

## Foundation Level – Number and Algebra

### Overview

<b>Task name</b>	Making connections
<b>Learning intention</b>	To use counting strategies to solve simple problems
<b>Duration</b>	60 minutes
<b>Background:</b>	Discuss words that are used to talk about equality, order, addition and subtraction: <ul style="list-style-type: none"><li>• equals – makes altogether, gives</li><li>• ordering – more than, less than, smaller, larger</li><li>• addition – add, plus, more than, increase</li><li>• subtraction – minus, take away, less than, decrease.</li></ul>

### Links to Victorian Curriculum

These work samples are linked to [Foundation Level](#) of the Mathematics curriculum.

### Extract from achievement standard

Students connect number names and numerals with sets of up to 20 ... and use counting strategies to solve problems that involve comparing, combining and separating these sets.

### Relevant content descriptions

- Compare, order and make correspondences between collections, initially to 20, and explain reasoning (VCMNA072)
- Represent practical situations to model addition and subtraction (VCMNA073)

# Mathematics – Annotated student work samples

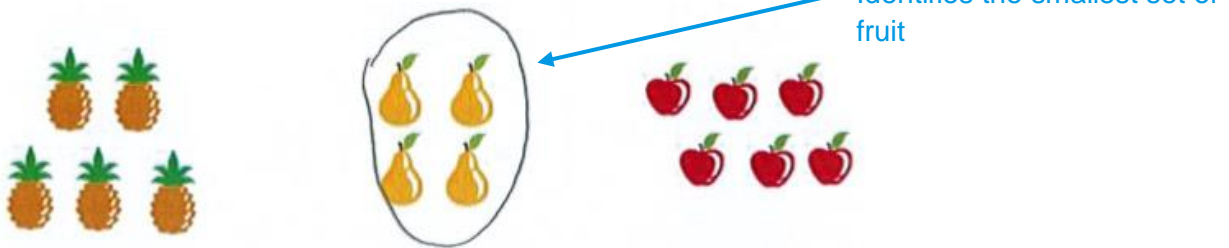
## Student work samples – Number collections

These work samples were created by students working at Foundation Level. Evidence of student achievement has been annotated.

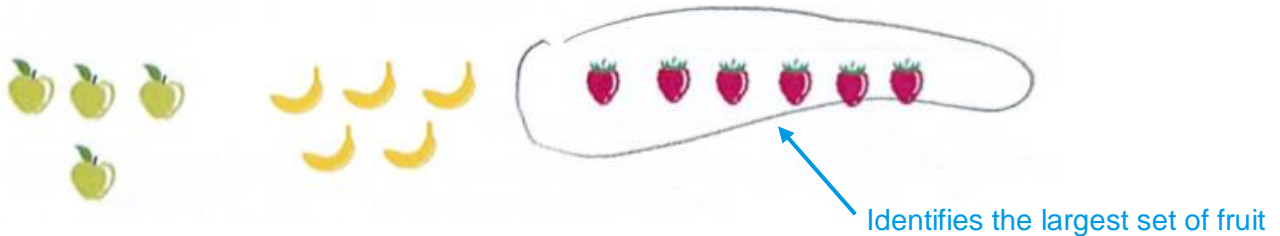
### Victorian Curriculum link

Compare, order and make correspondences between collections, initially to 20, and explain reasoning (VCMNA072)

Circle the group of fruit that has the least.



Circle the group of fruit that has the most.



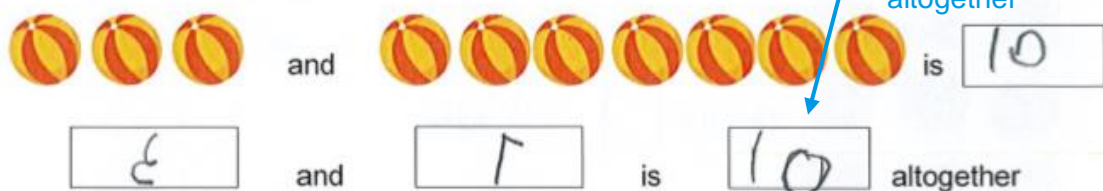
## Student work samples – Addition

These work samples were created by students working at Foundation Level. Evidence of student achievement has been annotated.



### Victorian Curriculum link

Represent practical situations to model addition and subtraction (VCMNA073)


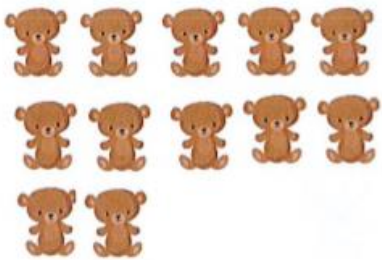
How many altogether?





# Mathematics – Annotated student work samples

 and  is   
 and  is  altogether

Counts each collection, records amounts of 3 and 7, and identifies 10 altogether

 add  equals   
 add  equals

Records 8 and 12 as amounts that add to equal 20, with some corrections

 add  equals   
 add  equals

Records 8 and 12 as amounts that add to equal 20

# Mathematics – Annotated student work samples

 +  =

← Adds two single-digit amounts and gives numerical answer

 plus  plus  makes  altogether

← Adds three single-digit amounts and gives a numerical answer with a total less than 20

 plus  makes  altogether



← Attempts to use '+' symbol

 +  =

← Adds two single-digit amounts and gives numerical answer

 plus  plus  makes  altogether

← Adds three single-digit amounts and gives a numerical answer with a total less than 20

 plus  makes  altogether

← Constructs example for 3 plus 4 makes 7 altogether

# Mathematics – Annotated student work samples

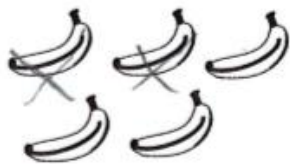
## Student work samples – Subtraction

These work samples were created by students working at Foundation Level. Evidence of student achievement has been annotated.

