

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching example in Learn (CWB p. 34).
- Highlight to students the importance of checking to see if their answer is reasonable. Guide them to check their answer by estimating the quotient.

Independent practice (For Print-based Program):

Tasks 2 to 4 require students to solve a 1-step word problem on division.

For answers, go to CW Manual p. 140.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Practice 2 (CB p. 54)

Assign the tasks to students as classwork for summative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

Lesson 3: Multiplication by 2-digit Whole Numbers

Duration: 5 h 20 min

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Learn (CB p. 55)

Go through the teaching example with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Multiplying 2-digit whole numbers by tens (CWB pp. 36–37)

Learning Outcome:

- Multiply a 2-digit whole number by tens

Materials:

- Place value discs
- Reusable adhesive

Stage: Concrete Experience

By this stage, students should be proficient in multiplying ones, tens and hundreds by 10. They should also be familiar with multiplying up to 4 digit numbers by a 1-digit number in vertical form. This example introduces students to the different methods of multiplying a 2-digit whole number by tens. Students will make use of the commutative and associative properties of multiplication to help them multiply quickly.

Method 1

- Carry out the following demonstration for Method 1. Stick 2 ten discs and 1 one disc on the board. Ask students to state the value of each disc and the number of represented by the discs.
- Tell students that we want to multiply 21 by 30. Write ' 21×30 ' on the board.
- Point out to students that when we multiply a 2-digit number by tens, we can express the tens as a product of 10 and another number. In this example, we can express 30 as a product of 10 and 3.
- Explain to students that we can use a few methods to find the value of 21×30 . In this first method, we multiply 21 by 10 first, before multiplying the resulting product by 3.
- Guide students to see that when we multiply 2 tens by 10, we get 2 hundreds; when we multiply 1 one by 10, we get 1 ten. So, the value of 2 tens 1 one $\times 10$ is 2 hundreds 1 ten.
- Replace the 2 ten discs and 1 one disc with 2 hundred discs and 1 ten disc to show 210.
- Point out to students that we have to now multiply 210 by 3. Demonstrate to them that when we multiply 2 hundreds 1 ten by 3, we get 6 hundreds and 3 tens.

Stage: Pictorial Representation

Follow up by relating the activity to the picture of the place value discs. This helps students to transit from the concrete to the pictorial representation to have a better understanding of the multiplication process.

- Refer students to the place value discs shown in Method 1 on CWB p. 36. Relate them back to the demonstration.
- Highlight to students the progression of the steps. When multiplying 21 by 30, we first break 30 into two factors: 10 and 3. Then, we multiply 21 by 10 first, before multiplying the resulting product by 3.

Stage: Abstract Representation

In this stage, students transit from the pictorial to the abstract representation as they learn to relate the exchanging of the place value discs to a multiplication sentence.

- Write ' $21 \times 30 = 21 \times 10 \times 3$ ' on the board. Use a red marker to write '21' and '10' in the multiplication sentence to highlight that we want to multiply these two numbers first.
- Have students recall that when we multiply a number by 10, we can get the product by inserting a zero at the end of the number. To get the product of 21×10 , we insert a zero at the end of 21 to get 210. Then, we multiply 210 by 3 to get the final answer of 630.
- Write the multiplication steps as shown in Method 1 on the board.

Stages: Concrete Experience and Pictorial Representation

In this stage, students are introduced to another method of multiplying a 2-digit number by tens. This method is similar to the first method as it requires students to split the tens into 10 and another 1-digit number. However, they will now learn to multiply the 2-digit number by the 1-digit number first, before multiplying by 10. Having learned the commutative and associative properties of multiplication, students should realize that the sequence of numbers being multiplied does not affect the product.

Method 2

- Following the same procedure as Method 1, demonstrate the multiplication process using place value discs. This time guide students to multiply the 2 tens 1 one by 3 first, before multiplying the resulting 6 tens 3 ones by 10.
- Then, refer students to the place value discs shown in Method 2 on CWB p. 36, and relate them back to the demonstration.
- Highlight to students the progression of the steps. When multiplying 21 by 30, we first break 30 into two factors: 3 and 10. Then, we multiply 21 by 3 first, before multiplying the resulting product by 10.
- Lead students to see that even though the sequence of multiplication has changed, the final result is still the same.

