6/5 Maths w/c 20th April 2020

4. Ratio & Proportion – Calculating Ratio

We can use ratio information to solve problems. I want to bake some cakes. For each cake I need one box of cake mix and three eggs (the ratio of box to eggs is 1:3). I have four boxes of cake mix – how many eggs do I need?

I can draw pictures to help me. I start with my four boxes and then add the eggs. I know I need three eggs for each box.

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Now I can count my eggs to see how many I need.

James is mixing paint. He wants to make purple but only has blue and red. For every scoop of blue paint, he needs two scoops of red. The ratio of blue to red is 1:2. He only has 7 scoops of blue paint. Can you draw a picture to answer the question – how many red scoops does he need?

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Now try this one. Lucy is making a necklace. For every pink bead in the necklace, there are four blue beads. The necklace needs 35 beads in total to be long enough. Can you draw a picture to answer the questions below?

How many pinks beads does Lucy need for each necklace?

How many blue beads does Lucy need for each necklace?

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Try this link to BBC Bitesize for more practice <https://www.bbc.co.uk/bitesize/topics/zsq7hyc/articles/z8kfnbk>

EXTRA CHALLENGE – bar models.

Bar models can help us to solve calculation problems. In a class at school, there are 12 children. The ratio of boys to girls is 1:3. We can show the ratio like this

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| --- | --- | --- | --- | --- |
| Boys |  |  |  | } Total = 12 |
| Girls |  |  |  |

To work out how boys there are in the class, I look at the number of boxes in my model. There are four boxes (one for boys and three for girls). Then I divide twelve by my four boxes. 12 $÷$ 4 = 3.

Next, I write 3 in each of the boxes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Boys | 3 |  |  | } Total = 12 |
| Girls | 3 | 3 | 3 |

This tells me how many boys there are – 3. How many girls? There are nine girls. Can you see why there are nine girls?

Now you try with the next class. This class has a girl to boy ratio of 2:4. There are 18 children in the class altogether.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Girls |  |  |  |  | } Total = 18 |
| Boys |  |  |  |  |

How many boxes are there altogether? \_\_\_\_\_

Now, work out 18 divided by the number of boxes. \_\_\_\_\_

Next, write that answer into each of the boxes.

How many girls are in the class? \_\_\_\_\_

How many boys? \_\_\_\_\_\_\_