DEVELOPING MATHEMATICAL INQUIRY COMMUNITIES

Number: Multiplication and Division

Level 1 (Year 1 - 2)

Copy Masters Booklet

Level 1 Year 1-2: Number: Multiplication and Division

Task 1

Amanda Bean loves to count. On a plate she has 4 cupcakes.

If there were 2 plates, how many cupcakes would there be altogether?

If there were 5 plates, how many cupcakes would there be altogether?

If there were 9 plates, how many cupcakes would there be altogether?

Task 1 (independent)

Mele has 26 leaves and two bags.

What are the different ways that she could put the leaves into the bags?

Can you record your ideas using drawing and number sentences?

Task 2

Amanda Bean is collecting pinecones and of course we all know what she likes to do. Yes, count them all!

As she collects them, she puts them in rows.

If there are 3 rows of pinecones and 6 pinecones in each row. How many pinecones are there altogether?

What if there are 5 rows of pinecones and 4 pinecones in each row. How many pinecones are there altogether?

What if there are 6 rows of pinecones and 5 pinecones in each row. How many pinecones are there altogether?

Task 2 (independent)

Ned has 9 toy cars and gets another 5 toy cars for his birthday. How many toy cars does Ned have now?

Marina has 5 shells and collects 19 more on the beach. How many shells does Marina have now?

Maka has 4 marbles and wins another 8 marbles after school. How many marbles does Maka have now?

Lola has 18 marbles and wins 4 more marbles after school. How many marbles does Lola have now?

3 + 9 =

3 + 19 =

8 + 9 =

18 + 9 =

Task 3

Amanda Bean has been a busy girl. She been sorting out her beans and arranging them as a putiputi. But, oh dear! Now she cannot work out how many different coloured beans she has used. So, she starts again and uses the beans to make more smaller putiputi.

If she puts 4 blue beans in each putiputi and she makes 5 putiputi, how many blue beans does she use altogether?

If she puts 8 yellow beans in each putiputi and she makes 4 putiputi, how many yellow beans does she use altogether?

If she puts 4 red beans in each putiputi and she makes 8 putiputi, how many red beans does she use altogether?

Task 3 (independent)

There are 3 plates with 4 cupcakes on each plate. Write an addition sentence to describe how many cupcakes there are altogether. How many lots of 4 do you have?

There are 4 plates with 5 cupcakes on each plate. Write an addition sentence to describe how many cupcakes there are altogether. How many lots of 5 do you have?

There are 2 plates with 10 cupcakes on each plate. Write an addition sentence to describe how many cupcakes there are altogether. How many lots of 10 do you have?

What pattern can you see?

Task 4

On the way to school Amanda Bean is counting wheels. She sees 10 kids on their 2-wheeler bicycles. How many wheels does she count altogether?

Next, she sees 5 cars. How many wheels does she count on the cars altogether?

How many wheels are there altogether in total?

Task 4 (independent)

If Amanda had 3 groups of 4 blue beans, how many blue beans did she have altogether?

Can you use skip counting to find out?

Use a numberline to show how you skip counted.

What did you do as you skip counted by 4?

If Amanda had 4 groups of 3 blue beans, how many blue beans did she have altogether?

Can you use skip counting to find out?

Use a numberline to show how you skip counted.

What did you do as you skip counted by 3?

What do you notice? Record your ideas.

Task 5

This year Amanda Bean's orange tree has so many oranges on it. She picks up 15 oranges off the tree but that's too many for one bowl!

You know what Amanda Bean is like. She likes to put them in groups and so she puts 3 oranges in each bowl.

How many bowls does she use?

What if she picked 20 oranges and put 4 in each bowl? How many bowls will she use now?

What if she picked 30 oranges and put 5 in each bowl? How many bowls will she use now?

Task 5 (independent)

If Amanda Bean had 8 pinecones in each row and there were 2 rows, what do you need to do to work out how many pinecones she has altogether?

What about if Amanda Bean had 2 pinecones in each row and there were 8 rows what do you need to do to work out how many pinecones she has altogether?

Record what you notice.

Task 6

Amanda Bean is drawing the sheep she counted to go to sleep. We all know Amanda Bean! She always has to know how many things she can see. She decides that she will put all the sheep in pens so she can work out how many sheep and pens there are.

If she has 10 sheep and only 5 can fit in a pen. How many pens does she need to draw?

If she has 20 sheep and only 4 can fit in a pen. How many pens does she need to draw?

If she has 100 sheep and 10 can fit in a pen. How many pens does she need to draw?

Task 6 (independent)

True or false?

15 – 5 = 5 – 15

12 + 6 = 6 + 12

22 + 6 = 21 + 7

3 + 3 + 3 = 6 + 3

8 + 4 = 4 + 4 + 4

3 x 3 = 3 x 3

4 x 3 = 4 + 4 + 4

4 x 3 = 3 + 3 + 3 + 3

Record your ideas to explain and justify your reasoning.

