# SCOUT ELF SCHOOL ™

## Lessons from Scout Elf School:

# Fruit Fractions

# Note to Teacher

Here at the North Pole, we find that visual models and manipulatives are most effective in introducing math concepts like fractions. In this activity, students can practice sorting wedges of fruit into equitable shares for a small group as they develop an understanding of fractions as numbers and as quantities formed by one part when a whole is broken into equal parts.

# Core Curriculum Standards

CCSS.MATH.CONTENT.3.NF.A.1 - Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

CCSS.MATH.CONTENT.3.NF.A.3 - Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.

CCSS.MATH.CONTENT.3.NF.A.3.B - Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

# Introductory Activity

- Divide students into groups of three or four.
- Review the concept of a fraction and relevant vocabulary: numerator (top number), denominator (bottom number), vinculum (line between the numerator and denominator, greater than (>) and less than (<).
- Show examples of 1/4, 1/3 and 1/2, along with examples of their equivalent fractions (i.e. 2/8, 3/9, 5/10, etc.)
- Give each child a piece of fruit. (Mandarin oranges are easiest to peel and divide.)
- Ask students to peel their orange without separating the wedges inside.
- Ask students to observe their fruit before taking it apart and to record its total number of wedges on a piece of paper.
- Ask students if it would be possible to share their fruit equally between two people or between three people.
- Have students record how many wedges each person would get if they shared their fruit equally between two people and/or between three people. Students may draw pictures or use numbers to record their answers.
- Have students share their fractions and equivalent fractions with the class.
  Explain that each table of students is also a fraction of the whole class. Have each table sum the total number of their orange wedges and determine how many people could equally divide their orange wedges.

# Further Fraction Practice

Beginning Learners

**Fraction Battle (Dice Version):**

*(Teacher Note: Print, fold and glue two Fraction Battle dice cubes for each pair of students. Print Fraction Battle scoresheets.)*

1.  Divide class into pairs and give each group two Fraction Battle dice and one fraction battle scoresheet. (The printable dice are limited to numbers 1-4 to keep fractions simple).
2.  One student will roll both dice and record their fraction on their side of the worksheet. The larger number is always recorded as the denominator (bottom number). If one of the dice lands on the Scout Elf School icon, the student may choose any number between 1 and 4.
3.  The next student will roll both dice and record their fraction.
4.  Students work together to determine which fraction is larger and they circle it.
5.  Students continue rolling dice and recording their fractions for 10 rounds.
6.  The student with the most fractions circled is the winner.

Progressing Learners

**Fraction Battle (Card Version):**

*(Teacher Note: Print and cut out a set of Fraction Battle cards for each pair of students.)*

1.  Shuffle cards and divide evenly between two players.
2.  Each player places a pencil on the table as their vinculum (line separating the numerator and denominator.)
3.  Each player draws two cards from their own deck and places one above their pencil and the other below their pencil.
4.  Players compare their fractions and the player with the largest fraction wins all four cards. (Players may need scratch paper to calculate equivalent fractions).
5.  If players turn over equivalent fractions, it's time for a fraction war.
6.  Each player places 2 new cards face down and a 3rd & 4th card face up (one above the pencil and one below).
7.  The player with the larger fraction wins all the cards.
8.  Play continues until one player has all the cards.

Advanced Learners

**Fraction Frenzy (Team Play):**

*(Teacher Note: Print and cut a set of Fraction Battle cards for each team.)*

1. Divide class into two teams.
2. One player from each team comes up to battle.
3. Each player draws two cards from their own deck and places one above their pencil and the other below their pencil.
4. Players compare their fractions and the player with the largest fraction wins all four cards. (Players may use white board to show their calculations of equivalent fractions.)
5. The player with the higher fraction returns to their team and sends up another player from their team.
6. The player with the smaller fraction continues playing.
7. Game play continues with the winning player returning to their team after each round.
8. If players turn over equivalent fractions, both players return to their teams.
9. The first team to have played all their players wins.

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