## The Commutative Property

The **commutative property of multiplication** ($a \times b = b \times a$) says that when two numbers are multiplied, changing the order of the factors does not change the product; for example, $^{-}3/4 \times 1/3 = 1/3 \times {}^{-}3/4$.

Note: This game treats division as multiplication of the opposite: $^{-}1/3 \div {}^{-}1/2 = {}^{-}2 \times {}^{-}1/3$.

# Game Description and Materials

**One-Two Switcheroo** is a game for two players that uses the commutative property of multiplication to give students mental math practice multiplying rational numbers. Players match commutative pairs of cards (Switcheroo Pairs) to a common product**.**

**Game materials** include a Game Board and a set of cards. Each player needs up to ten tokens to use as markers (not included).

The **object of the game** is to collect more Switcheroo Pairs than the other player.

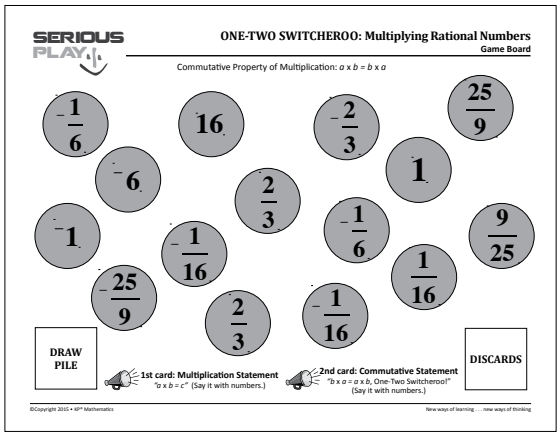
## Game Board

The Game Board has 15 Sum Spots (for Switcheroo Pairs) and places for the draw pile and discards.










## Cards

- There are 30 **Game Cards**, 15 "matching" cards that each make a Switcheroo Pair.
- There are five **Chance Cards**. Chance Cards are saved and used as needed. Playing a Chance Card constitutes a turn.

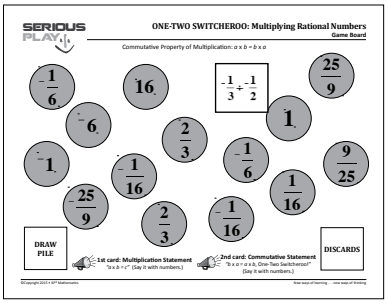


  - ✦ Two Chance Cards say, "Discard and pick 2." Players use this card to discard an unwanted card from their hand and exchange it for the top card from the draw pile. Then, they discard the Chance Card and pick the top card from the draw pile to replace it.
  - ✦ Three Chance Cards say, "Take a card  ." Players take any card (except a Chance Card) from their opponent, place it with their other cards in their play area, and discard the Chance Card. The opponent then picks a card from the draw pile to replace the one that was taken. (See next page.)

## Getting Ready to Play

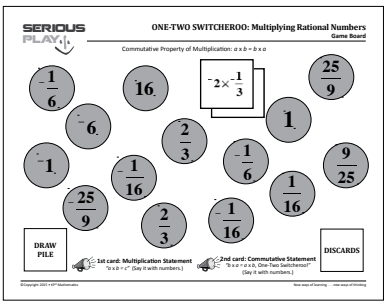
The dealer shuffles the cards, deals five cards to each player, and places the remaining cards face down to form a draw pile. Throughout the game, players' cards remain face up so both players can see them. Players replace each card they use by drawing the top card from the draw pile. They should have five cards at the end of each turn.

## Playing the Game




**1.** Players decide who takes the first turn. Player 1 places a card from his hand on a Product Spot, saying aloud the correct multiplication or division statement: "$^{-}1/3 \div {}^{-}1/2 = 2/3$."

**2.** Player 2 takes the next turn, following the same procedure as Player 1.




**3.** When a player has a card that will make a Switcheroo Pair, he places that card on the Game Board on top of the other card of the pair. Then, he places his marker on the pair of cards and says aloud the commutative statement: "$^{-}2 \times {}^{-}1/3 = {}^{-}1/3 \div {}^{-}1/2$, One-Two Switcheroo."