Stage: Abstract Representation

In this stage, students transit from the pictorial to the abstract representation as they learn to relate the exchanging of the place value discs to a multiplication sentence.

- Write ' $21 \times 30 = 21 \times 3 \times 10$ ' on the board. Use a red marker to write '21' and '3' in the multiplication sentence to highlight that we want to multiply 21 and 3 first.
- Then, we multiply the resulting product, 63, by 10 to get the final answer of 630.
- Write the multiplication steps as shown in Method 2 on the board.

Stage: Abstract Representation

In this stage, students learn to multiply a 2-digit whole number by tens in the vertical form. This is an anchor for learning to multiply a 2- or 3-digit number by a 2-digit number. Students will learn the steps to multiplying the ones and tens systematically.

Method 3

- Write the vertical form of ' 21×30 ' on the board. Reiterate to students the importance of aligning the digits in the same place value.
- First, guide students to multiply 21 by 0 ones. Have them recall that any number multiplied by 0 gives 0. Then, write '0' in the ones place.
- Guide students to multiply 1 one by 3 tens next. Have them see that 1 one multiplied by 3 tens is the same as 1 one \times 30 which is 30 ones or 30. Then, write '3' in the tens place.

- Finally, guide students to multiply 2 tens by 3 tens. Have them see that 2 tens multiplied by 3 tens is the same as 2 tens \times 30 which is 60 tens or 600. Then, write '6' in the hundreds place.
- Conclude that the product of 21 and 30 is 630. Write the multiplication sentence ' $21 \times 30 = 630$ ' on the board.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Do (CB p. 56)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Learn (CB pp. 56–57)

Go through the teaching example with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Multiplying 3-digit whole numbers by tens (CWB p. 37)

Learning Outcome:

- Multiply a 3-digit whole number by tens

Stage: Abstract Representation

This example builds on the earlier example of multiplying a 2-digit whole number by tens. Students learn to apply the same methods taught earlier and extend them to the multiplication of 3-digit whole numbers by tens.

Method 1

- Tell students that we want to multiply 462 by 30. Write ' 462×30 ' on the board.
- Have students recall that when we multiply a number by tens, we can express the tens as a product of 10 and another number. In this example, we can express 30 as a product of 10 and 3.
- Write ' $462 \times 30 = 462 \times 10 \times 3$ ' on the board. Use a red marker to write '462' and '10' in the multiplication sentence to highlight that we want to multiply these two numbers first.
- Have students recall that when we multiply a number by 10, we can get the product by inserting a zero at the end of the number. To get the product of 462×10 , we insert a zero at the end of 462 to get 4620.
- Then, have a student multiply 4620 by 3 on the board to get the final answer of 13 860.

Method 2

- Write ' $462 \times 30 = 462 \times 3 \times 10$ ' on the board. Use a red marker to write '462' and '3' in the multiplication sentence to highlight that we want to multiply 462 and 3 first.
- Have a student multiply 462 and 3 on the board first, before multiplying the resulting product, 1386, by 10 to get the final answer of 13 860.
- Reiterate to students that even though the sequence of multiplication has changed, the final answer is still the same.

