

Math 6 - Act. 05: Making Games

Summary

Playing math games is a fun way for students to practice skills. This activity contains four games: Factor Capture, Garbage Can Basketball, Equivalent Fraction Capture, and Equivalent Spoons.

Main Core Tie

Mathematics Grade 6

[Strand: RATIOS AND PROPORTIONAL RELATIONSHIPS \(6.RP\)](#)

Materials

Factor Capture

- Factor Capture Chart (see below)

- Paper and Pencil

Garbage Can Basketball

- Garbage can

- Paper and Pencil

- String

- Cards labeled $\frac{5}{6}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$

- Crumpled sheets of paper of different colors

Equivalent Fraction Capture

- Cards folded in half with the following fractions labeled on each side: $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$, $\frac{1}{6}$, $\frac{5}{6}$

- Fractions cards (The cards need to be fractions that are not simplified)

Equivalent Spoons

- Fraction, decimal, percent, ratio cards (see below)

- Spoons (One less than the number of players)

Background for Teachers

Students are typically motivated by games. Games can be a fun and motivational tool for practicing number and operation skills. While playing games, the students will practice skills over and over and think of it only as playing a game. It makes computation practice painless. While playing games, the students receive instant feedback. There is often much math communication as students discuss the reasons why answers are right or wrong. It is important to insist that students use correct math words while playing the games.

Parents can be a great help in playing games. Some teachers have parent volunteers come in for "Math Game Friday" or have them play a game with a small group of students who need extra practice and immediate feedback. The volunteers can also help the teacher assess the needs of the students.

Having the element of "luck" is important. No student should feel stupid because they lost a game. With the element of "luck" the students lose the game because they are unlucky, not because they are stupid. Students especially love it when they are lucky enough to beat the teacher.

Instructional Procedures

Invitation to Learn

Students almost always enjoy playing games. It is important that clear and simple directions are given. If the directions are too complicated, the game loses its appeal for most students.

Instructional Procedure

Determine the skill or process to be practiced.

Match the skill with a simple or common game.

Develop the materials needed.

Have the students play the game.

Evaluate and change the game --always be ready when needed to change the rules in the middle of play. Often the students have excellent ideas for changes.

Curriculum Integration

Many developed games can also be adapted to practice vocabulary and skills in geometry, probability, algebra, and problem solving.

Factor Capture

Participants: 2 players

Procedures:

Player One selects a number (crosses it out on the Chart). Player Two then captures the factors of that number (crosses them out on the chart, while saying, "(the factor being crossed out) is a factor of (the number selected by the other player)." Player One's points equal the number that Player One crossed out. Player Two's points are the sum of the factors Player Two crossed out.

Example: If Player One selects 12, Player One would receive 12 points. Player Two could cross out the factors of 12 (1, 2, 3, 4, and 6). The sum of these factors is 16. Player Two would receive 16 points. The players keep a running total of their points.

Player Two then selects a number. Player One captures the factors. If the player selects a number for which there are no factors available, then no points are awarded either player and the other player selects the next number. The play continues until only prime numbers are left on the board.

Garbage Can Basketball

Participants: Any number of players

Procedures:

Set up the following basketball area by putting the garbage can in the middle. Then make a circle around the basket with the string. Put the card $\frac{5}{6}$ in the circle. Make a bigger circle around this and put the $\frac{3}{4}$ card in the outer circle. Continue for the remaining fractions. Give each player a ball (the crumpled sheet of paper). The players all shoot their balls at the garbage can. A score of one point is given to all who make the basket. All other students get the score of the circle their ball lands in. Have the students "shoot" again. Students are to keep a running total of their scores. You can play for a set time period or until a predetermined score is achieved.

Equivalent Fraction capture

Participants: 2 -5 players

Procedures:

Have the students get into groups of 2-5 players. Have the students stand the cards up in the middle. They sit around the cards. The teacher/parent/student flips over the first of the fraction cards. The students in the circle grab the card in the middle with an equivalent fraction written on it. The player to grab the card gets one point and puts the card back into the middle. The teacher/parent/student flips over the next number.

Equivalent Spoons

Participants: 4 or more players

Procedures:

Have the students sit in a circle and place all of the spoons in the middles of the circle. Pass out all of

the cards. The players look at their cards and try to find matching sets of four. When a player has a matching set they quietly pick up a spoon. All of the other players then pick up a spoon. The last player to notice the spoons being picked up will not get one. If none of the players have a set, then each player takes one card from their hand and passes it to the right. It helps to have one person calling out "pass" when it is time to pass a card. If you wish to keep score, the player without the spoon receives a letter. The first letter would be an "S," then a "P," etc. spelling Spoons. The cards are then gathered, dealt again, and play begins again. When a player spells Spoons the game is over.

Additional Resources

Mega-Fun Math Games

by Michael Schiro

Extensions

Possible Extension/Adaptations

:

After teaching a new skill or process, challenge the students to come up with a game that will help them practice the skill.

Homework & Family Connections:

Games can be taken home to play with parents and siblings. It is an excellent way to involve parents and help them to be aware of what their students are currently studying. It often leads to excellent parent discussions of the use of math in the real world.

Assessment Plan

Assessment is typically instant when playing games. The teacher, volunteer, and other students quickly detect mistakes and can quickly reteach.

Authors

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