

Table of contents

Program overview	6
<i>Solve</i> [®] overview	8
Pacing charts	10
The Australian Curriculum	13
Features of a <i>Solve</i> [®] practice	14
Scope and sequence chart	20

PART 1 LESSON PLANS

Place value

Practice 1 Place value	23
-------------------------------------	----

Addition and subtraction

Practice 2 Add and subtract	26
--	----

Multiplication

Practice 3 Multiplication concepts	29
---	----

Practice 4 Fact strategies	32
---	----

Reviews 1–2 Practices 1–4	35
--	----

Practice 5 More fact strategies	38
--	----

Division

Practice 6 Division concepts	41
---	----

Practice 7 Fact families	44
---------------------------------------	----

Fractions

Practice 8 Fraction concepts	47
---	----

Reviews 3–4 Practices 5–8	50
--	----

Practice 9 Model equivalent fractions	53
--	----

Practice 10 Benchmark fractions	56
--	----

Practice 11 Compare fractions	59
--	----

Practice 12 Fractions greater than 1	62
---	----

Reviews 5–6 Practices 9–12	65
---	----

Plane geometry

Practice 13 Plane figures	68
--	----

Linear measurement and area

Practice 14 Length 71

Practice 15 Perimeter. 74

Graphs

Practice 16 Picture graphs and column graphs. 77

Reviews 7-8 Practices 13-16 80

PART 2 LESSON PLANS FOR ADDITIONAL PRACTICE

Linear measurement and area *(Can be used after Practice 15)*

Practice 17 Understand area. 85

Reviews 9-10 Practice 17 88

INDIVIDUAL TRACKING CHART *(Activity sheet)* 91

© Hawker Brownlow Education

PRACTICE 1

PLACE VALUE

Parts one and two

OBJECTIVES

In part one, students will:

- Identify the number of thousands, hundreds, tens or ones in a number.
- Understand the place value of digits in numbers up to 10 000.
- Evaluate and compare the values of different digits in a number.

In part two, students will:

- Identify the values of digits in numbers up to 10 000.
- Use regrouping to write whole numbers in different ways.
- Use reasoning to arrange digits to write the greatest number possible.

VOCABULARY

Part one

- **place value:** the value of the place of a digit in a number
- **digit:** any one of the ten symbols used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
- **thousands place:** the digit to the left of the hundreds place
- **hundreds place:** the digit to the left of the tens place
- **tens place:** the digit to the left of the ones place
- **ones place:** the right-most digit in a whole number

Part two

- **regroup:** to use place value to write a whole number in a different way

AUSTRALIAN CURRICULUM CONTENT DESCRIPTIONS

See page 13 to cross-reference this lesson with aligned Australian Curriculum content descriptions

RELATED STAMS® PLUS INSTRUCTION

For instruction that supports this Practice, go to:



STAMS® Plus, Book C, Lesson 1,
Place value, pp. 4–13

STAMS® IWB lessons, Level C, Visualise place value of whole numbers up to thousands



Use features such as sliding screens with additional Practice to deepen students' understanding of place value of whole numbers to thousands.



Download

<http://iwb.camsandstams.com.au>


Part one

PRACTICE
1
Part one


PLACE VALUE

Use place value to solve the problem.


1. These blocks show the number 1346. How can you write 1346 to show the value of each digit?




1 thousand
1000



3 hundreds
300



4 tens
40



6 ones
6

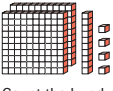
Thousands	Hundreds	Tens	Ones
1	3	4	6

Place value tells the value of each digit in a number.

Solution: 1346 = 1000 + 300 + 40 + 6

Solve each problem. Write the solution.

2. Natalia uses blocks to show the number 214. How many hundreds are shown?



Count the hundreds.
Solution: 2 hundreds

3. Quentin writes the number 6459 in a place-value chart. How many thousands are in his number?

Thousands	Hundreds	Tens	Ones
6	4	5	9

Solution: 6 thousands

Place value

Solve each problem. Choose the best answer.

4. Cara has 139 beads. What is the value of the 3 in 139?

A 3 C 300
 B 30 D 3000

5. Alicia's school collected a number of cans to recycle. The number has a digit with a value of 50. Which could be the number of cans they collected?

A 159 C 316
 B 265 D 514

6. Donovan writes a number with a digit that has a value of 4000. Which could be the number?

A 1489 C 8914
 B 4891 D 9841

7. George uses the digits 9, 5, 2 and 4 to write the least number possible. Which digit does he write in the thousands place?

A 9 C 2
 B 5 D 4

REASONING

Use the place-value chart to answer numbers 8–10.

The place-value chart shows the number 7129.

Thousands	Hundreds	Tens	Ones
7	1	2	9

8. What is the value of the 1 in 7129? 100
 What is the value of the 9 in 7129? 9

9. Which digit in 7129 has the greater value, 1 or 9? 1

10. Explain how a 1 in a number can be worth more than a 9. Give an example.

A 1 can be in a place in the number that has a greater value than the place of the 9. For example, in 7129, the 1 is in the hundreds place, so its value is 100, but the 9 is in the ones place, so its value is only 9. 9 is less than 100.