**4.** Players alternate turns. The game is over when all the cards have been played.

**5.** The winner is the player with more Switcheroo Pairs.

# ONE-TWO SWITCHEROO: Multiplying Rational Numbers

**Game Board**

Commutative Property of Multiplication: $a \times b = b \times a$

$-\frac{1}{6}$ $\quad$ 16 $\quad$ $-\frac{2}{3}$ $\quad$ $\frac{25}{9}$

$-6$ $\quad$ $\frac{2}{3}$ $\quad$ 1

$-1$ $\quad$ $-\frac{1}{16}$ $\quad$ $-\frac{1}{6}$ $\quad$ $\frac{9}{25}$

$-\frac{25}{9}$ $\quad$ $\frac{2}{3}$ $\quad$ $-\frac{1}{16}$ $\quad$ $\frac{1}{16}$

**DRAW PILE**

**DISCARDS**

**1st card: Multiplication Statement**
*"a x b = c"* (Say it with numbers.)

**2nd card: Commutative Statement**
*"b x a = a x b*, One-Two Switcheroo!"
(Say it with numbers.)

SERIOUS PLAY

# ONE-TWO SWITCHEROO
## Multiplying Rational Numbers

**Cards**

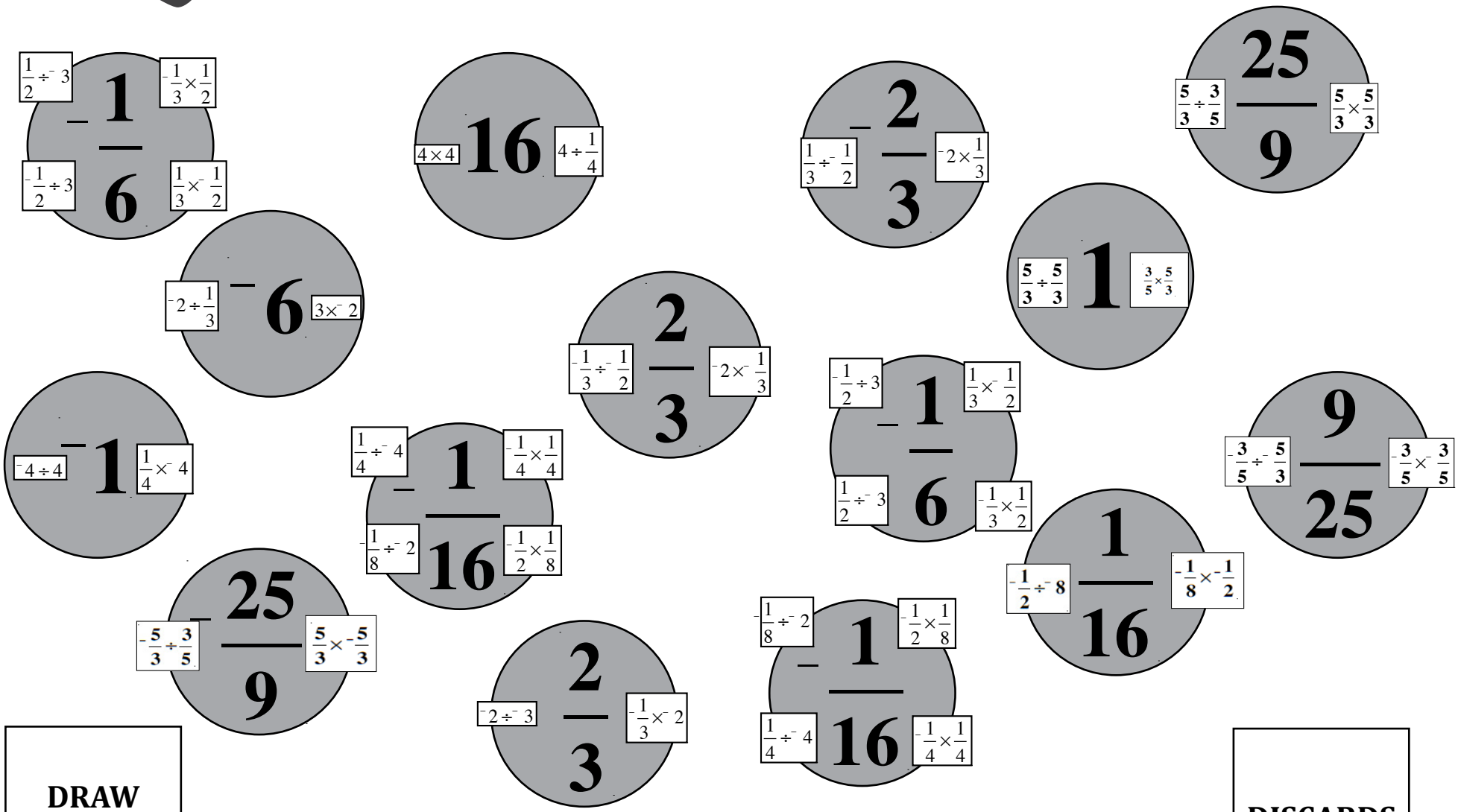
| | | | | | |
|---|---|---|---|---|---|
| $\frac{1}{2} \div {}^{-}3$ | ${}^{-}\frac{1}{3} \times \frac{1}{2}$ | ${}^{-}\frac{1}{2} \div 3$ | $\frac{1}{3} \times {}^{-}\frac{1}{2}$ | $\frac{1}{3} \div {}^{-}\frac{1}{2}$ | ${}^{-}2 \times \frac{1}{3}$ |
| ${}^{-}2 \div \frac{1}{3}$ | $3 \times {}^{-}2$ | ${}^{-}\frac{1}{3} \div {}^{-}\frac{1}{2}$ | ${}^{-}2 \times {}^{-}\frac{1}{3}$ | ${}^{-}2 \div {}^{-}3$ | ${}^{-}\frac{1}{3} \times {}^{-}2$ |
| ${}^{-}4 \div 4$ | $\frac{1}{4} \times {}^{-}4$ | $\frac{1}{4} \div {}^{-}4$ | ${}^{-}\frac{1}{4} \times \frac{1}{4}$ | $4 \div \frac{1}{4}$ | $4 \times 4$ |
| $\frac{5}{3} \div \frac{5}{3}$ | $\frac{3}{5} \times \frac{5}{3}$ | ${}^{-}\frac{3}{5} \div {}^{-}\frac{5}{3}$ | ${}^{-}\frac{3}{5} \times {}^{-}\frac{3}{5}$ | $\frac{5}{3} \div \frac{3}{5}$ | $\frac{5}{3} \times \frac{5}{3}$ |
| ${}^{-}\frac{5}{3} \div \frac{3}{5}$ | $\frac{5}{3} \times {}^{-}\frac{5}{3}$ | $\frac{1}{8} \div {}^{-}2$ | ${}^{-}\frac{1}{2} \times \frac{1}{8}$ | ${}^{-}\frac{1}{2} \div {}^{-}8$ | ${}^{-}\frac{1}{8} \times {}^{-}\frac{1}{2}$ |
| **CHANCE**<br>Discard and pick 2 | **CHANCE**<br>Discard and pick 2 | **CHANCE**<br>Take a card | **CHANCE**<br>Take a card | **CHANCE**<br>Take a card | |

