BALTIMORE COUNTY PUBLIC SCHOOLS

OFFICE OF MATHEMATICS

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SAMPLE PERFORMANCE TASK

NCAA BASKETBALL WINNING AND LOSING

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NCAA BASKETBALL

WINNING AND LOSING

Core Learning Goal 3: Data Analysis and Probability

Learning Outcomes

3.2.1: The student will make informed decisions and predictions based upon data from research.

3.2.2: The student will make predictions by finding and using a line of best fit.

Lesson Objective: The student will create a scatter plot, fit a line to a set of data and write the equation of the line to predict outcomes.

Web Search: Key words for a web search are **College Basketball** or **March Mayhem.** Once a site is found, select **HISTORY** of championship games. One of many web sites is www.finalfour.net.

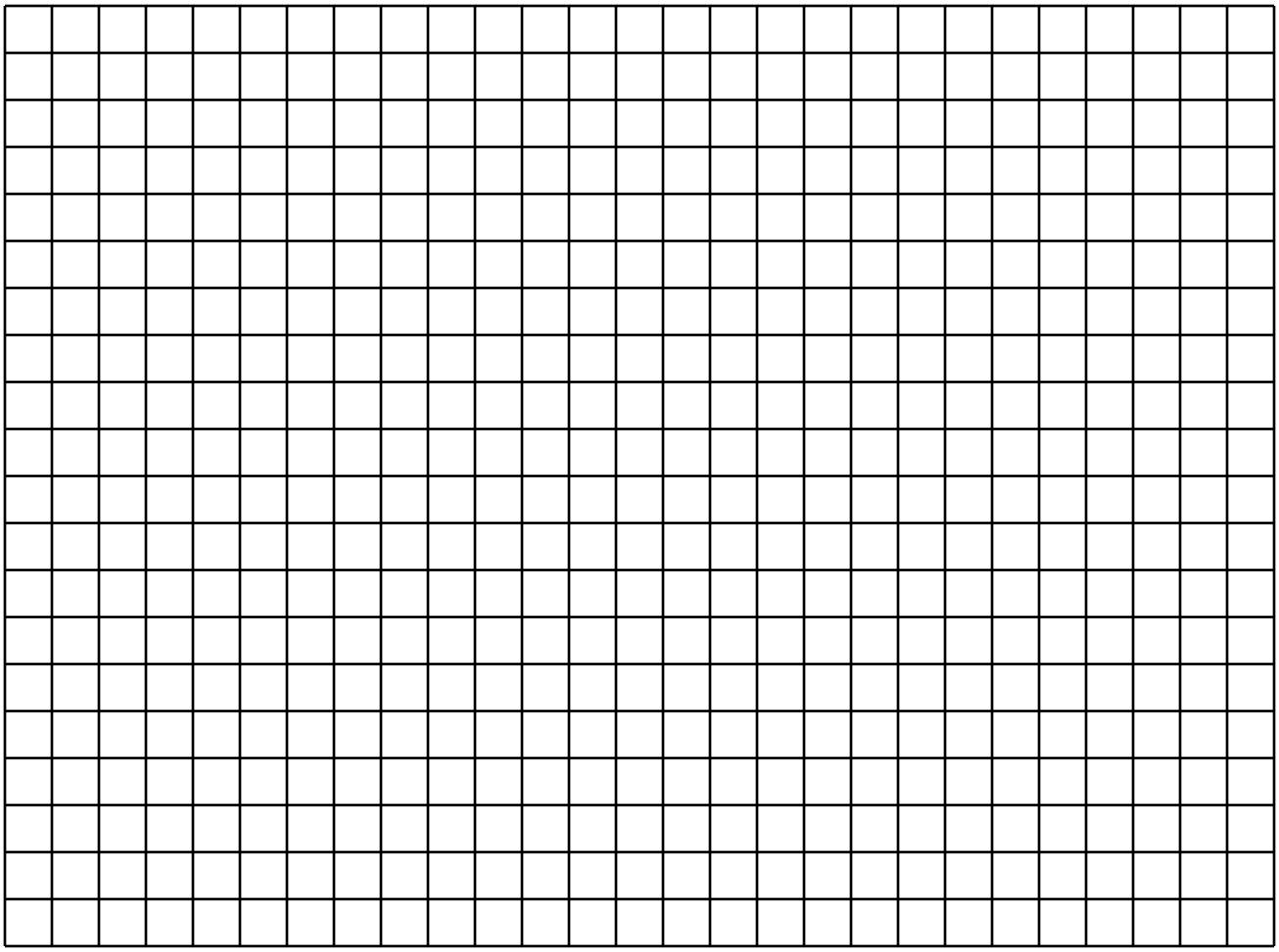
Teaching Strategies: The students will create a scatter plot of the gathered data, draw a line of best fit and write an equation for that line. Students should be encouraged to utilize the graphing calculator but should also know how to complete the questions without the aid of the calculator.