Method 3

- Write the vertical form of ' 462×30 ' on the board. Reiterate to students the importance of aligning the digits in the same place value.
- First, guide students to multiply 462 by 0 ones. Have them recall that any number multiplied by 0 gives 0. Then, write '0' in the ones place.
- Guide students to multiply 2 ones by 3 tens next. Have them see that 2 ones multiplied by 3 tens is the same as 2 ones \times 30 which is 60 ones or 6 tens. Then, write '6' in the tens place.
- Guide students to multiply 6 tens by 3 tens next. Have them see that 6 tens multiplied by 3 tens is the same as 6 tens \times 30 which is 180 tens. Guide students to regroup 180 tens to 1 thousand 8 hundreds. Then, write '1' above '4' in the hundreds place and '8' in the hundreds place.
- Guide students to multiply 4 hundreds by 3 tens next. Have them see that 4 hundreds multiplied by 3 tens is the same as 4 hundreds \times 30 which is 120 hundreds. Guide students to regroup 120 hundreds to 1 ten thousand 2 thousands.
- Have students take note of the 1 thousand from the regrouping earlier. Highlight to them that there are now a total of 2 thousands + 1 thousand = 3 thousands. Then, write '3' in the thousands place, and '1' in the ten thousands place.
- Conclude that the product of 462 and 30 is 13 860. Write the multiplication sentence ' $462 \times 30 = 13\,860$ ' on the board.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition: Let's Do (CB p. 57)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

Exercise 8 (PB p. 33)

Assign the tasks to students as classwork for further formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

From PRIME Mathematics Coursework Book:

Coursework Book Practice 8 (CWB p. 38)

Assign all tasks to students as homework. Use the following notes to identify the skills needed for each task and address remediation needs.

Practice 8 (CWB p. 38)

Class practice (For Print-based Program):

Task 1 requires students to multiply a 2-digit or a 3-digit whole number by tens.

Remediation

Task 1: Reteach multiplying a 2-digit whole number by tens using Methods 1 and 2 as detailed on CWB p. 36. Guide students to first express the tens as a product of 10 and another 1-digit number before proceeding with the multiplication steps.

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching examples in Learn (CWB pp. 36–37).
- Reiterate the importance of aligning the digits in the correct place value when writing the multiplication in the vertical form.

Independent practice (For Print-based Program):

Task 2 requires students to multiply a 2-digit or a 3-digit whole number by tens.

For answers, go to CW Manual p. 140.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition: Let's Learn (CB p. 58)

Go through the teaching example with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Multiplying 2-digit whole numbers by 2-digit whole numbers (CWB p. 38)

Learning Outcome:

- Multiply a 2-digit whole number by a 2-digit whole number

Stage: Abstract Representation

In this stage, students learn to multiply a 2-digit whole number by a 2-digit whole number in the vertical form. They will learn to multiply systematically by multiplying the 2-digit number by the ones of the second 2-digit number, then by the tens.

- Write the vertical form of ' 43×26 ' on the board. Reiterate to students the importance of aligning the digits in the same place value.

- First, guide students to multiply 43 by 6. Guide them to multiply 3 ones from 43 by 6 to get 18 ones. Highlight that we can regroup 18 ones to 1 ten 8 ones. Then, write '8' in the ones place and '1' above '4' in the tens place as shown in Step 1.
- Next, guide students to multiply 4 tens from 43 by 6. Lead them to see that we get 24 tens. Have students take note of the 1 ten from the regrouping earlier. Highlight that there are now a total of 24 tens + 1 ten = 25 tens. Guide students to regroup 25 tens to 2 hundreds 5 tens. Then, write '5' in the tens place, and '2' in the hundreds place.
- Lead students to see that the product of 43 and 6 is 258.
- Proceed to guide students to multiply 43 by 20. Guide them to multiply 4 tens 3 ones by 20 to get 8 hundreds 6 tens. Then, write '6' in the tens place, and '8' in the hundreds place.
- Lead students to see that the product of 43 and 20 is 860.
- Finally, guide students to add the two products, 258 and 860, in the vertical form to get 1118.
- Conclude that the product of 43 and 26 is 1118. Write the multiplication sentence ' $43 \times 26 = 1118$ ' on the board.
- Highlight to students that when we multiply a whole number by a 2-digit number, we are multiplying the whole number by both the ones and the tens of the 2-digit number separately. Therefore, we can break the 2-digit number into its tens and ones first, and multiply the whole number by the tens and the ones separately. We can then find the sum of the two products to get the final product of the multiplication.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Do (CB p. 58)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

Exercise 9 (PB p. 34)

Assign the tasks to students as classwork for further formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

From PRIME Mathematics Coursework Book:

Coursework Book Practice 9 (CWB p. 39)

Assign all tasks to students as homework. Use the following notes to identify the skills needed for each task and address remediation needs.

