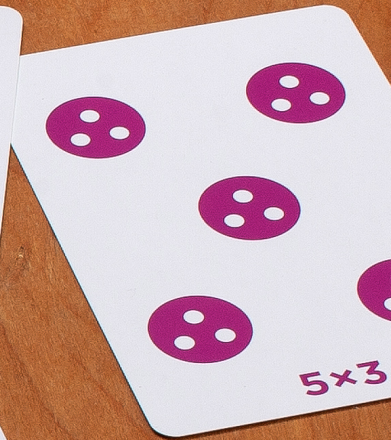
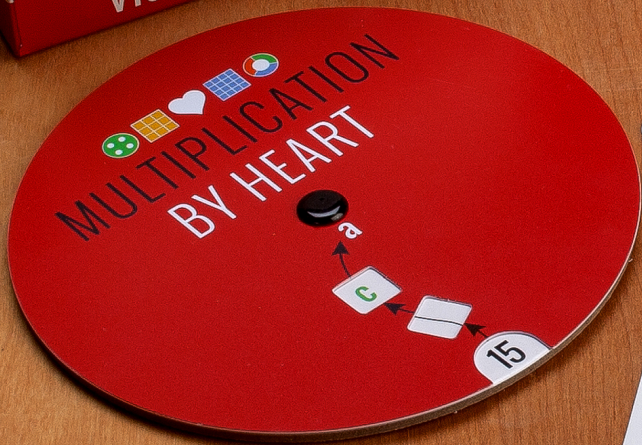


Math for Love

Extra Games for Multiplication by Heart



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Where to get Multiplication by Heart cards

Get cards from mathforlove.com/games/multiplication-by-heart

Free virtual flash are at mathigon.com/multiply.

Introduction

I never thought we'd make flash cards. But people kept asking, and as I looked more and more into the research on learning and memory, I became convinced that it would be hugely beneficial to have flash cards out in the world that were actually good. So we made Multiplication by Heart, which featured powerful visual images, a smarter timeline for practicing facts, and beautiful design.

Ever since we made the cards, teachers have been asking for more ideas for classroom play beyond standard flash card practice. And these cards just beg to be played with!

So, this little booklet features three quick, simple classroom games to play with your Multiplication by Heart deck. They're built to include many students at a time, and they involve all the same practice of flash cards, but in a game format that's even more fun. They also touch on some other topics, including estimation, number comparison, and probability.

I hope you and your students enjoy these games!

Common Core:

3.OA.7 Fluently multiply and divide within 100

4.OA.4 Gain familiarity with factors and multiples

MP7 Look for and make use of structure

MP8 Look for and express regularity in repeated reasoning

Wild Squares

Materials: Multiplication by Heart array cards (Deck 2 - 100 cards)

Number of players: 2 - 6

Who can get rid of all their cards first?

Why We Love Wild Squares

This game—a riff on the classic Crazy Eights (which became Uno)— is perfect for practicing multiplication facts. This delightful game of luck and strategy also draws special attention to square numbers, and the geometric meaning behind their name.

How to Play

For 2 - 6 players.

Setup: Take the 100 array cards, shuffle them, and deal five cards to each player. Place a card with the factors (not the product) face up, and put the deck beside it.

Goal: discard all of your cards. Whoever can get rid of all their cards first wins.

Players take turns.

On a turn, play a card on top of the discard pile.

You may play a card if one factor matches the card below it.

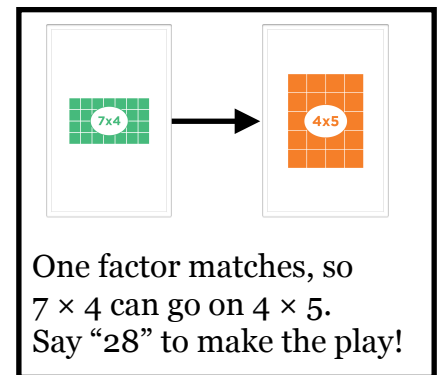
For example, if the card on the top of the discard pile is 4×5 , then you could play 7×4 , since the cards share a factor (4).

Say the product (“28”) or the equation (“ $7 \times 4 = 28$ ”) as you play. If you’ve said the correct product and matched with the card below, the next player takes their turn. (Or if no one speaks up to correct you, the next player takes their turn.)

