DOINGWHATWORKS

Roll Around the Clock

G. Stanley Hall Elementary School, Nebraska

Topic: Improving Mathematical Problem Solving in Grades 4 Through 8

Practice: Problem-Solving Instruction

Fifth graders at G. Stanley Hall Elementary School play *Roll Around the Clock* to reinforce their understanding of fraction concepts and practice problem solving. These game materials include instructions for the game with a suggested scoring variation, as well as a clock face to use as a game board.

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Roll Around the Clock

Materials: Large clock face, fraction cubes, markers
- One cube with faces labeled: $\frac{1}{12}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{5}{12}$, $\frac{1}{2}$

- Second cube with faces labeled: $\frac{1}{2}$, $\frac{7}{12}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$, $\frac{11}{12}$

The object of the game is to roll fractions that add to 1 (once around the clock, or 1 hour). The player closest to 1 wins a point.

Play with two or three players.
1. Players alternate who goes first in a round.

2. A player chooses a fraction cube to roll, and records the roll with a marker on the clock face. The player can then choose either fraction cube to roll again. A player is allowed up to three rolls on a turn.

3. The player records in an equation the fractions rolled on his/her turn to show the sum of the fractions. A player may have a sum greater than 1.

4. The next player takes a turn and rolls up to three times. This player records with a marker on the clock face and by writing an equation for the sum.

5. After each player has taken their turn to roll, the player with a sum closest to 1 scores a point. In case of a tie, each player with the sum closest to 1 scores a point. This ends a round of play.

6. After five (or a predetermined number) rounds, the player with the highest score wins the game.

Variation:
- <u>Positive/ Negative Scoring</u>: On a turn, a player's score is positive if the sum is greater than 1 and negative if the score is less than 1. For example, a sum of $1\frac{1}{4}$ gives a score of $\frac{1}{4}$, and a sum of $\frac{5}{6}$ gives a score of $^{-}\frac{1}{6}$. In this variation, the player with the score closest to 0 after several rounds wins.

Reference
 "What's That Portion: Fractions and Percents." A curriculum unit from *Investigations in Number, Data, and Space.* Pearson Education, 2008.

Large Clock Face