GO MATHS

ACE

TEACHER GUIDE
UNITS 1-15

YEAR 1

UNIT SAMPLE

Australian Curriculum Edition

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Working with Place Value and Simple Number Lines

GO Maths ACE | Year 1 Unit 9   65

CONTENT DESCRIPTIONS

NA013 Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line

NA014 Count collections to 100 by partitioning numbers using place value

MATHEMATICAL BACKGROUND

This unit continues the development of place value involving two-digit numbers. The particular focus is on reading and writing two-digit numbers. The numeral expander is used to help interpret the value of the digits in the places as well as read and write numbers. Place value involving the teens is also studied in this unit. The number track is used to explore relative position – an important number sense idea that assists students when they add and subtract numbers.

LESSON OVERVIEW

9.1 Writing Two-Digit Numbers

9.2 Reading and Writing Two-Digit Numbers

9.3 Reading and Writing Numbers with Zeros

9.4 Building a Simple Number Line

9.5 Locating Numbers on a Simple Number Line

LANGUAGE

Students will develop a stronger understanding of the meaning of the suffixes '-teen' and '-ty', zero, tens, ones

MATERIALS

Lesson 9.1
- *GM ACE* student journal, page 36
- Two-digit numeral expander 👁 for each pair of students (use Blackline Master 8)
- ○ Clear tape and non-permanent markers for each pair of students

Lesson 9.2
- *GM ACE* student journal, page 37
- Numeral expanders 👁 and markers from the previous lesson
- ○ Number name cards made in Unit 6

Lesson 9.3
- *GM ACE* student journal, page 38
- Numeral expanders 👁 and markers from 9.1

Lesson 9.4
- *GM ACE* student journal, Tear Out 5, page 135
- *GM ACE* mentals workbook, page 9
- Scissors and glue or tape for each pair of students
- 1 small cube or game piece for each pair of students

Lesson 9.5
- *GM ACE* student journal, page 39
- *GM ACE* mentals workbook, page 10
- Number strips and small cubes or game pieces from the previous lesson

Optional Digital Resources and Program Blackline Masters
The lessons in this program are further supported by optional online resources.
Go to **www.origoeducation.com/go-maths-ace-support** for further information about the program blackline masters and these resources.

Assessment

TECHNIQUES

The following tools can be used to assess the content indicators.

1. Written Test A B C D

Allow time for the students to complete the written test for Unit 9. Consider administering the test one or two weeks after completion of the unit.

2. Diagnostic Probe A

Say: *Fifty-three*. Ask the student to write this number.

If the student is successful, repeat with the numbers 48, 60, 17.

Unit 9 Written Test

UNIT 9 TEST Name: _____

A — **1.** Write the numbers.

ten __10__ twenty __20__ fifty __50__

seventy __70__ eighty __80__ ninety __90__

B — **2.** Draw lines to match.

sixty-four   **ninety-six**   **forty-nine**

96 64 46 49 69 94

forty-six   **ninety-four**   **sixty-nine**

C — **3.** Draw lines to the matching space on the track.
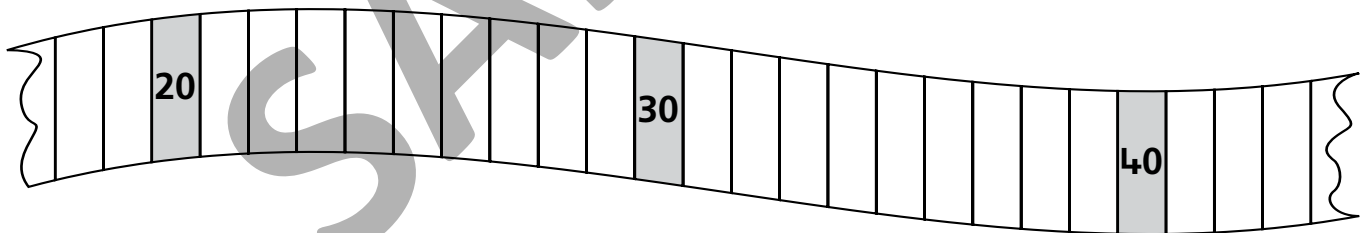
22 26 31 35 39 43

20 30 40

twenty-three twenty-nine thirty-four forty-one

D — **4.** Write the number on the expander.
Then write the number and the number name.

35

3 tens 5 ones   thirty- five

RECORDING

Content Strands

Record each student's achievement of the content indicators in the box(es) for this unit alongside the relevant content description(s) on a copy of the Progress Record (page xii).

Proficiency Strands

Record significant observations in the Progress Record (page xiv).