NCAA BASKETBALL

WINNING AND LOSING

Today we will look back in history at that famous basketball tournament that we have affectionately nickednamed “March Madness”. You will be analyzing data that has been collected on the winning and losing team’s scores of the championship game to determine trends for predicting future winners.

1. Draw a scatter plot to show the relationship between winning team’s scores and losing team’s scores during the odd-numbered years.



2. Is the data linear? If so, draw a best-fit line. _____

_____

3. Find the slope of the line. Describe in words what the slope represents.

_____

_____

4. Find the x- and y-intercepts. Explain in terms of winning and losing scores what each result represents.

5. Write the equation of the best-fit line. _____

6. Use the equation to complete the **Predicted Losing Score** column for the chart below.

YEAR	Actual Winning Score	**Predicted Losing Score**	Actual Losing Score
1942	53		
1952	80		
1962	71		
1972	81		
1982	63		
1992	71		

7. How accurate do you think your predictions are?

8. Now use the data and complete the **Actual Losing Score** column. How accurate are your predictions? Explain your answer.

_____

_____

_____

9. During this year's, 1998, NCAA tournament, the Maryland Terrapins averaged 58 points per game while their losing opponents averaged 56 points per game. Do you think they will win the championship? Justify your answer.

_____

_____

_____

Extension: Research data about the winning and losing teams average points for the NBA championship series. Draw a scatter plot and determine a graph of best-fit. Determine the equation of your best-fit graph and use it to predict the winning team's average score if the losing team's average score is 95.

Sunday, March 14, 1999, 14:26 ET

CHAMPIONSHIP RESULTS

Year	Championship	Score	Runner-up
1939	Oregon	46-33	Ohio St.
1940	Indiana	60-42	Kansas
1941	Wisconsin	39-34	Washington St.
1942	Stanford	53-38	Dartmouth
1943	Wyoming	46-34	Georgetown
1944	Utah	42-40	Dartmouth
1945	Oklahoma St.	49-45	New York U.
1946	Oklahoma	43-40	North Carolina
1947	Holy Cross	58-47	Oklahoma
1948	Kentucky	58-42	Baylor
1949	Kentucky	46-36	Oklahoma St.
1950	CCNY	71-68	Bradley
1951	Kentucky	68-58	Kansas St.
1952	Kansas	80-63	St. John's
1953	Indiana	69-68	Kansas
1954	La Salle	92-76	Bradley
1955	San Francisco	77-63	La Salle
1956	San Francisco	83-71	Iowa
1957	North Carolina	54-53	Kansas
1958	Kentucky	84-72	Seattle
1959	California	71-70	West Virginia
1960	Ohio St.	75-55	California
1961	Cincinnati	70-65	Ohio St.
1962	Cincinnati	71-59	Ohio St.
1963	Loyola (Ill.)	60-58	Cincinnati
1964	UCLA	98-83	Duke
1965	UCLA	91-80	Michigan
1966	UTEP	72-65	Kentucky
1967	UCLA	79-64	Dayton
1968	UCLA	78-55	North Carolina
1969	UCLA	92-72	Purdue
1970	UCLA	80-69	Jacksonville
1971	UCLA	68-62	Villanova
1972	UCLA	81-76	Florida St.
1973	UCLA	87-66	Memphis St.
1974	North Carolina	76-64	Marquette
1975	UCLA	92-85	Kentucky
1976	Indiana	86-68	Michigan
1977	Marquette	67-59	North Carolina
1978	Kentucky	94-88	Duke
1979	Michigan St.	75-64	Indiana St.
1980	Louisville	59-54	UCLA
1981	Indiana	63-50	North Carolina
1982	North Carolina	63-62	Georgetown
1983	N. Carolina St.	54-52	Houston
1984	Georgetown	84-75	Houston
1985	Villanova	66-64	Georgetown
1986	Louisville	72-69	Duke
1987	Indiana	74-73	Syracuse
1988	Kansas	83-79	Oklahoma
1990	UNLV	103-73	Duke
1991	Duke	72-65	Kansas
1992	Duke	71-51	Michigan
1993	North Carolina	77-71	Michigan
1994	Arkansas	76-72	Duke
1995	UCLA	89-78	Arkansas
1996	Kentucky	76-67	Syracuse
1997	Arizona	84-79	Kentucky
1998	Kentucky	78-69	Utah