Practice 9 (CWB p. 39)

Class practice (For Print-based Program):

Task 1 requires students to multiply a 2-digit whole number by a 2-digit whole number in the vertical form. Students are guided to first multiply the 2-digit whole number by the ones followed by the tens.

Remediation

Task 1: Reteach multiplying a 2-digit whole number by a 2-digit whole number without regrouping in the vertical form, e.g. 22×11 . Guide students to break the second 2-digit number into its tens and ones first, then multiply the first 2-digit number by its tens and ones separately. Finally, guide students to find the sum of the two products to get the final product of the multiplication. Once they have understood the steps, proceed to teach multiplying a 2-digit whole number by a 2-digit whole number with regrouping in the vertical form.

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching examples in Learn (CWB p. 38).
- Reiterate the importance of aligning the digits in the correct place value when writing the multiplication in the vertical form.

Independent practice (For Print-based Program):

Task 2 requires students to multiply a 2-digit whole number by a 2-digit whole number in the vertical form.

For answers, go to CW Manual pp. 140–141.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Learn (CB p. 59)

Go through the teaching example with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Multiplying 3-digit whole numbers by 2-digit whole numbers (CWB p. 39)

Learning Outcome:

- Multiply a 3-digit whole number by a 2-digit whole number

Materials:

- 1 copy of Think About It Worksheet (WS2.2) per group

Stage: Abstract Representation

In this stage, students learn to multiply a 3-digit whole number by a 2-digit whole number in the vertical form. Similar to the previous example, they will learn to multiply systematically by multiplying the 3-digit number by the ones of the 2-digit number, then by the tens.

- Write the vertical form of ' 317×48 ' on the board. Reiterate to students the importance of aligning the digits in the same place value.
- First, guide students to multiply 317 by 8. Guide them to multiply 7 ones from 317 by 8 to get 56 ones. Highlight that we can regroup 56 ones to 5 tens 6 ones. Then, write '6' in the ones place and '5' above '1' in the tens place as shown in Step 1.
- Next, guide students to multiply 1 ten from 317 by 8. Lead them to see that we get 8 tens. Have students take note of the 5 tens from the regrouping earlier. Highlight that there are now a total of 8 tens + 5 tens = 13 tens. Guide students to regroup 13 tens to 1 hundred 3 tens. Then, write '3' in the tens place, and '1' above '3' in the hundreds place as shown in Step 1.
- Then, guide students to multiply 3 hundreds from 317 by 8. Lead them to see that we get 24 hundreds. Have students take note of the 1 hundred from the regrouping earlier. Highlight that there are now a total of 24 hundreds + 1 hundred = 25 hundreds. Guide students to regroup 25 hundreds to 2 thousands 5 hundreds. Then, write '5' in the hundreds place, and '2' in the thousands place.
- Lead students to see that the product of 317 and 8 is 2536.
- Proceed to guide students to multiply 317 by 40. Guide them to multiply 7 ones from 317 by 40 to get 280 ones. Highlight that we can regroup 280 ones to 28 tens. Then, write '0' in the ones place, '8' in the tens place, and '2' above '1' in the tens place as shown in Step 2.
- Next, guide students to multiply 1 ten from 317 by 40. Lead them to see that we get 40 tens. Have students take note of the 20 tens from the regrouping earlier. Highlight that there are now a total of 60 tens. Guide students to regroup 60 tens to 6 hundreds. Then, write '6' in the hundreds place as shown in Step 2.
- Then, guide students to multiply 3 hundreds from 317 by 40. Lead them to see that we get 120 hundreds. Guide students to regroup 120 hundreds to 1 ten thousand 2 thousands. Then, write '2' in the thousands place, and '1' in the ten thousands place.
- Lead students to see that the product of 317 and 40 is 12 680.
- Finally, guide students to add the two products, 2536 and 12 680, in the vertical form to get 15 216.
- Conclude that the product of 317 and 48 is 15 216. Write the multiplication sentence ' $317 \times 48 = 15\,216$ ' on the board.
- Reiterate to students that when we multiply a whole number by a 2-digit number, we are multiplying the whole number by both the ones and the tens of the 2-digit number separately. Therefore, we can break the 2-digit number into its tens and ones first, and multiply the whole number by the tens

and the ones separately. We can then find the sum of the two products to get the final product of the multiplication.

