

**STUDY
SQUAD**

KS2 Maths

SATs Practice Workbook

Ages 10-11

REASONING



**Answer
BOOK 2**



Boost test confidence and results with our curriculum-aligned bite-sized revision.

Section 1 - Measurement

Page 3-6 – Estimating and Reading Scales

- 1) 1.75 litres or 1 $\frac{3}{4}$ litres
- 2) 2.6 kg or 2 $\frac{3}{5}$ kg
- 3) a) 4.5cm or 4 $\frac{1}{2}$ cm
b) 2cm
c) 0.5cm or $\frac{1}{2}$ cm

Page 7-10 – Converting between Metric Units

- 1) 320 000 ml
- 2) Lengths in correct order:
150m, 1500cm, 1.5m, 105cm, 1m
or accept correct conversions, e.g.
15,000cm, 1500cm, 150cm, 105cm, 100cm

- 3) Award two marks for the correct answer of 12 cakes.

If the answer is incorrect, award one mark for evidence of an appropriate method.

- 4) Award three marks for the correct answer of 1.1(l) or 1100(ml).

If the answer is incorrect, award two marks for: sight of 18 900 or 18.9 as evidence of the multiplication completed correctly or evidence of an appropriate method with no more than one error, e.g.
 $42 \times 450 = 18\ 900$
 $20 \times 1000 = 20\ 000$
 $20\ 000 - 18\ 900 = 1100\text{ml or }1.1\text{l}$

Award one mark for evidence of an appropriate method.

Page 11-14 – Converting between Metric and Imperial Units

- 1) Award two marks for four correct answers, as shown:
5 inches \approx 12.5cm
2 litres \approx 3.6 pints
10 ounces \approx 280g
4 miles \approx 6.4km

Award one mark for three correct answers.

- 2) a) 9 litres
b) 1.7 gallons or 1.8 gallons

- 3) Amrit is correct
Accept answers that refer to correct approximate conversions, e.g.
'4ft 5in is approximately 132.5cm'
'130cm is approximately 4ft 3in'

Do not accept incomplete or vague explanations, e.g. 'Because 4ft 3in is greater than 130cm.'

Do not accept the answer of 'Amrit' without an explanation.

Page 15-18 – Money

- 1) Award one mark for any of the following answers:
£1 and 5p
£1, 2p, 2p and 1p
50p, 50p and 5p
50p, 50p, 2p, 2p and 1p

Coins may be given in any order.

Accept answers written in words e.g. 'one pound, fifty pence, etc.'

- 2) Goggles = £5.02

Watch = £5.05

Scarf = £4.95

Buckle = £4.82

Award one mark for two correct matches.

If any item has been matched to more than one amount, do not accept this as a correct match.

- 3) Award two marks for the correct answer of £0.89 or 89p

If the answer is incorrect, award one mark for evidence of an appropriate method (examples below) which contains no more than one arithmetical error.

$$£4.19 - £1.65 = £2.54$$

$$£2.54 - £1.65 = £0.89 \text{ or } 89\text{p}$$

$$£1.65 \times 2 = £3.30$$

$$£4.19 - £3.30 = £0.89 \text{ or } 89\text{p}$$

$$£1.65 \div 3 = £0.55$$

$$£0.55 \times 6 = £3.30$$

$$£4.19 - £3.30 = £0.89 \text{ or } 89\text{p}$$

Award one mark for 0.89p, £89 or £89p as evidence of an appropriate method.

Page 19-22 – Telling the Time and Units of Time

- 1) Award two marks for three correct answers, as shown:
 96 hours = 4 days
 56 days = 8 weeks
 144 months = 12 years

Award one mark for two correct answers.

- 2) 90 days
 3) Award two marks for the correct answer of 227 glasses.

If the answer is incorrect, award one mark for evidence of an appropriate method.

- 4) Award one mark for two correct answers of 8:23 and 20:23
 5) Award two marks for the correct answer of 5808 hours.

