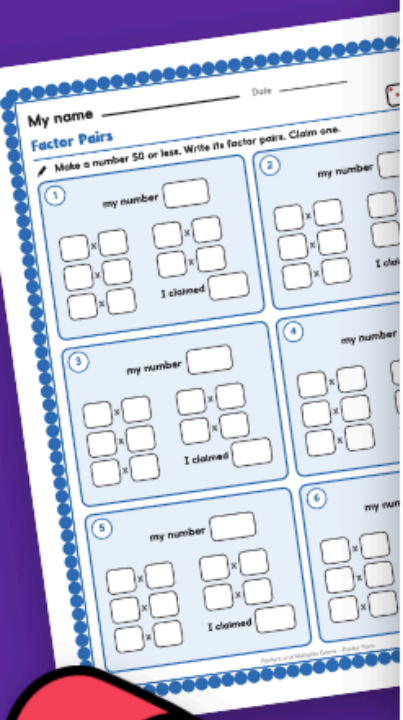
FACTORS AND MULTIPLES

Roll and Claim Game, Grade 4

2 PLAYERS

3 LEVELS



My name _____ Date _____

Claim Board

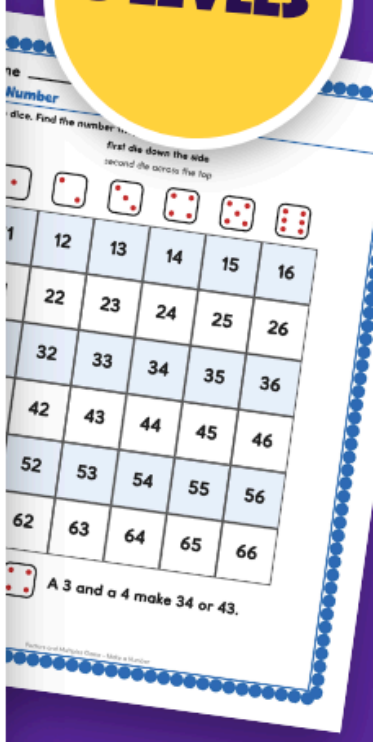
Roll two dice. Claim a number with your color.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

My color ☐ My partner's color ☐

Factors and Multiples Game – Claim Board





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This is a fillable PDF

- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a box, type, and Save As.
- The name lines and the answer boxes on the recording sheets are type-in fields. You can also print any page and write by hand. The claim board is played on paper with two colored pencils.
- It works offline. No account, no subscription, no internet connection needed after you download it.

Print at 100 percent

Turn off fit to page and shrink to fit so the board squares stay big enough to color. The board is plain numbers in boxes, so it copies cleanly in black and white. Print one board for every game.

How the pieces fit

- Student pages 6 to 11: the 1-100 claim board, a number-maker chart, three recording sheets and a score strip.
- Check against the keys on pages 12 to 15. How to play is on page 4.
- You need two dice, a pencil and two colored pencils or crayons for each pair of players.

Need help?

If a box will not behave or a page will not print the way you expect, use Ask a Question on the product page first. Every question is read, and a fix ships as a free update from My Purchases.

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PREVIEW

How to Play: Roll and Claim

One board, two dice, three kinds of turn. Pick the sheet that fits the group.

Game	Three steps	Pages
Get ready 2 players	1. Each pair needs one claim board (page 6), two dice, a pencil and a recording sheet each. Each player picks a different color. 2. Take turns. Roll the dice, play the turn for your sheet, write it on your sheet and color your claim on the board. 3. When every round on the sheet is done, count your colored squares. The most squares wins. Start a new board for a new game.	6, 11
Count by 2, 3, 4, 5 8 rounds	1. Roll two dice. Pick a die that shows 2, 3, 4 or 5. If neither die does, roll again. 2. Count by that number 5 times and write the first 5 multiples. 3. Claim any multiple of your number on the board, up to 100. A claimed number is colored in your color, and the other player cannot claim it. If every number you could claim is already taken, you lose that turn.	8
Factor Pairs 6 rounds	1. Roll two dice. Make a number with them: a 3 and a 4 make 34 or 43. Pick one that is 46 or less. If both are over 46, roll again. 2. Write every factor pair of your number, like 4 x 6. Use up to five pair boxes. 3. Claim one factor of your number on the board. A claimed number is colored in your color, and the other player cannot claim it. If every number you could claim is already taken, you lose that turn.	9, 7
Factors, Multiples, Prime 5 rounds	1. Roll two dice and make a number with them, either way around. 2. Write all its factors. Write prime if it has exactly two factors, or composite if it has more. 3. Claim one factor of your number (not 1) or one multiple of it up to 100. The number itself counts as a multiple. Write which kind you claimed. A claimed number is colored in your color, and the other player cannot claim it. If every number you could claim is already taken, you lose that turn.	10, 7

