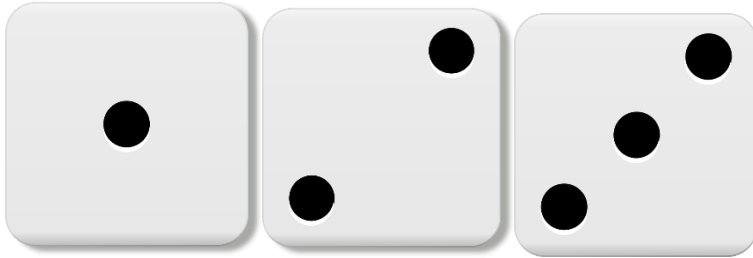# DEVELOPING MATHEMATICAL INQUIRY COMMUNITIES

# Level 0 (NE/Year 0) Copy Masters, Number and Algebra

## Task 1 – Group Task

Sam and Jade are making dice to play snakes and ladders. This is the pattern they used for the first three numbers:



What is the same and different about the patterns?

Which pattern is easiest to recognise?

Can you create the dot patterns for 4, 5, and 6?

**Task 1 – Independent Tasks**

Mere and Ana are playing with acorns and using them to make dice patterns for the numbers 1 to 8.

What are some of the patterns they make?

Can you draw the pattern and write the numbers to match?

Can you write a number sentence to represent it?

## Task 2 – Group Task

Fau and Mepa are inventing a game to play at home. They want to make a dice that has dot patterns for the numbers 7 to 10 on it.

Can you create the dot patterns for dice for 7, 8, 9, 10?

How many different patterns can you create?

**Task 2 - Independent Tasks**

Mary and Sima are playing with pinecones and using them to make dice patterns for the numbers 4 to 12.

What are some of the patterns they make?

Can you draw the pattern and write the numbers to match?

Can you write a number sentence to represent it?

## Task 3 – Group Task

John has a set of marbles. He wants to know how many marbles he has. Can you help him find out how many marbles he has?

What is the quickest way John can count the marbles?

Levi has a set of marbles, and he wants to know how many marbles he has. Can you help him find out how many marbles he has?

What is the quickest way Levi can count the marbles?

## Task 3 - Independent Tasks

Liana has some stickers. She wants to know how many stickers she has. Can you help her count the stickers?

Can you arrange the stickers into an easy way to count them? Now make sure that you draw your pattern and write the numbers to match.

## Task 4 – Group Task

Hala has collected some leaves. She wants to know how many leaves she has. Can you help her work out how many leaves she has?

What is the quickest way Hala can count the leaves?

Can you find a different way to count the leaves using groups?

## Task 4 - Independent Tasks

Liana has been collecting cicada shells. She wants to know how many cicada shells she has. Can you help her count them?

Can you arrange the cicada shells in different ways to find out how many of them she has?

Make sure that you show the groups that you used and write the numbers to match them.

## Task 5 – Group Task

Tupou has 10 tipani for two baskets. What are the different ways that she could put the tipani into the baskets?

Can you record your ideas using drawings and number sentences?

**Task 5 - Independent Tasks**

Jenna has 12 grapes and two bowls.

What are all the different ways that she could put the grapes into the bowls?

Record your ideas using drawings and number sentences.

## Task 6 – Group Task

Sunlou and Amaya are playing with tiles. They have two square tiles that are the same. They make a pattern, so the tiles join together.

Can you make a pattern with your tiles the same as they have?

Can you draw your pattern?

Now Sunlou and Amaya have 4 squares. Can you make a pattern out of the four squares so that each tile joins on two sides?

Can you draw your pattern?

## Task 6 - Independent Tasks

Sunlou and Amaya are playing with tiles. They have four square tiles that are the same. They make a pattern so the tiles join together on two sides. Can you make the pattern with your tiles?

Can you draw what the pattern looks like?

Can you make a pattern with 8 tiles and draw this?

## Task 7 – Group Task

Bobbi and Leesa are playing with tiles. They have six square tiles that are the same. They make a grid so the tiles join together, can you make a grid with your tiles so that they are joined together?

Can you draw the pattern you have made with your tiles?

Now can you have a go at drawing these grids?

A grid that is 3 by 3

A grid that is 2 by 4

A grid that is 4 by 3

## Task 7 - Independent Tasks

Draw these grids first and then make them with the ice-block sticks.

A grid that is 2 by 5

A grid that is 4 by 2

A grid that is 3 by 3

A grid that is 5 by 4

**Task 8 – Group Task**

How many dots are there?

Draw a picture of the array and record the numbers you used to find the number of dots.

**Task 8 - Independent Tasks**

Can you make these arrays using counters and draw them? Record a matching number sentence.

3 by 2

3 by 3

4 by 2

2 by 5

3 by 5

4 by 5

## Task 9 – Group Task

Seini was collecting some flowers. She picked 3 red flowers and 3 yellow flowers. How many flowers did she pick altogether?