If the answer is incorrect, award one mark for evidence of an appropriate method.

Page 23-26 – Solving Problems Involving Time and Duration

- 1) 7 hours and 17 minutes
 2) a) 18 minutes and 45 seconds
 b) 15 minutes and 53 seconds
 3) a) Award **two** marks for **four** correct durations:
 117 minutes
 101 minutes
 96 minutes
 182 minutes

Accept durations given in **hours and minutes**

Award **one** mark for **three** correct durations.

- b) Award **two** marks for **four** correct matches:
 1st = Don't Lose the Dog
 2nd = Spy Sisters
 3rd = The True Way Home
 4th = Measure Machine: The Movie

Award **one** mark for **two** correct matches.

If any film has been matched to more than one position, do not accept this as a correct match.

Page 27-30 – Perimeter

- 1) Award **two** marks for the correct answer of 40cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 2) Award **two** marks for **three** rows completed correctly, as shown:
Rhombus = Side lengths of 6cm
Rectangle = Side lengths of 5cm and 7cm
Rectangle = Side lengths of 8cm and 4cm
Equilateral Triangle = Side lengths of 8cm

Award **one** mark for any **two** rows completed correctly.

- 3) Award **two** marks for the correct answer of 46cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

Page 31-34 – Area

- 1) Award **two** marks for the correct answer of 72cm².

If the answer is **incorrect**, award **one** mark for evidence of an appropriate method (example below) which contains no more than one arithmetical error.

$$9\text{cm} \times 9\text{cm} = 81\text{cm}^2$$

$$9\text{cm} \div 3 = 3\text{cm}$$

$$3\text{cm} \times 3\text{cm} = 9\text{cm}^2$$

$$81\text{cm}^2 - 9\text{cm}^2 = 72\text{cm}^2$$

Award **one** mark for sight of 81(cm²) **and** 9(cm²).

- 2) **No** – Amrit is incorrect.
Accept answers that give a valid **counterexample**, e.g. 'A rectangle with

sides of 5cm by 4cm has a perimeter of 18cm and an area of 20cm² but a rectangle with sides of 10cm by 2cm has a perimeter of 24cm and the same area of 20cm².'

Accept answers with incorrect or missing units, provided that the counterexample is valid, e.g.

$$'(6 + 5) \times 2 = 22 \text{ and } 6 \times 5 = 30 \text{ but } (10 + 3) \times 2 = 26 \text{ and } 10 \times 3 = 30'$$

- 3) Award **two** marks for the correct answer of 4 cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method** which contains no more than **one** arithmetical error.

Page 35-38 – Areas of Triangles and Parallelograms

- 1) Award one mark for any **rectangle** drawn which has an area of 8 squares.

- 2) 52cm²

- 3) Award **two** marks for the correct answer of 14cm².

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 4) Award **two** marks for the correct answer of 60cm².

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

Page 39-42 – Volume

- 1) 216cm³

- 2) Award **two** marks for the correct answer

of 294cm³.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 3) Award **two** marks for the correct answer of 4 cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 4) 45 more

Page 43-44 – Measurement Mixed Practice

- 1) a) Accept answers in the range 32-32.5km inclusive.

- b) Accept answers in the range 18.5-19.5 miles inclusive.

- 2) Award **two** marks for the correct answer of 36cm².

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 3) 4 (minutes) to 6 or 5:56
Accept 05:56, 17:56, 5:56 a.m., 5:56 p.m.

- 4) Award **two** marks for the correct answer of £1.55

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

Section 2 - Properties of Shapes

Page 47-50 – Angle Facts

- 1) a) 5
b) 8

Award **one** mark for **two** correct answers.

- 2) 450°
3) d, a, c, b, e

- 4) Agree
Accept answers that recognise that if the largest possible obtuse angle is halved, the result will still be an acute angle, e.g. 'When you halve 179° (an obtuse angle), you get 89.5° which is still an acute angle'.

