For school teachers

Lesson plan – Year 3 maths

Unit 1, Lesson 10: Place value application

This lesson plan was developed by Ochre Education and maths teacher Sue Davis. It outlines her approach to teaching a Year 3 maths lesson on reading and writing 4-digit numbers.

- Watch the lesson video
- Watch a video of Sue talking about her teaching practices
- View the maths unit plan example
- Download sample lesson plan template
- View all other online lessons and supporting resources

This lesson is part of a unit on place value. Ochre Education and the Australian Education Research Organisation (AERO) have published 10 online lessons (and supporting resources) that make up this unit. This is the first lesson in the unit – you can watch the lesson video here and watch a video of Sue talking about her practice here.

This lesson plan is a supplementary resource for this work. It includes guidance on how the lesson was structured and sequenced within the unit and can be used while interacting with the Ochre resources. The plan also allows teachers to see an example of planning for one lesson within a sequence of lessons and reflect on their own teaching and effective practice. The lesson plan is annotated to explicitly show some of the decisions that are made during the planning process

Another way to use this lesson plan is as a starting point for discussions with colleagues to build collective capacity for lesson and unit planning. Teachers can also use the lesson plan to reflect on their own planning for lessons and units and guide future planning. A blank lesson plan teachers can use and modify as a resource for their own planning can be accessed here.

All the lessons from this unit can be accessed for free on either the AERO or Ochre Education websites.

Definitions

Learning objectives

Clear and easy to understand statements about what students are expected to be able to know, do and/or understand by the end of a period of instruction (not to be confused with the instructional tasks), and at what level this learning is to take place.

Success criteria

A clear statement about the measure that will be used to prove whether, and how well, a student has met the learning objectives by the end of a period of instruction. Success criteria are observable actions that a student can perform to demonstrate their understanding of the learning objectives. It is important that these elements are observable – avoid using phrases like 'students will understand that...' as we can't observe understanding. Instead, the criteria could be 'students will write, say, make or do something that indicates understanding'.

Tasks

Activities undertaken by students as part of the learning process. Carefully designed tasks can also assist students in mastering new knowledge or skills. Scaffolds and worked examples might be used to assist students with some tasks. Teachers can monitor their students' ability to complete tasks as part of a formative assessment approach to help determine whether students have demonstrated the success criteria.

Subject Mathematics: Place value

Year level/Stage 3

Lesson background

This is the tenth and final lesson in the Place value unit, which is the first unit of mathematics in Year 3. It revisits the place value principles from the preceding lessons, as well as building on what has already been learnt.

This lesson background shows how the lesson is sequenced and positioned within the unit.

Learning objectives

To understand how place value can be applied to ordering, partitioning and regrouping 3- and 4-digit numbers.

Success criteria

By the end of this lesson, students will be able to:

- use place value knowledge to compare and order numbers from a set
- apply place value knowledge to regroup when partitioning
- name 4-digit numbers as ones, tens, hundreds and thousands, including after regrouping.

The success criteria are a series of clear statements that will be used to prove whether, and how well, a student has met the learning objectives at the end of a period of instruction.

Misconceptions

Some students may:

- order numbers based on the value of the digits in the number, not necessarily their place value; for example, that 189 is a higher value than 201
- rename 3245 as 5 hundreds, instead of 32 hundreds
- think that a partitioned 4-digit number with one or more zeroes just leaves out that digit; for example, 3000 + 20 + 5 = 325, instead of 3025

Misconceptions are incorrect knowledges and understandings that students have prior to the lesson, or may obtain during the lesson. Outlining these during planning can help with monitoring student learning, and recognising when corrective feedback is needed.

* In this column, you will find prompting questions to guide your planning for each lesson stage.

** In this column you will find prompting questions to consider when monitoring learning at each stage of the lesson.

Lesson stage*	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning**
Review of previous learning		
How will you ensure that students have the prerequisite skills and knowledge to progress their learning in this lesson? How will you activate prior knowledge/help students retrieve relevant learning from previous lessons?	A quick introductory quiz of prior knowledge*** about place value, including partitioning, ordering and comparing number values, and the properties of numbers. 1. Overview of keywords: a. Digit b. Place value c. Partitioning d. Regrouping. 2. Opening questions and ideas: a. Place value – the value of digits in 4-digit numbers. b. Matching base ten blocks and numerals.****	How will you gather evidence that shows you where your students are at in their learning?

*** It is important to get a sense of what students know and are able to do already. Formative assessment allows us to gather information to help inform decision making. The quiz is one way of doing it, but formative assessment does not have to be so formal.

The use of a quick quiz can give information quickly. This could also be run as a quick mini whiteboard activity, with students showing their thinking.

**** I use these opening questions to activate prior knowledge, as well as focusing student attention on the learning objective and success criteria. By using questions, we can identify potential misconceptions, as well as engage students.

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Explicit teaching of new learning ('I do') – ordering numbers		
How will you communicate the learning objectives to students? How will you break down your content into sequential steps to avoid overloading your students' working memory? How will you model the learning to support student understanding?	**Whole class:** 1. Read learning objectives and success criteria to students, with references back to them as they are encountered throughout the lesson. 2. Ordering numbers is broken into concrete steps, each of which has an 'I do, we do, you do' cycle:* a. three-digit numbers b. using place value to determine the value of numbers c. ordering numbers based on their value d. ordering 4-digit numbers. 3. Direct teaching around identifying and creating 3-digit numbers. Model using a set of 3 digits to systematically create 6, 3-digit numbers.	How will you help students retrieve information learned in previous lessons, units? How will you check for understanding and correct any errors or misconceptions before moving onto guided practice?

