

Name: Paula Wood
Grade Level: 6, 7, 8
Topic: Volume Application
Class Time Needed: 1-2 days with additional time outside of class

A. Objective

Students will determine the volume of a regular and an irregular shape. Students will reason through the problems solving process, make connections and communicate the results. (PASS process standards 1, 2, 4 and content standards 2.1a, 4.1,4.3)

B. Materials

- a. Resource books
- b. Card stock or poster board
- c. Internet access
- d. Crayons/markers, construction paper, etc.

C. Resources

- a. Images of America. Oklahoma City Zoo 1902 – 1959, by Amy Dee Stephens, copyright 2006, ISBN 0-7385-4049-8, Arcadia Publishing, pages 115 – 119.
- b. I Want a Hippopotamus for Christmas, by John Rox, ISBN 0060529423, HarperCollins Publishing.
- c. <http://www.minibite.com/christmas/hippo.htm>

D. Introduction

Students have previously been introduced to the formulas and methods for finding volume of cubes, prisms, cylinders, etc.

Upon entering the classroom students are greeted with the song “I Want a Hippopotamus for Christmas” by John Rox using the internet site listed in the resource section (there is a children’s book with the same title that could also be used). We will also discuss where the song originated and when and why it became popular using material from the resources (included).

After listening to the song, the idea of truly having a hippopotamus will be discussed. Students will give their thoughts about what kinds of things we should know, such as size of the living space, size of the hippo, what a hippo does eat, would we be able to get a hippopotamus through a normal sized door, etc.

Assignment: Complete the handout. Use the Internet, the books provided, the library, or other resources to answer the questions. Students may also email zoos to obtain information. Using the information recorded on the handout, create a net of a 6" x 6" cube to display the results. The following information should be used to finish the cube:

Side 1:	Your name, project title, due date
Side 2:	General facts
Side 3:	Fun facts
Side 4:	What would it be like to live in the math room?
Side 5:	Required Information
Side 6:	Venn diagram comparing the Hardesty environment to the actual living environment of the hippopotamus

Complete the net with the information first and then build the cube. All cubes will be on display.

E. Assessment

- Handout will be checked for completeness.
- Cube will be checked for accuracy.
- Math sections will be checked for correctness.
- Work will be completed on time.