Victorian Curriculum link

Represent practical situations to model addition and subtraction (VCMNA073)

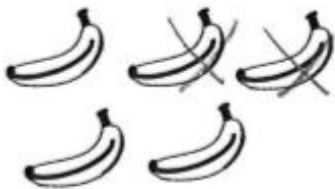
### Cross off to take away.



There are 5 bananas

Take away 2 bananas leaves  bananas.

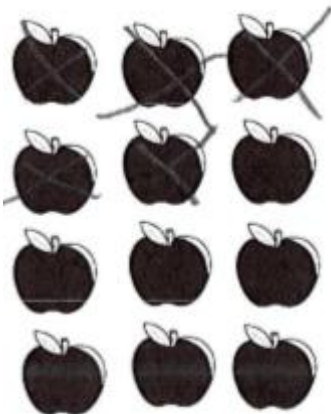
Crosses off 2 bananas and records remaining amount of 3, with numeral written in reverse



There are 5 bananas

Take away 2 bananas leaves  bananas.

Crosses off 2 bananas and records remaining amount of 3

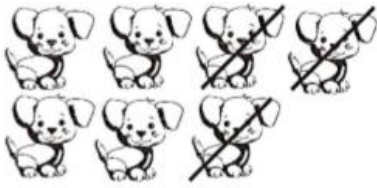


$12 - 5 =$   apples.

Represents subtraction by crossing off 5 apples and records the answer of 7 apples

# Mathematics – Annotated student work samples

Complete the following number sentences.



There are 7 puppies  
 Take away  puppies  
 Leaves  puppies

Models subtraction by taking away (crossing off) 3 puppies and identifies there are 4 puppies remaining

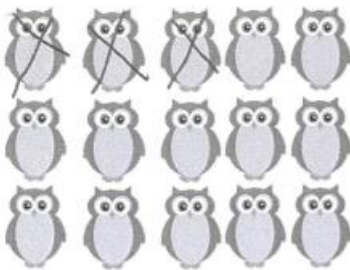
Make your own number sentence below.



There are 15 owls  
 Take away  owls  
 Leaves  owls  
 -  =

Initially just writes answer, then erases and records 5 owls taken away (with numeral written in reverse) and records answer of 10 remaining owls

Attempts, but does not complete, a number sentence



There are 15 owls  
 Take away  owls  
 Leaves  owls  
 -  =

Models subtraction and develops a matching number sentence

How many balls are shown below?

Records the number of balls in the picture as 6

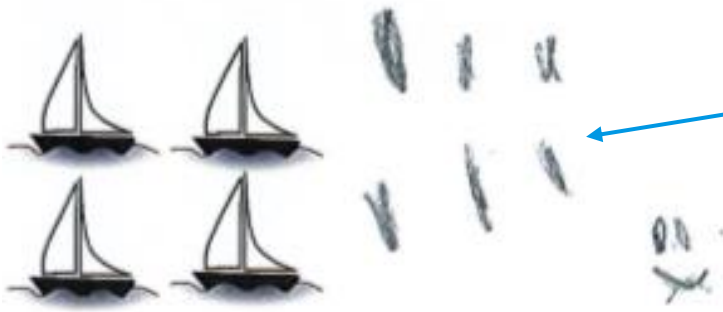


Draws an additional ball and records new total of 7 balls

Add one more ball. How many are there now?

# Mathematics – Annotated student work samples

How many more boats to make 10 boats in total?



Uses a tally to represent an additional 6 boats in order to represent 10 boats in total



Draws an additional 6 boats to represent 10 boats in total

How many more stars make 18 stars in total?



Draws an additional 5 stars so that there is a total of  $13 + 5 = 18$  stars



## Where to next for the teacher?

When the task on which these annotated student work samples is based has been used as a classroom activity, there is opportunity to gather data on student achievement to help inform further teaching.

An analysis of student responses, on an individual, group or whole class basis, can be used to develop and direct student learning with respect to the following content.

### For students needing to review underpinning knowledge and skills at [Level D](#)

- Model practical situations involving ‘adding to’ or ‘taking away’ with collections of up to five objects (VCMNA056)

### For students consolidating knowledge and skills at [Foundation Level](#)

- Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (VCMNA069)
- Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (VCMNA070)

### For students moving on to new knowledge and skills at [Level 1](#)

- Count collections to 100 by partitioning numbers using place value (VCMNA088)
- Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (VCMNA089)

## Resources

- [Numeracy Learning Progressions](#), Victorian Curriculum and Assessment Authority (VCAA) – The Numeracy Learning Progressions amplify, extend and build on the numeracy skills in the Victorian Curriculum F–10: Mathematics and support the application of numeracy learning within other learning areas.
- [FUSE](#), Victorian Department of Education and Training (DET) – The FUSE website provides access to digital resources that support the implementation of the Victorian Curriculum F–10, including an extensive range of activities and other resources for [Primary Mathematics](#) and [Secondary Mathematics](#).
- [Mathematics Curriculum Companion](#), Victorian Department of Education and Training (DET)
- [Aligned Australian Curriculum Resources \(Mathematics\)](#), Australian Curriculum, Assessment and Reporting Authority (ACARA)