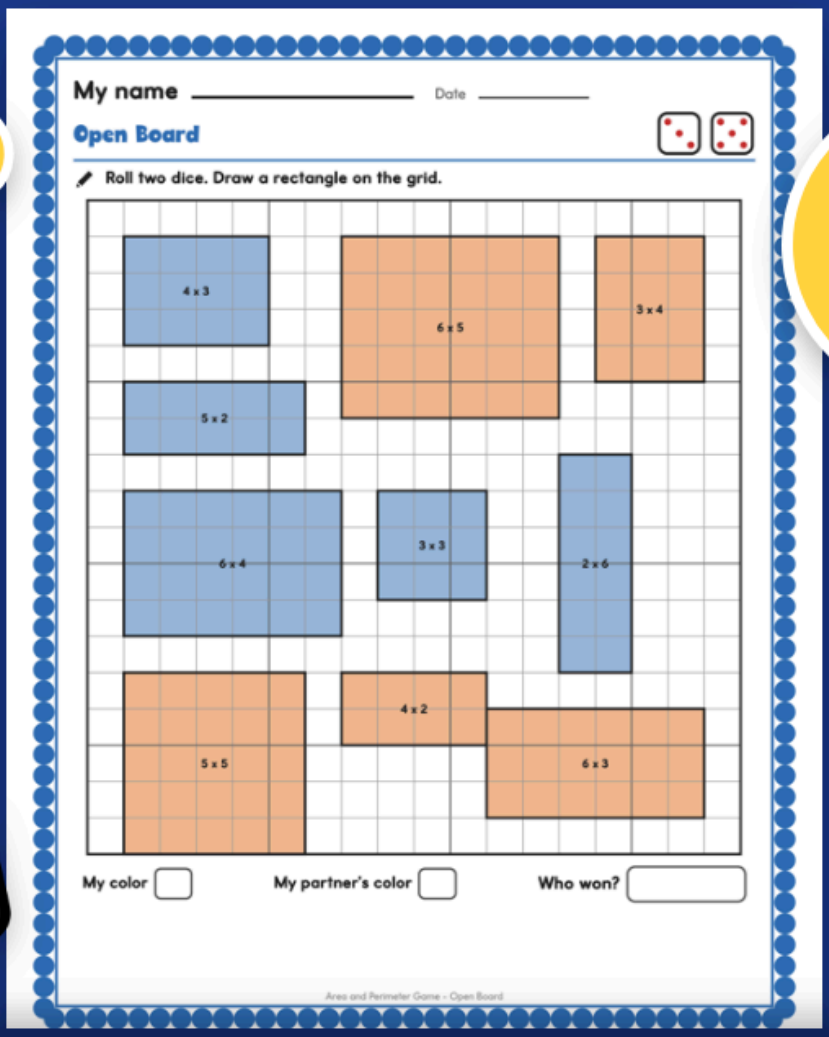
2 PLAYERS



3 BOARDS



Bright Path Sped

AREA AND PERIMETER GAME

Roll and Draw, Grades 3-4

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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 boards are 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. The boards are drawn in centimeters, so at 100 percent every square is 1 centimeter by 1 centimeter, and a ruler will agree. The boards are plain grid lines, so they copy cleanly in black and white. Print a fresh board for every game.

How the pieces fit

- Student pages 6 to 12: 3 game boards and 4 recording sheets.
- Check against the keys on pages 13 and 14. 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 Draw

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

Get ready

- Each pair needs one board (pages 6 to 8), two dice, a pencil and a recording sheet each. Each player picks a different color.
- Take turns. Roll, draw your rectangle on the board and color it in, then fill in your row on your sheet.
- When every round on the sheet is done, add up and decide who won. Print a fresh board for a new game.

The dice rule

- Roll two dice. One is the length and one is the width. Either die can be either one.
- Draw a rectangle that many squares long and wide, along the grid lines. Turn it any way you like.
- Your rectangle can touch another, but it cannot cover one. If it will not fit anywhere, you lose the turn.