❖ Blended Learning Program ❖

From PRIME Mathematics Interactive Edition:

Let's Do (CB p. 59)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

Exercise 10 (PB p. 35)

Assign the tasks to students as classwork for further formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

From PRIME Mathematics Coursework Book:

Coursework Book Practice 10 (CWB p. 40)

Assign all tasks to students as homework. Use the following notes to identify the skills needed for each task and address remediation needs.

Practice 10 (CWB p. 40)

Class practice (For Print-based Program):

Task 1 requires students to multiply a 3-digit whole number by a 2-digit whole number in the vertical form. Students are guided to first multiply the 2-digit whole number by the ones followed by the tens.

Remediation

Task 1: Reteach multiplying a 3-digit whole number by a 2-digit whole number without regrouping in the vertical form, e.g. 123×12 . Guide students to break the 2-digit number into its tens and ones first, then multiply the 3-digit number by its tens and ones separately. Finally, guide students to find the sum of the two products to get the final product of the multiplication. Once they have understood the steps, proceed to teach multiplying a 3-digit whole number by a 2-digit whole number with regrouping in the vertical form.

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching examples in Learn (CWB p. 39).
- Reiterate the importance of aligning the digits in the correct place value when writing the multiplication in the vertical form.

Independent practice (For Print-based Program):

Task 2 requires students to multiply a 3-digit whole number by a 2-digit whole number in the vertical form.

For answers, go to CW Manual p. 141.

Think About It

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Think About it (CB p. 60)

Assign the task to students as classwork. Have them complete the task in groups. Facilitate discussions using the corresponding lesson notes.

Have students get into groups. Distribute a copy of Think About It Worksheet (WS2.2) to each group. Have them discuss the question presented. Ask a student from each group to present their answers before proceeding with the questions below.

- What are the children supposed to find? (The product of 538 and 31)
- How should we multiply 538 by 31? (Multiply 538 by the ones and tens of 31, then add the products)
- How many tens and ones are there in 31? (3 tens 1 one)
- What is the first step? (Multiply 538 by 1 one)
- What is the next step? (Multiply 538 by 3 tens)
- What is the product of 538 and 3 tens? (16 140)
- How should the two products be written in the vertical form? (16 140 should be written below 538 with the digits of the products aligned starting from the ones place)
- After getting the products, what do we do? (Add the products together)
- What is the sum of the products? (16 678)
- So, what is the value of 538×31 ? (16 678)

Conclude that Sam is correct and Yen is wrong. Lead students to see that Yen has mistakenly multiplied 538 by 3 ones, instead of by 3 tens. Point out to students that the 3 in 31 is in the tens place. Therefore, it has a value of 30 and not 3.

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Let's Learn (CB pp. 60–61)

Go through the teaching examples with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Estimating products (CWB p. 40)

Learning Outcome:

- Estimate and check the reasonableness of an answer in multiplication

(a)

Stage: Pictorial Representation

Students have learned to use rounding to estimate products in Lesson 1. In this lesson, they will now apply their knowledge to estimate products of 2- or 3-digit whole numbers multiplied by 2-digit numbers. In this stage, guide students to recap rounding a number to the nearest ten using a number line.

- Refer students to Task (a) on CWB p. 40. Get them to recall using rounding to estimate products. Explain that they have to round both factors in 84×15 to find an estimated value.
- Draw a number line on the board to guide students to see that 84 is nearer to 80 than to 90. Therefore, we should round 84 to 80.
- Then, draw another number line to guide students to see that 15 is halfway between 10 and 20. Therefore, we should round 15 to 20.

