

Year 6 Maths Activity Mat: Dice

4

Section 1: Number Patterns

Look at the patterns used to show the six numbers on a die. Design some other patterns. Test them on some other children. Can they see how many dots without counting them?

Section 2: Higher or Lower (A game for up to 4 players)

1 dice and paper or whiteboard to keep score. Player 1 rolls the die. After each roll the player adds the number on the die for their score that round. After the first roll, the player must say "higher" or "lower" before rolling the die. If they are correct, they add on the score. If they are incorrect, they lose their score for that round. If the die is the same as the previous roll, they can play again, but nothing is added. A player must stick with a score to add that to their score from previous rounds, before losing the score for that round. The first to 50 wins.

Examples:

4 (lower) 2 (higher) 5 (lower) 1 (stick) = 12

5 (lower) 4 (lower) 6 No score that round.

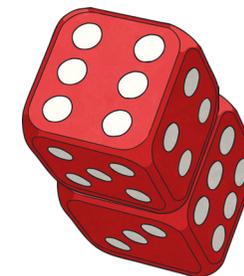
Section 3: Dice in the Corner

Create a corner. You can use a small book or a folded piece of paper. Put 2 dice in the corner, one on top of the other, so only 5 sides can be seen.

What is the highest and lowest total?

What different totals can be made?

(You may need a separate sheet to do this.)



Section 4: Roll 2 Dice

Roll 2 dice 100 times. Use a tally to record the results on this table, and then use the grid to draw a bar chart.

roll	number of rolls
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Section 5: Simulation

Use a spreadsheet application like Excel or Google Sheets to simulate the rolling of 2 dice many times.

Use the formula

=RANDBETWEEN(1,6) to give the roll of 1 die. Copy this into as many cells as you choose. Create 2 columns to represent the 2 dice and a third where the total of 2 dice is added. (=cell+cell)

To count the number of each number use the formula **=COUNTIF**(cell range,number). Try using the cell with the dice total in the table as the number.

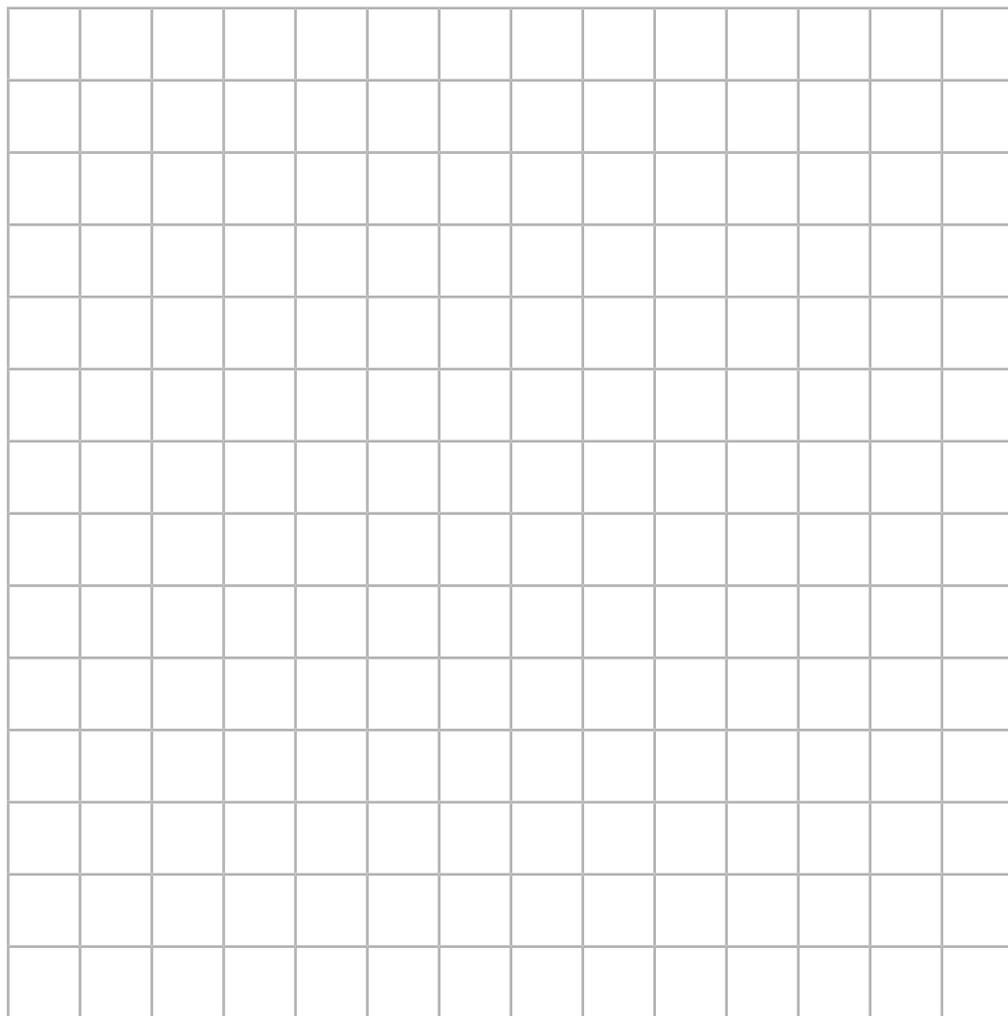
Roll	Number of rolls
2	9
3	12
4	33
5	25
6	38
7	47
8	47
9	35
10	25
11	19
12	10

Section 6: Net

Make a die from the net provided. Draw the spots correctly.