Game	Three steps	Pages
Area Rolls 6 rounds	1. Roll, draw and color your rectangle. 2. Count the squares inside. Write length x width = area. 3. Your area is your points. Add your areas. The bigger total wins.	9
Perimeter Rolls 6 rounds	1. Roll, draw and color your rectangle. 2. Add the four sides: length + width + length + width. 3. Your perimeter is your points. Add them. The bigger total wins.	10
Area and Perimeter 5 rounds	1. Roll, draw and color. Write the area and the perimeter. 2. When both players have played the round, compare. Write X for each number that is bigger than your partner's. 3. If the numbers match, you both write X. Count your X marks at the end.	11
Same Area, New Rectangle 5 rounds	1. Roll the dice and find the area. Do not draw that rectangle. 2. Draw a different rectangle with the same area (no side longer than 18). If there is no other one, roll again. 3. Your new perimeter is your points. The bigger total wins.	12

Make it easier or harder

- Easier: play only Area Rolls on the open board, or use the sketch grid first.
- Harder: play on the board with gray squares (26 squares are blocked), or try the same-area sheet. Quick game: use the two quick boards, 3 turns each.

When the game ends

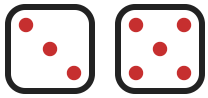
- Add up the points for the sheet you played, or count your X marks. The bigger total wins.
- A tie means one more round each. Check each sheet with the keys on pages 13 and 14.

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Open Board



Roll two dice. Draw a rectangle on the grid.

