

Line 'Em Up

Object of the Game

Players take turns drawing two cards and multiplying them together to find the product. Then players arrange a number of objects equal to the product into 2, 3, 4, 5, and 6 rows and record the remainder each time. After completing two rounds, players add the remainders. The player with the lower total remainder wins the game.

Materials

- Line 'Em Up Number Cards, or any set of cards with two each of the numbers 3–7, plus a 2, and an 8
Print number cards, make your own, or use the 2–8 cards from a standard deck of playing cards.
- Line 'Em Up Record Sheet
Print the record sheet or make your own.
- 56 small objects
Use paper clips, cereal o's, soup crackers, beads, buttons, small blocks, or small slips of paper.
- Pencils or pens
- Multiplication Table (optional)



Skills

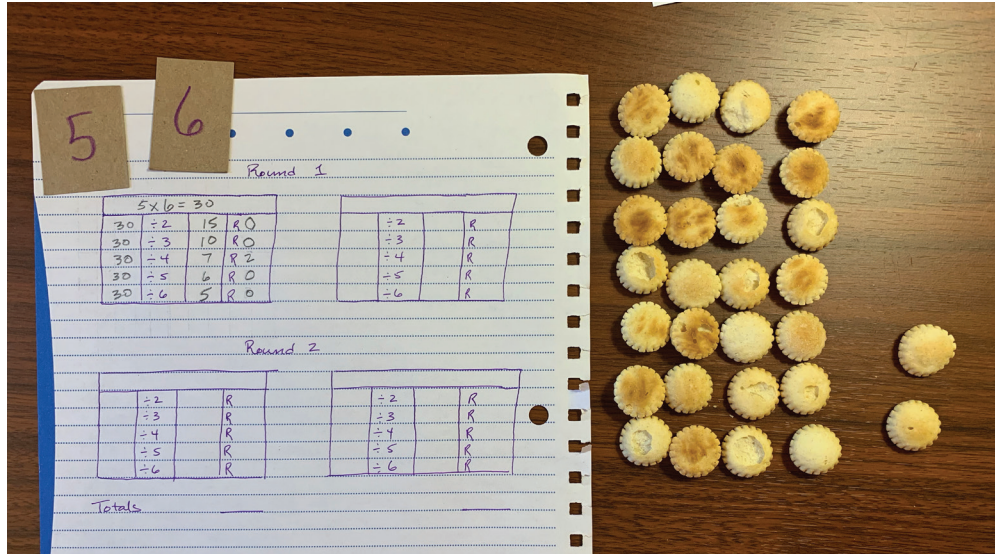
This game helps us practice:

- Making equal groups
- Multiplying by 1-digit numbers
- Dividing by 1-digit numbers

How to Play

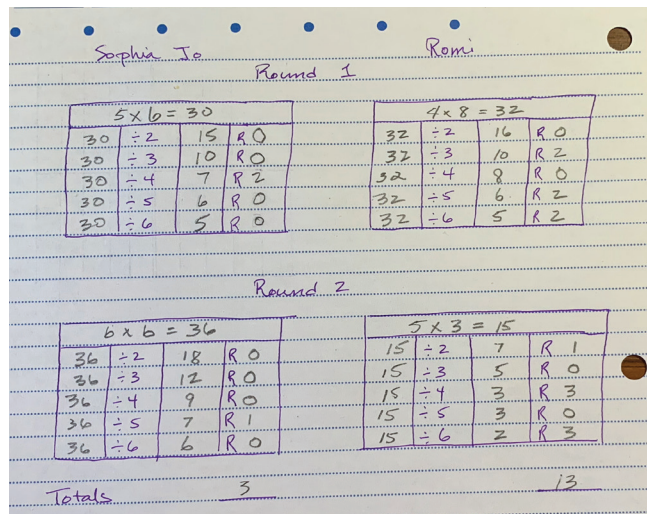
1. Players each draw a card. The player with the greater number goes first.
2. Player 1 draws two Number Cards, multiplies the two numbers, and writes a matching equation on the Line 'Em Up Record Sheet.

- Next, Player 1 counts out the number of objects equal to the product and divides the objects into rows of 2, setting any that are left over to the side. Player 1 repeats the division process four more times with rows of 3, 4, 5, and 6 objects. Each time, the player records an equation showing the division and the remainder.



Sophia Jo made equal rows of 2, 3, 5, and 6 without remainders.
When she made rows of 4, there were 2 remaining.

- Player 2 takes a turn following the same steps.
- Play continues until each player has had two turns. Then, each player adds their remainders from both rounds. The player with the lesser total remainder wins the game.



Romi adds the remainders from both rounds and gets 13. Sophia Jo adds the remainders from both rounds and gets 3. Sophia Jo wins this match!

Tips for Families

- As you play, you may notice some patterns. *What numbers can always be divided by 2 without a remainder? What else do you notice?*
- Work together as you multiply and arrange objects into equal rows. Help each other make sure you have counted out the right number of objects and have divided them into equal rows.
- Use the multiplication table to double check your product. You can also use it to check your equal groups. There should be no remainder if the product is in the column of the number of groups you are making.

Change It Up

Making even small changes to a game can invite new ways of thinking about the math. Try making one of the changes below. How did it change your strategy for winning the game?

- In each round, cross out one of the numbers of groups (2, 3, 4, 5, or 6). Divide by the remaining 4 numbers. What strategy can you use to help you win the game?
- Instead of using objects, draw an array or rows of dots. You could also try dividing first. Then prove your answer to your opponent with a picture.
- Add a Wild Card to the deck of cards. The player who draws the wild card can assign it any number before multiplying it with the other card they draw.



3	4	5	<u>6</u>
7	3	4	5
<u>6</u>	7	2	8
Wild Card	Wild Card		

Line 'Em Up Record Sheet

Player 1 _____

Player 2 _____

Round 1								
	$\div 2 =$		R			$\div 2 =$		R
	$\div 3 =$		R			$\div 3 =$		R
	$\div 4 =$		R			$\div 4 =$		R
	$\div 5 =$		R			$\div 5 =$		R
	$\div 6 =$		R			$\div 6 =$		R

Round 2								
	$\div 2 =$		R			$\div 2 =$		R
	$\div 3 =$		R			$\div 3 =$		R
	$\div 4 =$		R			$\div 4 =$		R
	$\div 5 =$		R			$\div 5 =$		R
	$\div 6 =$		R			$\div 6 =$		R

After you have played both rounds, add all of your remainders. The player with the lower total wins.

Total remainders for Player 1	<div></div>	Total remainders for Player 2	<div></div>
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Multiplication Table

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100