

Name: _____

Date: _____

Class: _____

Lesson Plan October 19, 2007 Statistics Poster Competition Kick Off

Topic: Statistics Poster Competition Kick Off

Objective: Students will discover the rules and guidelines for their statistics poster competition project. They will also gather some advice on how to select a topic, what types of graphs are most appropriate for certain data types, and what features help create a successful poster. Judging criteria and due dates are also included in the presentation.

Procedure: This lesson is created for my substitute, Ms. Setlak. She will direct the students to go to their computer seats and go to the common directory and in the assignments folder there will be the Statistics Poster Project folder, I://MMSTC/common/assignments/Statistics Poster Project. Open the presentation and begin using the "Begin" button. Make sure you visit each button on the Main Menu slide. **Read all the slides and all the linked pages** for each button. Answer all the questions on your corresponding worksheet and turn in to Ms. Setlak before you leave today.

Survey: There is a Power Point quiz at the end for the students to assess what they have read. There is also a worksheet for the students to turn in so I can see what information they extracted from their reading.

ISTE National Educational Technology Standards for Students (NET*S)

1. Basic operations and concepts
 2. Social, ethical, and human issues
 3. Technology productivity tools
 4. Technology communications tools
 5. Technology research tools
 6. Technology problem-solving and decision-making tools
-
1. Routinely and efficiently use online information resources to meet needs for collaboration, research, publication, communication, and productivity. (1,4, 5, 6)
 2. Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning. (1,4, 5)
 3. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations. (3, 5, 6)
 4. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. (4, 5, 6)

Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked.

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High School Content Expectation Codes

Strand IV: Statistics and Probability

S1: Examining Distributions and Relationships - (S1.1, S1.2, S1.6)

S2: Sampling and Study Design - (S2.1, S2.2, S2.3, S2.4)

S4: Sampling Distributions – (S4.1, S4.2, S4.3, S4.4, S4.5)

S6: Significance Testing – (S6.1, S6.2, S6.3, S6.4, S6.6)

S8: Assessing Assumptions of Statistical Models – (S8.1, S8.2, S8.3, S8.4)

Michigan Curriculum Framework

Strand III. Data Analysis and Statistics

Content Standard 1. Collection, Organization, and Presentation of Data – (Students collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.) (1,2,3,4)

Content Standard 2. Description and Interpretation – (Students examine data and describe characteristics of the distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.) (1,2,3,4,5)

Content Standard 3. Inference and Prediction – (Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.) (1,2,3,4,5)

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Statistics Poster Competition Worksheet

1. From the link *Selecting a Topic* from the Grand Valley State University website, what is the key to creating a good poster? **Find a topic you enjoy and are interested in.**
2. What is the first thing you and your partner should do when trying to come up with a topic? **Make a list of possible topics**
3. What resources can you use to help you make this list? **The internet, magazines and newspapers, favorite sports or hobbies, etc.**
4. What is another thing this site mentions that you should consider while selecting a topic? **You should also consider how you are going to collect the data on this topic.**
5. List four ways that this article suggests you can collect data. **1- Find data on the internet (published data) 2. Survey classmates (surveys). 3. Observe behaviors 4. Perform an experiment**
6. According to the link, *Constructing Graphs*, from the Grand Valley State University website, data can be broken down into what two major categories? **Quantitative and Qualitative**
7. Define Quantitative and Qualitative using the words used in the *Constructing Graphs* site. **Qualitative (words or text) Qualitative (numbers)**
8. Quantitative data can be further broken down into whether the variable is discrete or continuous. Define discrete and continuous. **Discrete (it takes on only certain values in a range of numbers). Continuous (it takes on all values in a range of numbers).**
9. Pie charts and bar graphs are most appropriate for displaying what type of data? Be specific. **Bar graphs and pie charts are more appropriate graphs for displaying qualitative variables or discrete quantitative variables.**
10. Histograms and stem-and-leaf plots are most appropriate for displaying what type of data? **Graphs such as histograms and stem-and-leaf plots are more appropriate for displaying continuous quantitative variables or numerical values that have been grouped together.**
11. According to the Putting it all together site, what is the most important feature of a successful poster? **The most important feature of a successful statistical poster is that everything on the poster is correct. The graphs must be an accurate description of the data. Titles, axis labels, legends, conclusions, etc. must be representative of and supported by the data.**
12. Another feature of the successful statistical poster is... ? **that there is one unifying message throughout the poster.**
13. When is the Poster Plan Worksheet Due? **November 2, 2007**
14. When is the Statistical Test Type Due? **December 7, 2007**
15. When is the Final Poster Due? **January 11, 2008**

Mark these dates in your agenda book.

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Statistics Poster Plan

1. Problem Statement/Question to be answered: _____

2. How will you gather the data? (put a check next to the one that applies to you)

Survey (attach a copy of the survey)

Experiment (write out a full description)

Published data (attach a copy of the data and its source)

3. Briefly describe how you ensure that the data you collect is valid. Address randomization of the test units/subjects, sample size, and if doing an experiment, discuss how you plan to eliminate lurking variables (describe your control). _____

4. Sketch at least two graphs that you intend to make. Be sure to label both axes and model the type of data you expect to collect.