



Children's Museum of Houston

Pre/Post Classroom Activities

Capture that Fraction!

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 *Capture that Fraction!*, students will practice using fractions to capture the most circles. This game involves a combination of fraction knowledge, creativity, strategy, and defense to win. In *Cyberchase*, students will use a various fractions to complete Motherboard's circuits that have been damaged. This activity will help students review fraction concepts for this component.

TEKS Objectives

- 2.2: The student describes how fractions are used to name parts of whole objects or sets of objects (
- 3.2: The student uses fraction names and symbols (with denominators of 12 or less) to describe fractional parts of whole objects or sets of objects.
- 4.2: The student describes and compares fractional parts of whole objects or sets of objects.
- 5.2: The student uses fractions in problem-solving situations.

Vocabulary

Fraction – any part of a group, number, or whole.

Background

According to the NCTM Curriculum Focal Points, practice with fractions can help children develop an understanding of fractions to represent parts of a whole or group. Understanding the size of a fractional part and how it relates to the whole is also an important concept for children to learn and practice in various ways.

Materials

- 2 dice
- Colored markers and 1 black marker
- Large sheets of paper

- Circular lid or compass to create a medium sized circle (coffee or jar lid works well)

Procedure

Set Up: This activity will take place over one class period and works best in small groups of 3-4 students. Each group will need the materials listed below.

1. Trace 7 circle shapes onto a sheet of paper using the black marker.
2. Make a dot in the center of each circle.
3. Each player selects a different colored marker.
4. Players take turns rolling the dice.
5. Use the 2 numbers to make a fraction less than or equal to 1. For example, if you roll a 1 and 3, you make the fraction $\frac{1}{3}$.
6. After you roll the dice, color in your fraction on any circle. (For example, if you rolled $\frac{1}{2}$ color in $\frac{1}{2}$ of a circle)
7. When a player captures more than $\frac{1}{2}$ of a circle they win that circle.
8. When all circles are captured, the game is over. Whoever has captured the most circles is the winner!

Questions to ask

- Try dividing the circle into three equal parts, then five parts. What did you find?
- How can you tell when you have more than half of a circle captured?
- Did you notice any equivalent fractions? (fractions that covered the same amount on a circle)

Extensions

- Add up all the fractions to see who had the greatest fraction capture.
- Add a rule where players can split up their fraction amounts and place them in different circles. For example, a roll of $\frac{3}{4}$ can capture $\frac{1}{4}$ on one circle and $\frac{1}{2}$ on another circle.
- Play the game using a shape other than a circle (ex. squares, triangles, etc.)

Resources

- Fraction *For Real*: A short real life clip featuring Bianca and equivalent fractions: http://pbskids.org/cyberchase/forreal/203_for_real.html
- Use equivalent fractions in this online CYBERCHASE game: <http://pbskids.org/cyberchase/games/equivalentfractions/index.html>
- Find 13 different ways to make a half: <http://pbskids.org/cyberchase/games/fractions/index.html>
- *Give Me Half!*: Book by [Stuart J. Murphy](#). The concept that " and is 1" is presented using two bickering siblings who cannot share anything without parental intervention. Funny resolution and fraction practice.
- *Funny & Fabulous Fraction Stories*: Book by [Dan Greenberg](#) and [Jared Lee](#). Hilarious stories and follow-up problems, reinforce essential fraction skills