

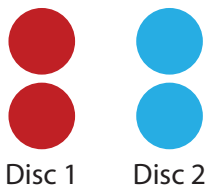
Y7 Learning at home activity sheet #1

Problem 1:

Brad has made two discs for a game. These discs should have numbers on each side but he's not sure what numbers to use.

When Brad flips the discs and adds the numbers that he can see, he wants to get only sums of 8, 10, 11 or 13.

What numbers should Brad use?



Problem 2:

What is the smallest number which is a multiple of 2, 3, 4, and 8?

Problem 3:

If you roll two regular dice, what is the probability that at least one of the numbers is more than three?



Number facts:

Complete the number facts on the attached sheet. You can complete one box each day. On the fifth day, make up some examples of your own.



Quick questions:

1. What is 7^2 ?
2. What is $\frac{1}{2}$ plus $\frac{1}{3}$?
3. What is the formula for the area of a triangle?
4. Which is further 1 mile or 1 kilometre?
5. What is $\frac{1}{2}$ as a decimal?
6. Does a triangle tessellate?
7. What do you call the distance around a circle?
8. How many centimetres are there in 3.7 metres?
9. Is zero an even number?
10. What is 26×5 ?



Project:

Draw a map of your house. Make it as accurate as you can. Include doors and windows, and any large items of furniture. How will you make sure that things are the right sizes?



Stained glass challenge:

Design a stained glass window to fit a 1-square-metre frame. Use squares, rectangles and triangles of different colours.

After you have designed your window:

1. Calculate the fraction that each shape is of the whole.
2. Calculate the areas of glass of each colour needed for your design.



Learning at home: Notes for whānau

When your child finishes each activity, ask them to add a mouth to the face to show how they felt about that activity.



Problem 1:

We need to be able to get a sum of 8, so we know that we need two numbers (one on each disc) that add to 8. If we ignore the fact that we could swap the discs around there are 4 possible pairs (1 and 7, 2 and 6, 3 and 5, 4 and 4).

A little trial and error for each of those options should allow you to find these pairs of numbers that work:

- 1 and 4 on one disc and 7 and 9 on the other.
- 1 and 3 on one disc and 7 and 10 on the other.
- 2 and 5 on one disc and 6 and 8 on the other.
- 2 and 4 on one disc and 6 and 9 on the other.
- 3 and 6 on one disc and 5 and 7 on the other.
- 3 and 5 on one disc and 5 and 8 on the other.
- 4 and 7 on one disc and 4 and 6 on the other.

Problem 2:

Because 8 is a multiple of both 2 and 4, any number which is a multiple of 8 is also a multiple of 2 and 4. The smallest number which is a multiple of 3 and 8 (and also 2 and 4) is 24.

Problem 3:

There are six possible outcomes for rolling a dice. If you are rolling two dice then we can make a grid showing all the possible outcomes. There are 36 in total. In the table below you can clearly see that, of the 36 possible outcomes, there are nine for which neither number is over three, and 27, for which at least one is.

	1	2	3	4	5	6
1	no	no	no	yes	yes	yes
2	no	no	no	yes	yes	yes
3	no	no	no	yes	yes	yes
4	yes	yes	yes	yes	yes	yes
5	yes	yes	yes	yes	yes	yes
6	yes	yes	yes	yes	yes	yes

If you roll two regular dice, the probability that at least one of the numbers is more than three is $\frac{27}{36}$, or $\frac{3}{4}$.

Project:

Your child will need to decide on a scale for their map. To be consistent in their scale they will need to decide what length on their map to draw for a certain length in their room. For example 1 metre in their room might be represented by 1 centimetre on their map, or one pencil length might be shown as half a centimetre.

Stained glass challenge:

This task will be much easier if your child works from the corners, and the middles of the sides of the original square. That way the shapes they make will be simpler fractions of the whole window. Encourage them to think about what happens when they split a part of their window which is already a fraction into several equal parts.

Quick Questions:

1. 49
2. $\frac{5}{6}$
3. Half of the base times the height ($\frac{1}{2} b \times h$)
4. 1 mile (a mile is 1.61km)
5. 0.125
6. Yes, any triangle tessellates (you can use copies of it to cover a surface with no gaps or overlaps)
7. Circumference
8. 370
9. Yes it is
10. 130

$30 \times 7 = \square$

$120 \div 4 = \square$

$\square \times 9 = 63$

$2700 \div \square = 900$

$80 \times 40 = \square$

$\square \div 8 = 80$

$80 \times \square = 56$

$70 \times 7 = \square$

$240 \div 8 = \square$

$\square \times 4 = 36$

$1800 \div \square = 300$

$70 \times 60 = \square$

$\square \div 9 = 90$

$30 \times \square = 24$

$60 \times 4 = \square$

$360 \div 6 = \square$

$\square \times 8 = 56$

$2800 \div \square = 400$

$60 \times 80 = \square$

$\square \div 3 = 70$

$90 \times \square = 63$

$90 \times 6 = \square$

$480 \div 8 = \square$

$\square \times 8 = 72$

$1600 \div \square = 400$

$80 \times 70 = \square$

$\square \div 7 = 70$

$90 \times \square = 27$