

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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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.

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

- Write the value of the 7 in each number: a) 3.72 b) 4.07 c) 6.007
.....
- Write in digits: a) six point zero four b) two point three five
.....
- Complete the sentence using tenths or hundredths. In 0.35, the 3 is worth 3 _____ and the 5 is worth 5 _____
.....
- 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

- Write the value of the 5 in each number: a) 2.153 b) 0.508 c) 15.62
.....
- Write > or < or = in each gap: a) 0.4 ____ 0.38 b) 3.09 ____ 3.1 c) 0.50 ____ 0.5
.....
- Put in order, smallest first: 0.5, 0.05, 0.55, 0.505
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.....
- Aisha says that 0.35 is bigger than 0.4 because it has more digits. Is she right? Explain
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.....

Practising score _____ / 24

Parent / guardian signature: _____

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

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

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

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- 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

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Challenging score _____ / 15

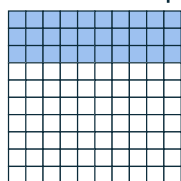
● Mastery

- 13 Is there a decimal between 0.999 and 1? Explain

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- 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



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

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Mastery score _____ / 12

Parent / guardian signature: _____



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

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- 17** Work out: a) $4.5 + 2.3$ b) $7.8 - 3.4$ c) $0.6 + 0.7$

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- 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) $12.65 + 3.4$

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- 21** Work out: a) $7 - 3.4$ b) $12.07 - 4.6$ c) $5 - 2.46$

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

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

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Practising score _____ / 24

Parent / guardian signature: _____

7.4.2 Add and subtract decimal numbers

CHALLENGING · MASTERY

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

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- 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?

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- 26 Find the missing number: $3.6 + \underline{\quad} = 5.15$

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- 27 Work out $0.9 + 0.45 + 2$

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Challenging score _____ / 15

● Mastery

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

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

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

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Mastery score _____ / 9

Parent / guardian signature: _____



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

Parent / guardian signature: _____

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?



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- 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?



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



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

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Practising score _____ / 12

Parent / guardian signature: _____

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 $10 \div 6$

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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?

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

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

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Challenging score _____ / 15

● Mastery

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

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

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

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Mastery score _____ / 9

Parent / guardian signature: _____

7.4.5 Multiply and divide by powers of 10

Name: _____

Key vocabulary

Word	Meaning	Example
power of 10	10, 100, 1000 and so on	$100 = 10 \times 10$
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	$3.4 \times 100 = 340$

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?

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

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- 48 Work out: a) $45 \div 10$ b) $7 \div 100$ c) $0.8 \div 10$

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

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Learning score _____ / 24

● Practising

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

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- 51 Work out: a) $7 \div 1000$ b) $450 \div 100$ c) $3.5 \div 10$

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

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- 53 Write the missing power of 10: a) $3.4 \times \underline{\quad} = 340$ b) $45 \div \underline{\quad} = 0.45$

.....

Practising score _____ / 30

Parent / guardian signature: _____

7.4.5 Multiply and divide by powers of 10

CHALLENGING · MASTERY

Name: _____

● Challenging

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

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55 Find the missing number: a) $0.25 \times \underline{\quad} = 250$ b) $\underline{\quad} \div 1000 = 0.06$ c) $8.3 \div \underline{\quad} = 0.083$

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

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

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Challenging score _____ / 21

● Mastery

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

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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

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60 $n \times 1\,000 = 7.5 \times 10$. Find the value of n

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Mastery score _____ / 9

Parent / guardian signature: _____

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

Parent / guardian signature: _____

7.4.6 Convert units of measurement

CHALLENGING · MASTERY

Name: _____

● Challenging

69 Find and describe the mistake. Ravi says that $3.5 \text{ m} = 3.5 \times 10 = 35 \text{ cm}$

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

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

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.....

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

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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

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.....

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

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.....

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

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Mastery score _____ / 9

Parent / guardian signature: _____

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	$347 \approx 350$
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

Parent / guardian signature: _____

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:
 $2.3496 \rightarrow 2.35 \rightarrow 2.4$

.....

.....

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

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.....

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

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.....

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

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.....

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

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- 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

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.....

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

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Mastery score _____ / 9

Parent / guardian signature: _____

7.4.9 Divide decimals by whole numbers

LEARNING · PRACTISING

Name: _____

Key vocabulary

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

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 $8.4 \div 2$. Write the decimal point straight above the decimal point in the question

.....

92 Work out: a) $6.9 \div 3$ b) $9.6 \div 4$ c) $0.84 \div 2$

.....