Say it out loud

- What times what makes my number?
- Which number am I counting by? What comes next?
- Does my number have more than two factors?

Make it easier or harder

- Easier: play only the Count by sheet, or use one die and the numbers 2 to 5.
- Harder: play the Factors, Multiples, Prime sheet, and add a rule: nobody may claim the number 1.

When the game ends

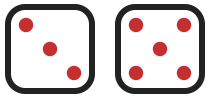
- Count the colored squares on the score strip. The most squares wins. A tie means one more round each.
- Check each sheet with the keys on pages 12 to 15.

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Claim Board



Roll two dice. Claim a number with your color.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

My color ☐ My partner's color ☐

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Make a Number

Roll two dice. Find the number they make.

first die down the side

second die across the top

						
	11	12	13	14	15	16
	21	22	23	24	25	26
	31	32	33	34	35	36
	41	42	43	44	45	46
	51	52	53	54	55	56
	61	62	63	64	65	66

A 3 and a 4 make 34 or 43.

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Factor Pairs



Make a number 50 or less. Write its factor pairs. Claim one.

1

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

2

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

3

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

4

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

5

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

6

my number ☐

☐ x ☐ ☐ x ☐

☐ x ☐ ☐ x ☐

☐ x ☐ I claimed ☐

PREVIEW

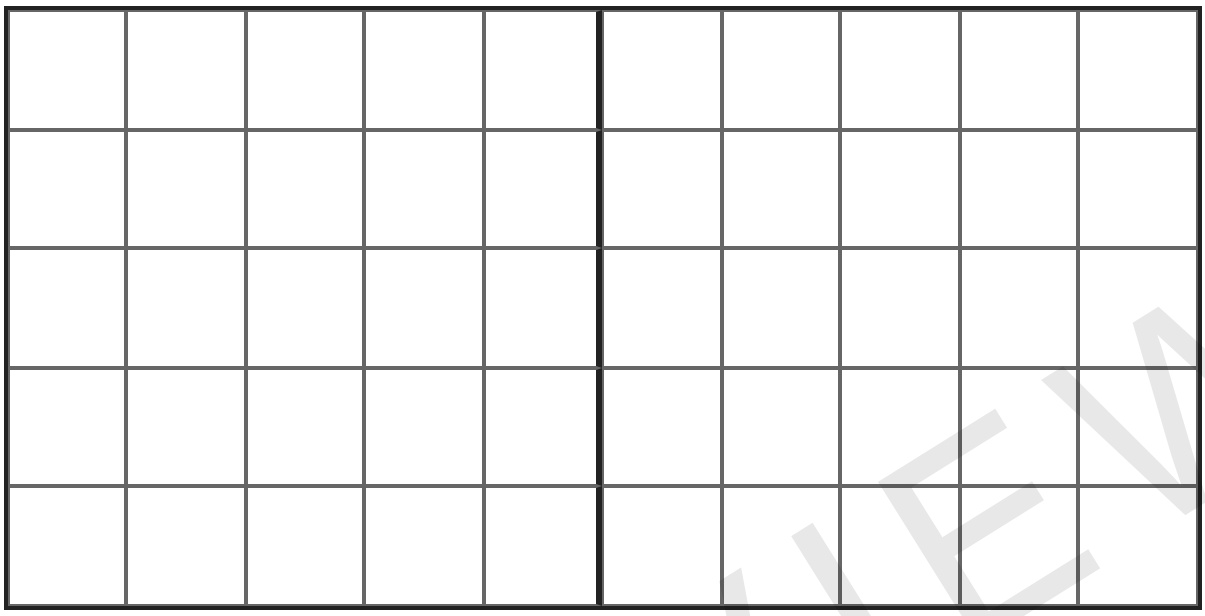
Preview - Bright Path Shed

My name _____ Date _____

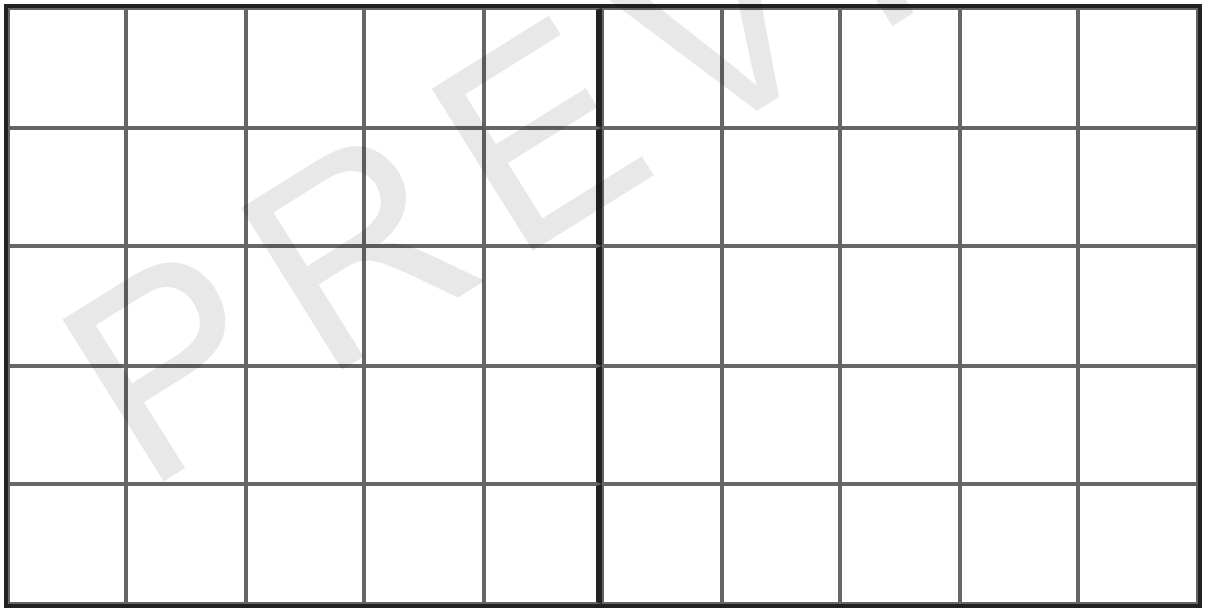
Score Strip

Count your boxes. Who has more?

Me color a box for every number you claimed



My partner color a box for every number you claimed



I claimed ☐ **My partner** ☐ **Who won?** ☐

PREVIEW

Answer Key: Factor Pairs

Every number two dice can make that is 46 or less: 24 numbers. Any one factor of the number is a good claim.

Number	Factor pairs	Note
11	1 x 11	prime
12	1 x 12, 2 x 6, 3 x 4	
13	1 x 13	prime
14	1 x 14, 2 x 7	
15	1 x 15, 3 x 5	
16	1 x 16, 2 x 8, 4 x 4	
21	1 x 21, 3 x 7	
22	1 x 22, 2 x 11	
23	1 x 23	prime
24	1 x 24, 2 x 12, 3 x 8, 4 x 6	
25	1 x 25, 5 x 5	
26	1 x 26, 2 x 13	

Number	Factor pairs	Note
31	1 x 31	prime
32	1 x 32, 2 x 16, 4 x 8	
33	1 x 33, 3 x 11	
34	1 x 34, 2 x 17	
35	1 x 35, 5 x 7	
36	1 x 36, 2 x 18, 3 x 12, 4 x 9, 6 x 6	
41	1 x 41	prime
42	1 x 42, 2 x 21, 3 x 14, 6 x 7	
43	1 x 43	prime
44	1 x 44, 2 x 22, 4 x 11	
45	1 x 45, 3 x 15, 5 x 9	
46	1 x 46, 2 x 23	

PREVIEW

Reading the key

- A pair is written with the smaller factor first. The same pair turned around (6 x 4) is the same pair.
- A prime number has only one pair, 1 times itself. Its claim is 1 or the number itself.
- A square number such as 16 or 36 has a pair with the same factor twice: 4 x 4, 6 x 6.

