



Manaiakalani

Class OnAir



Episode Title: Division - Equal sharing

Teacher: Kelsey Parrant

School: Pt England School

Year Level: 5

Lesson Topic: Creating equal sets to solve division problems and find the relationship between multiplication and division.

Learning Intention: divide by making equal sets.

Links with the
[New Zealand Curriculum](#)

Number strategies

Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.

Number knowledge

Know basic multiplication and division facts.

Key Competencies

Managing self: Students will need to manage themselves by completing the learning activities by the end of the week. Students will also need to be able to manage themselves in a whole class maths warm up game as well as a small group lesson.

Thinking: Students will need to think about their understanding of place value and numbers from 11 to 66 when completing the maths warm up game. They will also need to think about the ordering of numbers and how this works in order to be able to complete the game. Students will also need to think about sharing items equally making equal sets in order to divide these numbers. They will also need to think about the relationship between multiplication and division.

Participating and contributing: Students will need to participate in a whole class maths lesson where they will find out what is required of them for the week as well as take part in the warm up activity. Students will need to be able to contribute their answers with the whole class as well as in their small group. . Students will need to participate in a group maths session where they will understand the maths concept and answer questions related to the learning intention.

Relating to others: Students will need to be able to relate what they already know about sharing and division in order to solve more complex problems. Students will also need to relate to others by sharing strategies and listening to other strategies that students may have used to solve the problems.

Prior Knowledge

Students will need to use their prior knowledge of place value and numbers from 11 to 66 when completing the maths warm up game. They will also need to use their prior knowledge of ordering numbers in order to place the numbers into the rocket. Students will also need to use their prior knowledge about sharing items equally making equal sets in order to divide the numbers in the session. They will also need to use their knowledge and understanding of multiplication to be able to link this to division.

Lesson Sequence

Before the Session

Rocket Bingo

This is our warm up game that we have been playing in small groups as well as for a whole class activity.

1. Students will need to draw a rocket in their maths books, two squares by 6 squares.
2. Have a virtual dice or two physical dice ready to roll.
3. Roll the die and have the students decide which way round they want the numbers to go. (eg a 4 and a 6 could be 46 or 64).
4. Students need to place this number on their rocket, somewhere where they will be able to fill up the other squares before others in the class. These numbers go from smallest to biggest on the rocket (66 is the highest and 11 is the lowest number that students can have).
5. Complete steps 3 and 4 for 6 turns or until the first students call rocket bingo.
6. Have the students share their rocket bingo with the rest of the class and compare differences and similarities that people might have.

Number of the week (99)

I have gone over this activity again with the students as some are still a little bit confused with parts of the task.

1. Draw the number using the scribble tool.
2. Number art - have the students choose free to use images of each number. (99)
3. Expanded form tens + ones ($90 + 9$)
4. Written form - ninety nine
5. More or less - the students need to place their number of the week into the middle of this slide then add and subtract as the squares require them to do so.
6. Place value blocks - show the number using place value blocks students will need to duplicate these.
7. Place value money - show the number using money, students will need to duplicate these.
8. Number line - students will need to place their number on the number line and show where it fits in relation to other numbers.
9. Odd or even - is the number of the week an odd number or an even number?
10. Rounding - students will need to round this number to the nearest 100 and 10.
11. Different language - students will need to choose a different language that has been linked to the slide and write down this number.

During the Session

Discuss the learning intention with the group and show the materials that we will be using for the lesson.

Introduction:

Over the next two days we will walk 20 kms in total. We are going to walk the same distance each day. How many kms is that per day?

Have 20 counters out on the table and make two equal sets of 20 which will be 10 in each group. This is 20 divided by 2. Show this with the 20 counters being shared equally between the two students.

Questions

How many of these would each animal get? Give the students counters or have them draw this in their maths books to show understanding.

- 6 apples shared by 2 horses
- 12 worms shared by 2 birds

	• 15 carrots shared by 5 goats • 30 seeds shared by 10 kea How many birds would there be in these • 14 tui flying in groups of 2 • 20 bellbirds flying in groups of 5 • 50 fantails flying in groups of 10 Sharing: Five of Max's friends shared 15 biscuits at camp. How many biscuits did each person get? Draw this out with 5 friends and sharing the biscuits between them Link this to $5 \times 3 = 15$ so it is the same as $15 \div 5 = 3$ Have the students work this out independently in their maths books while at the maths group lesson 1. The camp cook used 12 eggs to make pies. 2 eggs were used in each pie. How many pies could the cook make? Draw like above and show $2 \times 6 = 12$ so $12 \div 2 = 6$ 2. After one pie: $12 - 2 = 10$ eggs left then show this subtracting 2 each time until they reach 0 to show they can make 6 pies. Follow up activity: Discuss the follow up activity with the group to show them what they will need to be completing while they are working independently. <i>Example:</i> <i>How many does each friend get if:</i> <i>8 biscuits are shared between 2 friends</i> 1. Duplicate the biscuits that are on the slide. 2. Multiplication equation - $2 \times 4 = 8$ 3. Division equation - $8 \div 2 = 4$
After the Session	Students will need to work with their maths groups to complete the maths tasks for the week. After they have completed this we will go through the answers as a group and students will share their learning on their blogs.

Learn Create Share Breakdown

Learn	How to share counters and numbers equally to make equal sets. Sharing equally is the same as division. The link between multiplication and division.
Create	Maths follow up the task of sharing the biscuits between people in the slides and finding the multiplication and division question for each.
Share	With the group when we meet up later in the week as well as sharing this on their own personal blog.

Resources Used	Wind Task Wind Number of the week Times table practice Video XtraMath Maths-Whizz
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Reflection

Reflection on Lesson Sequence

I think that this lesson went well, in the end the students were able to grasp the concept of division being linked to sharing equally. Once they had been able to see this they were then able to link this to the times tables that they already know and started to see the link between multiplication and division. We had worked on multiplication the previous week so this really helped going into division this week. The students really love the warm up game that we play as a class and it is starting to get really competitive. I am hoping that I will be able to add in a larger sided dice as well as introducing decimals with the rocket game.

For this lesson I really had to go back to the basics of maths groups and what is expected during our sessions as the student started to just call out random answers rather than thinking about the answer and how they got the answer. This has highlighted something that I need to keep working on with the whole class to make sure that the students are really thinking about the maths strategies that they are using.

I had completed this lesson with another group prior to filming this lesson thankfully as the first lesson did not go as well. It was my explaining that led the students to feel confused and not really sure of what was being asked of them. I looked back at my initial planning and that was the part that seemed to be confusing, where I was making the concept into a story about birds or other animals so for this lesson I made it about the students in front of me sharing equally between each other. This was a much better way to teach the strategy. When I saw the group for the second time I was able to use the stories that I had used in my planning and they seemed to grasp the concept and strategy much better.

I don't usually go over the follow up activity with the group but I did find that with this strategy in particular it was a great idea to do this. I think this was because it really solidified their knowledge and made the strategy easy to see and understand. This also showed the clear links between multiplication and division that was the overall goal for this group to achieve. Overall I think this was a really good lesson to introduce division as sharing equally and was something that I ended up using with the whole class in order to make that connection.

Next Steps

- Continuing to make those connections between sharing and division.
- Connecting multiplication and division.
- Learning multiplication facts to be able to solve more complex division problems.
- Possibly learning more about family of facts and how they link.
- Establishing group norms and focusing on using strategies to solve problems rather than just guessing.
- Using decimals for the rocket warm up activity.