

Cambridge Primary

Mathematics

Second Edition

Learner's Book 6

Steph King
Josh Lury

Series editors:
Paul Broadbent
Mike Askew

**SAMPLE
MATERIAL**



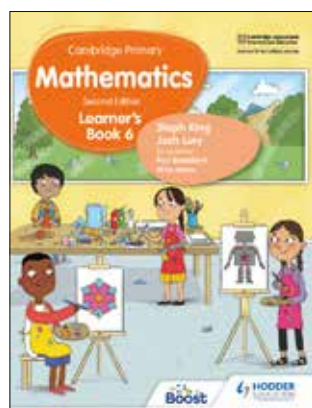
We are working with Cambridge Assessment International Education to gain endorsement for this forthcoming series.

We are working with Cambridge Assessment International Education to gain endorsement for this forthcoming series.

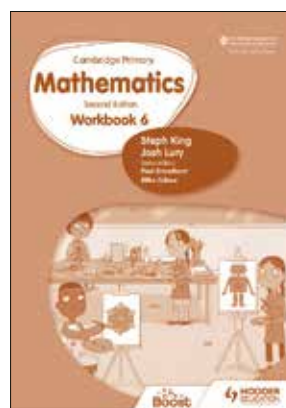
Master the essential mathematical concepts that underpin the new Cambridge Primary Mathematics curriculum framework (0096) from 2020, with specifically sign-posted tasks and activities rooted in the mastery approach.

	Learner's Book £13.50 March 2021	Boost eBook £9 for 1-year access March 2021	Workbook £6.50 June 2021	Teacher's Guide with Boost subscription £150 for access until 2026 July 2021
Stage 1 (ages 5–6)	9781398300903	9781398300934	9781398301153	9781398300781
Stage 2 (ages 6–7)	9781398300941	9781398300972	9781398301177	9781398300798
Stage 3 (ages 7–8)	9781398300989	9781398301016	9781398301184	9781398300804
Stage 4 (ages 8–9)	9781398301023	9781398301054	9781398301207	9781398300811
Stage 5 (ages 9–10)	9781398301061	9781398301092	9781398301221	9781398300828
Stage 6 (ages 10–11)	9781398301108	9781398301139	9781398301245	9781398300835

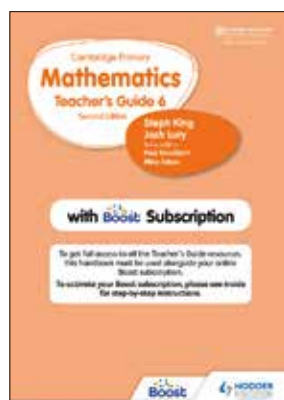
* Age ranges are for guidance only



Boost eBooks – interactive, engaging and completely flexible. Boost eBooks use the latest research and technologies to provide the very best learning experience for learners. They can be downloaded onto any device and used in the classroom, at home or on the move.



Encourage reflection and self-assessment with write-in workbooks full of varied independent activities for extra practice both in the classroom and at home.



Created with teachers and learners in schools across the globe, Boost is the next generation in digital learning for schools, bringing quality content and new technology together in one interactive website.

The Cambridge Primary Mathematics Teacher's Guides include a print handbook and a subscription to Boost, where you will find a range of online resources to support your teaching.

- **Confidently deliver the new curriculum framework:** Detailed guidance and explanations for new mathematical content, an introduction on the mastery approach and emphasis throughout on mathematical thinking and working.

- **Develop key mathematical skills:** See learners progress through a range of activities, assessment ideas, success measures and quizzes for stages 5 and 6.
- **Support the use of ESL:** Introductions and activities included that have been developed by an ESL specialist to help facilitate the most effective teaching in classrooms with mixed English abilities.
- **Enrich learning:** Character artwork taken from the Learner's Books to be used front of class, audio recordings of the vocabulary in the Learner's Books and Flashcards with pictures and words based on the vocabulary covered.

To explore the entire series, visit www.hoddereducation.com/cambridgeprimary-maths

We're here to help!

If we can help with questions, and to find out more, please contact us at international.sales@hoddereducation.com

Cambridge Primary

Mathematics

Second Edition

Learner's Book 6

Steph King
Josh Lury

Series editors:

Paul Broadbent

Mike Askew



Cambridge International copyright material in this publication is reproduced under licence and remains the intellectual property of Cambridge Assessment International Education.

Third-party websites and resources referred to in this publication have not been endorsed by Cambridge Assessment International Education.

Registered Cambridge International Schools benefit from high-quality programmes, assessments and a wide range of support so that teachers can effectively deliver Cambridge Primary. Visit www.cambridgeinternational.org/primary to find out more.

Acknowledgements

The Publishers would like to thank the following for permission to reproduce copyright material.

Photo credits

p. 8 *tl, tc, tr* © Hachette UK.

Every effort has been made to trace all copyright holders, but if any have been inadvertently overlooked, the Publishers will be pleased to make the necessary arrangements at the first opportunity.

