

White

**Rose
Maths**

Autumn - Block 4

Multiplication & Division

Overview

Small Steps

Notes for 2020/21

- ▶ Make equal groups R
- ▶ Add equal groups R
- ▶ Make arrays R

Use this time to recap the basics of multiplication. Year 2 multiplication will be covered in the Spring term.

Making Equal Groups

Notes and Guidance

Children begin by using stories which link to pictures and concrete manipulatives to explore making equal groups and write statements such as ‘there are ___ groups of ___.’ They will recognise and explain how they know when they are equal or not. Children see equal groups that are arranged differently so they understand that the groups look different but can still be equal in number.

At this stage children do not explore multiplication formally.

Mathematical Talk

How do I know that the groups are equal? What does equal mean?

How many pencils are there in each pot? How can I complete the sentence to describe the groups?

What’s the same and what’s different?

Are Josh’s groups equal or unequal? How can we make them equal?

Varied Fluency



Are the groups equal or unequal? Write a label for each.





Complete the sentences



There are ___ groups of ___ pencils.



There are ___ groups of ___ flowers.

Josh is drawing equal groups of 3



Complete his drawing.

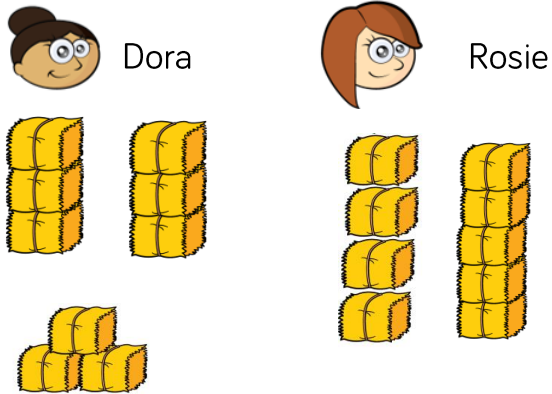
Making Equal Groups

Reasoning and Problem Solving



Dora and Rosie are making hay bundles.

Who has made equal groups?



Explain how you know.

Possible answer:
Dora has made equal groups because she has 3 groups of 3 hay bundles.

Rosie has two unequal groups.

Use concrete materials or pictures to complete the questions.

Alex has 4 equal groups.
Show me what Alex's groups could look like.

Whitney has 3 unequal groups.
Show me what Whitney's groups could look like.

Children will show 4 groups where there are the same amount in each group for Alex and 3 groups that are unequal for Whitney.

Encourage children to do this in more than one way.

Add Equal Groups

Notes and Guidance

Children use equal groups to find a total. They focus on counting equal groups of 2, 5 and 10 and explore this within 50.

Children could begin by linking this to real life, for example animal legs, wheels, flowers in vases etc.

Stem sentences alongside number sentences can help children link the calculation with the situation. Ensure children have the opportunity to say their sentences aloud.

Mathematical Talk

How many apples are there in each bag?

Do all of the bags have an equal number of apples?

How many equal groups can you see?

How can we represent this with counters/cubes/on a number line/in a number sentence etc?

What other equipment could you use to represent your pattern? What's the same? What's different?

Which is more, 3 groups of 10 or 4 groups of 5? Prove why.

Varied Fluency

R

How many wheels altogether?



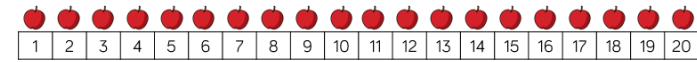
$$2 + 2 + 2 + 2 + 2 =$$

How many fingers altogether?



$$5 + 5 + 5 =$$

How many apples are there? Complete the sentences.



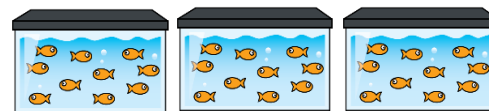
$$5 + 5 + 5 + 5 =$$

There are ___ apples.