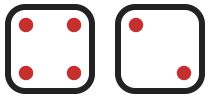
PREVIEW

My color ☐ My partner's color ☐ Who won? ☐

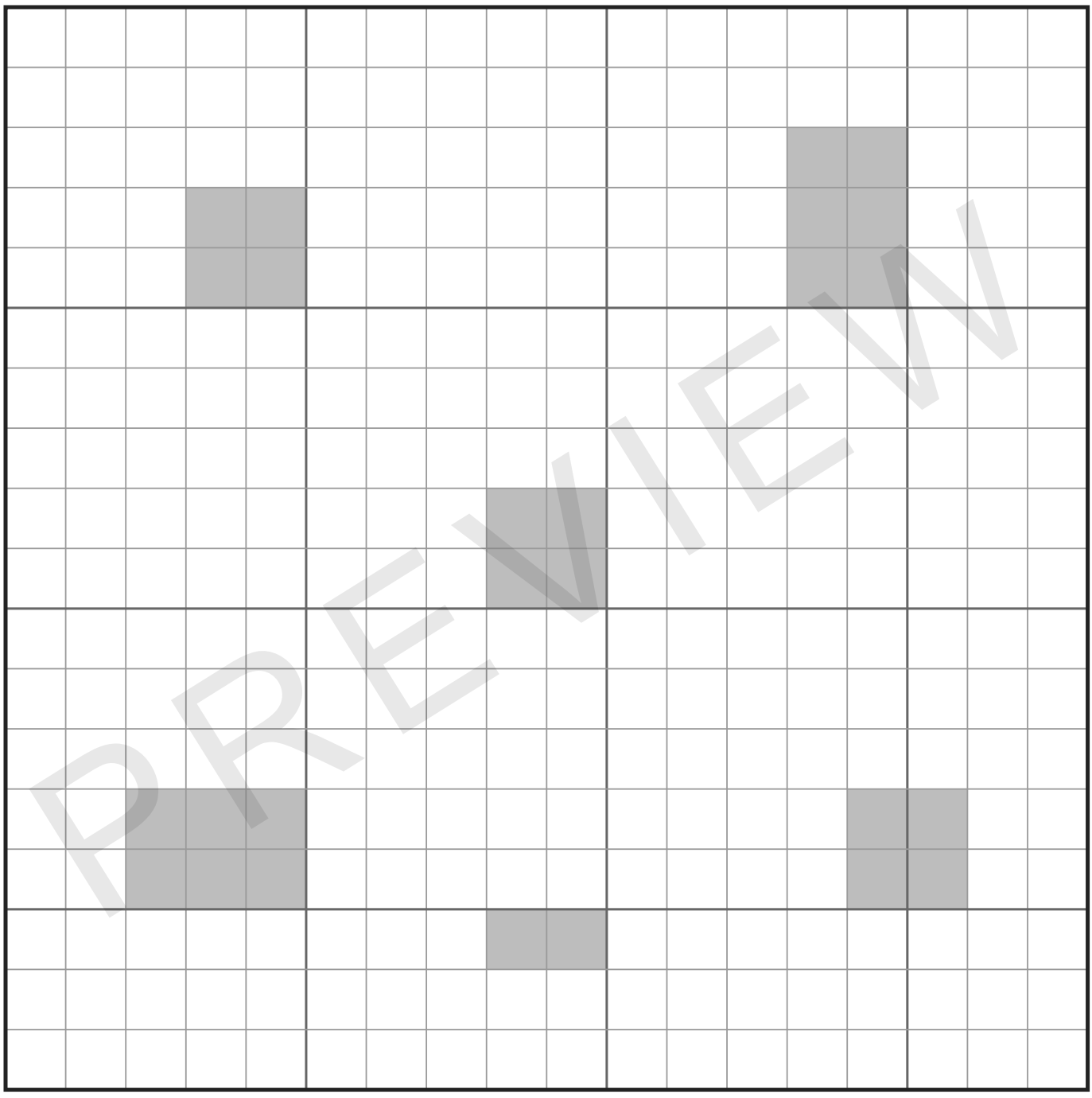
Preview - Bright Path Shed

My name _____ Date _____

Board with Gray Squares



Roll two dice. Draw a rectangle. Skip the gray squares.



PREVIEW

My color ☐ My partner's color ☐ Who won? ☐

Preview - Bright Path Shed

My name _____ Date _____

Area Rolls

Roll two dice. Draw it. Count the squares inside.

	sketch	length		width		area	
1			x		=		square cm
2			x		=		square cm
3			x		=		square cm
4			x		=		square cm
5			x		=		square cm
6			x		=		square cm

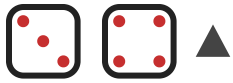
My total area _____ My partner's _____ Who won? _____

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____

Same Area, New Rectangle



Roll two dice. Find the area. Draw a new rectangle with the same area.

		length		width		area			
1	I rolled		x		=				
	My new rectangle	length	x	width	=	same area	perimeter		
			x		=				
2	I rolled	length	x	width	=	area			
			x		=				
	My new rectangle	length	x	width	=	same area	perimeter		
			x		=				
3	I rolled	length	x	width	=	area			
			x		=				
	My new rectangle	length	x	width	=	same area	perimeter		
			x		=				
4	I rolled	length	x	width	=	area			
			x		=				
	My new rectangle	length	x	width	=	same area	perimeter		
			x		=				
5	I rolled	length	x	width	=	area			
			x		=				
	My new rectangle	length	x	width	=	same area	perimeter		
			x		=				

My points _____ My partner's _____ Who won? _____

PREVIEW

Answer Key: Same Area, New Rectangle

Every area two dice can make: 18 areas. A new rectangle is any one in the row except the one that was rolled. No side is longer than 18, so every one fits the board.

Area	Rectangles with that area (length x width: perimeter)	Note
1	1 x 1: 4	roll again
2	1 x 2: 6	roll again
3	1 x 3: 8	roll again
4	1 x 4: 10, 2 x 2: 8	
5	1 x 5: 12	roll again
6	1 x 6: 14, 2 x 3: 10	
8	1 x 8: 18, 2 x 4: 12	
9	1 x 9: 20, 3 x 3: 12	
10	1 x 10: 22, 2 x 5: 14	
12	1 x 12: 26, 2 x 6: 16, 3 x 4: 14	
15	1 x 15: 32, 3 x 5: 16	
16	1 x 16: 34, 2 x 8: 20, 4 x 4: 16	
18	1 x 18: 38, 2 x 9: 22, 3 x 6: 18	
20	2 x 10: 24, 4 x 5: 18	
24	2 x 12: 28, 3 x 8: 22, 4 x 6: 20	
25	5 x 5: 20	roll again
30	2 x 15: 34, 3 x 10: 26, 5 x 6: 22	
36	2 x 18: 40, 3 x 12: 30, 4 x 9: 26, 6 x 6: 24	