Accept an explanation that demonstrates where the statement in the question is correct, e.g. 'If the obtuse angle is between 91° and 179° before halving, it will be less than 90° once halved which is acute'.

Page 51-54 – Finding Missing Angles

- 1) 121°
2) a = 155°
b = 25°
3) x = 55°
y = 45°
4) Award **two** marks for the correct answer of 65°

If the answer is incorrect, award **one** mark for evidence of an **appropriate method**.

Page 55-58 – Measuring Angles

- 1) a = Answers in the range 120° to 124° inclusive
b = Answers in the range 95° to 99° inclusive

c = Answers in the range 144° to 148° inclusive

Award **two** marks for **three** correct answers.

Award **one** mark for **two** correct answers.

- 2) x = Answers in the range 35° to 39° inclusive
- 3) a) Answers in the range 41mm to 45mm inclusive
- b) Accept answers that refer to: Angle z as an **acute** angle so it cannot be 109° as this angle size would be obtuse; Felix having used the **wrong scale of the protractor** (he started from 180° and used the outside scale rather than starting from 0° and using the inside scale).

Page 59-62 – Classifying 2D Shapes

- 1) a) scalene triangle
b) trapezium
- Accept recognisable misspellings.
- 2) A
- 3) Award **two** marks for **five** correct matches.
- Award **one** mark for **three** correct matches.
- If any shape has been matched to more than one name, do not accept this as a correct match.

Page 63-66 – Circles

- 1) 36mm
- 2) 35cm
- 3) Award two marks for the correct answer of 6cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

Page 67-70 – Drawing 2D Shapes

- 1) Award **two** marks for **all** of the following **three** points:
two lines drawn, each in the range 4.8cm to 5.2cm inclusive, which join at a **vertex**; an **angle** in the range 145° to 149° inclusive.
- 2) Award **two** marks for a completed triangle that has **all** of the following **three** points:
an angle in the range 30° to 34° inclusive for the angle marked 32° ;
an angle in the range 88° to 92° inclusive for the **right angle**;
the triangle has been drawn on a 7cm line (either on the given line or a line drawn) provided that both angles have been constructed within the tolerance of the line 6.9cm to 7.1cm.
- 3) Award **two** marks for a completed parallelogram that has **both** of the following **two** points:
an angle in the range 73° to 77° inclusive for the angle marked 75° ;
a side in the range 8.8cm to 9.2cm inclusive for the side marked 9cm;
- If the answer is **incorrect**, award **one** mark for **one** of the two points correct.
- Accept drawings where any side has been extended past a vertex.

Page 71-74 – 3D Shapes

- 1) Award **two** marks for **three** correct answers of:
5 faces
6 vertices

9 edges

Award **one** mark for any **two** correct answers.

2) Pentagonal prism

3) Award **two** marks for **three** correct answers of:

False

True

True

Award **one** mark for any **two** correct answers.

4) 2 cubes

5) 6 faces and 9 edges

Page 75-76 – Properties of Shapes Mixed Practice

1) Award **one** mark for the **two correct** angles ticked:

Acute angle furthest left

Acute angle bottom right

Do not award the mark for any additional angles ticked.

2) Award **two** marks for all **three** rows completed correctly:

Right-angle: 45° , 45° **and** 90°

Isosceles: 50° , 50° **and** 80°

Isosceles: 50° , 65° **and** 65°

Award **one** mark for **two** rows correctly completed correctly.

Accept the angles given within a row in any order.

Do not accept the same row repeated, e.g. if row two and three are exactly the same.

3) a) Answers in the range 58mm to 62mm inclusive

b) Answers in the range 59° to 63° inclusive

4) a) AB and CD

b) BC and DA

5) Award one mark for a correct net.