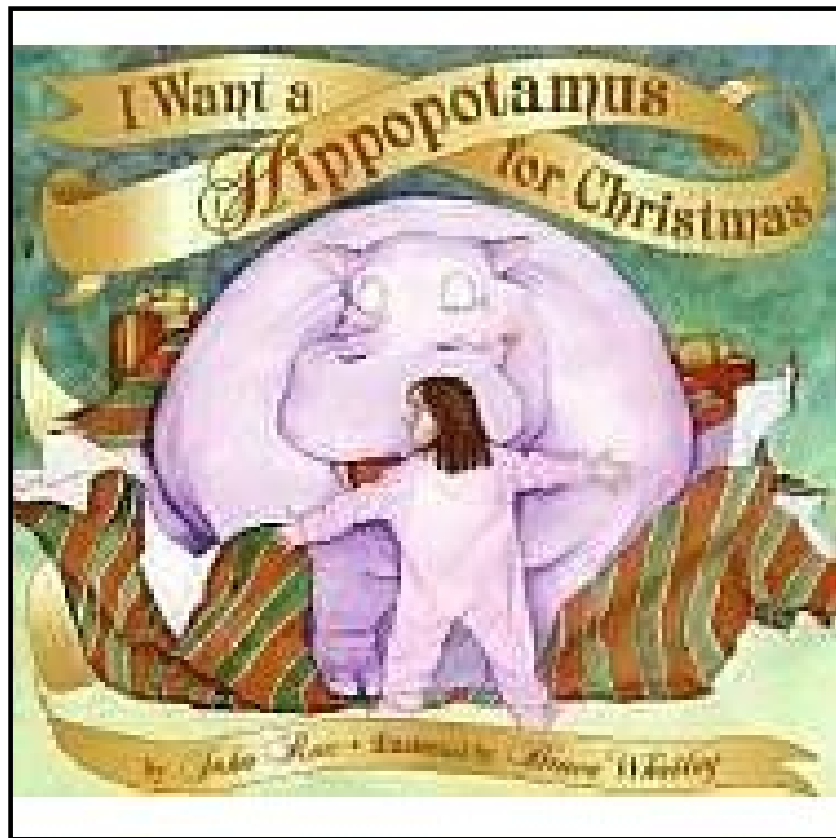
F. Modifications

- Students who have difficulty pulling information may be given information in a format that is easier to find exactly what they are looking for.
- Students may be paired according to ability.