Sepi was collecting some flowers. She picked 4 orange flowers and 3 white flowers. How many flowers did she pick altogether?

Tiana was collecting some flowers. She picked 4 blue flowers and 5 yellow flowers. How many flowers did she pick altogether?

## Task 9 - Independent Tasks

Seini was collecting some flowers. She picked 4 red flowers and 4 yellow flowers. How many flowers did she pick altogether?

Sepi was collecting some flowers. She picked 5 orange flowers and 4 white flowers. How many flowers did she pick altogether?

Tiana was collecting some flowers. She picked 5 blue flowers and 5 yellow flowers. How many flowers did she pick altogether?

Lia was collecting some flowers. She picked 6 red flowers and 5 white flowers. How many flowers did she pick altogether?

$4 + 3 =$

$3 + 4 =$

$7 + 6 =$

$6 + 7 =$

## Task 10 – Group Task

Vimi's soccer team scored 3 goals in one game and 6 goals in another game. How many goals did her team score altogether?

Nate's soccer team scored 7 goals in one game and 4 goals in another game. How many goals did his team score altogether?

Leti's soccer team scored 5 goals in one game and 9 goals in another game. How many goals did her team score altogether?

## Task 10 - Independent Tasks

Vimi's soccer team scored 6 goals in one game and 2 goals in another game. How many goals did her team score altogether?

Nate's soccer team scored 8 goals in one game and 6 goals in another game. How many goals did his team score altogether?

Leti's soccer team scored 9 goals in one game and 4 goals in another game. How many goals did her team score altogether?

$7 + 5 =$

$6 + 8 =$

$5 + 9 =$

## Task 11 – Group Task

Mele had 6 felt tips and her friend Sarah borrowed 3 felt tips. How many felt tips does Mele have now?

Rita had 9 felt tips and her friend Leesa borrowed 5 felt tips. How many felt tips does Rita have now?

Sangeeta had 12 felt tips and her friend Mata borrowed 3 felt tips. How many felt tips does Sangeeta have now?

## Task 11 - Independent Tasks

Sima caught 7 fish and gave his friend 4 fish. How many fish does Sima have left?

Timo caught 9 fish and gave his friend 4 fish. How many fish does Timo have left?

Max caught 11 fish and gave his friend 2 fish. How many fish does Max have left?

$8 - 3 =$

$6 - 4 =$

$5 - 3 =$

$4 - 4 =$

**Task 12 – Group Task**

Tina had 8 beads and gave her friend Mellie 4 beads.
How many beads does Tina have now?

Daisy had 10 beads and gave her friend Ana 6 beads.
How many beads does Daisy have now?

Kelly had 12 beads and gave her friend Alisi 7 beads.
How many beads does Kelly have now?

**Task 12 - Independent Tasks**

Mere had 5 shells and gave her mum 3 shells. How many shells does Mere have left?

Sam had 8 shells and gave her mum 5 shells. How many shells does Sam have left?

Martha had 12 shells and gave her mum 6 shells. How many shells does Martha have left?

$7 - 2 =$

$8 - 3 =$

$9 - 4 =$

$12 - 4 =$

## Task 13 – Group Task

Work with your partner to work out which number sentences are true or false.

$8 = 8$

$4 + 3 = 7 + 4$

$9 = 5 + 4$

$8 + 6 = 9 + 5$

$10 - 8 = 9 - 7$

$14 - 6 = 14 - 6$

$7 = 10$

Explain why you think the number sentences are true or false.

# Task 13 - Independent Tasks

Solve these problems:

$3 + 9 =$

$4 + 8 =$

$5 + 7 =$

$6 + 6 =$

$7 + 5 =$

$8 + 4 =$

$9 + 3 =$

What patterns do you notice in the equations? Could you write more equations that match the pattern?

## Task 14 – Group Task

Here are some number sentences. What are the answers?

5 + 3 = 8

3 + 5 =


9 + 6 = 15

6 + 9 =


13 + 7 = 20

7 + 13 =


What patterns do you notice? Did you find an easy way to find the answer?

## Task 14 - Independent Tasks

Complete the following problems:

$11 - 1 =$

$12 - 1 =$

$13 - 1 =$

$11 - 2 =$

$12 - 2 =$

$13 - 2 =$

$11 - 3 =$

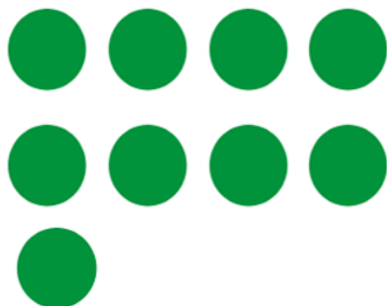$12 - 3 =$

$13 - 3 =$

$11 - 4 =$

$12 - 4 =$

$13 - 4 =$

$11 - 5 =$

$12 - 5 =$

$13 - 5 =$

What patterns do you notice? Did you find an easy way to find the answer?

## Task 15 – Group Task



Use number sentences to represent this pattern in as many ways as you can.