93 Check $6.9 \div 3 = 2.3$ by multiplying back

.....

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

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Learning score _____ / 18

● Practising

95 Work out: a) $4.2 \div 4$ b) $5.1 \div 6$ c) $7.2 \div 5$

.....

96 Work out: a) $0.96 \div 8$ b) $12.6 \div 9$ c) $3 \div 4$

.....

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

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.....

98 Estimate first, then divide, then check: $20.4 \div 6$

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.....

Practising score _____ / 24

Parent / guardian signature: _____

7.4.9 Divide decimals by whole numbers

CHALLENGING · MASTERY

Name: _____

● Challenging

99 Find and describe the mistake. Kai says that $4.2 \div 4 = 1.5$ because $2 \div 4 = 5$

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

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.....

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

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

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Challenging score _____ / 12

● Mastery

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

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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

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.....

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

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Mastery score _____ / 15

Parent / guardian signature: _____

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:

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One thing I understand better now

.....

.....

Score: _____

Parent / guardian signature: _____

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) $1.35 + 0.90 + 2.50 + 3.05 = \text{CHF } 7.80$ b) $10.00 - 7.80 = \text{CHF } 2.20$
	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	$(50 - 0) \div 5 = 10$
	32	$2 \div 10 = 0.2$
	33	$20 + 3 \times 2 = 26$
	34	$6 + 4 + 6 + 4 = 20$ cm (opposite sides of a rectangle are equal)
Practising	35	One division is $1 \div 10 = 0.1$ litre. The reading is $4 \times 0.1 = 0.4$ litre
	36	One division is $100 \div 4 = 25$ g. The reading is $100 + 3 \times 25 = 175$ 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 $10 \div 5 = 2$
	40	a) $3 \div 12 = 0.25$ b) $5 \times 0.25 = 1.25$
	41	$(8.5 + 4.2) \times 2 = 12.7 \times 2 = 25.4$ cm
	42	Length + width = $30 \div 2 = 15$, 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 = $(120 + 85) \times 2 = 410$ 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	$3.4 \times 10 = 34$. 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: $4.5 \times 10 = 45$
	55	a) 1 000 b) 60 c) 100
	56	a) $0.12 \times 100 = 12$ mm b) $0.12 \times 1000 = 120$ mm
	57	$3.5 \div 10 = 0.35$ and $35 \div 100 = 0.35$ (equal), then $3.5 \times 10 = 35$, then $3.5 \times 100 = 350$
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 $10 \times 10 = 100$ times bigger
	59	$4.5 \div 10 = 0.45$ has no zero to take away. Dividing by 10 moves each digit one column to the right
	60	$7.5 \times 10 = 75$, so $n = 75 \div 1000 = 0.075$

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. $3.5 \times 100 = 350$ cm
	70	$0.75 \text{ kg} = 750 \text{ g}$, so $750 + 250 = 1\,000 \text{ g}$ (1 kg)
	71	$1.5 \text{ l} = 1\,500 \text{ ml}$, and $1\,500 \div 250 = 6$ 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	$2\,500\,000 \text{ mm} \div 1\,000 = 2\,500 \text{ m}$, and $2\,500 \text{ m} \div 1\,000 = 2.5 \text{ km}$
	75	$12 \times 400 = 4\,800 \text{ m} = 4.8 \text{ km}$

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	$5 \times 2 = 10$ (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	$8.4 \div 2 = 4.2$ (4 ones, 2 tenths)
	92	a) 2.3 b) 2.4 c) 0.42
	93	$2.3 \times 3 = 6.9$, so the answer is right
	94	The point goes straight up from the question: $7.5 \div 5 = 1.5$
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	$10 \div 3 = 3.333\dots$ so about CHF 3.33 each. Money is rounded to the nearest centime
	98	Estimate: $18 \div 6 = 3$. Exact: $20.4 \div 6 = 3.4$. Check: $3.4 \times 6 = 20.4$
Challenging	99	2 tenths shared between 4 is not 5 tenths. Write a zero and keep dividing: 20 hundredths $\div 4 = 5$ hundredths. $4.2 \div 4 = 1.05$. Check: $1.05 \times 4 = 4.20$
	100	$6.5 \div 4 = 1.625$ m
	101	$45.50 \div 7 = \text{CHF } 6.50$
	102	$30 \div 2.80 = 10.7\dots$, so you can buy 10 tickets (round down: you cannot buy part of a ticket)
Mastery	103	8 ones $\div 2 = 4$ ones and 4 tenths $\div 2 = 2$ 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: $2.05 \times 4 = 8.20$, so the number is 8.2