Y6 Learning at home activity sheet #3

Problem 1:

I have three dogs of different ages. If I add their ages together I get 15. If I multiply their ages together I get 45. How old are my dogs?

Problem 2:

If you throw the three darts and they all hit scoring zones on this dartboard, what possible scores could you get?

Problem 3:

Rosalina and Jodie are playing a game where they roll two dice and add up the total. Rosalina says that she thinks that the total for the next roll will be 7. Jodie says that she thinks it will be more than 9. Who is more likely to be right?

Number facts:

Cut out the cards on the attached sheet and shuffle them. How fast can you match each equation with the correct answer? Try to beat your time.

Quick questions:

1. If you cut a square into two triangles, are they equilateral triangles?
2. What is $1.50 \div 5$?
3. How many 50 cent coins does it take to make 10 dollars?
4. Write 0.25 as a fraction.
5. Is zero an odd number or an even number?
6. What do you call a shape with 8 sides?
7. How many metres is 270 centimetres?
8. Which is more, $\frac{1}{7}$ or $\frac{1}{8}$?
9. What is $\frac{1}{3}$ of 60?
10. What is 5 x 15?

Project:

Design a carton that will hold 2 eggs and keep them from being broken. Draw a net for this carton.

If you can, make the carton from a piece of cardboard (you could use cardboard from an old box).

Pairs of socks:

Imagine you only have two pairs of socks in your drawer, and they are not joined in pairs. If you pull out two socks at random, are they more likely to be a pair, or different?

Design and carry out an experiment to find out. Explain the results of your experiment to a member of your whānau.

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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:

There are a few combinations of numbers with a sum of 15. The problem also requires the ages multiply to give 45. This reduces the possibilities because 45 is only divisible by 1, 3, 5, 9, 15, and 45. The three dogs must each have one of these numbers as their age. Together their ages must add to 15, so none of the dogs can be 15 or older.

So, the choice is from 1, 3, 5, and 9. There are three ways to add to 15 using these numbers: 9 + 3 + 3, 9 + 5 + 1, or 5 + 5 + 5.

The only one of these that multiplies to give 45 is 9 + 5 + 1, so that must be the dogs' ages.

Problem 2:

The different possibilities are:
- 3 + 3 + 3 = 9
- 3 + 3 + 5 = 11
- 3 + 3 + 7 or 3 + 5 + 5 = 13
- 3 + 5 + 7 or 5 + 5 + 5 = 15
- 3 + 7 + 7 or 5 + 5 + 7 = 17
- 5 + 7 + 7 = 19
- 7 + 7 + 7 = 21

Problem 3:

The table below shows all the possible results for rolling two dice.

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

There are six ways that the total of the dice can be exactly 7. There are also six ways that the total can be more than 9. So both girls are equally likely to be right.

Project:

If you have cardboard and tape available for your child to use they should be able to make a box that will hold two eggs. Encourage them to measure and think about the size and shape and draw a net before starting to cut and fold.

Pairs of socks:

The obvious way to carry out an experiment is to use actual socks, either in a drawer or a basket or similar. If they do this they need to be careful that they mix them back up before each trial.

They could equally use counters of two different colours or playing cards, or pieces of paper labelled for the different socks.

Discuss with your child how many trials they need to do and how they will record them. The more trials they do, the more accurate their results are likely to be.

The results of the experiment might surprise you. You should find that the socks are a pair about 1/3 of the time. There are two ways to understand why. The diagram below shows arrows for all of the possible pairs of socks. There are six arrows, and only two of them represent pairs of socks.
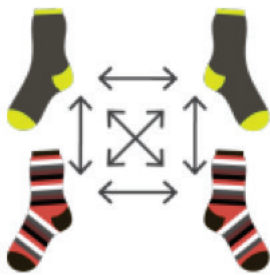
Another way to think about it is to consider only the second sock. Regardless which of the four socks you take out first, only one out of three of the remaining socks is its pair.

Quick questions:

1. No, they are isosceles triangles (two sides the same length).
2. 30 cents or $0.30
3. 20
4. $\frac{1}{4}$
5. An even number
6. Octagon
7. 2.7m
8. $\frac{1}{7}$
9. 20
10. 75

3 x 4	12	3 x 6	18
3 x 7	21	3 x 8	24
3 x 9	27	4 x 4	16
6 x 6	36	7 x 7	49
8 x 8	64	9 x 9	81
4 x 6	24	4 x 7	28
4 x 8	32	4 x 9	36
6 x 7	42	6 x 8	48
6 x 9	54	7 x 8	56
7 x 9	63	8 x 9	72