): Doris Quick			Lesson Title: Evaluation of Farm Data			
Grade Span			ICLE Application Model			
K-4	5-8	9-12 X	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.

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

Mr. McDonald owns a dairy farm. He earns a good living from the farm by using innovative practices. On an annual basis he must evaluate the farm's production to determine if the income from the farm met his anticipated outcomes. Often, Mr. McDonald must use data available from the farm extension service to help him in his decision-making processes. His farm is in a temperate climatic annual consisting of hills and valleys. The last frost for the season usually occurs near the end of April but occasionally will come in the first ten days of May. Farmer McDonald usually waits until May 10th before planting to be fairly certain that he won't lose his crop due to a possible frost. He is considering planting a new hybrid corn that is frost resistant that would allow him to plant earlier. Before planting he considered the following data.

Using statistical displays and measures analyze the given data (see attached Evaluation of Farm Data Chart) and state two recommendations to Mr. McDonald concerning the planting of the hybrid corn.

ICLE Essential Skills

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

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)

Scoring Guide:

4. The student through analysis of data will make a complete response to all parts of the task. He/she can accurately display the data so that others can read it. The student is able to use his/her own analysis in making two reasonable inferences.

3. The student shows some lack of understanding of data analysis but can realize success with a little coaching. The student can make only one reasonable inference based on his/her analysis.

2. The student demonstrates that he/she has gained little knowledge and techniques to complete the task. The student's display of the data is poorly constructed and incomplete. He/she is unable to make any reasonable inference.

1. The student does not complete the task and shows no understanding of data analysis. His/her work is disorganized, inaccurate, and incomplete. The student cannot make any inferences based on the data.

Keywords

English Language Arts	Mathematics	Science
Reading	Algebra	Earth Science
Writing	Geometry	Life Science
Communications	Statistics Charts Data Analysis Data Display Inference Problem Solving Graphs	Chemistry
Literature	Calculus	Physics
Other	Trigonometry	Other
	Other	

Chart

Low Temperatures (Degrees Fahrenheit) – April 20 through May 10

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
April 20	31	32	38	42	29	33	36	35	30	29
21	29	36	33	34	32	29	37	31	28	33
22	34	35	29	31	33	31	34	29	35	37
23	32	35	30	35	32	36	40	35	29	31
24	35	34	32	35	36	35	38	33	32	33
25	34	33	33	35	34	35	35	33	33	35
26	34	32	35	36	35	37	32	36	34	37
27	36	37	38	27	37	40	38	41	36	31
28	37	36	40	35	42	39	41	44	39	39
29	40	39	42	39	44	41	45	43	42	43
30	41	37	31	42	44	43	43	45	48	47
May 1	43	45	43	45	46	44	49	50	51	53
2	50	58	59	59	51	48	52	51	50	51
3	52	54	52	54	52	51	53	51	52	53
4	51	47	50	51	55	53	55	45	48	55
5	52	38	51	54	57	55	52	39	49	51
6	50	30	48	52	56	54	54	29	54	56
7	54	29	49	57	55	56	58	35	55	54
8	53	38	51	56	45	55	56	26	51	53
9	55	45	52	55	40	52	52	37	53	55
10	56	50	50	51	29	53	49	50	55	56

Using statistical displays and measures, analyze the given data and state two recommendations to Mr. McDonald concerning the planting of the hybrid corn.