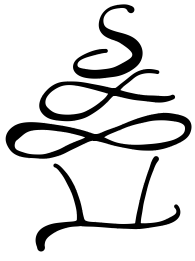
Practice Booklet

MYP 1 · Year 7 Mathematics

Unit 7.4 · Decimals and Measurement

Name: _____

7.4.1	Place value and ordering decimals · Questions 1–15
7.4.2	Add and subtract decimal numbers · Questions 16–30
7.4.3 · 7.4.4	Read scales · Perimeter · Questions 31–45
7.4.5	Multiply and divide by powers of 10 · Questions 46–60
7.4.6	Convert units of measurement · Questions 61–75
7.4.7 · 7.4.8	Round whole numbers · Round decimals · Questions 76–90
7.4.9	Divide decimals by whole numbers · Questions 91–105
Homework	Homework page and checking record
Answers	For checking and correcting in green pen



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How to use this booklet and your homework

READ THIS FIRST

Choosing your level

Every part of the unit has four levels. Start where you feel comfortable and move between them freely. Most questions ask you to explain as well as answer, because being able to say *why* is what makes a method stick.

Learning
Small numbers, with counters or a diagram beside you.

Practising
The standard question, with your reasoning written out.

Challenging
Working backwards, and finding what is wrong with someone else's thinking.

Mastery
Explaining why a rule must be true, and testing it on new cases.

Working on your homework

Pens and setting out

- Answers in blue or black non-erasable pen, or in pencil.
- Colour and highlighters are for annotating your work and showing the steps of a method.
- Never erase a mistake. Rework it underneath so you can see what changed.

Green pen is for checking. When you finish, use the answers at the back to check your work.

- **Got it wrong?** Circle the question number, then make your correction and write your error analysis in green pen.
- **Still can't work out how to solve it?** Put a star ★ next to the question number, so we know to go over it in class.

Each sheet

- Your name goes on every sheet, because they are handed in one at a time.
- Each question is worth up to 3 marks. If a question has parts (a, b, c...), each part is marked out of 3. At the end of each level, write your score out of the total for that level.
- Questions are numbered 1, 2, 3... all the way through the booklet, so we can say exactly which ones to do.
- If you are stuck after trying, ask for help. Showing me what you tried is a good start.

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7.4.1 Place value and ordering decimals

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
place value	what a digit is worth because of where it is	In 3.72, the 7 is worth 0.7
decimal point	the dot between the whole numbers and the parts	3.72
tenths	one whole split into 10 equal parts	0.1 = $\frac{1}{10}$
hundredths	one whole split into 100 equal parts	0.01 = $\frac{1}{100}$
thousandths	one whole split into 1000 equal parts	0.001 = $\frac{1}{1000}$

A zero at the end of a decimal is a place holder. The value does not change but how it is written does: 0.3 = 0.30.

Learning

1 Write the value of the 7 in each number: a) 3.72 b) 4.07 c) 6.007

2 Write in digits: a) six point zero four b) two point three five

3 Complete the sentence using tenths or hundredths. In 0.35, the 3 is worth 3 _____ and the 5 is worth 5 _____

4 Fill the gap with a zero so both decimals have two decimal places, then say which is bigger: 0.7 and 0.65

Learning score _____ / 21

Practising

5 Write the value of the 5 in each number: a) 2.153 b) 0.508 c) 15.62

6 Write > or < or = in each gap: a) 0.4 ___ 0.38 b) 3.09 ___ 3.1 c) 0.50 ___ 0.5

7 Put in order, smallest first: 0.5, 0.05, 0.55, 0.505

8 Aisha says that 0.35 is bigger than 0.4 because it has more digits. Is she right? Explain

Practising score _____ / 24

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7.4.1 Place value and ordering decimals

CHALLENGING · MASTERY

Name:

Challenging

9 **Find and describe the mistake.** Ben says 0.25 is bigger than 0.3 because 25 is bigger than 3