SERIOUS PLAY

# ONE-TWO SWITCHEROO: Multiplying Rational Numbers

**Answer Key**

Commutative Property of Multiplication: $a \times b = b \times a$




**DRAW PILE**

**DISCARDS**

**1st card: Multiplication Statement**
*"a x b = c"* (Say it with numbers.)

**2nd card: Commutative Statement**
*"b x a = a x b*, One-Two Switcheroo!"
(Say it with numbers.)

# ONE-TWO SWITCHEROO: Multiplying Rational Numbers

**Blank Game Board**

Commutative Property of Multiplication: $a \times b = b \times a$

**DRAW PILE**

**1st card: Multiplication Statement**
*"a x b = c"* (Say it with numbers.)

**2nd card: Commutative Statement**
*"b x a = a x b*, One-Two Switcheroo!"
(Say it with numbers.)

**DISCARDS**

SERIOUS PLAY

# ONE-TWO SWITCHEROO
## Multiplying Rational Numbers

**Blank Cards**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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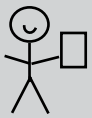
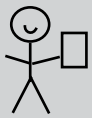
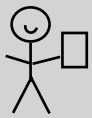
| **CHANCE** Discard and pick 2 | **CHANCE** Discard and pick 2 | **CHANCE** Take a card  | **CHANCE** Take a card  | **CHANCE** Take a card  | |