

Improving Teacher Quality Program

Mathematics Within: Algebraic Processes and its Connections to Geometry

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Broad Topic: Number Sense

Subtopic: Fractions

Grade Level: 3rd-7th grade

Time Frame: 30 minutes

Aim: Comparing fractions with unlike denominators

Specific Objective:

Students will use their knowledge of fractions to compare different fractions and put them in order from smallest to largest.

Materials/Supplies:

- standard deck of playing cards (with jokers and face cards removed)
- paper and pencil
- 50 counters (beans, pennies, chips)

References:

- Piece It Together With Fractions for Elementary/Junior High, Volume VIII, written by Joanne Currah and Jane Felling.
- Website: www.boxcarsandoneeyedjacks.com.

Introduction:

Students will play a game in which they must order 3 fractions from the smallest to the largest value, then explain using common denominators, pictures, words, or decimals why this order is correct.

Body

This game is an adaptation of the "Fraction Line Up" game from the above reference.

Players: 3-4 (may be either individuals or teams of two people)

To Start: Deal out six cards to each player/team, placing them face down in an array of three columns and two rows. Each team flips over the cards at the same time, displaying three fractions. If the numerator is larger than the denominator, flip the cards within that fraction. Each team must put the fractions in order from smallest to largest, and then prove the answer with paper and pencil, using common denominators, decimals, words, or a pictorial representation. When done, the team says "Lined Up." Other teams stop and listen to the explanation/representation. If the order is correct and the representation is clear, the first team earns three points and takes three counters. If the order is incorrect or the explanation is not clear, each of the other teams receives a counter and the game

continues. The first team with a correct order and explanation earns 3 counters, the second team earns 2 counters, and the third team earns 1 counter. The first team to earn ten counters wins the game.

After the game, each player explains one of the strategies that was helpful to him/her and writes a clear explanation to show how he/she put the fractions in order and proved the answer.

Variation I: Allow students to move around their cards after flipping them over.

Variation II: Use both proper and improper fractions.

Variation III: Deal out eight cards in an array of four columns and two rows.

Close:

In a class discussion, students will share some of the strategies they used and why they chose different ways to represent the answer, depending on the fractions compared. Students will be able to learn from classmates as they demonstrate how to use their strategies to figure out the answer.

Application/assessment:

Measure the learning by watching students play the game and listening to them share strategies, as well as proving their answer to their opponents. Also, read through the explanations written by each student to assess individual learning.