10 Put in order, smallest first: 6.06, 6.6, 6.066, 6.606, 0.66

11 Write a decimal that lies between 0.35 and 0.36. Then write one between your decimal and 0.36

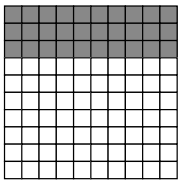
12 Use the digits 3, 7 and 5 once each, with the decimal point after the first digit. a) Make the biggest decimal b) Make the smallest decimal

Challenging score _____ / 15

Mastery

13 Is there a decimal between 0.999 and 1? Explain

14 The hundred square shows 0.3 as 30 out of 100 squares. Use it to explain why 0.3 and 0.30 are equal



15 Use the cards 0, 4 and 8 to complete 0.___ ___ ___. a) Make the biggest decimal b) Make the smallest decimal

Mastery score _____ / 12

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7.4.2 Add and subtract decimal numbers

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
decimal point	separates whole numbers from parts of a whole	12.65
place value	what a digit is worth because of its position	In 12.65 the 6 is 6 tenths
column method	writing numbers one under the other	3.40 + 12.65
place holder	a zero that keeps digits in the right column	3.4 = 3.40
estimate	a quick answer found by rounding	19.8 + 5.1 is about 25

Line up the decimal points, fill empty columns with zeros, calculate from the right, bring the point straight down, then check with an estimate.

Learning

16 Write 6.3 + 2.85 in a place value table. Use a zero as a place holder so every column has a digit, then add

17 Work out: a) 4.5 + 2.3 b) 7.8 − 3.4 c) 0.6 + 0.7

18 Write 9.8 + 4.1 in a column with the decimal points in a straight line. Then work it out

19 Use the idea of tenths to complete: 0.6 + 0.7 means 6 tenths + 7 tenths = ___ tenths = ___ whole and ___ tenths

Learning score _____ **/ 18**

Practising

20 Work out: a) 15.6 + 3.85 b) 8.07 + 4.9 c) 12.65 + 3.4

21 Work out: a) 7 − 3.4 b) 12.07 − 4.6 c) 5 − 2.46

22 A rope is 3.5 m long. 1.75 m is cut off. How long is the rope that is left?

23 Estimate first, then work it out: 19.8 + 5.1

Practising score _____ **/ 24**

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7.4.2 Add and subtract decimal numbers

Name:

Challenging

24 **Find and describe the mistake.** Mia works out 4.2 + 3.85 = 4.27 by lining up the ends of the numbers

25 Pencil CHF 1.35, rubber CHF 0.90, ruler CHF 2.50 and glue stick CHF 3.05. a) Find the total cost b) How much change from a CHF 10 note?

26 Find the missing number: 3.6 + ___ = 5.15

27 Work out 0.9 + 0.45 + 2

Challenging score _____ **/ 15**

Mastery

28 Explain why we write 5 as 5.00 when we work out 5 − 2.46

29 Two decimals each have two decimal places. They add to exactly 1 and one is 0.5 bigger than the other. Find them

30 Without a calculator, explain why 19.8 + 5.1 cannot be 7.0 or 70

Mastery score _____ **/ 9**

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7.4.3 Read scales · 7.4.4 Perimeter

LEARNING

Name:

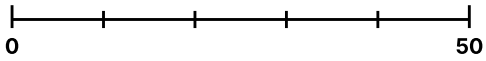
Key vocabulary

Word	Meaning	Example
scale	marks with numbers that measure an amount	a ruler, a jug
division	one equal step between two marks	worth 2 on a 20 to 30 scale
reading	the number the pointer shows	26 g
estimate	a sensible reading between two marks	about 27
perimeter	the distance around the edge of a shape	6 + 4 + 6 + 4 = 20 cm
length, width	the sides of a rectangle; opposite sides are equal	6 cm by 4 cm

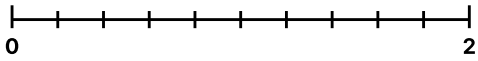
Count the gaps, not the marks. One division = (difference between marks) ÷ (number of gaps). Always write the unit.

