



Children's Museum of Houston

Pre/Post Classroom Activities

What Shall I Wear Today?

Rationale

It is the classic good vs. evil adventure as the dastardly Hacker attempts to overtake CyberSpace, but is continuously outsmarted by three curious kids and one cyberbird pal determined to stop him. Join forces with the CyberSquad, Matt, Inez, Jackie and Digit, in their quest to save CyberSpace as they zoom into *Cyberchase – The Chase Is On!*, an out-of-this-world, educational mathematics exhibit.

In this exhibit, children will enter CyberSpace through a special portal to explore favorite cybersites, including the *Control Central*, the *Grim Wrecker* and *Poddleville*. They will help the CyberSquad protect the virtual universe from the villainous Hacker while exploring math concepts such as place value, algebra, geometry, fractions and probability.

In this activity, students will examine possible combinations (outcomes) by creating different outfits with shirts and pants. The students will then create a chart to record their data. This concrete to abstract activity will help students understand how to organize data in a useful manner to ease the process of interpretation. In *Cyberchase*, students will use a combination chart to help them stop a rocket that is threatening Motherboard's Control Central.

TEKS Objectives

V.E.2 (PreK): Child collects data and organizes it in a graphic representation.

K.12: The student constructs and uses graphs of real objects or pictures to answer questions.

1.10: The student uses information from organized data.

2.11: The student organizes data to make it useful for interpreting information.

3.13, 4.13: The student solves problems by collecting, organizing, displaying, and interpreting sets of data.

(A) Use concrete objects or pictures to make generalizations about determining all possible combinations of a given set of data or of objects in a problem situation.

5.12: The student describes and predicts the results of a probability experiment.

Background

Children learn about combinations by using real life objects such as sandwich ingredients or pieces of clothing for outfits. In this activity, children learn the foundation of combinations before they have to think about it algebraically. According to NCTM Focal Points, students should represent data in picture graphs in order to provide another meaningful connection to number relationships. As you analyze data in the graphs, students will compare information and use operations to solve problems about the graph.

Vocabulary

Outcome – one of the possible results of a probability experiment

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Materials

- Sets of clothes (doll clothes or paper cut-outs of clothes)
- Data sheets

Procedure

Set Up: This activity will take place during one class period. Set out clothes for children to work with. This activity can be done in small groups or individually. With younger students, using real clothes will help them concretely understand this concept when creating an abstract chart of the data.

1. Pretend that you have a new school uniform.
2. You have a choice of 3 colors of shirts and 3 colors of pants.
3. Make combinations out of the clothes.
4. Keep track of all of the combinations you make on the data sheet.

Questions to ask

- What makes one outfit different from another outfit?
- How do you know you have all the possible combinations?
- What happens to the number of combinations when you add one more type of clothing?
- Do you see any patterns that can help you predict what will happen when the number of items is changed?

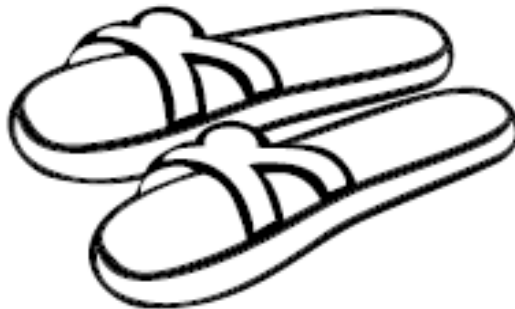
Extensions

- Try different numbers of each type of clothes.
- Add another article of clothing to the tables, like a hat or different types of shoes.
- Increase the number of articles of clothing beyond 1-3. How does that affect the number of combinations?

Resources

- *Combination For Real*: A short real life clip featuring Harry working at a sandwich shop: http://pbskids.org/cyberchase/forreal/111_for_real.html
- Create wacky disguises to help the CyberSquad hide from Hacker: How many disguise combinations can you make? <http://pbskids.org/cyberchase/games/combinations/index.html>
- Free lesson plan: Cyber Combos CYBERCHASE Activity http://www-tc.pbskids.org/cyberchase/parentsteachers/lessons/pdf/LP_CyberCombos.pdf
- *Graphs*: Book by [Bonnie Bader](#). This lively story demonstrates different types of graphs such as a bar graph, line graph, and pie graph.

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