

Fraction Alley

Game Instructions

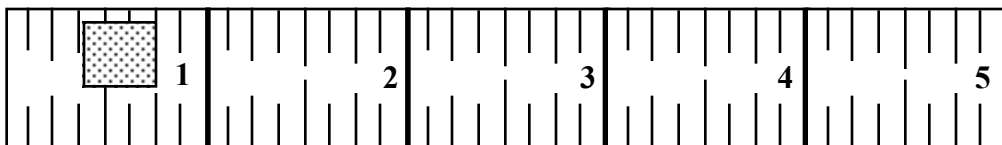
Getting ready to play...

- Divide your class into groups of three.
- In each group, designate one of the three as the Judge and Banker. Designate the other two students as Player A and Player B. Have the members of each group form a playing surface by pointing their cleared desks toward each other. Players A and B will need pencil and paper to record and solve problems.
- Distribute 1 Fraction Alley game board, 1 deck of playing cards, 1 Fraction Alley Question Library, 1 Fraction Builder Card Mat (fraction mat), 1 pack of money, 1 square game piece, and 1 triangle game piece to each group. The Judge is in charge of the playing cards, problem bank, and money.

Beginning play...

- The Judge will divide the playing cards into two stacks. The Denominator stack will consist only of red aces (value 1), red twos, red fours, and red eights. The rest of the cards will form the Complement stack. Face cards will all have value 10. The Judge will shuffle both stacks (individually) and turn them face down on a table or desk.
- The two players will designate themselves as A and B. Player A will use the square game piece and Player B will use the triangle game piece. Both players will place their game pieces on the start box. Player A will be the first to play.
- The Judge will then take a card from the Denominator stack and place it on the denominator box on the fraction mat. The Judge will take a card from the Complement stack and place it on the numerator box on the fraction mat. This will create a fraction.
- IF THE NUMERATOR AND DENOMINATOR CARDS ARE BOTH RED AND THE FRACTION IS PROPER (NUMERATOR < DENOMINATOR), THE JUDGE WILL TAKE AN ADDITIONAL CARD FROM THE COMPLEMENT STACK AND PLACE IT ON THE WHOLE NUMBER BOX ON THE FRACTION MAT, THUS CREATING A MIXED NUMBER.
- Player A will move his or her game piece along the 'inch-ruled' game path to the mark that is representative of the fraction or mixed number generated by the Judge. For example, if the Judge generated the fraction $\frac{3}{4}$ on the fraction mat, player A would slide his or her square-game piece until the edge of the square aligned with the $\frac{3}{4}$ mark on the ruler.

YELLOW: \$5 BACK TRACK: 1 SPACE

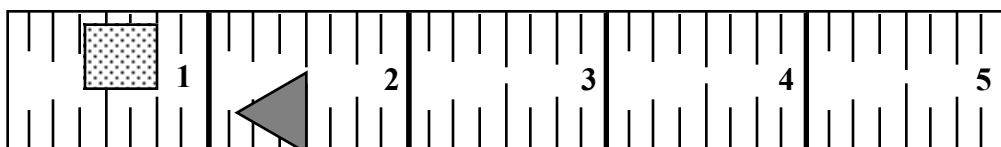


Player A would now be required to answer the question or problem assigned to $.75 (=3/4)$ on the problem card. The Judge, who oversees the question library and the money, will read the problem for Player A. Player A has one minute to solve the problem. Player A reports the answer to the Judge and the Judge compares player A's answer with the answer on the problem card. If Player A answered the question correctly, the Judge awards Player A the amount of money shown above the track the player's game piece is on (\$5 while on the first track). If Player A answers incorrectly, no money is awarded and Player A must move the game piece back a number of whole spaces equal to the back-track number indicated on that track (back 1 space on the first track). If a player runs out of room to back track, their game piece goes back to the start box.

- The Judge removes the numerator and whole number (if there was a whole number) card(s) from the fraction mat and places them at the bottom of the Complement deck. THE DENOMINATOR CARD REMAINS ON THE FRACTION MAT FOR PLAYER B. THE DENOMINATOR CARD IS NOT REPLACED UNTIL IT IS PLAYER A'S TURN AGAIN. The Judge takes the next card off the Complement stack and places it on the numerator box. As always, IF THE NUMERATOR AND DENOMINATOR CARDS ARE BOTH RED AND THE FRACTION IS PROPER (NUMERATOR < DENOMINATOR), THE JUDGE WILL TAKE AN ADDITIONAL CARD FROM THE COMPLEMENT STACK AND PLACE IT ON THE WHOLE NUMBER BOX ON THE FRACTION MAT, THUS CREATING A MIXED NUMBER.