Learning

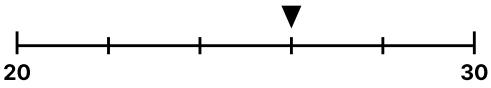
31 7.4.3 The marks are at 0 and 50 and there are 5 equal divisions. What is one division worth?



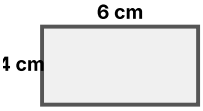
32 7.4.3 The marks are at 0 and 2 and there are 10 equal divisions. What is one division worth?



33 7.4.3 One division is worth 2. The pointer is 3 divisions past 20. What is the reading?



34 7.4.4 A rectangle is 6 cm by 4 cm. Write the length of all four sides, then add them to find the perimeter



Learning score _____ / 12

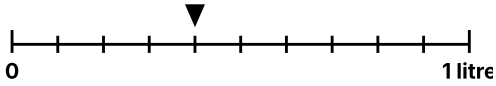
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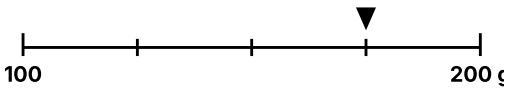
Name:

Practising

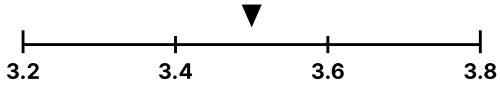
35 7.4.3 The jug is marked at 0 and 1 litre with 10 equal divisions. The level is 4 divisions up. What is the reading?



36 7.4.3 The kitchen scale is marked at 100 g and 200 g with 4 equal divisions. The pointer is 3 divisions past 100 g. What is the reading?



37 7.4.3 The pointer is between 3.4 and 3.6, about halfway. Estimate the reading



38 7.4.4 Find the perimeter of a triangle with sides 3.2 cm, 4.1 cm and 5 cm

Practising score _____ / 12

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7.4.3 Read scales · 7.4.4 Perimeter

CHALLENGING · MASTERY

Name:

Challenging

39 **Find and describe the mistake.** 7.4.3 A scale from 0 to 10 has 6 marks. Leo says one division is worth 10 ÷ 6

40 7.4.3 A scale goes from 0 to 3 with 12 divisions. a) What is one division worth? b) The pointer is 5 divisions along. What is the reading?

41 7.4.4 A rectangle is 8.5 cm long and 4.2 cm wide. Find its perimeter

42 7.4.4 A rectangle has a perimeter of 30 cm and a length of 9 cm. Find its width

Challenging score _____ / 15

Mastery

43 7.4.3 Why is 12.43 cm not a sensible reading for a ruler marked in millimetres?

44 7.4.4 A garden is 1.2 m long and 85 cm wide. Find the perimeter in centimetres

45 7.4.4 Draw two different rectangles that each have a perimeter of 20 cm. Label the sides

Mastery score _____ / 9

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7.4.5 Multiply and divide by powers of 10

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
power of 10	10, 100, 1000 and so on	100 = 10 × 10
place value	what a digit is worth because of its column	In 3.4, the 3 is worth 3 ones
digit	one of the symbols 0 to 9	34 has two digits
column	a place in a number, such as the tenths	tenths column
place holder	a zero in an empty column	3.4 × 100 = 340

The decimal point never moves: the digits do. Say first whether the answer should be bigger or smaller.

Learning

46 Use the place value columns to work out 3.4 × 10. Which way do the digits move, and how many columns?

47 Work out: a) 3.4 × 100 b) 0.6 × 10 c) 2.5 × 1000

48 Work out: a) 45 ÷ 10 b) 7 ÷ 100 c) 0.8 ÷ 10

49 When we multiply 3.4 by 100, does the decimal point move or do the digits move? Explain

Learning score _____ **/ 24**

Practising

50 Work out: a) 0.036 × 100 b) 5.2 × 1000 c) 0.04 × 10

51 Work out: a) 7 ÷ 1000 b) 450 ÷ 100 c) 3.5 ÷ 10

52 Say whether the answer will be bigger or smaller than the starting number, then work it out: a) 0.6 × 100 b) 600 ÷ 100

