MATHS

Lesson 18

Prep

Topic: Number and place value

Exploring flexible partitioning (1)

Lesson concepts

- **Number**— Quantity
- **Addition and subtraction** — Process/operation
- **Addition and subtraction** — Relationships
- **Addition and subtraction** — Part–part–whole

Today students will:

- partition and combine parts of a collection.

Resources

Digital

Learning object — Five little monkeys

Find and prepare

Collage materials, such as pasta/beans of at least three different colours/shapes

Up to 10 buttons or counters

Key terms

partition

For definitions and explanations of terms, please see the Glossary.

Lesson

Introduce the lesson

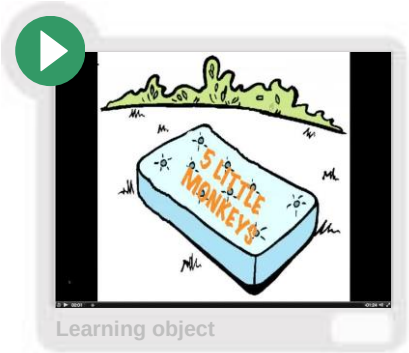
Note

It is important to highlight and develop the following vocabulary throughout this lesson.

part, whole, join, makes, and, more, total, altogether, combine, total, add, more, less, partition, visualise, describe, record, twenty-bead string, collection, split

Explore two-part partitioning

- Have students view the **Learning object — Five little monkeys**.
- Explain to students that in the past two lessons they have looked at collections and seen how the parts of a collection go together to make a whole collection.



Learning object

Say to students

When we are talking about seeing the parts of a whole collection, we use the word ‘partition’.

Can you say the word ‘partition’? I can hear the small word ‘part’ at the start of the word.

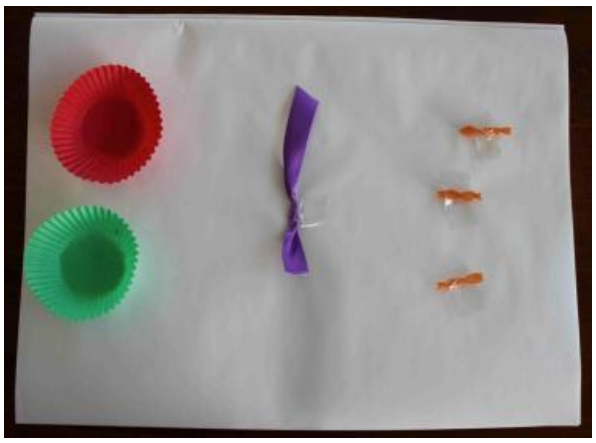
When you watched the **Learning object — Five little monkeys**, you could see five monkeys all the time, but some were on the bed and some were on the ground. There were lots of different ways to partition the five monkeys; for example, when there was one monkey on the ground, there were four on the bed. When there were two on the ground, there were three in the bed.

Watch the **Learning object — Five little monkeys** again and see what other ways the collection of five monkeys could be ‘partitioned’.

Explore different ways of partitioning a quantity

Represent partitioning and joining parts

- Have students practise partitioning or splitting collections. Ask students to:
  - make a collection of materials for a collage
  - sort it into parts
  - glue these parts onto paper
  - record what they can see (for example: I can see two and one and three make six.).



Focus questions

Q: *What parts can you see in this collage?*
A: For example: two cupcake papers, three pasta pieces, one ribbon

Q: *What is the whole? Or total?*
A: For example: six

Q: *Are there any collages the same? How are they the same?*

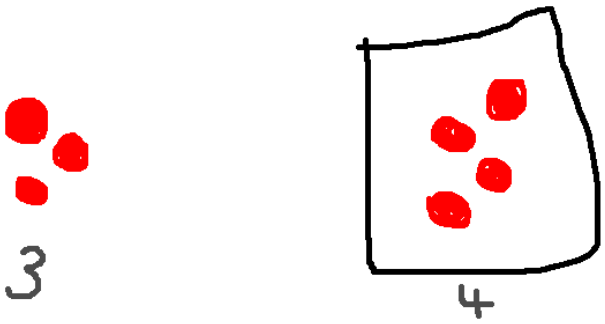
Q: *These two collages have the same total, but they are different. How are they different?*

Q: *How could you rearrange these pieces of pasta?*

Identify part–part–whole combinations in a variety of contexts

- Explain to students that you will play a game called ‘How many buttons behind my back?’
- To play the game:
  - show students all of the buttons and have them count how many are in the collection
  - partition the collection into two parts
  - place one part in each hand and hide one hand behind your back. Have the other part so that they can be seen
  - ask students to say how many buttons are behind your back.

- Ask students to draw a picture to represent the partitioning. For example:



Focus questions

Q: *Was the total still the same when I put some behind my back? How do you know?*
A: Yes, for example, you didn't add any buttons or take any away.

Q: *How could you describe the total?*
A: For example: seven buttons

Q: *What parts did you see?*
A: For example: three and four

Q: *How did you work out the missing part?*
A: For example: I could see three buttons and I knew the other part would be four.

- Repeat the game, but partition the collection differently.