Year 3 Maths No Problem lesson plans Chapter 11, Lesson 21 - 27, Pages 114 - 123, week beginning 08/06/20

Lesson 21: Finding Part of a Set

Textbook pages: 171 – 172

Lesson Objective

To be able to recognise, find and write fractions of a discrete set of objects.

Lesson Approach

To begin this lesson, provide pupils with 12 counters each. Show them the In Focus task and ask them to solve the problem using the counters. If there are 12 sweets in total shared equally between 4 friends, how many will each get? Ask pupils to use their counters to show that each child will get 3 sweets. Then ask them if it is possible to represent this as a fraction.

Explain that another way of sharing 12 sweets with 4 children is to find 1⁄4 of 12. Show the class how the 12 counters can be divided into 4 parts by drawing 4 quarters within a bar model, each quarter with 3 counters. Guide pupils to see that there are 4 quarters and 1⁄4 of 12 is 3. How can we write that down mathematically? Show them how to write the mathematical statement, 1⁄4 of 12 = 3. Explain that when we share a set of objects with 4 people, we need to divide it into 4 parts and find how many are in 1 part; this is the same as finding 1⁄4 of the set of objects.

What if we need to share the 12 sweets between 3 children? What fraction of the 12 sweets are we finding? What if we need to share 12 sweets between 6 children? What fraction of the 12 sweets are we finding? Guide pupils to draw the thirds and sixths within a bar model and divide the counters accordingly. Then write the mathematical statements for each problem.

During Guided Practice, pupils are using bar models and pictures to show how to share equally using fractions. At this stage, allow them to continue using the counters from the original task.

Lesson 22: Finding Part of a Set

Textbook pages: 173 – 175

Lesson Objective

To be able to recognise, find and write fractions of a discrete set of objects.

Lesson Approach

To begin this lesson, provide pupils with 12 counters each and show them the In Focus task. Ask if they are able to work out what 2⁄3 of the box of doughnuts is. How about finding 1⁄3 first? Can they use what they learnt in the previous lesson to find 1⁄3 of 12? Ask them to use the counters to show how to divide 12 by 3. Then ask them again what is 1⁄3 of 12.

Reiterate that 1⁄3 means 1 part out of the 3 parts. After they have shown the divided counters, ask them to write the mathematical statement, 1⁄3 of 12 = 4.

If we can see that 1⁄3 is 4 doughnuts, what will 2⁄3 be? If 1⁄3 is 1 part of 12 doughnuts, then 2⁄3 would be 2 parts of 12 doughnuts. We can use multiplication, 2 × 4, to find that 2⁄3 is 8 doughnuts. Ask pupils to write the mathematical statement, 2⁄3 of 12 = 2 × 4 = 8. Explain that when we have to find multiple parts of a set of objects, we can first find 1 part, then multiply to find the answer.

Then ask pupils to try finding 5⁄6 of 12 doughnuts and 3⁄4 of 12 doughnuts. Can they write the mathematical statements for these problems? Guide pupils to use the counters and draw the fractions to find the answers, then relate it to the mathematical statements they have to write.

During Guided Practice, pupils are finding fractions of a set of objects. Reinforce the idea that they need to find 1 part before finding 2, 3 or 4 parts to find the answer. Allow them to use counters to do the division and multiplication.

Lesson 23: Finding the Fraction of a Number

Textbook pages: 176 – 178

Lesson Objective

To be able to recognise, find and write fractions of a discrete set of objects.

Lesson Approach

To begin this lesson, provide pupils with counters, fraction frames (bar model frames) and other materials they may need to express their learning. Show the class the In Focus task and give them time to solve the problem. Ask pupils how many ways they are able to show you their understanding. Tell them to show at least two ways. Reinforce the bar model method, where the total number of sweets is represented by the bar and each equal part of the bar represents a unit fraction of the sweets. Pupils then use division to find the value of one part and can multiply (if necessary) to find the value of more than one part.

During Guided Practice, pupils are expected to calculate fractions of a whole number using a method of their choice.

Lesson 24: Sharing One

Textbook pages: 179 – 180

Lesson Objective

To be able to relate fractions to division.

Lesson Approach

To begin this lesson, show pupils the In Focus task and ask how they would share the mints. Tell them your friend said that each child would get 3 packs of mints and there would be 1

pack left over. What should we do with the leftover pack of mints? How can it be equally divided between 2? Ask pupils what they would do.