53 Write the missing power of 10: a) 3.4 × ___ = 340 b) 45 ÷ ___ = 0.45

Practising score _____ **/ 30**

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7.4.5 Multiply and divide by powers of 10

CHALLENGING · MASTERY

Name:

Challenging

54 **Find and describe the mistake.** Zoe says that 4.5 × 10 = 4.50 because we just add a zero

55 Find the missing number: a) 0.25 × ___ = 250 b) ___ ÷ 1000 = 0.06 c) 8.3 ÷ ___ = 0.083

56 A sheet of paper is 0.12 mm thick. a) How thick are 100 sheets? b) How thick are 1 000 sheets?

57 Put in order, smallest first: 3.5 × 10, 3.5 ÷ 10, 3.5 × 100, 35 ÷ 100. Which two are equal?

Challenging score _____ **/ 21**

Mastery

58 Explain why multiplying by 100 moves every digit two columns to the left

59 A student says that dividing by 10 means taking away a zero. Give an example where this does not work, and say what really happens

60 n × 1 000 = 7.5 × 10. Find the value of n

Mastery score _____ **/ 9**

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7.4.6 Convert units of measurement

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
unit	what we measure in	25 cm
convert	change from one unit to another without changing the amount	3.5 m = 350 cm
km, m, cm, mm	1 km = 1 000 m, 1 m = 100 cm, 1 cm = 10 mm	1 000 mm = 1 m
kg, g	1 kg = 1 000 g	2 kg = 2 000 g
l, ml	1 l = 1 000 ml	250 ml = 0.25 l

Going to a smaller unit: multiply, the number gets bigger. Going to a larger unit: divide, the number gets smaller. Convert before you add or compare.

Learning

61 Complete: a) 1 m = ___ cm b) 1 kg = ___ g c) 1 l = ___ ml d) 1 km = ___ m

62 Convert: a) 3 m to cm b) 5 kg to g c) 2 l to ml

63 Convert: a) 450 cm to m b) 2 500 g to kg c) 750 ml to l

64 When you change metres into centimetres, should the number get bigger or smaller? Explain why

Learning score _____ **/ 33**

Practising

65 Convert: a) 3.5 m to cm b) 2.4 km to m c) 6.2 cm to mm

66 Convert: a) 8 500 g to kg b) 340 mm to cm c) 45 ml to l

67 Which is longer, 1.2 m or 135 cm? Show how you know

68 Work out 120 cm + 35 cm. Give the answer in cm and in m

Practising score _____ **/ 24**

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7.4.6 Convert units of measurement

CHALLENGING · MASTERY

Name:

Challenging

69 **Find and describe the mistake.** Ravi says that 3.5 m = 3.5 × 10 = 35 cm

70 A recipe uses 0.75 kg of flour and 250 g of sugar. Find the total mass in grams

71 A bottle holds 1.5 l. How many 250 ml glasses can be filled from it?

72 Put these lengths in order, smallest first: 2.5 m, 240 cm, 2 600 mm, 0.0025 km

Challenging score _____ **/ 12**

Mastery

73 Explain why 1 m and 100 cm are the same length, even though 100 is a bigger number than 1

74 Convert 2 500 000 mm to km. Show each step

75 A runner completes 12 laps of a 400 m track. How many kilometres is this?

Mastery score _____ **/ 9**

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7.4.7 Round whole numbers · 7.4.8 Round decimals

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
round	change a number to a simpler one that is close to it	347 ≈ 350
nearest	the closest ten, hundred or thousand	nearest 10 to 347 is 350
rounding digit	the place you round to; look at the digit to its right	nearest 10: look at the ones
halfway	exactly in the middle of two numbers; round up	35 is halfway between 30 and 40
decimal place	a digit after the decimal point	3.846 has 3 decimal places
accuracy	how many decimal places an answer has	94.350 is to 3 d.p.

0 to 4 stays the same, 5 to 9 rounds up. Round the original number once, never twice.

