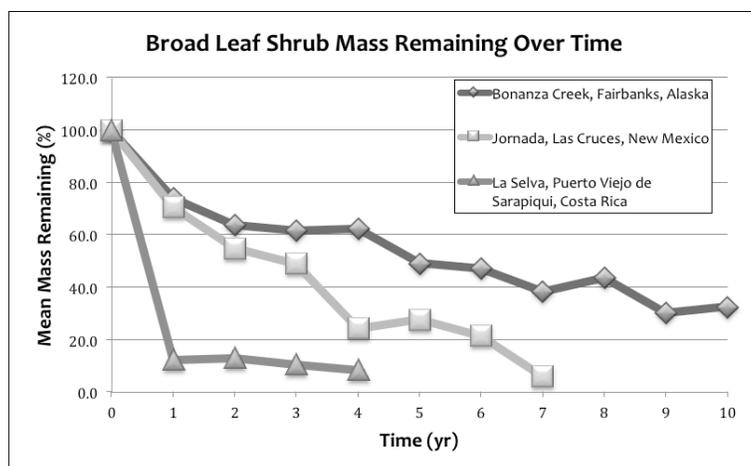




Desert Data Jam

Bringing ecological data to life for non-scientist audiences

Guidelines for the Spring 2017 Competition Middle School Division



Project Overview

Welcome to the Desert Data Jam Competition!

For more than 100 years, scientists with the Jornada Experimental Range, a US Department of Agriculture facility, have been conducting desert ecology research in Southern New Mexico. Additionally, the Jornada Basin Long-Term Ecological Research Program (LTER) site has also contributed to our understanding of desert ecosystems for more than 25 years.

These organizations have gathered a wealth of long-term data. Currently, there is an increasing need for public understanding of these data. Scientists, now more than ever, are looking to find new, creative ways to summarize and present data to non-scientist audiences.

The Desert Data Jam Competition has been designed to let your students combine their creativity and skills to find interesting ways to present data. Students will use one of three datasets that have been collected in and around the Las Cruces region to design unique ways to present trends relevant to non-scientist audiences.

Asombro staff will visit your class at least 4 times to work with your students on Desert Data Jam. Upon completion of Desert Data Jam projects in your class, please select the top 3 projects to be entered into our final competition at NMSU in Spring 2017.

Projects will be judged using the criteria detailed on page 6. A rubric is available with more details.

Funding for the Desert Data Jam Competition has been generously provided by a grant from the National Science Foundation to the Jornada Basin LTER and from the Las Cruces Public School District.

For more information, please contact:

Stephanie Bestelmeyer or Libby Grace
datajam@asombro.org
Asombro Institute for Science Education
575-524-3334

Dates to remember:

Final Competition Selections due **Thurs. April 13, 2017.**

Projects must be delivered to NMSU on **Tues. April 25, 2017.**

Awards ceremony will take place on **Thurs. April 27, 2017.**

Data Presentation Examples

Anyone who follows major league sports, and especially baseball, knows the incredible amount of data that is collected during each and every game. Craig Robinson is a self-proclaimed baseball fanatic who has turned some of these data into fun and fascinating graphics in his book [Flip Flop Fly Ball: An Infographic Baseball Adventure](#) and on his website www.flipflopflyball.com. Here is one example of his work that makes the statistics accessible and understandable for the general audience:



Note that Mr. Robinson took data available to everyone, but found a way to summarize and present it in a way that few others would.

“Infographics” like those created by Mr. Robinson are becoming increasingly popular, and there are a number of tools available to help you create these masterpieces (for examples, see: <http://edudemic.com/2012/08/diy-infographics>).

Yet graphical presentations need not be the only option for presenting science to non-scientists. For example, students attaining a Ph.D. in science can create a dance explaining their research and enter it in the [Dance Your Ph.D. Contest](#) (<http://gonzolabs.org/dance/>). In

previous Desert Data Jam competitions, students have created children’s books, rap songs, poems, games, physical models, and much more.

Now it is time for your students to try! How can trends in regional ecological data be explained and presented to nonscientists? We do not wish to be limiting - students can create a graphic, story, play, song, or other product. We only require that it illustrates trends in the data.

We can’t wait to see what is created!

Rules and Procedures

Teams

Students can work on projects on their own or in groups of no more than three students. Prizes (\$300 for 1st place; \$200 for 2nd place; and \$100 for 3rd place) are awarded for a project, so it must be split between team members if a team consists of more than one student.

Registration

Due to space limitations, only the top 3 projects from each class can be entered into the final competition. To register the top projects from your class, complete the project registration form by **Thurs. April 13, 2017**. The project registration form must include:

- 1) Your name and school
- 2) Student names and project titles
- 3) Components of the project
- 4) Brief description of creative project

Project registration forms can be found on our website. You may send these in an email, fax or use the registration form online.

Website: www.asombro.org/desertdatajam

Email: datajam@asombro.org

Fax: 575-646-2315

You will receive a confirmation email with more details about project drop off and the final competition by **Wed. April 19, 2017**. If you do not receive a confirmation email, please call our office at 575-524-3334.

Data to Use for the Project

Students will have a choice between three regional datasets: dust emissions, litter decomposition, or grass restoration. Each includes locally collected data that students can apply to their understanding of desert ecology. Once they choose the dataset, students will be guided through interpreting their data, identifying a trend, and developing a creative project.