If you said the wrong product (“ $7 \times 4 = 26$ ”) a player challenges you by saying “correction” and giving the correct product (“ $7 \times 4 = 28$ ”) you take back your card and they can play ANY card from their hand on top of the discard pile, even if it doesn’t match the factors of the card below. Play then continues as normal. If it’s your turn and you don’t have a card that matches the factors of the top card on the discard pile, draw cards until you have a legal play.

If you have a square array in your hand, you can play it on top of ANY card, without matching factors. (You still have to name the product correctly to play it.)

Then you can discard a second card of your choice on top of the square. The second card does not need to match the factors in the square, but you do need to say the correct product to play it.



The Product of War

Materials: Multiplication by Heart cards: any deck or all the decks together

Number of players: 2 - 6

Whose card is bigger?

Why We Love The Product of War

War is a classic, and applying it with the Multiplication by Heart cards gives us an easy way to reinforce fact fluency with a little extra incentive.

How to Play

For 2 - 5 players.

Mix up all the cards (or a subset of them for a shorter game) into equal piles, and give one pile to each person. Everyone plays a card at the same time (without looking at the product), then players go around in the circle and say the product they played. Whoever plays the highest product wins all the cards, and places them on the bottom of their pile. Play until one player has all the cards. For a shorter game, just play through your pile once, and count the captured cards to see who wins.

If a player catches another's mistake in naming their product correctly, they get a ten point bonus for that round. It's possible to get multiple bonuses in one round!

In case of a tie, the players who tied turn up their next cards as a tiebreaker. Whoever wins that war gets all the cards from the round.

Example 1

Player 1 plays 3×4 and says "12."

Player 2 plays 5×10 and says "50."

Player 2 wins both cards.

Example 2

Player 1 plays 5×7 and says "35".

Player 2 plays 7×7 and says "42."

Player 1 catches the error and gives Player 2 another chance. Player 2 says "45". Player 1 catches the second error, so gains 20 bonus points, making their total 55. This beats Player 2's 49, so Player 1 wins both cards.

Rising Rows

Materials: Multiplication by Heart cards: any deck or all the decks together

Number of players: 1 - 9

A game of clever placement and lucky (and unlucky) draws.

Why We Love Rising Rows

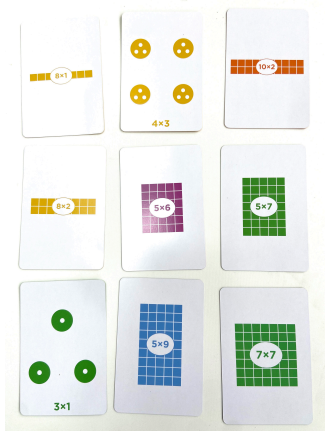
This delightful challenge works as solitaire alone or with a small group, or as a head to head competition between groups. It rewards knowing all your multiplication facts, but anyone can play.

How to Play

Solitaire: 1 - 3 players. Competitive: 2 - 3 teams of 1 - 3 players.

Every team will need a stack of nine cards, with the answers face down. Pick cards from the top and place them, one at a time, in a 3 by 3 grid. Once a card is placed, it cannot be moved.

After all nine cards are placed, turn them up to see the answers. You earn one point for each row and column that has the cards in increasing order. Whoever has the most points wins. In solitaire, a perfect game is 6 points.

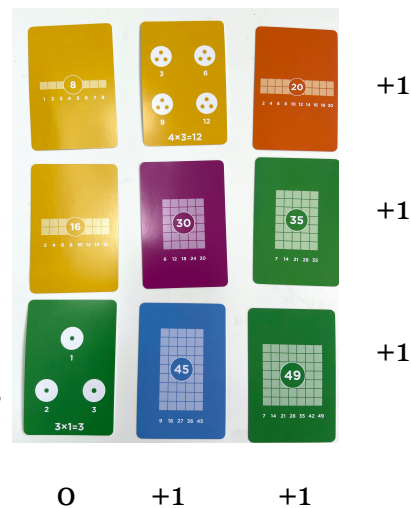


Place cards like this

Then turn them over and see how many points you earned.



You get one point for each row and column where the cards increase. I got 5 points in this game, out of 6 possible.



Variation

Play with 16 cards in a 4 by 4 square instead.