Structure the learning as represented in the Let's Learn tasks. To share 1 pack of mints between 2 children, we have to divide it into 2 equal parts. Each child gets 1 part. Write the mathematical statement 1 ÷ 2 = ? Ask pupils how to write 1 part out of 2 parts. Then write 1⁄2 on the board and say that each child will get 1⁄2 of the 1 pack of mints. Draw a number line on the board indicating 0 and 1. Ask pupils if they know where 1⁄2 would be and ask them to show you 1⁄2 on the number line. Guide pupils to see that 1⁄2 is the same as saying 1 ÷ 2.

What if you had a whole pizza to share among 3 children? How would you share it equally? How should we divide the pizza? How much would each child get? Can they draw the pizza to show this? Can they write a mathematical statement for this? Can they show this using a number line? Guide pupils to see that 1⁄3 is the same as saying 1 ÷ 3. Then ask them to work on Let's Learn 3 in the same way. Lead them to see that any whole number when divided by another whole number can be expressed using fractions.

During Guided Practice, pupils are being asked to divide a number and 1. For the first task, guide pupils to use the fractional notation for division of whole numbers (6⁄3).

Lesson 25: Sharing More Than 1

Textbook pages: 181 – 182

Lesson Objective

To be able to relate fractions to division.

Lesson Approach

To begin this lesson, show pupils the In Focus task and allow them to discuss whether Sam or Hannah is correct. Tell them your friend said that Sam is correct because there are 3 equal pieces in his circle and 2 of them are shaded in, which shows 2 thirds. Is this true? What about Hannah? Does she have thirds? How do we know she doesn't? How is each whole divided – into 6 or into 3? Allow pupils to discuss this idea.

Structure the lesson working through the Let's Learn tasks. For task 2, ask pupils how they would show you their thinking using pictures. If there were 2 whole pies that needed to be shared between 3 children, how would we cut them? Ask them to draw this and explain it to one another. Guide pupils to relate fractions to division: when 2 is shared by 3 children, they have divided 2 wholes into 3 equal parts each; each child will get 2⁄3 , therefore 2 ÷ 3 is the same as 2⁄3.

During Guided Practice, pupils are relating fractions to division. In the first example, there are 12 whole pies being shared among 4 children: 12 ÷ 4. They have to relate the problem to 12⁄4 . In the second example, there are 3 whole pizzas being shared between 4. How should the pizzas be sliced? Does each child get an equal amount of each pizza? In this case, they have to relate it to 3⁄4 .

Lesson 26: Sharing More Than 1

Textbook pages: 183 – 184

Lesson Objective

To be able to relate fractions to division.

Lesson Approach

To begin this lesson, show pupils the In Focus task. Provide them with 3 circular pieces of paper and ask them to show you the division needed to solve the problem. Give them some time to work it out. Ask them to write the mathematical statement for the problem. Lead pupils to see that 4 children sharing 3 pies is the same as 3 ÷ 4, which is equal to 3⁄4 . Then show them the division using a number line.

During Guided Practice, ask pupils how they will create a number line for the fractions. Has the denominator given them a clue about how many markers need to be on the number line between 0 and 1?

Lesson 27: Sharing More Than 1

Textbook pages: 185 – 186

Lesson Objective

To be able to relate fractions to division.

Lesson Approach

To begin this lesson, provide pupils with paper to fold and cut/shade. Show them the In Focus task and ask them how they would share 4 pies equally between 3 children. Allow pupils time to show you using the paper provided. Remind them that if there are 3 children, the pies should be divided in a way so that each gets their fair share of pie. Prompt pupils to draw what they have given to each child from each pie: thirds. Then work through Let's Learn and show the class how each child will get 4⁄3 by using paper cutouts to share the pies equally: each child gets one piece of pie from each of the 4 pies.

4⁄3 has a numerator that is larger than the denominator; what would this look like in a drawing? Give pupils some time to work this out. Reinforce the fact that the denominator tells us how many parts a whole has been divided into. If 1 whole is divided into 3 parts, and there are 4 parts, it means that we have to draw 1 whole with all the parts shaded, and another whole with 1 of its parts shaded, to show 4⁄3. We can also rewrite 4⁄3 as 1 whole and 1⁄3 . Using the cutouts, reassemble the 4 pieces of pizza to show this.

During Guided Practice, pupils are sharing whole numbers equally between children arriving at answers that equal more than 1.