Activity E.6: Land Grab for Fractions

Special Note: In this game, each staircase represents a vertical number line. Players will interpret stacks of tokens on the steps as improper fractions and/or mixed numbers.

Learning Objectives:

1) Develop fluency in interpreting fractions on a number line.

2) Develop ability to convert from mixed fractions to improper fractions and vice versa.

3) Develop reasoning skills.

Examples of Skills Accomplished:

1) 43/5 = 8 3/5

2) 2 < 2 1/8 < 3

Setup:

1) Put staircases in counterclockwise sequence 1x → 12x.

2) Tokens will be used blank side up to represent quantities. We suggest you use several different colors to make the game more visually exciting.

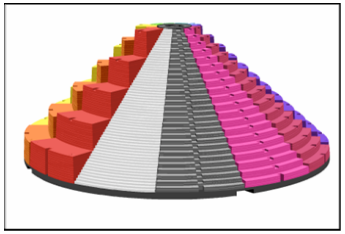
3) Place about thirty small stacks of tokens on the top of random steps on Zillio. Use the following guidelines for best effect:

- No stack should be taller than the step it is on, but you can have a few that are equal in height to the step.
- Have at least 2 stacks on each staircase but put most of the stacks on the 6x, 7x, 8x, and 9x staircases to practice multiples of those numbers.
- Avoid having the quantity in stack of tokens = the same number as the step (for example don't put 2 tokens on the 2nd step) to be sure they are using # of groups and # of remainders correctly.
- Place one or two tokens in random notches on the staircases that have no stacks on them – these will represent whole numbers with no remainders.

Maximum Number of Players for Small Group Activities: 6

Players Positions: Standing

Grey foam logs: Out



Review:

1) Remind students they have done several activities (D.1 and or E.5) using staircases to represent fractions. Point to any stack of tokens and ask them how to express what is visually represented as an improper fraction and a mixed fraction. Clear up any misconceptions and begin the game.

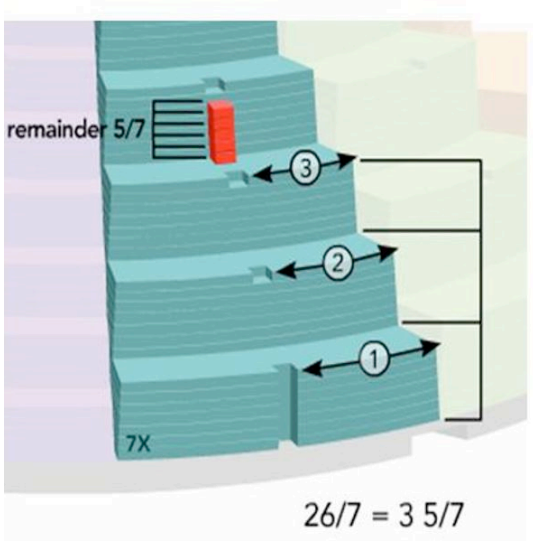
Game Objective: Explain that right now you own the entire mountain. All tokens on Zillio represent parcels of land you own. Students must play together as a team to try to claim as much of your territory as possible before time is up. They capture territory by knowing the improper and/or mixed fraction associated with each stack of tokens. When they have successfully claimed territory, and you agree, they may capture the parcels of land.

1) Players do not need to take turns. Allow them to point to any stack of tokens and say the appropriate fraction(s) represented. For example, for 5 tokens on the third step of the 7x staircase, representing 26 grouped by (divided by) 7's, the player should say "26/7 and 3 5/7"; however they must have your attention and you must say "yes" before they are allowed to capture the tokens to claim the parcels for the team.

2) At the end of the play, or whenever you call time players, count all the captured parcels of land to determine their final score. If they have captured all possible parcels (or some pre-determined number), they get to look at the surprise in the treasure trove.

3) For students who need more of a challenge, pick up any of the stacks of tokens and rapidly move it up and down the staircase or across to other staircases, requiring them to quickly interpret multiple problems before you let them capture the tokens.

Example 26/7 = 3 5/7



Alternative Scoring:
If students need to practice double-digit addition, have them add the numeric value of the tokens captured instead of just counting tokens captured.

Observe and Assess: 1) How easily students can calculate improper and proper fractions. If they are not yet fluent in their times tables consider having them put the multiples on Zillio first. This helps them develop fluency during set-up but lets them succeed during the game.
Group Discussion & Review of Findings: 1) N/A
Transition to Paper: 1) Assign the reproducible for either class work or homework.

zillio

a zillion ways to play math

Name: _____ Date: _____

Convert these improper fractions to mixed numbers:	Convert these mixed numbers to improper fractions:
a) 34/6 = 5 4/6	b) 3 ¼ = 13/4
c) 33/4= 8 1/4	d) 6 2/7 = 44/7
e) 55/12 = 4 7/12	f) 8 1/3 = 25/3
g) 71/9 = 7 8/9	h) 5 1/6 = 31/6
i) 45/8 = 5 5/8	j) 20 1/3 = 61/3
k) 23/10 = 2 3/10	l) 10 1/10 = 101/10