Year 1					
NA013 1	4	6	9	16	27
NA014 1	4	6	9	12	28

Name: _____

1. Write the numbers.

ten _____	twenty _____	fifty _____
seventy _____	eighty _____	ninety _____

2. Draw lines to match.

sixty-four	**ninety-six**	**forty-nine**

96   64   46   49   69   94

forty-six	**ninety-four**	**sixty-nine**

3. Draw lines to the matching space on the track.

22   26   31   35   39   43

20   30   40

twenty-three   twenty-nine   thirty-four   forty-one

4. Write the number on the expander.
Then write the number and the number name.

tens   ones

thirty-_____

Writing Two-Digit Numbers

In this lesson, students use a numeral expander to record tens and ones shown in a picture. Then they write the numeral and number name.

DAILY NUMBER SENSE

Draw the target on the right on the board. Ask: *If two darts hit this target, what total scores could they make?* Invite individuals to identify possible combinations. Make sure they understand that both darts can land on the same number. Write addition number sentences for the combinations the students suggest.
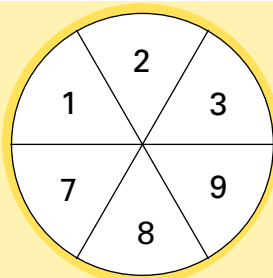
ACTIVITY

1. Ask the students to move into pairs to make numeral expanders. Have them cut out the expanders and carefully tape over the writing space on the expanders. (*Note:* Retain the expanders for use throughout this unit.)

2. Ask seven students to represent '68' using their fingers in groups of tens and ones. (Refer to the Teaching Note in 1.1 for guidelines.) Ask: *What do you know about this number? How can you use the tens and the ones part to read the number?* Invite volunteers to share their observations. Have the students write the digits on their expanders and encourage them to say the number name using the digits written in the tens and ones places (e.g. 'Six tens is sixty and eight ones is eight'). Write **sixty-eight** on the board. Direct the students to close their expanders and ask: *What number will we write for sixty-eight?* Invite an individual to write **68** on the board.

3. Repeat Step 2 for numbers such as five tens and three ones, three tens and five ones, four tens and one one, one ten and four ones, and four tens and zero ones. Retain the expanders for use throughout this unit.

4. Have the students work independently to complete page 36 of the *GO Maths ACE* student journal. Provide a spelling list of number words on the board as required.

REFLECTION

1. Discuss the students' answers to page 36 of the *GO Maths ACE* student journal.

2. Write the number **84** on the board and ask: *How many tens (ones) does this number have? What number name do we say for this number?* Encourage the students to describe the number and how the sound of the tens digit is related to the number of tens. Repeat for the numbers 27 and 52.
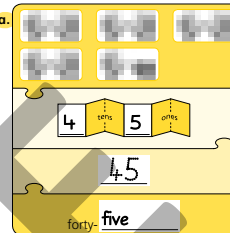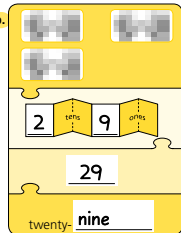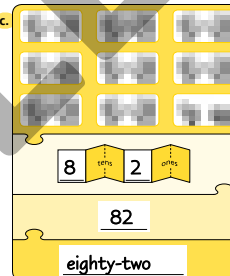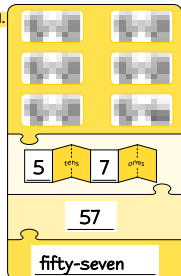
MATERIALS

- *GM ACE* student journal, page 36
- Two-digit numeral expander 👁 for each pair of students (use Blackline Master 8)
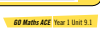- Clear tape and non-permanent markers for each pair of students

Student Journal

DAILY COMPUTATION PRACTICE

Write ___ **+ 1 =** ___ on the board. Point to the first empty space and ask one student to say a number from 1 to 9 and another student to say the answer. Repeat until all the students have had a turn saying the number and giving the answer. Then write **1 +** ___ **=** ___ and repeat the activity.

CONSOLIDATION

Have students work in pairs with their expanders. Direct one student to write a number on the expander for the other student to read when the expander is open and then closed.

UNDERSTANDING   FLUENCY   PROBLEM SOLVING   REASONING

Reading and Writing Two-Digit Numbers

In this lesson, students read number names and record the tens and ones on an expander. Then they write the number in numerals.

DAILY NUMBER SENSE

Use the target from the previous Daily Number Sense discussion. Ask: *What scores can you make in more than one way?* Make sure the students understand that both darts can land on the same number. Write addition number sentences for the combinations the students suggest.

ACTIVITY

1. Ask the students to move into pairs and hand out the expanders and markers. Write **ninety-eight** on the board. Ask: *How can you show this number with fingers in groups of tens and ones? What will we write?* Invite some students to show the number using their hands. Reinforce that the number of tens matches the first part of the number name. Have one student in each pair write the number on their expander and then have the other student write the number on the board.