Stage: Abstract Representation

In this stage, students find the estimated value of the product by multiplying the rounded 2-digit numbers.

- Explain to students that they can now find the estimated value of 84×15 by finding the product of 80 and 20.
- Write ' $84 \times 15 \approx 80 \times 20$ ' on the board. Reiterate to students that we use ' \approx ' to indicate that we are finding an estimated value of 84×15 .
- Guide students to work out the product of 80 and 20. Highlight that they can multiply 8 and 2 first, then add two zeros to the product to get the final product. Then, write ' $80 \times 20 = 1600$ ' on the board. Reiterate that we use '=' as we are finding the exact value of 80×20 .
- Conclude that the estimated value of 80×20 is 1600.

(b)

Stage: Pictorial Representation

This example builds upon the same concept and extends the estimation to 3-digit whole numbers. In this stage, guide students to recap rounding numbers to the nearest ten and hundred using a number line.

- Refer students to Task (b) on CWB p. 40. Lead them to see that they have to round both factors in 66×192 to find an estimated value.
- Draw a number line on the board to guide students to see that 66 is nearer to 70 than to 60. Therefore, we should round 66 to 70.
- Then, draw another number line to guide students to see that 192 is nearer to 200 than to 100. Therefore, we should round 192 to 200.

Stage: Abstract Representation

Students now find the estimated value of the product by multiplying the rounded 2- and 3-digit numbers.

- Explain to students that they can now find the estimated value of 66×192 by finding the product of 70 and 200.
- Write ' $66 \times 192 \approx 70 \times 200$ ' on the board. Reiterate to students that we use ' \approx ' to indicate that we are finding an estimated value of 70×200 .
- Guide students to work out the product of 70 and 200. Highlight that they can multiply 7 and 2 first, then add three zeros to the

product to get the final product. Then, write ' $70 \times 200 = 14\ 000$ ' on the board. Reiterate that we use '=' as we are finding the exact value of 70×200 .

- Conclude that the estimated value of 70×200 is 14 000.

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Let's Do (CB p. 61)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs

Exercise 11 (PB pp. 36–37)

Assign the tasks to students as classwork for further formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

From PR1ME Mathematics Coursework Book:

Coursework Book Practice 11 (CWB p. 41)

Assign all tasks to students as homework. Use the following notes to identify the skills needed for each task and address remediation needs.

Practice 11 (CWB p. 41)

Class practice (For Print-based Program):

Task 1 requires students to multiply a 1-digit number, tens or hundreds by tens or hundreds.

Task 2 requires students to estimate and check the reasonableness of an answer in multiplication.

Remediation

Task 1: Reteach multiplying whole numbers by tens. Guide students to first express the tens or hundreds as a product of 10 or 100 and another 1-digit number before proceeding with the multiplication steps.

Task 2: Reteach multiplying a 2-digit whole number by a 2-digit number with regrouping in the vertical form. Guide students to break the second 2-digit number into its tens and ones first, then multiply the first 2-digit number by its tens and ones separately. Finally, guide students to find the sum of the two products to get the final product of the multiplication. Then, reteach estimating products to check the reasonableness of their answer. Remind students that they should round the 2-digit numbers to the nearest ten to allow for easy and quick computation.

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching example in Learn (CWB p. 25). Reiterate to students that we can get the product by inserting a zero at the end of a number when multiplying it by 10.

Task 2

- When reteaching, follow the same procedure as the teaching examples in Learn (CWB p. 38 and p. 40).
- Reiterate the importance of aligning the digits in the correct place value when multiplying in the vertical form.

Independent practice (For Print-based Program):

Task 3 requires students to estimate and check the reasonableness of an answer in multiplication.

For answers, go to CW Manual p. 141.