Answer Key: Factors and Prime, Part 2

Numbers two dice make, 41 to 66. A claim is a factor (not 1) or any multiple on the board. A prime has exactly two factors; a composite has more.

Number	All factors	Type	Multiples up to 100
41	1, 41	prime	41, 82
42	1, 2, 3, 6, 7, 14, 21, 42	composite	42, 84
43	1, 43	prime	43, 86
44	1, 2, 4, 11, 22, 44	composite	44, 88
45	1, 3, 5, 9, 15, 45	composite	45, 90
46	1, 2, 23, 46	composite	46, 92
51	1, 3, 17, 51	composite	51
52	1, 2, 4, 13, 26, 52	composite	52
53	1, 53	prime	53
54	1, 2, 3, 6, 9, 18, 27, 54	composite	54
55	1, 5, 11, 55	composite	55
56	1, 2, 4, 7, 8, 14, 28, 56	composite	56
61	1, 61	prime	61
62	1, 2, 31, 62	composite	62
63	1, 3, 7, 9, 21, 63	composite	63
64	1, 2, 4, 8, 16, 32, 64	composite	64
65	1, 5, 13, 65	composite	65
66	1, 2, 3, 6, 11, 22, 33, 66	composite	66

PREVIEW

Factor Pairs: An Invented Game

Theo M. and Nia are invented. Nothing on this page describes a real child. Rounds are played in order, Theo first. The squares below are the first half of the board, after round 6.

Round	Player	Number	Factor pairs	Claimed
1	Theo	24	1 x 24, 2 x 12, 3 x 8, 4 x 6	8
1	Nia	12	1 x 12, 2 x 6, 3 x 4	6
2	Theo	36	1 x 36, 2 x 18, 3 x 12, 4 x 9, 6 x 6	9
2	Nia	44	1 x 44, 2 x 22, 4 x 11	22
3	Theo	13	1 x 13	13
3	Nia	26	1 x 26, 2 x 13	2
4	Theo	11	1 x 11	1
4	Nia	33	1 x 33, 3 x 11	11
5	Theo	42	1 x 42, 2 x 21, 3 x 14, 6 x 7	21
5	Nia	13	1 x 13	lost turn: 1 and 13 are taken
6	Theo	32	1 x 32, 2 x 16, 4 x 8	16
6	Nia	16	1 x 16, 2 x 8, 4 x 4	4

1	**2**	3	**4**	5	**6**	7	**8**	**9**	10
11	12	**13**	14	15	**16**	17	18	19	20
21	**22**	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Theo: 6 **Nia: 5**

How to read it

Theo and Nia each played 6 rounds of Factor Pairs. Theo claimed 6 squares and Nia claimed 5, so Theo won by 1. In round 5 Nia rolled 13. Its only factors are 1 and 13, and Theo had already claimed both, so she lost that turn.

PREVIEW

The Factors and Multiples Game at Home

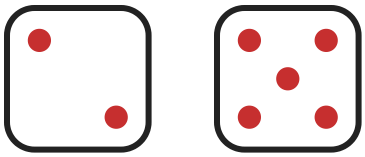
Dear family, this week we are practicing factors and multiples: what times what makes a number, and counting by a number. These questions are for talking and playing, not for a grade. Short answers are fine.

Student _____ Week of _____

Play the game at home, in three steps

- Find two dice and two pencils. Make a 1 to 100 number board on paper, or print the one in the file.
- Roll the dice. Make a number with them, like 3 and 4 make 34 or 43. Say a factor of it, or count by it, and claim a number.
- Take turns. The most claimed numbers wins. Then say what you learned.

Our family roll



My number ☐

A factor ☐

A multiple ☐

Try saying

- "What times what makes that number?"
- "Can you count by it? What comes next?"
- "Is it prime? How many factors does it have?"

Note from the teacher

Note from home

PREVIEW