Learning

76 7.4.7 Round to the nearest 10: a) 347 b) 82 c) 65

77 7.4.7 Which two tens is 347 between? Which one is it nearer to?

78 7.4.8 Round to 1 decimal place: a) 3.846 b) 5.72 c) 0.35

79 7.4.8 You round 5.7348 to 2 decimal places. Which digit is the rounding digit, and which digit do you look at? Write the answer

Learning score _____ **/ 24**

Practising

80 7.4.7 Round to the nearest 100: a) 347 b) 2 650 c) 4 950

81 7.4.7 Round to the nearest 1 000: a) 3 472 b) 6 500 c) 9 820

82 7.4.8 Round to 2 decimal places: a) 5.7348 b) 0.0647 c) 12.995

83 7.4.8 Round to 3 decimal places: a) 94.3496 b) 2.0004 c) 0.6666

Practising score _____ **/ 36**

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7.4.7 Round whole numbers · 7.4.8 Round decimals

CHALLENGING · MASTERY

Name:

Challenging

84 **Find and describe the mistake. 7.4.8** Tia rounds 2.3496 to 1 decimal place by rounding twice: 2.3496 → 2.35 → 2.4

85 7.4.8 Round 3.298 to 2 decimal places. Explain why the answer is written 3.30 and not 3.3

86 7.4.8 Round each number to the nearest whole number to estimate 4.9 × 2.1

87 7.4.7 Which whole numbers round to 500 when rounded to the nearest 100? Give the smallest and the biggest

Challenging score _____ / 12

Mastery

88 7.4.7 Use a number line to explain why 35 rounds up to 40 even though it is exactly halfway

89 7.4.7 A town has 4 865 people. Write this number to the nearest 10, to the nearest 100 and to the nearest 1 000

90 7.4.8 A number is 2.7 to 1 decimal place and 2.68 to 2 decimal places. Give two possible values

Mastery score _____ / 9

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7.4.9 Divide decimals by whole numbers

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
divide	share into equal groups	8.4 ÷ 2 = 4.2
quotient	the answer to a division	in 8.4 ÷ 2 = 4.2 it is 4.2
remainder	the amount left over	7 ÷ 2 = 3 remainder 1
decimal point	the dot between whole numbers and parts	4.2
check	use the opposite operation	4.2 × 2 = 8.4

Point straight up, divide column by column from the left, write a zero when there is a leftover, then check by multiplying back.

Learning

91 Work out 8.4 ÷ 2. Write the decimal point straight above the decimal point in the question

92 Work out: a) 6.9 ÷ 3 b) 9.6 ÷ 4 c) 0.84 ÷ 2

93 Check 6.9 ÷ 3 = 2.3 by multiplying back

94 Where does the decimal point go? Write the answer to 7.5 ÷ 5 = 1_5

Learning score _____ **/ 18**

Practising

95 Work out: a) 4.2 ÷ 4 b) 5.1 ÷ 6 c) 7.2 ÷ 5

96 Work out: a) 0.96 ÷ 8 b) 12.6 ÷ 9 c) 3 ÷ 4

97 Three friends share CHF 10 equally. How much does each person get? Explain how you rounded

98 Estimate first, then divide, then check: 20.4 ÷ 6

Practising score _____ **/ 24**

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7.4.9 Divide decimals by whole numbers

CHALLENGING · MASTERY

Name:

Challenging

99 **Find and describe the mistake.** Kai says that 4.2 ÷ 4 = 1.5 because 2 ÷ 4 = 5

100 A ribbon 6.5 m long is cut into 4 equal pieces. How long is each piece?

101 Seven friends share a bill of CHF 45.50 equally. How much does each person pay?

102 A bus ticket costs CHF 2.80. How many tickets can you buy with CHF 30?

Challenging score _____ / 12

Mastery

103 Explain why the decimal point goes straight up in the answer. Use 8.4 ÷ 2 and place value to help

104 For each situation say whether to give the exact answer, round to money, or round down: a) 5 m of ribbon cut into 4 b) CHF 10 shared by 3 c) how many CHF 2.80 tickets for CHF 30

105 A number divided by 4 gives 2.05. Use the check to find the number

Mastery score _____ / 15

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Homework and checking record

HAND THIS PAGE IN WITH YOUR SHEETS

Name:

Your teacher will tell you which sheet and questions to do. Choose your level, set out your work in pen or pencil, then check it with the answers at the back using a **green pen**: circle wrong question numbers, and star ★ any you still cannot solve.