6) 26cm

Section 3 - Position and Direction

Page 79-82 – Coordinates

1) a) (-4, 2)

b) (0, 2)

2) a) (53, 22)

b) (17, 12)

Page 83-86 – Reflection and Translation

1) 6, 2)

Accept (8, 2), (8, 6) or (6, 6)

Coordinates must be written in the correct order.

Accept answers written on the diagram, with or without brackets and commas.

2) Award **one** mark for the correctly reflected shape.

Award **two** marks for **two** triangles drawn correctly.

3) Award **one** mark for any **one** of the following: correct triangle A

correct triangle B
a correct reflection of an incorrectly translated triangle (A)

Page 87-88 – Position and Direction Mixed Practice

1) Award **one** mark for a correctly completed design.

- 2) The rectangle has moved 2 squares to the left and 4 squares up.
- 3) Award one mark for a correctly completed diagram completed,
- 4) Award one mark for the second pattern indicated.

Section 4 - Statistics

Page 91-94 – Tables and Pictograms

1) 49 problems

2) Award **two** marks for the correct answer of 91 children.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

3) 14

4) Award **one** mark for the correct time ~ of 15:01.

Accept 17:07 indicated **in addition** to 15:01, provided that no other time is indicated.

Do not accept only the arrival time of 17:07 indicated.

Page 95-98 – Bar Charts

1) a) 3 boys
b) 2 classes

2) a) Accept answers that refer to Priya not reading the bar correctly, e.g. 'The bar falls between the marked scale, meaning that 47 children walk to school rather than 46.'

Do not accept only an answer of '47' without an explanation.

b) **No** – Bartek is incorrect.

Accept answers that refer to the total of the number of children who walk and ride the bus being **more** than those who are driven in the car, e.g.

'There are 146 children altogether and only 70 are driven in the car which is less than half.'

'Because 76 is more than 70.'

'Because half of the total children is 73 and the number who are driven in the car is less than this.'

Page 99-102 – Line Graphs

1) a) 5cm

b) 11cm

Accept answers within the range of 10.5cm and 11.5cm.

c) Accept answers that refer to the sunflower only growing **1cm** between week 10 and week 12 which is the **smallest amount of growth**, e.g. 'Elias' sunflower grew 3cm every two weeks

except between week 10 and week 12 where it only grew 1cm.'

- 2) Award **two** marks for **four** sentences correctly matched:

A to B = The car travelled 5 miles in 10 minutes.

B to C = The car travels 3 miles in 15 minutes because of traffic.

C to D = The driver of the car stops for a break.

D to E = The car travels a large distance in a short amount of time on the motorway.

Page 103-106 – Pie Charts

- 1) Award **two** marks if the **third and fourth boxes are ticked**.

- 2) **Yes** – Joseph is correct.

Award **one** mark for an explanation that recognises that **both** pie charts represent 25 children, e.g. 'One-quarter of 100 girls is 25 and one-half of 50 boys is also 25.' 'They both show 25.'

- 3) Award **two** marks for the correct answer of 144° .

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

Page 107-110 – Finding the Mean

- 1) Award **two** marks for the correct answer of 103 pizzas.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 2) Award **two** marks for the correct answer of 142cm.

If the answer is **incorrect**, award **one** mark for evidence of an **appropriate method**.

- 3) Accept answers that give a correct explanation, e.g. 'Her average is 14km.'
' $13 + 15 + 16 + 14 + 12 = 70$ '
' $70 \div 5 = 14$ which is less than 16km.'

Do not accept incomplete or incorrect explanations, e.g. 'If you add up how far she cycled and divide it by 5 it is more than 16'

Page 111-112 – Statistics Mixed Practice

- 1) a) 183g

- b) Award **one** mark for **four** correctly completed rows:

$$200g - 249g = 2 \text{ parcels}$$

$$250g - 299g = 1 \text{ parcel}$$

$$300g - 349g = 0 \text{ parcel}$$

$$350g - 400g = 3 \text{ parcels}$$

- 2) a) 4°C

- b) 6°C

- c) 2°C

