Shooting Percentage

Lesson Summary	Students play "trashket ball" while practicing converting fractions, decimals and percentages.

Major Topic and SOL

Math SOL (2009)   6.1

Length of Unit   60 minutes

Student Objectives

In Mathematics the student will be able to:

- Identify representations of a fraction
- Simplify fractions to lowest terms
- Describe orally and in writing the equivalence relationships among fractions, decimals, and percents

In Language the students will be able to:

- Discuss the fractional representation of the number of shots an individual makes over number of shots taken
- Simplify fraction to lowest terms
- Make connections about the relationship between fractions, decimals, and percentages.

21st Century Skills

- Critical-thinking and Problem Solving
- Communication
- Creativity and Innovation
- Collaboration
- Information and Media Literacy
- Contextual Learning

Assessment Evidence

- As the students compare all the scores to decide who had the best percentage, the teacher will be able to determine if they converted the fraction correctly into decimals and percents.
  - If there are any questions about a conversion, this time would be used as a teachable moment (Teacher would be able to clarify how to record the fraction, simplify, and convert to decimal and percent.)
- Overall grade would be based on active participation in the game.

Supplies/Materials/Technology

- **Teacher Material:**
  - Tennis or nerf ball
  - Wastebasket
  - Index cards numbered 1 to 20
  - Promethean board
- **Student Material:**
  - Paper
  - Pencil
  - Calculator

Lesson Plan

Motivation & Building Background:

- **Background:** The students have studied the common use of fractions, decimals, and percents. They will be able to put this knowledge to use in a game of "trashket ball."
- **Motivation:** The teacher will explain to the students that they will be playing a new game today in class. Explain to them that "trashket ball" is a lot like basketball except that the goal is a trash can and in order to complete the game the students must understand fractions, decimals and percents.

Presentation

- Briefly review how to represent fractions and how to simplify those fractions.
- Explain to the students the procedures for "trashket ball" and demonstrate where they should stand, how to count the shot, and how to record shots made over shots taken.
- Ask students to count the number of basket that each student makes out of total shots made and record the information on their paper in the form of a fraction. The students will simplify the fraction to lowest term and then convert the fraction into a decimal and a percent.
  - Remind the students what resources they can use to help them calculate the equivalent decimal or percent for a fraction (posters, calculators, etc.)

Practice/Application

- Draw or tape a line to the floor at a distance from the wastebasket.
- Choose a student to draw a card. This is the number of shots he/she will take.
- The student shoots the ball at the wastebasket while the other students are keeping track of the number of shots made. They write this as a fraction, i.e. number of shots made over total shots taken.
- As the students are recording the fraction on their paper, the teacher will record each fraction on the promethean board.

- Students then simplify the fraction and convert this fraction to a decimal and the decimal to a percent.
- Another student draws a card and shoots. Continue in this way until all cards are used.
- Monitor the students to make sure that they are using the correct procedures to simplify and convert their fractions.
- Provide feedback as needed. Once all the cards are used, have students orally give the decimal and percent for the number of shots that they made. This information will be recorded on a chart on the promethean board.
- Compare all the scores to decide who had the best percentage. Did some students have advantages over others? What is an easy way to improve one's percentage?