* I made a deliberate choice to separate out these components, gradually building students' mastery of each before moving on to more complex representations and removing scaffolds. It is important that students have the opportunity to practise mastery of these points before removing scaffolds. Each element also builds on the previous steps in a logical sequence, allowing for repeated practice.

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Guided practice ('We do') – ordering numbers		
What worked examples will you provide students? What scaffolds and instructional supports will you introduce, and how will students use these? How will students work together to progress their skills and understanding?	**Whole class:** 1. Guided practice of creating 3-digit numbers then ordering them based on their value.* 2. Use a given set of 3 digits to identify all 6 options of 3-digit numbers that can be made from them. 3. Scaffold the task; for example, provide the digits one at a time for students to use in the hundreds place. 4. Use mini whiteboards or number cards for the students to provide their responses. 5. Once your students are comfortable creating the numbers, order the numbers according to their value, working on 2 numbers at a time. 6. Use mini whiteboards for the students to provide their responses and look for students who are struggling with ordering the numbers.** 7. Gradually reduce prompting, so that students work towards independence in following all steps of identifying and ordering the numbers. 8. Encourage students to complete the independent practice questions that follow in the 'you do' phase. Indicate that there will be opportunities for more difficult examples in the later tasks of the worksheet.	How will you check for understanding and correct any errors or misconceptions before allowing students to independently practice?

* This guided practice is important. Work through each step with the students, asking them what we should do at each step. If this is proving tricky, you might add additional examples to work through together prior to release.

** Breaking this task down even further, into groups of two numbers, enables you to constantly be assessing for understanding, and giving corrective feedback in real time.

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Independent practice ('You do') – ordering numbers		
How will students display that they have mastered the skills and content? How will you work with students to provide support and to gain insight into their learning?	**Independent:** Encourage all students to work on the independent practice questions, as it helps to produce fluency. **Small groups:** 1. Some students may need more guided practice. Gather these students into a small group and work through one more example before giving them the opportunity to work independently. Use scaffolds, such as the lesson worksheet, which has boxes to indicate how many answers and creates an answer framework. This allows students to focus on the numbers, rather than having to think about the setting out if that is an area of difficulty for them. 2. Extension work – use a larger set of digits to choose from, include conditions such as 'must be between the values of x and y', or provide examples using 4-digit numbers.	What formative assessment will you gather to provide feedback to your students?

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Explicit teaching of new learning ('I do') – partitioning and naming		
	Whole class: 1. Refer to the learning intention and success criteria. 2. Review partitioning of 4-digit numbers: a. Model displaying the numbers with base ten blocks and place value charts. b. Review how to partition into thousands, hundreds, tens and ones, writing the expanded form as numerals only.* c. Model writing as a number of thousands, hundreds, tens and ones (units in words). d. Write the partitioned numbers as an equation, explaining that both sides of the equation must be of equal value.	
Guided practice ('We do') – partitioning and naming		
	Whole class: 1. Model using 4-digit numbers displayed as base ten blocks and in place value charts. Gradually remove these supports. 2. Work through examples together, observing student responses (on mini whiteboards, for ease of observation). 3. Gradually remove supports, so that students are working with numerals only, and partitioning is in equation form.	

* These prompts will aid students in retrieving prior knowledge and bringing it to the forefront of their thinking, ready to be built on with the next steps.

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Independent practice ('You do') – partitioning and naming		
	Independent: 1. All students are encouraged to work on the independent practice, as it helps to develop fluency. **Small groups:** 1. Some students may need more guided practice. Gather these students into a small group and work through one more example before giving them the opportunity to work independently. 2. Students who need extra practice can try worksheet 8. 3. Extension – give examples without worked examples, with no parts completed, or with multiple zeroes.	
Explicit teaching of new learning ('I do') – partitioning with regrouping/renaming		
	Whole class: 1. Refer to the learning intention and success criteria. 2. Now that partitioning and naming has been mastered, the next step is to regroup and rename parts of the numbers a. Review partitioning with regrouping, using base ten blocks to model the process. b. Include naming and renaming; for example 3245 as 32 hundreds, 4 tens and 5 ones.	

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Guided practice ('We do') – partitioning with regrouping/renaming		
	Whole class: 1. Work through examples together, initially with: a. supports, such as base ten blocks and/or place value charts b. prompts, such as giving the units (thousands, hundreds, tens, ones) for students to allocate values to c. smaller (three digit) numbers, to start. 2. Gradually reduce the scaffolding provided, until students are working with just numerals.*	
Independent practice ('You do') – partitioning with regrouping/renaming		
	Small groups: 1. All students are encouraged to use the independent practice questions, as they help to produce fluency. 2. Extension – use the worksheet without prompts or scaffolds, which requires students to work on all stages independently. 3. Support – work with students to go through the steps. Using base ten blocks, place value charts and printed worked examples can provide the scaffolding that is needed.	

* Check for understanding at each removal of support, before moving on to the next step.

Lesson stage	Tasks What are the specific classroom or instructional activities that you and your students will use in each stage?	Monitoring student learning
Lesson summary		
How will you show students how far they have come in the lesson? How will you review their learning? How will you help students reflect on, or summarise the most important parts of their learning?	1. Review the success criteria from the lesson, pointing to specific skills demonstrated by the students.* 2. Use the exit quiz to get a sense of what students know and are able to do as a result of the lesson.**	What evidence will you gather from your students to understand what you may need to review next lesson?

* Reviewing the success criteria is important – what did we do in the lesson and what do we know and what have we learned in our time together?

** This is a final attempt to gain information about what the students can do as a result of the lesson (formative assessment). The quiz has two purposes – it lets students test their understanding of the concepts and it allows the teachers to gain a deeper understanding of what students have understood from the lesson.