



# Division

## 2.4.6

**Word Wall:** collection, share, sharing, groups, division, how many, remaining, left over

### Introduction

Students will understand concept of equal sharing and come to understand the commutative property of division.



### Resources

- ✓✓ Mini Whiteboard
- Whiteboard pens
- Animal Counters

### Time / Classroom Organisation

Each activity process may be introduced in a small or whole group context. Allow 15---20 minutes for each part of this activity.

### Australian Curriculum Year Two

Recognise and represent division as grouping into equal sets and solve simple problems using these representations ([ACMNA032](#))

### Proficiency Strand:

Understanding – Identifying and describing the relationship between addition and subtraction and multiplication and division.

Understanding --- Connecting number calculations with counting sequences.

Reasoning – using known facts to derive strategies for unfamiliar calculations.

Reasoning--- Comparing and contrasting related models of operations.



### Activity Process---Sharing a Collection

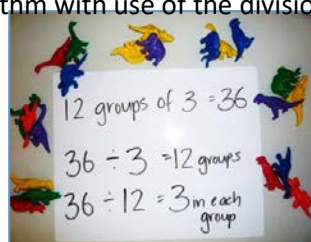
1. Provide students with a collection of 25-35 counters.
2. Scatter them in the middle of a circle.
3. Ask students to organise and labels equal sized groups, such as a threes.



4. Lead them to summarise the groupings and record the algorithm on their mini whiteboards in a variety of ways. Ask students:

*How many groups of three are there?*

5. Direction will be needed to show students how to record the algorithm with use of the division sign (exposure only).



6. Repeat the activity and ask students to create groups of 2, 4 and 1.

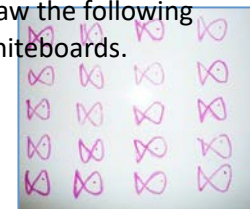
Source: *First steps in Mathematics – Number: Operations/Calculate/Number Patterns*, 2010. Rigby: Port Melbourne. p42

### Activity Process – Picture Puzzles –Division

1. Provide a group of students with a mini whiteboard and whiteboard pen.

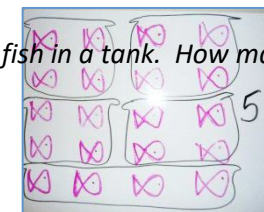
2. Ask students to draw the following picture on their whiteboards.

*I have twenty fish.*



3. Ask students the following questions and encourage them to use their knowledge of division to solve the questions.

*I can only have 4 gold fish in a tank. How many tanks do I need?*



4. Repeat with other picture puzzles stories.

*I have 12 slices of watermelon.*  
• *If I am babysitting three children, How many slices of watermelon will they each get?*

*The teacher has 6 students and 20 counters.*  
• *How many counters will each student get?*  
• *Will there be any leftover?*

Source: Source: Linthorne, C. & Serenc, M. 2005. *Jigsaw Maths Teacher Resource Book 2*. Firefly Press: Buderim p126



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## Variations & Extensions

### 1. Hoops

Resources: Hoops, Music, Students  
Have students dance to music. While students are dancing lay out a number of hoops. When the teacher stops the music they call out a number, the students must then arrange themselves into that number group inside each hoop. Discuss and record the division fact and the remainder if any students are left over.



### 2. Grouping

Resources: Deck of cards  
Remove the jacks, kings, queens and jokers from the pack. The ace card has a value of one. Deal out the pack of cards equally. The backs of the cards are used for this game. One player calls out 2, 3, 4 or 5 and each player quickly puts their cards into groups of that many. Players call out how many groups they have and how many cards are left over. The first player to do this wins.



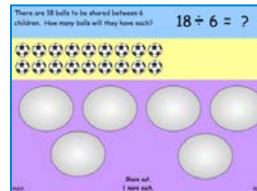
Source: Dutton, L. 2007. *Maths Games Cards & Dice*. Firefly Press: Buderim. p6

## Digital Resources

<https://au.ixl.com/math/year-3/divide-by-2>



<http://www.topmarks.co.uk/Flash.aspx?f=sharingv2>



### Contexts for Learning

#### Play:

Clumps: Students dance around the room to music. When the music stops the teacher calls out a number. Students must then form groups of that number. Any students who are left over are out. Model the language patterns to students: *We have 4 groups of 5 and 2 left over.*

#### Investigation:

Provide students with a set of unifix cubes to use. Pose the following question to students. *I have some unifix cubes in my pocket and I notice that when I share them into two equal groups there are one left over, but when I share them into three equal groups there are two left over. How many unifix cubes are in my pocket?*

Source: Sullivan and Lilburn. 2010. *Open-ended maths activities*. Oxford University Press: South Melbourne. p 50

#### Real life experience:

Sharing craft materials: cut the ribbon so four people get the same length, share the paint so everyone gets an even amount, hand out the pipe cleaners so everyone gets the same amount.

#### Routines and Transitions:

Have students divide themselves into groups of particular numbers for small group activities.

## Assessment

Provide students with a collection of counting objects. Ask students to share the counters in equal groups and then record the algorithm for what they have done in any way.

**Achievement Standard:** Represent multiplication and division by grouping into sets.

## Background Reading

Many children find division more difficult than addition, subtraction or multiplication. This is often because they do not have a clear understanding of the division concept before they are introduced to the algorithm. Other reasons for their difficulty include failure to make the links between multiplication and division, a too rapid move to symbolisation and the use of language that does not convey a clear meaning.

Source: Department of Education, Queensland. 1991. *Years 1 to 10 Mathematics Sourcebook: Activities for teaching mathematics in Year 3*. Department of Education: Qld p134

## Year three NAPLAN Numeracy test links

[Multiplication and division – number problems](#)

[Multiplication and division – word problems](#)

## Links to Related MAGs

2.2.6 - Multiplication – repeated addition

2.3.5 – Multiplication – arrays

2.4.1 – Division - Halving

2.4.5 – Multiplication – Solving Problems

3.3.4 – Solving Problems – Multiplication and Division