2. Repeat for the number names **eighty-nine**, **fifty-one**, **twelve**, **twenty** and **twenty-one**.

3. Write the words **sixty-one**, **sixty** and **sixteen** on the board. For each number, encourage the students to write it directly on the expander. Write the numbers on the board and then ask: *What does each number have in common? Where did you write the first sound that you said? How did you know where to write that digit?* Reinforce the care that the student must take when writing numbers with the 'teen' sound.

4. Have the students work independently to complete page 37 of the *GO Maths ACE* student journal.

REFLECTION

Discuss the students' answers to page 37 of the *GO Maths ACE* student journal. Ask: *What numbers begin with the letters that spell the word 'seven'? How did you decide where the digit 7 should be written in each number?* Invite students to explain their thinking. Discuss the last three numbers on the page in the same way.
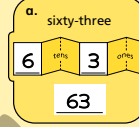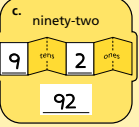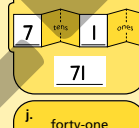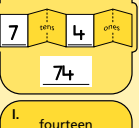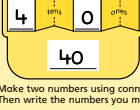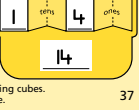
MATERIALS

- *GM ACE* student journal, page 37
- Numeral expanders and markers from the previous lesson
- Number name cards made in Unit 6

Student Journal

DAILY COMPUTATION PRACTICE

Repeat the Daily Computation Practice activity from the previous lesson.
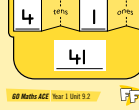
CONSOLIDATION

Have the students use the cards they made in Unit 6, and select a tens name and a ones name to form a two-digit number. Ask them to copy the words and write the number.

Reading and Writing Numbers with Zeros

In this lesson, students read and write numbers and number names. They begin by analysing multiples of ten and then work with teen numbers.

DAILY NUMBER SENSE

Repeat the Daily Number Sense discussion from the previous lesson for the target shown on the right. Make sure the students understand that both darts can land on the same number. Write addition number sentences for the combinations the students suggest.
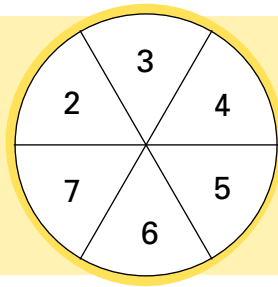
ACTIVITY

1. Ask: *What do you know about the number 60?* Invite students to describe different ways of representing the number (such as fingers in groups of tens and ones, rows of a hundred chart or coins) and then ask a student to write the number on the board. Then ask: *What does the six tell you about the number? Why do we need to write a zero?* Encourage confident individuals to explain the importance of the zero. Repeat the discussion for 30.

2. Ask the students to move into pairs and hand out the expanders and markers. Ask: *What are some other numbers where you must use a zero? Why do you need a zero?* Invite individuals to suggest the numbers and have the students write each number on their expanders as it is discussed. Encourage them to describe what they would see if they did not write a zero.

3. Say: *I am thinking of a number that sounds like 60. What number do you think it is?* Invite volunteers to predict the number and have a confident student write **sixteen** on the board. Encourage the students to describe what is the same and different about the way the numbers 60 and 16 would be said, written or shown with materials. Repeat the discussion for 13.

4. Have the students work independently to complete page 38 of the *GO Maths ACE* student journal.

REFLECTION

Discuss the students' answers to page 38 of the *GO Maths ACE* student journal. Ask questions such as: *What words begin with the same sound?* (For example, fifty-six, fifty, fifty-one, fifteen.) *What is different about the way the numbers are written? What does the first digit (5) tell you about that number?*

MATERIALS

- *GM ACE* student journal, page 38
- Numeral expanders and markers from 9.1

Student Journal

DAILY COMPUTATION PRACTICE

Write ___ **+ 2 =** ___ on the board. Point to the first empty space and ask one student to say a number from 1 to 9 and another student to say the answer. Repeat until all the students have had a turn saying the number and giving the answer. Then write **2 +** ___ **=** ___ and repeat the activity.

CONSOLIDATION

Ask the students to write pairs of numbers that are made with the same two digits in numerals and in words.

UNDERSTANDING   FLUENCY   PROBLEM SOLVING   REASONING

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Building a Simple Number Line

In this lesson, students build a number track to investigate the relative position of numbers. They learn that a number on the track is a count of the number of spaces from the beginning.