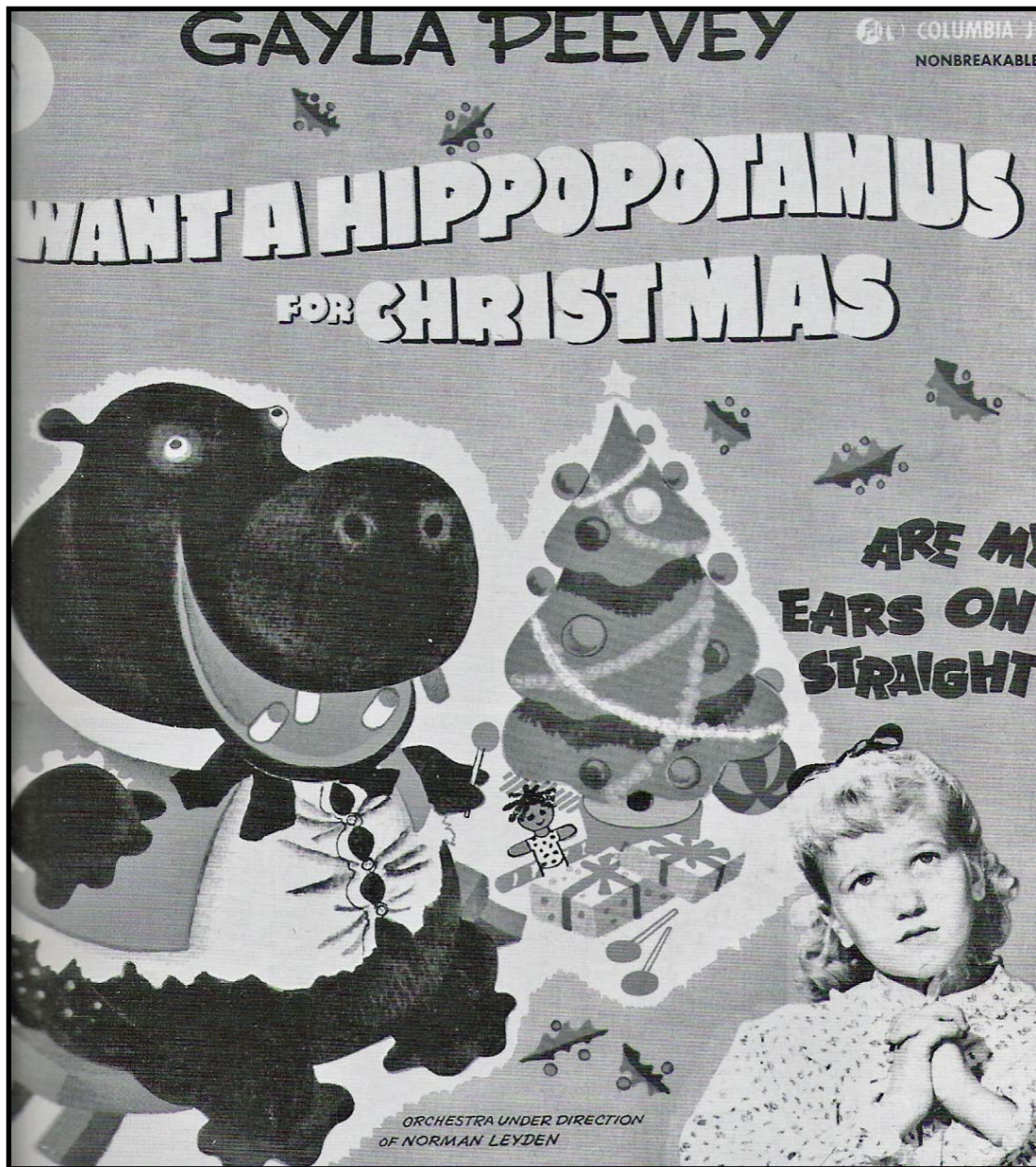
G. Reflection

I have used this project in the past but not in this form. The students have always been anxious to figure out truly how many hippos will fit in the math room. They have some difficulty finding some of the information, but if they will actually email a zoo they can get all the information they want!

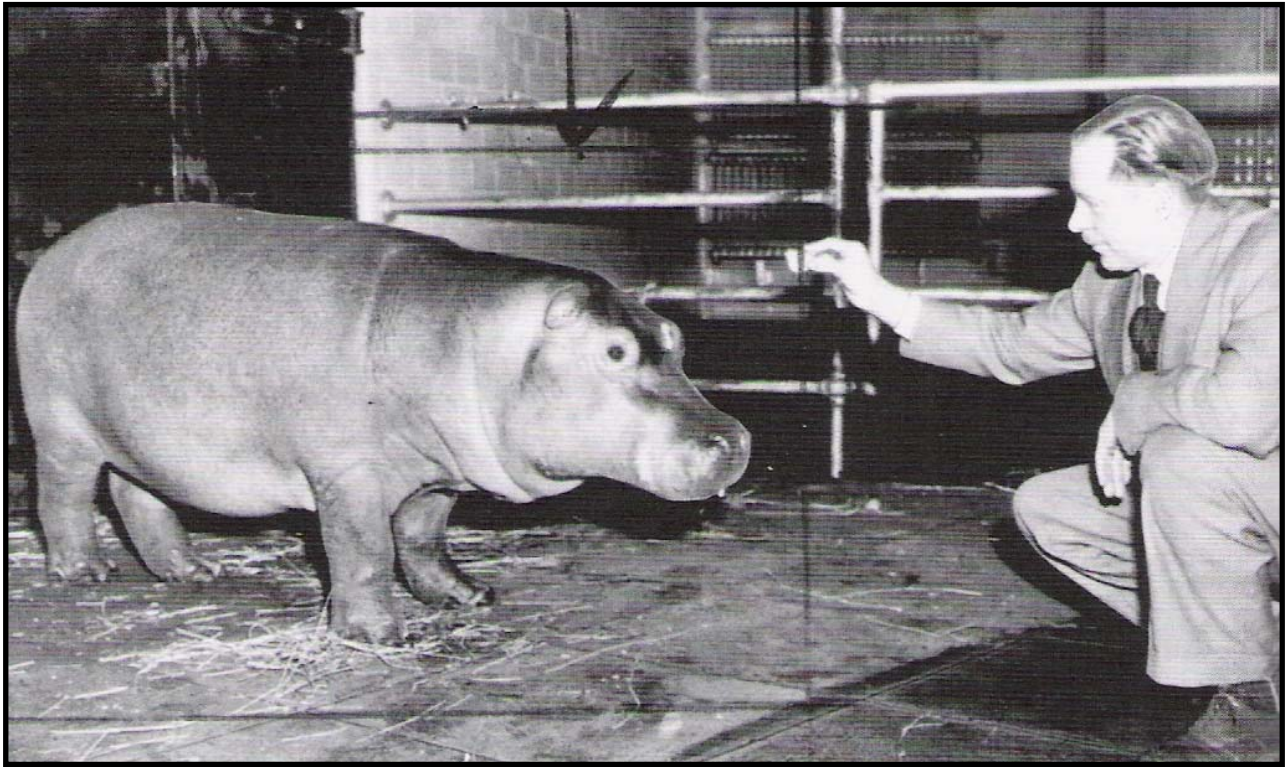
I am looking forward to trying this again with these modifications.