Sheet	Questions	Which ones I did	Checked in green ✔	Teacher
7.4.1 Place value and ordering decimals	Q1–15			
7.4.2 Add and subtract decimal numbers	Q16–30			
7.4.3 Read scales · 7.4.4 Perimeter	Q31–45			
7.4.5 Multiply and divide by powers of 10	Q46–60			
7.4.6 Convert units of measurement	Q61–75			
7.4.7 Round whole numbers · 7.4.8 Round decimals	Q76–90			
7.4.9 Divide decimals by whole numbers	Q91–105			

Error analysis

Circle the number of any question you got wrong. Star ★ it if you still cannot solve it after correcting. Then write the questions you need to rework, and what you will do differently:

One thing I understand better now

Score: Parent / guardian signature:

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Answers

CHECK IN GREEN PEN

7.4.1 Place value and ordering decimals

Learning	**1**	a) 7 tenths (0.7) b) 7 hundredths (0.07) c) 7 thousandths (0.007)
	2	a) 6.04 b) 2.35
	3	In 0.35, the 3 is worth 3 tenths and the 5 is worth 5 hundredths
	4	0.70 and 0.65. 7 tenths is more than 6 tenths, so 0.7 is bigger (0.70 > 0.65)
Practising	**5**	a) 5 hundredths (0.05) b) 5 tenths (0.5) c) 5 ones (5)
	6	a) > (0.40 > 0.38) b) < (3.09 < 3.10) c) = (0.50 and 0.5 are the same amount)
	7	0.05, 0.5, 0.505, 0.55 (as thousandths: 0.050, 0.500, 0.505, 0.550)
	8	No. 0.4 = 0.40, and 40 hundredths is more than 35 hundredths, so 0.4 is bigger. The number of digits does not decide the size
Challenging	**9**	He compared 25 and 3 as whole numbers. Fill the gap: 0.25 and 0.30. 25 hundredths is less than 30 hundredths, so 0.25 < 0.3
	10	0.66, 6.06, 6.066, 6.6, 6.606 (compare the ones, then the tenths, then the hundredths)
	11	For example 0.355 and then 0.3575. There are always more decimals in between
	12	a) 7.53 (the biggest digit goes in the highest place) b) 3.57
Mastery	**13**	Yes, for example 0.9995. There is always another decimal between any two decimals
	14	0.3 is 3 tenths, which is 3 rows of 10 squares = 30 squares. 0.30 is 30 hundredths = 30 squares. The value does not change but how it is written does
	15	a) 0.840 b) 0.048

7.4.2 Add and subtract decimal numbers

Learning	**16**	6.30 + 2.85 = 9.15 (tenths and hundredths line up when the decimal points are lined up)
	17	a) 6.8 b) 4.4 c) 1.3
	18	9.8 + 4.1 = 13.9 (the decimal point stays in the same place in the answer)
	19	13 tenths = 1 whole and 3 tenths, so 0.6 + 0.7 = 1.3
Practising	**20**	a) 19.45 b) 12.97 c) 16.05 (write 15.6 as 15.60, 4.9 as 4.90, 3.4 as 3.40)
	21	a) 3.6 b) 7.47 c) 2.54 (write 7 as 7.0, 4.6 as 4.60 and 5 as 5.00)
	22	3.50 − 1.75 = 1.75 m
	23	Estimate: 20 + 5 = 25. Exact: 19.8 + 5.1 = 24.9, which is close to 25 so it makes sense
Challenging	**24**	She put the 2 (tenths) under the 5 (hundredths). The decimal points must line up: 4.20 + 3.85 = 8.05
	25	a) 1.35 + 0.90 + 2.50 + 3.05 = CHF 7.80 b) 10.00 − 7.80 = CHF 2.20
	26	5.15 − 3.60 = 1.55
	27	3.35 (0.90 + 0.45 + 2.00)
Mastery	**28**	Every column needs a digit. The zeros are place holders that keep the digits in the right columns without changing the value of 5
	29	0.75 and 0.25 (0.75 + 0.25 = 1.00 and 0.75 − 0.25 = 0.50)
	30	Rounding gives 20 + 5 = 25. 7.0 is much too small and 70 is much too big, so the decimal point or a column has slipped

