

# "Solid Shapes and More" Tracy Brown



For further information contact

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## 2005-2006 IDEA CATALOG OF EXCELLENCE

### PROGRAM OVERVIEW

The children will discover three dimensional shapes all around them by photographing them and tallying, graphing, and analyzing data of the most popular shapes around. The children will discover that graphing will help them visually see the value in organizing information. PowerPoint presentation shows that the children understand the concept of the shapes. The children will then email PowerPoint and Graphs to administration, parents or other teachers. This has helped in Algebraic thinking on test scores as well as probability. Geometry is fun and this is a way to help the other aspects of Math, Writing and Technology to be integrated into one plan

### OVERALL VALUE – ISTE/NETS OBJECTIVES

#### TEACHER:

#### 1. 1. PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.

Teachers plan and design effective learning environments and experiences supported by technology. Teachers:

- A design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.

B apply current research on teaching and learning with technology when planning learning environments and experiences.

C identify and locate technology resources and evaluate them for accuracy and suitability.

D plan for the management of technology resources within the context of learning activities.

E plan strategies to manage student learning in a technology-enhanced environment.

#### 2. 1. TEACHING, LEARNING, AND THE CURRICULUM.

Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning. Teachers:

A facilitate technology-enhanced experiences that address content standards and student technology standards.

B use technology to support learner-centered strategies that address the diverse needs of students.

C apply technology to develop students' higher order skills and creativity.

D. manage student learning activities in a technology-enhanced environment.

#### STUDENT:

##### 1. 1. Basic operations and concepts

- Students demonstrate a sound understanding of the nature and operation of technology systems.
- Students are proficient in the use of technology.

##### 2. 1. Technology productivity tools

- Students use technology tools to enhance learning, increase productivity, and promote creativity.
- Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

##### 3. 1. Technology research tools

- Students use technology to locate, evaluate, and collect information from a variety of sources.
- Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

##### 4. 1. Technology problem-solving and decision-making tools

- Students use technology resources for solving problems and making informed decisions.



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- Students employ technology in the development of strategies for solving problems in the real world.

## SUBJECTS COVERED

Math, Writing

## GRADES

Third

## MATERIALS

- Computers with Excel and PowerPoint
- LCD projector so the teacher can model how to use the programs Excel, PowerPoint, and Word
- Digital Camera
- Clipboards
- Notebook Paper
- Information on solid shapes

## ABOUT THE DEVELOPER

Kathi Decker teaches a Primary Multiage class of 1<sup>st</sup> and 2<sup>nd</sup> graders at Eagle Lake Elementary. She has 23 years teaching experience and is certified in Early Childhood and Elementary Education. She has also taught reading in the ESOL program at the East Area Adult School and at Polk Community College.

In addition, she has a Master’s degree in Language Arts, is National Board certified as an Early Childhood Generalist, and is presently pursuing a doctorate degree in Instructional Technology.

## SUNSHINE STATE STANDARDS

### MATH

The student describes, draws, identifies, and analyzes two- and three-dimensional shapes. (MA.C.1.2)

1. given a verbal description, draws and/or models two- and three-dimensional shapes and uses appropriate geometric vocabulary to write a description of a figure or a picture composed of geometric figures.

The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions. (MA.D.1.2)

1. describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, rules using algebraic symbols.

The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (MA.D.2.2)

1. represents a given simple problem situation using diagrams, models, and symbolic expressions translated from verbal phrases, or verbal phrases translated from symbolic expressions, etc.
2. uses informal methods, such as physical models and graphs, to solve real-world problems involving equations and inequalities.

The student understands and uses the tools of data analysis for managing information. (MA.E.1.2)

1. solves problems by generating, collecting, organizing, displaying, and analyzing data using histograms, bar graphs, circle graphs, line graphs, pictographs, and charts.
2. determines range, mean, median, and mode from sets of data.

3. analyzes real-world data to recognize patterns and relationships of the measures of central tendency using tables, charts, histograms, bar graphs, line graphs, pictographs, and circle graphs generated by appropriate technology, including calculators and computers.