PREVIEW

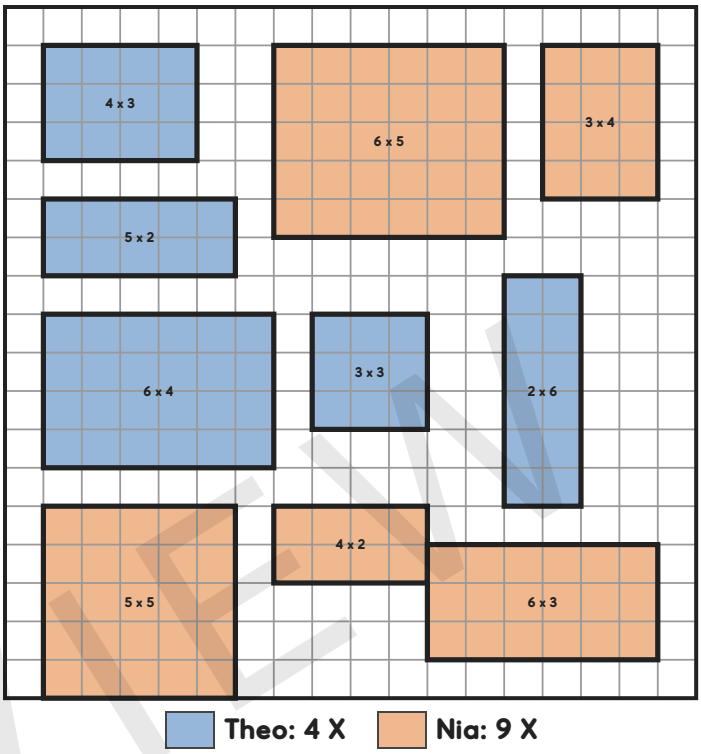
Reading the key

- Areas 1, 2, 3, 5 and 25 have only one rectangle on the board, so there is no new one: roll again.
- Long and thin rectangles have the biggest perimeter. The most square one has the smallest.
- Example: area 12 can be 1 x 12 (perimeter 26), 2 x 6 (16) or 3 x 4 (14). Same area, three perimeters.

Area and Perimeter: 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 board shows all ten rectangles, labeled length x width.

Round	Player	Dice	Area	Perimeter	X marks
1	Theo	4 x 3	12	14	none
1	Nia	6 x 5	30	22	X, X
2	Theo	5 x 2	10	14	X edge
2	Nia	3 x 4	12	14	X, X
3	Theo	6 x 4	24	20	X edge
3	Nia	5 x 5	25	20	X, X
4	Theo	3 x 3	9	12	X, X
4	Nia	4 x 2	8	12	X edge
5	Theo	2 x 6	12	16	none
5	Nia	6 x 3	18	18	X, X



How to read it

Theo and Nia each played 5 rounds of Area and Perimeter on the open board. Together the ten rectangles cover 160 squares. Theo's areas add to 67 and Nia's add to 93. In round 2 both rolled a perimeter of 14 (the rectangles were 5 x 2 and 3 x 4), so both wrote an X. Theo ended with **4** X marks and Nia with **9**, so Nia won.

Check two rounds

- Theo, round 3: 6 x 4. Area 6 x 4 = 24. Perimeter 6 + 4 + 6 + 4 = 20.
- Nia, round 3: 5 x 5. Area 5 x 5 = 25. Perimeter 5 + 5 + 5 + 5 = 20. The perimeters match (20), so both wrote an X for the edge; Nia's area is bigger.

PREVIEW

The Area and Perimeter Game at Home

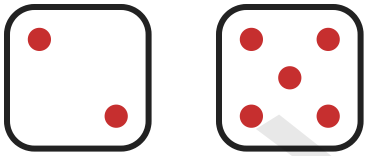
Dear family, this week we are practicing area and perimeter: how many squares cover a rectangle, and how far it is around the edge. These questions are for talking and playing, not for a grade. Short answers are fine.

Student _____ Week of _____

Play the game at home, in three steps

- Find two dice and two pencils. Use grid paper, or print one of the boards in the file.
- Roll the dice. Draw a rectangle that many squares long and wide. Count the squares inside (area) and the sides around the edge (perimeter).
- Take turns. Write your numbers in the boxes. The bigger total wins. Then say what you learned.

Our family roll



Length ☐

Width ☐

Area ☐

Perimeter ☐

Try saying

- "How many squares are inside? How many rows? How many in each row?"
- "How long is the edge all the way around?"
- "Can you draw a different rectangle with the same number of squares?"

Note from the teacher

Note from home

PREVIEW