7.4.3 Read scales · 7.4.4 Perimeter

Learning	**31**	(50 − 0) ÷ 5 = 10
	32	2 ÷ 10 = 0.2
	33	20 + 3 × 2 = 26
	34	6 + 4 + 6 + 4 = 20 cm (opposite sides of a rectangle are equal)
Practising	**35**	One division is 1 ÷ 10 = 0.1 litre. The reading is 4 × 0.1 = 0.4 litre
	36	One division is 100 ÷ 4 = 25 g. The reading is 100 + 3 × 25 = 175 g
	37	About 3.5
	38	3.2 + 4.1 + 5 = 12.3 cm
Challenging	**39**	He counted the marks. Count the gaps between the marks: 6 marks make 5 gaps, so one division is 10 ÷ 5 = 2
	40	a) 3 ÷ 12 = 0.25 b) 5 × 0.25 = 1.25
	41	(8.5 + 4.2) × 2 = 12.7 × 2 = 25.4 cm
	42	Length + width = 30 ÷ 2 = 15, so the width is 15 − 9 = 6 cm
Mastery	**43**	The smallest division is 1 mm = 0.1 cm. We cannot read more accurately than the smallest division, so 12.4 cm is sensible
	44	Convert first: 1.2 m = 120 cm. Perimeter = (120 + 85) × 2 = 410 cm
	45	Length + width = 10 cm, so for example 6 by 4 and 7 by 3 (or 9 by 1, 8 by 2, 5 by 5)

7.4.5 Multiply and divide by powers of 10

Learning	**46**	3.4 × 10 = 34. The digits move one column to the left
	47	a) 340 b) 6 c) 2 500
	48	a) 4.5 b) 0.07 c) 0.08
	49	The digits move. The decimal point stays where it is, and each digit moves two columns to the left
Practising	**50**	a) 3.6 b) 5 200 c) 0.4
	51	a) 0.007 b) 4.5 c) 0.35
	52	a) bigger: 60 b) smaller: 6
	53	a) 100 b) 100
Challenging	**54**	Adding a zero gives 4.50, which is the same value as 4.5. Multiplying by 10 moves each digit one column left: 4.5 × 10 = 45
	55	a) 1 000 b) 60 c) 100
	56	a) 0.12 × 100 = 12 mm b) 0.12 × 1000 = 120 mm
	57	3.5 ÷ 10 = 0.35 and 35 ÷ 100 = 0.35 (equal), then 3.5 × 10 = 35, then 3.5 × 100 = 350
Mastery	**58**	Each column is worth 10 times the column on its right. Moving left one column makes a digit 10 times bigger. Two columns is 10 × 10 = 100 times bigger
	59	4.5 ÷ 10 = 0.45 has no zero to take away. Dividing by 10 moves each digit one column to the right
	60	7.5 × 10 = 75, so n = 75 ÷ 1000 = 0.075