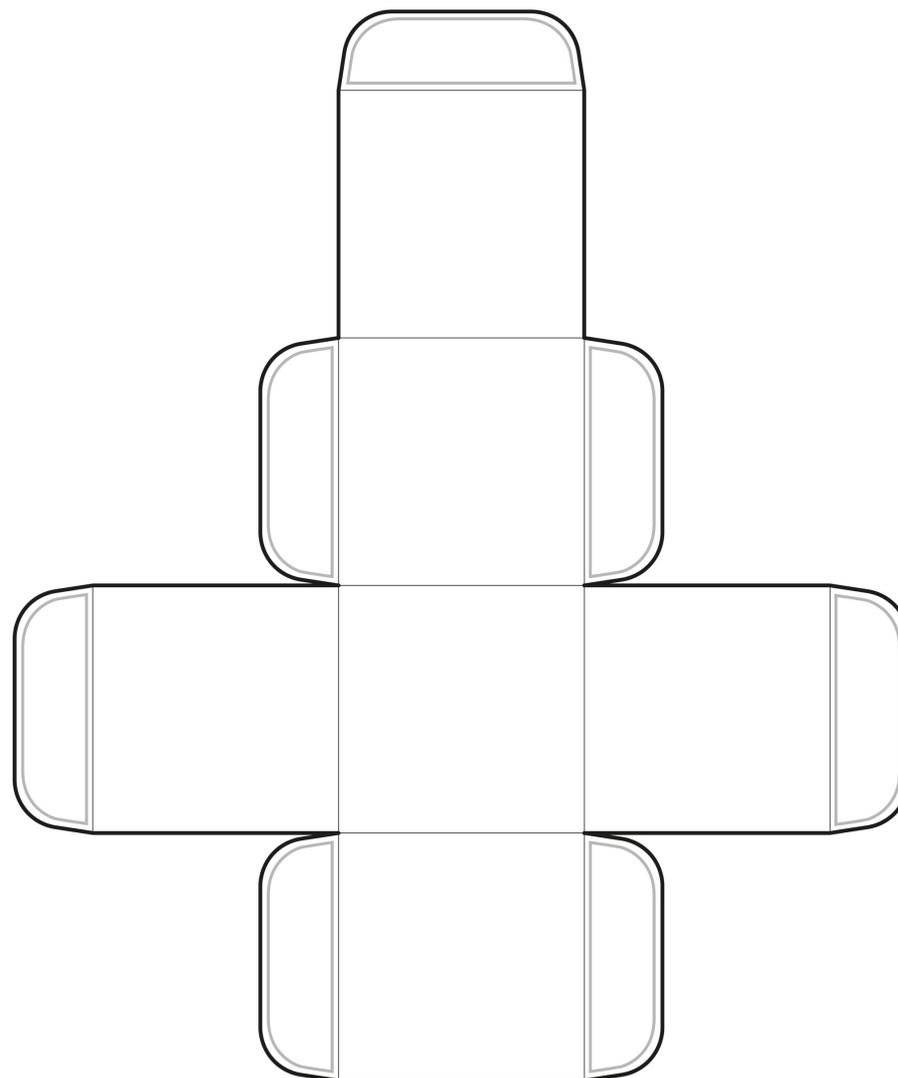
Section 4: Roll 2 Dice

Bar chart Grid



Section 6: Net

4



Section 1: What's Opposite?

Look at the patterns used to show the six numbers on a die. Design some other patterns. Test them on some other children. Can they see how many dots without counting them?

Section 2: Higher or Lower (A game for up to 4 players)

1 dice and paper or whiteboard to keep score. Player 1 rolls the die. After each roll the player adds the number on the die for their score that round. After the first roll, the player must say "higher" or "lower" before rolling the die. If they are correct, they add on the score. If they are incorrect, they lose their score for that round. If the die is the same as the previous roll, they can play again, but nothing is added. A player must stick with a score to add that to their score from previous rounds, before losing the score for that round. The first to 50 wins.

Examples:

4 (lower) 2 (higher) 5 (lower) 1 (stick) = 12

5 (lower) 4 (lower) 6 No score that round.

Section 3: Dice in the Corner

Create a corner. You can use a small book or a folded piece of paper. Put 2 dice in the corner, one on top of the other, so only 5 sides can be seen.

What is the highest and lowest total?

What different totals can be made?



Answers on
next sheet

Section 4: Roll 2 Dice

Roll 2 dice 100 times. Use a tally to record the results on this table, and then use the grid to draw a bar chart.

roll	number of rolls
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Section 5: Simulation

Use a spreadsheet application like Excel or Google Sheets to simulate the rolling of 2 dice many times.

Use the formula **=RANDBETWEEN(1,6)** to give the roll of 1 die. Copy this into as many cells as you choose. Create 2 columns to represent the 2 dice and a third where the total of 2 dice is added. (=cell+cell)

To count the number of each number use the formula **=COUNTIF(cell range,number)**. Try using the cell with the dice total in the table as the number.

Roll	Number of rolls
2	9
3	12
4	33
5	25
6	38
7	47
8	47
9	35
10	25
11	19
12	10

Example Excel in the pack.

Section 6: Net

Make a die from the net provided. Draw the spots correctly.

Section 3: 3 Dice in the Corner

Highest is 26 (4 5 6 5 6)

Lowest is 9 (1 2 3 1 2)

All combinations are the 2 sides revealed at the bottom alongside the totals with 1 die:

Top Die	Bottom die
1 2 3 = 6	1 2 = 3
1 2 4 = 7	1 3 = 4
1 3 5 = 9	1 4 or 2 3 = 5
1 4 5 = 10	1 5 or 2 4 = 6
2 3 6 = 11	2 5 or 3 4 = 7
2 4 6 = 12	2 6 or 3 5 = 8
3 5 6 = 14	3 6 or 4 5 = 9
4 5 6 = 15	4 6 = 10
	5 6 = 11

Therefore all totals between 9 and 26 inclusive are possible.