CA12945 • 9781760010324 • © 2013 Hawker Brownlow Education

6

At a Glance

Students solve a variety of problems involving place value. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

Solve Problems 2–3

If If students answer problem 3 incorrectly, they may not understand how to read a place-value chart.

Then Point out that the head in each column of the chart names the value of the digit. Show students how to read the value of the digit.

Solve Problems 4–7

If If students choose B or D for problem 5, they may not understand that 50 represents 5 tens.

Then Ask them to identify the value of the digit 5 in choice B (5) and in choice D (500).

Reasoning, Problems 8–10

If If students believe the digit 9 has a greater value than the digit 1, they are not considering the place value of each digit. They are assuming the values of the places are the same.

Then Have them write the value of each digit in the number 7129 (7000 + 100 + 20 + 9). Then compare to show them that the digit 1 has a greater value than the digit 9 in the number 7129.

24

CA12945 • 97781760010331 • © 2013 Hawker Brownlow Education

Part two

PRACTICE
1
 Part two

PLACE VALUE


Use place value to solve the problem.

1. The place-value chart shows the number 6395. What is another way to write 6395 if you regroup 1 thousand as 10 hundreds?

Thousands	Hundreds	Tens	Ones
6	3	9	5

Regroup 1 thousand as 10 hundreds.
 6 thousands = 5 thousands and 10 hundreds
 10 hundreds + 3 hundreds = 13 hundreds
Solution: 6395 = 5 thousands + 13 hundreds
 + 9 tens + 5 ones

Let's solve this together.



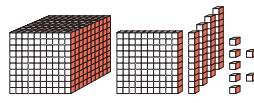
Solve each problem. Write the solution.

2. What is the value of the 3 in 1387?

Hundreds	Tens	Ones
1	3	8

Solution: 3 tens = 30

3. What is the value of the 4 in 11477?



Solution: 40

4. Carla regroups 1 thousand as 10 hundreds to write 5483 another way. How many hundreds does she write?

Solution: 14 hundreds

5. Regroup 1 hundred as 10 tens. What is another way to write 3528?

Thousands	Hundreds	Tens	Ones
3	5	2	8

Solution: 3528 = 3 thousands
 + 4 hundreds
 + 12 tens
 + 8 ones

© 2013 Hawker Brownlow Education • 9781760010324 • CA12945 7

Place value

REASONING

Solve each problem.

6. Tristan took 12 hundred photos over the summer. Explain how to write the number of photos another way by regrouping.

Solution: Regroup 10 hundreds as 1 thousand. Then 10 hundreds + 2 hundreds = 1 thousand + 2 hundreds = 1000 + 200 = 1200 photos

7. Ella writes 3682 another way by regrouping 1 thousand as 10 hundreds. She writes 3 thousands + 16 hundreds + 8 tens + 2 ones. What is her mistake?

Solution: She did not subtract 1 thousand from 3 thousands after she regrouped 1 thousand as 10 hundreds.

8. Angela writes a number another way by regrouping 1 hundred as 10 tens. She writes 3 thousands + 4 hundreds + 12 tens + 3 ones. What is the number she rewrites? Use pictures, words or numbers to show your work.

12 tens = 1 hundred + 2 tens
 1 hundred + 4 hundreds = 5 hundreds
 3 thousands + 5 hundreds + 2 tens + 3 ones
Solution: 3523

CONNECTIONS

Work with a partner. Take turns rolling a number cube. Each time you roll, write the digit on the cube in a place in the place-value chart. Place your digits to make the greatest number possible. Take 4 turns. Who has the greater number?

Thousands	Hundreds	Tens	Ones

9. If you rolled a 1 on your first turn, in which column of the place-value chart would you write it? Explain your answer.
 I would write it in the ones place because I want to write a greater number in the thousands place.

10. If you rolled a 5 on your first turn, in which column of the place-value chart would you write it? Explain your answer.
 I would write it in the thousands place because 5 is greater than most of the other numbers I can roll.

CA12945 • 9781760010324 • © 2013 Hawker Brownlow Education 8

At a Glance

Students use place value and regrouping to write whole numbers in different ways. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

Solve Problems 2–5

If If students forget to subtract 1 hundred from the 5 hundreds in problem 5, they may not fully understand the concept of regrouping from a greater value.

Then Provide students with base-ten blocks to model the regrouping.

Reasoning, Problems 6–8

If If students give an incorrect answer for problem 8, they may not realise they need to regroup 10 tens as 1 hundred.

Then Have students draw base-ten blocks to show the number as Angela wrote it and then work backwards to find the original number.

Connections, Problems 9–10

If If students choose to place a 1 in the thousands or hundreds place instead of the ones place, they do not understand *greatest* or do not understand that place value determines the value of a digit.

