

Mathematics lesson plan

Topic: Place value

Date:

Year Level(s): 3

Lesson duration: 60 min

<p>Mathematical Focus: Understanding quantity of 3-digit number using partitioning strategies</p> <p>Intended learning outcome:</p> <ul style="list-style-type: none"> Interpret 3-digit number quantity by using partitioning strategies Represent number partitioning using different representations (e.g., number lines, materials, equations, drawings, words) <p>Learning Intention: Learn about partitioning and how it is used to understand 3-digit numbers. Learn how to show the ways we partitioned using different representations.</p>	
<p>Australian Curriculum:</p> <p>Content strand(s): Number and algebra Sub-strand: Number and place value</p> <p>Content descriptors(s): Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053)</p> <p>Proficiency strand(s) and descriptor: <i>Understanding:</i> Recognising numbers can be partitioned and represented in different ways <i>Reasoning:</i> Explaining partitioning using multiple representations and appropriate vocabulary</p>	<p>Students' prior knowledge:</p> <ul style="list-style-type: none"> Place value structure of tens and ones and associated language Two-digit numbers can be partitioned in different ways using concrete materials and symbols Represent 2-digit numbers using materials (icy-pole sticks, MAB)
<p>Assessment strategies:</p> <ul style="list-style-type: none"> Observation checklist Work samples <p>What will you analyse?</p> <ul style="list-style-type: none"> Can they communicate their thinking using appropriate language related to place value How did the student represent their thinking? And if appropriate? <ul style="list-style-type: none"> concrete materials empty number lines drawings symbolic representations (e.g., equations, sentences) words What ways did the student use to partition their number? Was more than addition used? (e.g., 354 thinking 400 – 46) 	<p>Key vocabulary/terms:</p> <p>Partition, “bust up”, quantity, thousands, hundreds, tens, ones, digit, number line, equation, partitioning, number parts</p> <p>Resources:</p> <p>10 sided dice Multi-attribute blocks (MAB) Icy-pole sticks Elastics bands “Hundreds” bags Partitioning boards Paper Mini-whiteboards Interactive whiteboard (IWB)</p>

Lesson design**Introduction (Whole – TUNING IN): 12'**

Play “Roll it and place it” with whole class.

Record three rectangles on board



Say three digits will be generated by rolling a 10-sided die three times with aim of creating the *highest number possible*.

Ask

“What value will this rectangle represent? How do you know?”

Invite a student to roll foam 10-sided die and say the digit rolled. Ask

“Where will this digit go? Why?”

Check that students focus on place value represented by the rectangles.

Ask the student to record digit in the rectangle. Ask

“What number do we have now?”

Repeat for all three rectangles and record students’ responses and highlight the place value language.

“What do you notice about all of the words I have highlighted?”

Record words on flash cards and add to Mathematics Learning Wall (MLW).

Focus question/s:

How will you use the vocabulary today to help you explain their thinking to others?

Development/investigation (Part - INVESTIGATING): 30'

Play in pairs “Roll it and place it”,

Ask what mathematics could be explored with their numbers and record their ideas (Draw attention to “number busting” if offered. If not, ask)

“What idea did we learn about 2-digit numbers where we broke numbers into parts?”

Ask students to investigate their 3-digit number by “number busting”.

Show students materials for modelling their numbers. Tell students to focus on explaining partitions and representations to each other, in many different ways and record the explanations.

Move room asking students focus questions.

Use “spotlight strategy” with who has used a number line representation, asking them to explain its use. Encourage students to use a number line for next representation.

Ask students to select their most interesting number busting. “How might you convince another classmate that your busting is correct?”

Encourage them to use the language structure of: “I partitioned my number in these ways by...”

Refer students to MLW for vocabulary and add new vocabulary that the students might use. Ask students to share their work with another peer.

During roving, take note of four students who represented using.

Focus question/s:

Can you use materials, or number lines, or words, or number sentences?

What important language are you using to explain your thinking?

<p>Conclusion (Whole – REFLECTING):</p> <p>Invite four selected students to present to the class. Draw attention to ways they partitioned numbers and recorded their partitioning. Post work samples on MLW. Remind students of learning intention. Ask how evidence on the MLW has made the learning intention visible.</p>	<p>Focus question/s:</p> <p>What do you notice about the ways of busting and representing numbers?</p> <p>Which representations are most helpful? Why?</p> <p>What new ideas and language have we learned about partitioning?</p>
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Catering for diversity:

Enabling prompt:

Generate a 2-digit number, and model it with materials. Provide a “partitioning board” as a scaffolding tool. Encourage the student to use an empty number line instead of direct modelling with materials. When ready, introduce a 3-digit number.

Extending prompt:

Generate a 4-digit number and bust that number. Encourage students to record thinking using an empty number line and matching with the equation using different operations.

EALL/D learners:

Record place value word cards and ask the student to refer to those word cards to explain their thinking. Ask the student to show their “busting” and model the language for the student.

Indigenous learners:

Use the Indigenous protocol of “Watch first, then do”; ask peers to model, and then encourage student to work on task; incorporate the use of story to give greater meaning/context to the number partitioning.