### WRITING

The student writes to communicate ideas and information effectively. (LA.B.2.2)

1. writes notes, comments, and observations that reflect comprehension of content and experiences from a variety of media.
2. organizes information using alphabetical and numerical systems.
3. writes for a variety of occasions, audiences, and purposes.
4. uses electronic technology, including wordprocessing software and electronic encyclopedias, to create, revise, retrieve, and verify information.

## ACCOMMODATIONS

Notes on each type of solid figure.  
Partner to help with the language barrier.

## DIRECTIONS/PROCEDURE

***This lesson will take between 2 to 4 days to complete. The children should be in groups of two, three, or four.***

1. Have a set of three dimensional shapes for the children to discuss. Have them talk about what they see. Discuss what each shape is appropriately named, the discuss faces, vertices [corners], and edges of each shape. Compare and contrast the three dimensional shape with two dimensional shapes. (Venn Diagram)

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2. Have the children take a camera and chart to photograph different types of three dimensional shapes and count how many of each different shape they find.
3. The children will do two projects – Excel Spreadsheet/Graph and a PowerPoint discussing each type of three dimensional shape found along with its attributes (faces, vertices [corners], and edges)

## Graph with Excel:

1. Discuss what Excel is used for. (to organize information)
2. Have the children make the headings: Shape and Number Found
3. The children are to enter the names of all the three dimensional shapes that were discussed at the beginning of this unit.
4. Have the children enter the number found around the school for each shape.
5. SAVE!
6. Highlight the data
7. Press the Graph Button
8. The children choose between the graph wanting to present their data. (I've used Bar, Column, Pie, and Line graphs)
9. Have the children name the graph, and place it into a new sheet
10. Have the children analyze their data on the shape they found the most, least, and why.
11. The children can make a different type of graph using the same data. They are to compare and contrast the different graphs. When the comparison and data analysis is complete, they are to write up a paragraph of their findings to email to the teacher. Don't forget to peer edit, and teacher help with editing. (You can partner up with the Reading/Writing teacher for this portion.) Then with teacher approval, the children will email the completed evaluation to an administrator and/or parent.

## PowerPoint with Pictures of Solid Shapes

1. Discuss how to make a slide presentation
2. Have the children download the pictures they took with the digital camera.
3. The children are to make slides discussing what each solid figure entails – ie: faces, vertices, edges, and name of figure.
4. On the next slide, they are to insert the different items found around the school that represent that particular shape.

The children present their slide presentations to the class.

## ASSESSMENT/ EVALUATION

[rubistar.4teachers.org](http://rubistar.4teachers.org)  
[www.rubrics4teachers.com](http://www.rubrics4teachers.com)  
[http://teach-nology.com/web\\_tools/rubrics/](http://teach-nology.com/web_tools/rubrics/)

## OUTCOMES OR PRODUCTS PRODUCED

The children will produce a PowerPoint showing they understand the shapes by giving the correct number of faces and edges along with real world items that represent this shape. The children will organize the information found about these shapes on campus by having a completed graph on Excel. This will give the children information about what solid shape we use the most in society. This will teach them how they can show to an audience any data that they have collected to present

## CHECKLIST FOR PROJECT COMPLETION

- Completed Technology Certification Application (Can be found at [http://www.polk-fl.net/schooltech/Training/Teach\\_Cert/cert\\_app.asp](http://www.polk-fl.net/schooltech/Training/Teach_Cert/cert_app.asp))
- Completed Lesson Plan Template for Technology Certification Projects
- Submit a hard copy and an electronic copy on disk or CD

## TECHNOLOGY TRAINING MODULES USED

TH0039 Windows Desktop	TH078 Excel2000 - Basic
TH0041 Troubleshooting	TH0036 Using a Digital Camera in the Classroom
TH0047 Outlook Basic	
TH0089 Word Basic	
TH051 PowerPoint2000 - Basic	