DAILY NUMBER SENSE

Repeat the previous Daily Number Sense discussions for three darts and the target shown on the right. Make sure the students understand that two or all three darts can land on the same number. Write addition number sentences for the combinations the students suggest. Encourage them to find combinations that can be made more than one way and explain how they worked out the answers.
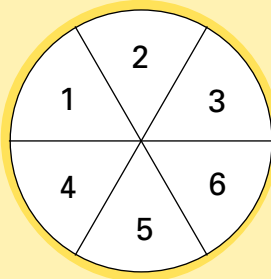
ACTIVITY

1. Have one student in each pair remove Tear Out 5 from the *GO Maths ACE* student journal. Both students should work together to cut out the four strips on the page. Say: *You are now going to join the strips together. How will you use the numbers on the pieces to help work out the order of the strips?* Encourage the students to explain how they will use the tens, then join the pieces to make one long strip.

2. Have the pairs lay out their strip and say: *Put a cube (game piece) at the beginning of the track and then move it along to the number that has 4 tens and 6 ones.* At the same time, write **4 tens and 6 ones** on the board. Ask: *What number will we write at this space? How do you know?* Move around the class and check that all pairs have the cube in the correct place. Then invite a volunteer to write a number on the board for the pairs to copy.

3. Repeat the discussion for **6 tens and 4 ones**, **2 tens and 7 ones**, and **1 ten and 5 ones**. Students in the pairs should take turns to write the numbers on the tracks.

4. Repeat Steps 1 to 3 starting with the number written in words e.g. **thirty-three** on the board. Choose one number from each ten.

5. Repeat Steps 1 to 3 for numbers written in numerals e.g. **23** on the board.

REFLECTION

Say: *Put a cube (game piece) on one of the empty spaces between 60 and 70. How far along the number track is that space? What number should we write in that space?* Call on volunteers to identify the empty spaces and explain that each number counts the spaces along the track. Then ask: *What number is 32 spaces along the track? How do you know?* Reinforce that each number gives the 'distance' in spaces from the beginning of the track. Retain the strips and cubes for use in the next lesson.

MATERIALS

- *GM ACE* student journal, Tear Out 5, page 135
- *GM ACE* mentals workbook, page 9
- Scissors and glue or tape for each pair of students
- 1 small cube or game piece for each pair of students

DAILY COMPUTATION PRACTICE

Use page 9 of the *GM ACE* mentals workbook.

Mentals Workbook

CONSOLIDATION

Challenge students to write in all of the missing numbers on their tracks.

EXTENSION

Encourage students to write stories and draw pictures to add numbers with one addend close to a ten, such as 19 + 6. Have them write an addition number sentence to match and then write related subtraction number sentences.

UNDERSTANDING   FLUENCY   PROBLEM SOLVING   REASONING

Locating Numbers on a Simple Number Line

In this lesson, students locate numbers on a number track and describe the relative position of numbers.

DAILY NUMBER SENSE

Repeat the previous Daily Number Sense discussion for three darts and the target shown on the right.
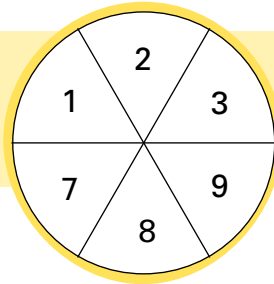
ACTIVITY

1. Have pairs of students lay out their number strips from the previous lesson. Ask: *What numbers are between 30 and 40?* Invite an individual to say a number and ask all the pairs to put a cube (game piece) on that number. Ask: *Which is closer, 30 or 40? How do you know?* Encourage individuals to describe their thinking. Repeat the discussion for other intervals.

2. Ask: *What numbers are a little more (little less) than 50?* As the students give their responses, encourage them to explain how they decided what a 'little more/less' means. Continue the discussion using other descriptions such as 'one space away from 20', 'two less than 70' and 'mid-way between 40 and 50'.

3. Have the students work independently to complete page 39 of the *GO Maths ACE* student journal.

REFLECTION

1. Discuss the students' answers to page 39 of the *GO Maths ACE* student journal.

2. Ask the class: *What are some things you notice about the number 31 when you look at the number track?* Encourage the students to describe the position of 31 relative to 30 (e.g. '31 is more [just more, a little more, one more] than 30'). Repeat the discussion for 39 and then 52.

3. Ask: *What numbers did you join to the track in your student journal that are two away from each other? How do you know?* Encourage the students to identify pairs (e.g. 29 and 31, 12 and 14 or 44 and 46) and describe any special features of the pair, such as '29 and 31 are one less and one more than 30' or '44 and 46 are on either side of 45'.

MATERIALS

- *GM ACE* student journal, page 39
- *GM ACE* mentals workbook, page 10
- Number strips and small cubes or game pieces from the previous lesson

Student Journal

DAILY COMPUTATION PRACTICE

Use page 10 of the *GM ACE* mentals workbook.

Mentals Workbook

UNDERSTANDING   FLUENCY   PROBLEM SOLVING   REASONING