<http://www.minibite.com/christmas/hippo.htm>



The song "I Want a Hippopotamus for Christmas" was written in 1950 by John Rox and became a nationwide hit in 1953 when ten-year-old Oklahoma native Gayla Peevey sang the song as a way to raise money for the Oklahoma City Zoo's first hippopotamus. The song sold a record half-a-million copies in December 1953, so Julian Frazier decided to capitalize on the event and grant Peevey's musical request. On December 10, he began the Gayla Peevey Hippo Fund. Children were invited to send their pennies to buy a hippopotamus for Peevey, who would then donate it to the zoo.



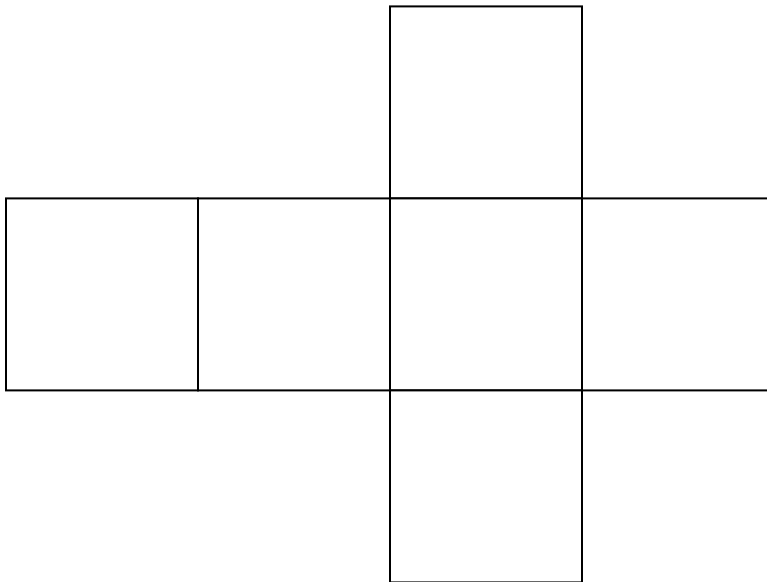
Two days later, newspapers ran this picture of Mathilda, the one-and-a-half year old baby hippopotamus John Frazier had picked. The 700-lb. baby hippopotamus was well traveled. She had been born in Kenya, shipped to Italy, and then sent to New York. The cost of purchasing Mathilda was \$3000 plus the trade of a zebu calf and \$500 to fly her to Oklahoma. Mathilda arrived in Oklahoma City on Christmas Eve 1953.



How Many Hippos Can Fit in the Math Room?

1. Determine the volume of the math room.
2. Determine the size of a grown hippopotamus. Calculate its volume.
3. How many hippos will fit in the math room? Explain your answer.
4. Use the internet, books, library, and/or other resources to find the following information:

- a. How does a hippopotamus spend its day?
 - b. What does a hippopotamus eat?
 - c. When does a hippopotamus eat?
 - d. How much will it cost to feed a hippopotamus for 1 month (use thirty days)
 - e. Will a full grown hippopotamus be able to fit through the classroom door, or for that matter even be able to get in our school?
 - f. 10 general facts about the hippopotamus
 - g. 10 fun facts about the hippopotamus
5. From the viewpoint of a hippopotamus, write a story about living in the math room.
6. Create a Venn diagram comparing the living environment of a hippopotamus in Hardesty to its natural living environment.
7. Using the net pattern below, draw and measure a net on a sheet of poster board that will be used to create a six inch cube.



8. Decorate your net and include the following information on each side.

- Side 1: Your name, project title, due date
- Side 2: General facts of your choice
- Side 3: Fun facts of your choice
- Side 4: What would it be like to live in the math room?
- Side 5: Required Information (points a – e)
- Side 6: Venn diagram comparing the Hardesty environment to the actual living environment of the hippopotamus

9. Cut out and build your cube.
10. Hand in your handout and your cube.