Then Point out the word *greatest* in the directions. Ask students to compare the value of a digit 1 in the thousands place to the value of a digit 9 in the thousands place. Help students see that a greater digit in the thousands place has a greater value and will make a greater number.

OBJECTIVES

In review 1, students will:

- Use place value to add and subtract 3-digit numbers.
- Apply understanding of place value to solve addition and subtraction problems.
- Write and solve addition and subtraction problems involving 3-digit numbers.

In review 2, students will:

- Use repeated addition and arrays to solve multiplication problems.
- Understand how to use skip counting and doubling to solve multiplication problems.
- Use reasoning to solve multiplication problems.

VOCABULARY

Review 1

- **digit:** any one of the ten symbols used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
- **thousands place:** the digit to the left of the hundreds place
- **hundreds place:** the digit to the left of the tens place
- **tens place:** the digit to the left of the ones place
- **ones place:** the right-most digit in a whole number
- **regroup:** to use place value to write a whole number in a different way
- **sum:** the answer to an addition problem
- **difference:** the answer to a subtraction problem

Review 2

- **array:** a set of objects or symbols arranged in rows of equal size
- **row:** a line of items that goes across
- **doubling:** making twice as great or twice as many
- **skip count:** counting by a number other than 1
- **product:** the result of multiplying numbers together

AUSTRALIAN CURRICULUM CONTENT DESCRIPTIONS

See page 13 to cross-reference this lesson with aligned Australian Curriculum content descriptions

Review 1

Name _____

REVIEW
1

REVIEW 1: PRACTICES 1 AND 2

Solve each problem. Choose the best answer.

1. There were 5271 people at a cricket game. What is the value of the thousands digit in 5271?

Ⓐ 50
Ⓑ 500
● 5000
Ⓒ 50 000

3. Rita adds 315 and 642. How many tens are in the sum?

● 5
Ⓑ 6
Ⓒ 7
Ⓓ 8

2.

$$\begin{array}{r} 254 \\ + 319 \\ \hline \end{array}$$

Ⓐ 563
● 573
Ⓒ 663
Ⓓ 673

4. Max and his family drove 464 kilometres on Thursday and 287 kilometres on Friday. How many more kilometres did they drive on Thursday than on Friday?

● 177
Ⓑ 187
Ⓒ 277
Ⓓ 751

© 2013 Hawker Brownlow Education • 9781760010324 • CA12945
21

Review 1: Practices 1 and 2

Solve each problem. Write the solution.

5. At Damon's school, 436 students ride the bus to school and 147 walk to school. How many students either walk or ride the bus to school?

Solution: 583

7. Find the difference. Then regroup 1 hundred as 10 tens to write the difference another way.

$$\begin{array}{r} 752 \\ - 487 \\ \hline 265 \end{array}$$

Solution: $\frac{1}{16}$ hundreds + $\frac{5}{16}$ tens + $\frac{5}{16}$ ones

6. Benjamin uses blocks to model a number. He uses 15 hundreds, 6 tens and 8 ones. What number does he model?

Solution: 1568

8. Alisha uses blocks to model $267 + 471$. How many tens blocks will she use to show the sum?

Solution: 3

REASONING

Use this information to solve numbers 9 and 10.

Fiona has 184 stamps in her collection. David has 217 stamps in his collection.

9. Find the number of stamps Fiona and David have together. Show your work.

Solution: 401 stamps

$$\begin{array}{r} 184 \\ + 217 \\ \hline 401 \end{array}$$

What operation did you use? Explain why.

I used addition. I need to find the total number of stamps, which is the sum of Fiona's and David's stamps.

10. Together, Fiona and David have 137 more stamps than Cody. How many stamps does Cody have? Show your work.

Solution: 264 stamps

$$\begin{array}{r} 3911 \\ - 401 \\ \hline 264 \end{array}$$

What operation did you use? Explain why.

I used subtraction. I know the total number of stamps, so I can subtract 137 to find the number of stamps that Cody has.

CA12945 • 9781760010324 • © 2013 Hawker Brownlow Education
22

At a Glance

Students solve problems involving place value and addition and subtraction of 3-digit numbers. If students have difficulty, check for these common pitfalls and use the related tips to provide help.

Solve Problems 1–4

If If students choose B for problem 3, they may have regrouped 10 ones as 1 ten when it was not necessary. This may be because they do not understand when to regroup.

Then Provide base-ten blocks for students to model the addition. Point out that they will regroup only if there are 10 or more ones.

Solve Problems 5–8

If If students answer 13 for problem 8, they may not have realised they needed to regroup 10 tens as 1 hundred to show the sum.

Then Clarify that students should always regroup unless they are asked specifically to write the number a different way.

Reasoning, Problems 9–10

If If students answer that Cody has 538 stamps for problem 10, they may have added instead of subtracted because they did not understand the context of the problem.

Then Ask, “If Fiona and David have 137 more stamps than Cody, should you add or subtract to solve the problem?”