

# Jelly Beans add up and the Great Seal of Mississippi

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### Gifted: Grades 3<sup>rd</sup>-5<sup>th</sup>

**Title:** Jelly Beans Add Up

**Overview/Annotation** The lesson will explore counting, sorting, and graphing skills. The lesson provides students an exciting and fun way of exploring and internalizing graphing, sorting, and counting skills. Realistically, the students will discover what color jelly bean is contained more often than any other color in a standard bag of jelly beans. Moreover, students will be investigating probability.

**Content Standard(s):**

1. Demonstrate concepts of number sense by counting forward and backward by ones, twos, fives, and tens up to 100; counting forward and backward from an initial number other than 1; and using multiple representations for a given number.
13. Organize objects or information into predetermined and labeled data displays, including pictographs, tally charts, bar graphs, or double-loop Venn diagrams.
13. Create displays, including appropriate labels, for a given set of data using pictographs, tally charts, bar graphs, or single- or double-loop Venn diagrams.
15. Represent categorical data using tables and graphs, including bar graphs, line graphs, and line plots.
16. Determine if outcomes of simple events are likely, unlikely, certain, equally likely, or impossible.
17. Represent numerical data using tables and graphs, including bar graphs and line graphs.
1. Select appropriate tools and technological resources needed to gather, analyze, and interpret data.
19. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2..., and represent whole-number sums and differences within 100 on a number diagram. [2-MD6]
22. Generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object. Show the measurements by making a line plot where the horizontal scale is marked off in whole-number units. [2-MD9]
23. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together,

take-apart, and compare problems using information presented in a bar graph. (See Appendix A, Table 1.) [2-MD10]

**Primary Learning Objective(s):** The student will: 1. observe, predict, sort, and classify  
2. develop graphing skills such as counting and equations  
3. gather and record data  
4. interpret data  
5. apply and generalize data

**Additional Learning Objective(s):** The student will: \*work cooperatively in groups  
\*explore learning through the use of technology (i.e. whiteboard; LCD projector; interactive website).  
**Visual Arts:** Begin to develop craftsmanship in a variety of additional media and processes to produce works of art. (CP)

**Approximate Duration of the Lesson:** 31 to 60 Minutes

**Materials and Equipment:** large bag of small jelly beans  
clear glass or plastic decanter (large enough to hold all of the jelly beans)  
styrofoam or plastic cups (1 cup for every 4-6 students)  
pencils  
crayons (1 crayon for each color of jelly beans)  
prediction graph  
final result graph  
name tags (with student's names written on them)  
sorting/classifying sheets  
student recording sheet (1 for each group of 4-6 students)  
glue stick for attaching the initial predictions to the prediction graph.  
\*Great Seal of Mississippi

**Technology Resources Needed:** \*whiteboard/interactive board  
\*Website for discussing probability [Interactive Activities](#)  
\*LCD projector (if WhiteBoard is not available)  
\*Web site access to site: [grapher](#)

**Procedures/Activities** 1.) INTRODUCTION: \*The teacher will use the interactive Web site Probability to discuss likely, least likely, most likely a color on a given graph or chart will occur with students. Students will interact with teacher via an interactive whiteboard. The teacher will click on either color of the given graph and ask questions pertaining to the likelihood of a color occurring on the given graph. 1. What color is most likely to occur on the circle graph? 2. What color is least likely to occur \*The teacher

will adjust the size of each color on the graph and ask questions similar to or like the above questions. Once teacher has explained probability to the students, the teacher will complete the Steps for Lesson Implementation.

[\(Probability\)](#)

*The interactive Web site allows teachers and students to explore probability.*

2.) STEPS FOR LESSON IMPLEMENTATION:

1. The teacher brings to class a glass or plastic decanter full of a large bag of small jelly beans
2. Students predict which color jelly bean they think will be found most frequently by placing their name cards on the appropriate color jelly bean on the prediction graph.(total class prediction graph)
3. Students then complete their individual student prediction sheet.
4. In cooperative learning groups, students then sort and classify a cup-full of jelly beans according to color.
5. Next, the students record their color counts on the cooperative group sorting / graphing sheet.(one member of the group records the data counts while the rest of the group counts)
6. Students finally graph their results on the final class results graph.  
Note: Students will graph one color at a time - one student from each group graphs one color - all students will have an opportunity to graph a color.
7. After cooperative learning groups have completed task, students will assemble in whole group setting to discuss the activity.  
Discussion: a. How many (color) jelly beans did we find? How many .....? b. What color did we find more of than any other? c. Did the prediction that you made turn out to be true? d. What if we bought a new bag of candy - would we find the same number of each color of candy? Why? Why not?
8. After lesson discussion, the teacher will:
  - A. Distribute the jelly beans for eating!
  - B. Have the children figure out number sentences about the graph. Post their ideas on a chart near the graph.
  - C. Challenge the children to think of questions to ask about the graph they have just created. Many will find it is much more difficult to "ask" a question than it is to answer one!
  - D. Teacher and students will create graph (Create a Graph by clicking on the highlighted area below).
  - E. Display the prediction graph and the final graph for the school to see...it will draw a lot of interest from adults as well as other students.
  - F. Encourage all students to share the results of this activity with their parents/guardians and a friend.

[\(Create a Graph\)](#)

*This Web site allows teachers (and students) the opportunity to create*

*and print their own graph.*

**Attachments:** \*\*Some files will display in a new window. Others will prompt you to download.

[Cooperative Group Sorting and Graphing Sheet Rich Text.rtf](#)  
[Student Performance Rubric Jelly Beans Add Up.rtf](#)  
[Student Prediction Sheet Rich Text.rtf](#)

**Assessment Strategies:**

\*teacher observation \*rubric (see attachment)

Three points: students were highly engaged in class discussions; were highly focused and worked well in their cooperative learning groups; followed directions well and successfully completed task; and were able to demonstrate a solid understanding of observing, sorting, classifying, graphing, interpreting and analyzing data.

Two Points: students were somewhat engaged in class discussions; were somewhat focused and worked well in their cooperative learning groups; followed directions for most part and successfully completed task with little outside assistance; and were able to demonstrate a solid understanding of observing, sorting, classifying, graphing, interpreting and analyzing data.

One point: students participated minimally in class discussions; were unfocused and did not participate in the cooperative learning group experience; were unable to follow directions without outside assistance; and were unable to demonstrate a solid understanding of observing, sorting, classifying, graphing, interpreting and analyzing data.

**Art Integration:**

Students will discuss other uses of jelly beans besides eating. Creating art might be a suggestion. Discuss with students that Ronald Reagan one of our past presidents was an avid Jelly Belly fan. (Could do this lesson in conjunction with a president study) President Reagan had his head shot created with Jelly Bellies as a piece of art. He also loved Blue jelly bellies and had them all over the White House for everyone to eat.

Instruct students that we will be creating a specific piece of art today using a different medium they have never used before- jelly beans. Explain that art can be found in any objects and all types of object can be used for creating art.

Discuss what the Great Seal of Mississippi is and that we will be creating one using the jelly beans. Students will hot glue the jelly beans to the Great Seal in groups. Students that aren't involved with the Seal will be creating small head shot pictures of them using the jelly beans.

Adapted and borrowed from:

<http://www.mde.k12.ms.us/ACAD/ID/Curriculum/Arts/curriculum/VisArts.pdf>