Parts of the Project

The final product students will create includes: (1) a **presentation board** that will be on display during the judging and awards ceremony and (2) the creative project (infographic, physical model, game, video, etc.). **Presentation boards must be no larger than 48” wide and 36” tall.** Use a standard, folding science fair display board.

Please see the “Presentation Board Requirements” on page 7 for necessary components of student presentation boards.

Project Supplies

Students are responsible for supplying all necessary materials for their data jam project. This includes their presentation board and any materials for their creative project (art supplies, technology, etc.). Asombro will provide tables and easels for presentation board display and outlets for student technology.

Technology

Although not required, it is common for students to use technology as a component of their creative project (e.g. video clip, recorded song, video game). If projects entered into the final competition require technology (iPad, laptop, MP3 player, etc.), it is students' responsibility to obtain technology from their school or use their own. Asombro can provide an outlet for charging and table space, but we cannot provide any technology.

If technology that students use for their projects is password protected, it is necessary that the students remove the password protection or provide login information on their presentation board.

All technology in final competition will be stored in a locked room overnight.

Submitting Student Projects

The poster and associated materials for student projects must be delivered to Wooton Hall (corner of Knox St. and Frenger St.) on the New Mexico State University campus on Tuesday, April 25 between 3:00 PM and 7:00 PM.

Deadlines

Thurs. April 13, 2017 - Each teacher needs to submit their project registration form. This form can be found at our website (www.asombro.org/desertdatajam).

Tues. April 25, 2017 - Projects and posters are due by 7:00 PM at Wooton Hall (see Submitting Student Projects above).

How Projects Will Be Judged

A panel of judges, including scientists and nonscientists, will evaluate each project using the judging rubric in this packet. Criteria include:

- 1) Presentation Board - Does the poster contain all ten components listed on page 7? Is it a standard tri-fold board, no larger than 48" wide x 36" tall? Is the poster visually appealing? Are proper grammar and spelling used throughout the text? Is the creative project prominently displayed on or near the board? Is there a reflection? (30 points)
- 2) Scientific Practices - Does the board include a background and question section explaining the topic? Are the independent and dependent variables identified? Is the data collection procedure explained? Is there a graph accurately representing data trend(s) used for creative project? Does the data trends section accurately describe the data trend(s) used for the creative project? Is there a possible explanation for observed data trends that is supported by evidence? (45 points)
- 3) Creativity in Communicating Data Trends - Is the product creative? Were resources/materials used effectively in a creative way? Is the data presentation appealing to non-scientist audiences? Does the project accurately portray the trend(s) of the data? (25 points)

Prizes

Prizes will be awarded for 1st, 2nd, and 3rd place projects. Honorable mentions will also be awarded.

1st prize - \$300

2nd prize - \$200

3rd prize - \$100

Judging will take place on Wednesday April 26, 2017. An awards ceremony will be held at 6:30 PM on Thursday April 27 in Wooton Hall. All projects must be picked up at the end of the awards ceremony.

Questions

Please feel free to contact the Asombro Institute for Science Education if you have any questions about the project or competition.

Asombro Institute for Science Education

575-524-3334

datajam@asombro.org

www.asombro.org/desertdatajam

Presentation Board Requirements

The board must be a standard, folding science fair display board, no larger than 36" x 48." It must have the following ten components:

1. Title of project should be descriptive and succinct.
2. Names of students who submitted the project and their school name.
3. Background and question: In your own words, describe your science topic to someone unfamiliar with it. Why are these topics important in our area? What was the research question being addressed by this project?
4. Variables: Clearly identify the independent variable(s) and the dependent variable(s) in the research. Remember that independent variables don't change due to any of the other variables in the project. Dependent variables are generally what you are measuring in your project; they usually depend on one or more other variables. For example, in a study measuring the effects of fertilizer and the amount of water on plant growth, plant growth is the dependent variable and fertilizer and water are the independent variables.
5. Procedures: In your own words, describe the methods used in the research project. Include details such as who collected data, how data was collected, where data was collected, frequency of data collection, etc.
6. Graph of data used in the project: Create a graph of the data used for your creative product. For example, if you are showing the trend in the chloride concentration of Mirror Lake before and after the installation of plastic liners on the highway, only graph the data that applies. If, however, you want to include the relationship to human population, be sure to graph human population data as well. Hand drawn graphs are allowed.
7. Data trend(s): What one or two trends do you want to highlight with your creative project? For example, chloride concentration in Mirror Lake increased following the construction of I-93. Chloride concentrations in Mirror Lake then decreased following the installation of plastic liners in 2000 to divert runoff, even though human population continued to increase throughout study duration.
8. Creative product: This is the heart of your Desert Data Jam project. Prominently display your creative product (e.g. video, infographic, poem) on or near your board. Make sure that it focuses on the data trend you identified in #7.
9. Possible explanation: Can you think of a possible explanation for why we found the data trends you identified in #7? Make sure your explanation is supported by evidence and is consistent with scientific ideas.
10. Brief reflection (1-2 paragraphs) on the Desert Data Jam. Which part was the most fun? What challenges did you have? What did you learn? What other questions do you now have?