7.4.6 Convert units of measurement

Learning	**61**	a) 100 b) 1 000 c) 1 000 d) 1 000
	62	a) 300 cm b) 5 000 g c) 2 000 ml
	63	a) 4.5 m b) 2.5 kg c) 0.75 l
	64	Bigger. A centimetre is a smaller unit than a metre, so you need more of them to make the same length
Practising	**65**	a) 350 cm b) 2 400 m c) 62 mm
	66	a) 8.5 kg b) 34 cm c) 0.045 l
	67	1.2 m = 120 cm, and 135 cm is longer than 120 cm
	68	155 cm = 1.55 m
Challenging	**69**	1 m = 100 cm, not 10 cm. 3.5 × 100 = 350 cm
	70	0.75 kg = 750 g, so 750 + 250 = 1 000 g (1 kg)
	71	1.5 l = 1 500 ml, and 1 500 ÷ 250 = 6 glasses
	72	In cm: 250, 240, 260, 250. Order: 240 cm, then 2.5 m and 0.0025 km (equal, both 250 cm), then 2 600 mm
Mastery	**73**	Only the unit changes, not the amount. The centimetre is a smaller unit, so the number is bigger. The value does not change but how it is written does
	74	2 500 000 mm ÷ 1 000 = 2 500 m, and 2 500 m ÷ 1 000 = 2.5 km
	75	12 × 400 = 4 800 m = 4.8 km

7.4.7 Round whole numbers · 7.4.8 Round decimals

Learning	**76**	a) 350 b) 80 c) 70 (65 is halfway, so it rounds up)
	77	340 and 350. The ones digit is 7, which is 5 or more, so it is nearer to 350
	78	a) 3.8 b) 5.7 c) 0.4
	79	The rounding digit is 3. Look at the 4 next to it: it is less than 5, so the 3 stays. 5.73
Practising	**80**	a) 300 b) 2 700 c) 5 000
	81	a) 3 000 b) 7 000 c) 10 000
	82	a) 5.73 b) 0.06 c) 13.00 (the 9s round up and carry)
	83	a) 94.350 b) 2.000 c) 0.667 (the final zero shows the accuracy)
Challenging	**84**	She rounded twice. Use the original number once: look at the 4 after the 3, so it stays. 2.3496 to 1 d.p. is 2.3
	85	The 8 rounds the 9 up to 10, which carries to make 3.30. The final zero shows the answer is to 2 decimal places
	86	5 × 2 = 10 (the exact answer is 10.29)
	87	The smallest is 450 and the biggest is 549
Mastery	**88**	35 is the same distance from 30 and 40. We agree that halfway rounds up, so 35 rounds to 40
	89	Nearest 10: 4 870. Nearest 100: 4 900. Nearest 1 000: 5 000
	90	It is between 2.675 and 2.685. For example 2.676 and 2.684

7.4.9 Divide decimals by whole numbers

Learning	**91**	8.4 ÷ 2 = 4.2 (4 ones, 2 tenths)
	92	a) 2.3 b) 2.4 c) 0.42
	93	2.3 × 3 = 6.9, so the answer is right
	94	The point goes straight up from the question: 7.5 ÷ 5 = 1.5
Practising	**95**	a) 1.05 b) 0.85 c) 1.44 (write a zero and keep dividing)
	96	a) 0.12 b) 1.4 c) 0.75 (write 3 as 3.00)
	97	10 ÷ 3 = 3.333… so about CHF 3.33 each. Money is rounded to the nearest centime
	98	Estimate: 18 ÷ 6 = 3. Exact: 20.4 ÷ 6 = 3.4. Check: 3.4 × 6 = 20.4
Challenging	**99**	2 tenths shared between 4 is not 5 tenths. Write a zero and keep dividing: 20 hundredths ÷ 4 = 5 hundredths. 4.2 ÷ 4 = 1.05. Check: 1.05 × 4 = 4.20
	100	6.5 ÷ 4 = 1.625 m
	101	45.50 ÷ 7 = CHF 6.50
	102	30 ÷ 2.80 = 10.7…, so you can buy 10 tickets (round down: you cannot buy part of a ticket)
Mastery	**103**	8 ones ÷ 2 = 4 ones and 4 tenths ÷ 2 = 2 tenths, so each digit stays in its own column: 4.2
	104	a) exact: 1.25 m b) round to money: CHF 3.33 c) round down: 10 tickets
	105	Multiply back: 2.05 × 4 = 8.20, so the number is 8.2