- Player B will move his or her game piece along the 'inch-ruled' game path to the mark that is representative of the fraction or mixed number generated by the Judge. For example, if the Judge generated the fraction $6/4$ on the fraction mat, player B would slide his or her triangle-game piece until the edge of the triangle aligned with the $1 \frac{1}{2}$ inch mark on the ruler.

YELLOW: \$5 BACK TRACK: 1 SPACE

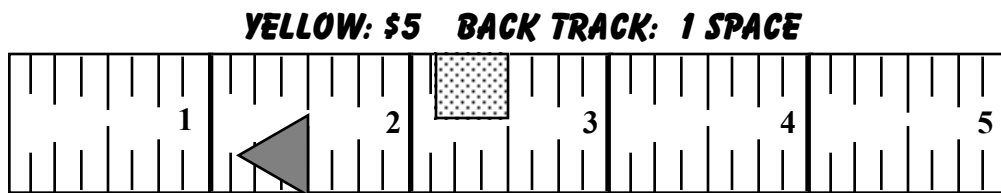


- Player B would now be required to answer the question or problem assigned to $1.5 (6/4)$ on the question library. The Judge, who oversees the problem card and the money, will read the question or problem for Player B. Player B has one minute to solve the problem. Player B reports the answer to the Judge and the Judge compares Player B's answer with the answer on the problem card. If Player B answered the question correctly, the Judge awards Player B the amount of money shown above the track the player's game piece is on (\$5 in this case). If Player B answers incorrectly, no money is awarded and Player B must move the game piece back a number of whole spaces equal to the back-track number indicated on that track. If a player runs out of room to back track, their game piece goes back to the start box.

- Alternating play continues until one player crosses the finish line. (THE FINISHING PLAYER DOES NOT HAVE TO LAND EXACTLY ON THE FINISH SPACE). Once a player crosses the finish line, the game is over. The player with the most money is the declared winner.

Special Notes and Reminders

- The denominator card changes only after Player B's turn. This adds to fairness since both players will deal with the same denominator before it is changed.
- The fraction or mixed number ON THE FRACTION ALLEY GAME BOARD PATH is the number that determines what problem a player gets to solve. For example, if the Judge turns up the mixed number $1 \frac{3}{4}$ and the player move his game piece $1 \frac{3}{4}$ spaces and lands on the $2 \frac{1}{2}$ mark, the Judge will read the question corresponding to 2.5 on the question library. The Judge will not read the problem associated with the number 1.75.



- Since students must convert the fractional measure on the game board path to a decimal to determine the problem to be solved, fraction - decimal equivalency charts are included in the game kit. They can be cut and provided to students. Frequent referral to the fraction-decimal equivalency charts will help students to quickly memorize them.
- Require your students to record the problems and solutions neatly on separate paper and collect those at the end of the game. These can be checked or graded for further effectiveness.
- While the Judge is responsible for the cards, problem card, and money, it may help to have the Judge be in charge of all the game materials to facilitate the cooperative learning process.
- Many of the problems in the question library feature improper fractions. This will challenge students to extend their thinking and reinforce their understandings of regular fractions.
- When dealing with improper fractions, teach your students to think as follows: $11/5$ represents 11 equal parts or pieces when five equal pieces make one whole. Since $5 + 5 = 10$, I have enough pieces to make two wholes and still have one left over. Thus, $11/5 = 2 \frac{1}{5}$.
- Each time you play the game, rotate students so Player B becomes the new Judge, Player A becomes Player B, and the former Judge becomes Player A.
- If a player's game piece lands on a white square (in the region of the square, not the edge of the square) the amount of money awarded for a correct answer is \$100.
- The player that crosses the finish line receives an additional \$100 from the banker.

Fraction Alley Game Contents

15 Fraction Alley Game Boards

15 Fraction Builder Card Mats

15 Fraction Alley Question Libraries

Math Concepts and Computation - OR - Algebra I and Geometry

15 Packs of paper money and game pieces (2 per pack)

15 Decks of Playing Cards

1 Set of Transparencies (for demonstrating the game to the class)

1 Game Container

1 Set of Instructions

3 Fraction - Decimal Equivalency cards