There are ___ groups of ___ apples which is equal to ___

How many fish are there?

Complete the sentences.



$$+ + =$$

There are ___ fish.

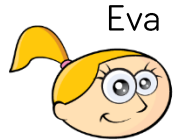
Can you show this using ten frames?

Add Equal Groups

Reasoning and Problem Solving



Eva and Whitney are making equal groups of bread rolls.



Eva

We need one more group to make 40

We need 10 more rolls to make 40



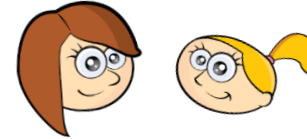
Whitney

Who do you agree with? Explain why.

Possible answer:
I agree with both.

They are counting in groups of 10 so they need one more group of 10

Rosie and Eva have equal groups of either 2, 5 or 10



Each of their totals is less than 40

Rosie has 5 equal groups.
Eva has 3 equal groups.

Eva's total is more than Rosie's total.

What could they be counting in?

Use equipment to help you.

Possible answers:
Rosie: $2 + 2 + 2 + 2 + 2 = 10$
Eva: $5 + 5 + 5 = 15$

Rosie: $5 + 5 + 5 + 5 + 5 = 25$
Eva: $10 + 10 + 10 = 30$

Rosie: $2 + 2 + 2 + 2 + 2 = 10$
Eva: $10 + 10 + 10 = 30$

Make Arrays

Notes and Guidance

Children begin to make arrays by making equal groups and building them up in columns or rows.

They use a range of concrete and pictorial representations alongside sentence stems to support their understanding.

Children also explore arrays built incorrectly and recognise the importance of columns and rows.

Mathematical Talk

How many equal groups do I have? How many in each group?
Can I represent my apples with counters?

What is the difference between columns and rows?
How many counters in each row? How many counters in each column?

How can I record my array with a number sentence?

Varied Fluency



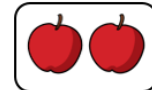
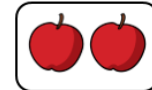
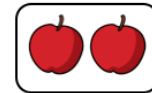
Build an array with counters to represent the apples.
Complete the sentences.

There are ___ apples in each row.

There are ___ rows.

___ + ___ + ___ = ___

There are ___ apples altogether.



Complete the table.

Array	Description - columns	Description - rows	Totals
	5 columns 2 cookies in each column	2 rows 5 cookies in each row	$2 + 2 + 2 + 2 + 2 = 10$ $5 + 5 = 10$
	___ columns ___ donuts in each column	___ rows ___ donuts in each row	
	___ columns ___ fish in each column	___ rows ___ fish in each row	
	3 columns 5 cupcakes in each column	5 rows 3 cupcakes in each row	

Make Arrays

Reasoning and Problem Solving



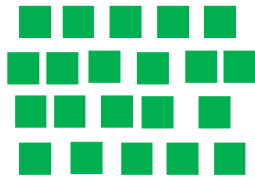
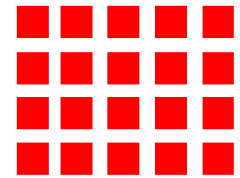
Amir and Whitney are making arrays.



Amir



Whitney



Who has made a mistake? Explain why.

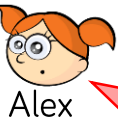
Possible answer:
Whitney has made a mistake because her array is not in columns. There are an unequal amount of squares in each row.

Teddy and Alex are writing number sentences to describe the array.



Teddy

$$4 + 4 + 4 + 4 + 4 = 20$$



Alex

$$5 + 5 + 5 + 5 = 20$$

Who do you agree with? Explain why.

Possible answer:
They are both right. Teddy has counted the columns. Alex has counted the rows.

Eva begins to make an array with 40 counters. She has finished her first row and her first column. Complete her array.



Write two different number sentences to describe the finished array.

Possible answer:
Array showing $10 + 10 + 10 + 10 = 40$

Or

$$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 40$$