Task 7

In Amanda Bean's dream each sheep pulls out balls of beautiful fleece from their pocket.

There are 6 balls of beautiful fleece. Amanda Bean wants to draw a picture of the beautiful fleece and the sheep. Can you show her all the ways she can fairly share out the beautiful fleece with different groups of sheep so that they all get the same amount?

There are 10 balls of beautiful fleece. Amanda Bean wants to draw a picture of the beautiful fleece and the sheep. Can you show her all the ways she can fairly share out the beautiful fleece with different groups of sheep so that they all get the same amount?

There are 20 balls of beautiful fleece. Amanda Bean wants to draw a picture of the beautiful fleece and the sheep. Can you show her all the ways she can fairly share out the beautiful fleece with different groups of sheep so that they all get the same amount?

Task 7 (independent)

Amanda Bean drew 12 sheep and decided to put 6 in each pen.

How many pens did she need?

Can you write this as a subtraction question?

If Amanda Bean drew 6 sheep and decided to put 2 in each pen. How many pens did she need? Can you write this as a subtraction question?

What do you notice about the pattern you can see?

Task 8

Out shopping with her mother Amanda Bean stops at the cake shop and watches the baker decorate the top of a small cake with jellybeans. First the baker divides the cake into 2 sections. Amanda Bean notices that she has 12 jellybeans which she carefully shares fairly on each section.

How many jellybeans does she put on each section? What fraction of the jellybeans does she put on each section?

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How many jellybeans does she put on each section? What fraction of the jellybeans does she put on each section?

Task 8 (independent)

6 x 1 = 1 x 6

3 x 2 = 2 x 3

What would come next with

1x 10 =

10 x 1 =

2 x 5 =

5 x 2 =

What pattern can you see? Record your ideas.

Task 9

Amanda Bean notices that the baker uses trays to bake cookies on. He has 20 cookies. He shares them equally on 2 trays.

What fraction of the cookies are on each tray?
How many cookies are on each tray?

What if he has 40 cookies and shares them equally across 4 trays.

What fraction of the cookies are on each tray?
How many cookies are on each tray?

Task 9 (independent task)

If there are 6 jellybeans to share fairly on two sides of a small cake, how many jellybeans would there be on each side?

What is a half of 6?

Can you record this in two different ways?

If there are 20 jellybeans to share fairly on two sides of a small cake, how many jellybeans would there be on each side?

What is a half of 20?

Can you record this in two different ways?

What do you notice?

Task 10

After school Amanda Bean has a bowl of popcorn.

Of course, she wants to count how much popcorn is in her bowl so she puts it in as many different rows as she can make.

If she has 30 pieces of popcorn what are all the different ways, she organises them?

Can you write down a multiplication sentence, a division sentence and a fraction sentence for each way she organises the 30 pieces of popcorn.

Task 10 (independent task)

Record the following like this:

$\frac{1}{2}$ of ___ =

__ ÷ ___ =

What is a half of 60?

What is half of 30

What is a half of 100?

What patterns and relationships do you notice?

Record the following like this:

$\frac{1}{4}$ of ___ =

__ ÷ ___ =

What is one quarter of 20?

What is one quarter of 40?

What is one quarter of 100?

What patterns and relationships do you notice?

Task 11 (optional task)

Oh dear, Amanda Bean is very confused!

Can you help her to say which of these are true and which are false?

10 x 9 = 9 x 10

34 x 89 = 89 x 10

8 ÷ 2 = 6

10 = 2 x 5

$\frac{1}{2}$ of 8 = 2

$\frac{1}{2}$ of 20 = 10

20 ÷ 10 = 2

200 ÷ 100 = 2

$\frac{1}{2}$ of 100 = 200

Task 11 (independent - optional task)

What are the different ways you could organise 12 green beads?

What patterns and relationships do you notice? Record your ideas.

What are the different ways you could organise 15 red beads?

What patterns and relationships do you notice? Record your ideas.

What do you notice?

Task 12 (optional task)

Now Amanda Bean wants to write these addition sentences as multiplication and the subtraction sentences as division. Can you help her?

10 + 10 + 10 = 3 x ?

4 + 4 + 4 + 4 =

2 + 2 + 2 =

10 x 10 =

3 x 5 =

6 x 2 =

20 ÷ 2 = 20 - 10 - ?

12 ÷ 3 = 12 -

6 ÷ 2 = 6 -

50 – 10 – 10 – 10 – 10 – 10 =

Task 12 (independent - optional task)

4 x 2 = 8 and 2 x 4 = 8

So, we can say 4 x 2 = 2 x 4

What about 8 ÷ 2 = 4? Can we say 4 ÷ 2 = 8?

Why or why not?

Record a conjecture about what you have noticed?