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Let's Learn (CB p. 62)

Go through the teaching examples with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Solving word problems (CWB p. 42)

Learning Outcome:

- Solve a 1-step word problem on multiplication

Stage: Abstract Representation

Students apply their knowledge on multiplication of 2- or 3-digit whole numbers by 2-digit numbers to learn to solve simple word problems.

- Have students read the word problem on CWB p. 42. Guide them to extract relevant information to help them solve the word problem. They should be able to identify '188 pages in a notebook' and '41 notebooks' as important information.
- Lead students to see that we have to find the total number of pages in 41 notebooks.
- Have students suggest how they will solve the problem with the given information. They should be able to state that it requires them to multiply 188 by 41.
- Write ' 188×41 ' on the board. Have a student work out the multiplication in the vertical form on the board. The student should get an answer of 7708.
- Have another student check if the answer is reasonable using estimation. The student should round 188 to 200, and 41 to 40 to get an estimated value of 8000. Lead students to see that the answer, 7708, is close to the estimated value of 8000. So, it is reasonable.
- Conclude that there are 7708 pages altogether.

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Let's Do (CB p. 62)

Assign the tasks to students as classwork for formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs

Exercise 12 (PB p. 38)

Assign the tasks to students as classwork for further formative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

From PR1ME Mathematics Coursework Book:

Coursework Book Practice 12 (CWB pp. 42–43)

Assign all tasks to students as homework. Use the following notes to identify the skills needed for each task and address remediation needs.

Practice 12 (CWB pp. 42–43)

Class practice (For Print-based Program):

Task 1 requires students to solve a 1-step word problem involving multiplication of 2-digit whole numbers.

Remediation

Task 1: Highlight that each pair of shoes cost \$88. We have to find the cost of 62 pairs of shoes, so we should multiply 62 by 88 to find the total cost. Guide students to write the multiplication in the vertical form and reiterate the importance of aligning the digits in the correct place value. Then, guide them to break 88 into its tens and ones first, and multiply 62 by its tens and ones separately. Finally, guide students to find the sum of the two products to get the answer.

Teaching tips

Task 1

- When reteaching, follow the same procedure as the teaching example in Learn (CWB p. 42).
- Highlight to students the importance of checking to see if their answer is reasonable. Guide them to check their answer by estimating the product.

Independent practice (For Print-based Program):

Tasks 2 and 3 require students to solve a 1-step word problem involving multiplication of a 3-digit whole number and a 2-digit whole number.

Task 4 requires students to solve a 1-step word problem involving multiplication of a 2-digit whole number by 10.

Task 5 requires students to solve a 1-step word problem involving multiplication of a 3-digit whole number by tens.

For answers, go to CW Manual p. 141.

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Practice 3 (CB p. 63)

Assign the tasks to students as classwork for summative assessment. Use the corresponding lesson notes to identify the objectives of each task and address remediation needs.

Lesson 4: Problem Solving

Duration: 2 h 40 min

❖ Blended Learning Program ❖

From PR1ME Mathematics Interactive Edition:

Let's Learn (CB p. 64)

Go through the teaching example with students for concept development. Use the detailed lesson plan given in the corresponding lesson notes to carry out the teaching.

Learn

Word problems (CWB p. 44)

Learning Outcome:

- Solve an up to 3-step word problem involving multiplication and division

Materials:

- 1 copy of Create Your Own Worksheet (WS2.3) per group

Overview

This word problem requires students to apply the skills of multiplying 2-digit whole numbers and finding the difference between two 3-digit whole numbers. Go through the word problem using the 4-step Understand-Plan-Answer-Check process.

Have students read the word problem on CWB p. 44 and underline the key information. This helps them to understand the word problem and interpret it correctly.

1. Understand the problem.

- Explain to students that there are 19 classes and there are 32 students in each class. There are both boys and girls in each class, and there are 410 boys altogether.
- Lead students to see that they have to find the number of girls.

2. Plan what to do.

- Point out to students that they need to first find the total number of students in the school before finding the number of girls.

3. Work out the Answer.

- First, find the total number of students in the school. Get a student to work out 19×32 in the vertical form on the board. He/she should get an answer of 608.