Hachette UK's policy is to use papers that are natural, renewable and recyclable products and made from wood grown in well-managed forests and other controlled sources. The logging and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

Orders: please contact Bookpoint Ltd, 130 Park Drive, Milton Park, Abingdon, Oxon OX14 4SE. Telephone: +44 (0)1235 827827. Fax: +44 (0)1235 400401. Email education@bookpoint.co.uk. Lines are open from 9 a.m. to 5 p.m., Monday to Saturday, with a 24-hour message answering service. You can also order through our website: www.hoddereducation.com

ISBN: 978 1398 301 10 8

© Steph King, Josh Lury 2021

First published in 2017

This edition published in 2021 by

Hodder Education,

An Hachette UK Company

Carmelite House

50 Victoria Embankment

London EC4Y 0DZ

www.hoddereducation.com

Impression number 10 9 8 7 6 5 4 3 2 1

Year 2025 2024 2023 2022 2021

All rights reserved. Apart from any use permitted under UK copyright law, no part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or held within any information storage and retrieval system, without permission in writing from the publisher or under licence from the Copyright Licensing Agency Limited. Further details of such licences (for reprographic reproduction) may be obtained from the Copyright Licensing Agency Limited, www.cla.co.uk

Cover illustration © Lisa Hunt, The Bright Agency

Illustrations by Alex van Houwelingen, James Hearne, Lisa Hunt, Stéphan Theron, Tina Nel, Vian Oelofsen

Typeset 12 in 14pt FS Albert

Printed in the UK

A catalogue record for this title is available from the British Library.

Contents

How to use this book

Term 1

Unit 1 Number

Unit 2 2D and 3D shapes

Unit 3 Calculation

Unit 4 Statistical methods

Unit 5 Fractions, decimals, percentages, ratio and proportion

Unit 6 Probability

Term 1 Review

Term 2

Unit 7 Fractions, decimals, percentages, ratio and proportion

Unit 8 The coordinate grid

Unit 9 Calculation

Unit 10 Probability

Unit 11 Number

Unit 12 2D and 3D shapes

Term 2 Review

Term 3

Unit 13 Number

Unit 14 The coordinate grid

Unit 15 Calculation

Unit 16 2D and 3D shapes

Unit 17 Fractions, decimals, percentages, ratio and proportion

Unit 18 Statistical methods

Term 3 Review

Mathematical dictionary



Measuring and drawing angles

Explore

Use a **protractor** to draw **angles**.
Follow the steps to draw
an angle of 50 **degrees**.

Remember: We write
degrees as $^{\circ}$, so 90
degrees = 90° .

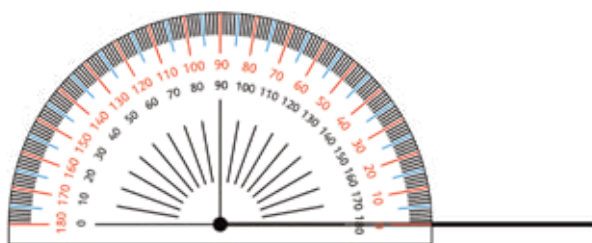


Maths words

protractor	angle
degree	acute
obtuse	isosceles

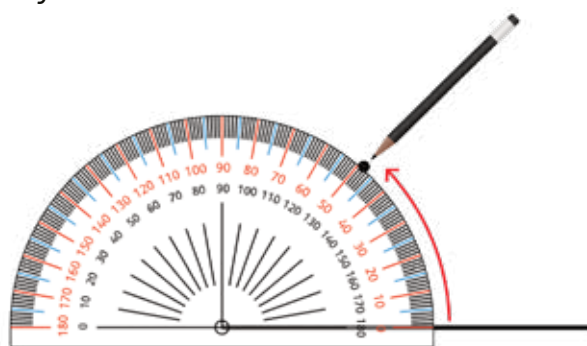
Step 1

Draw a baseline (straight line).
Place the protractor accurately on the
baseline, with the centre at the angle.



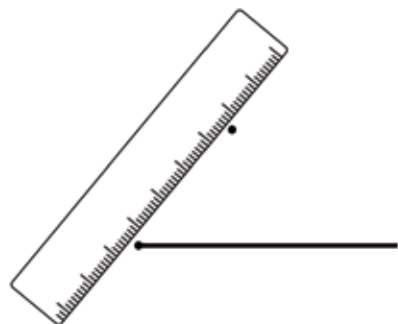
Step 2

Mark the angle on the correct scale.
The angle scale should start at 0
on your baseline.



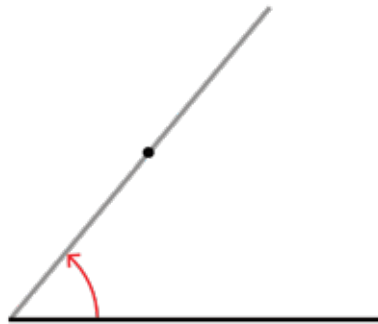
Step 3

Remove the protractor. Use a ruler to join
the corner with your angle mark.



Step 4

Check your angle. Is it correct?
Is it **acute** or **obtuse**?



First, imagine what these angles will look like.
Then draw them:

- 20 degrees
- 90 degrees
- 135 degrees

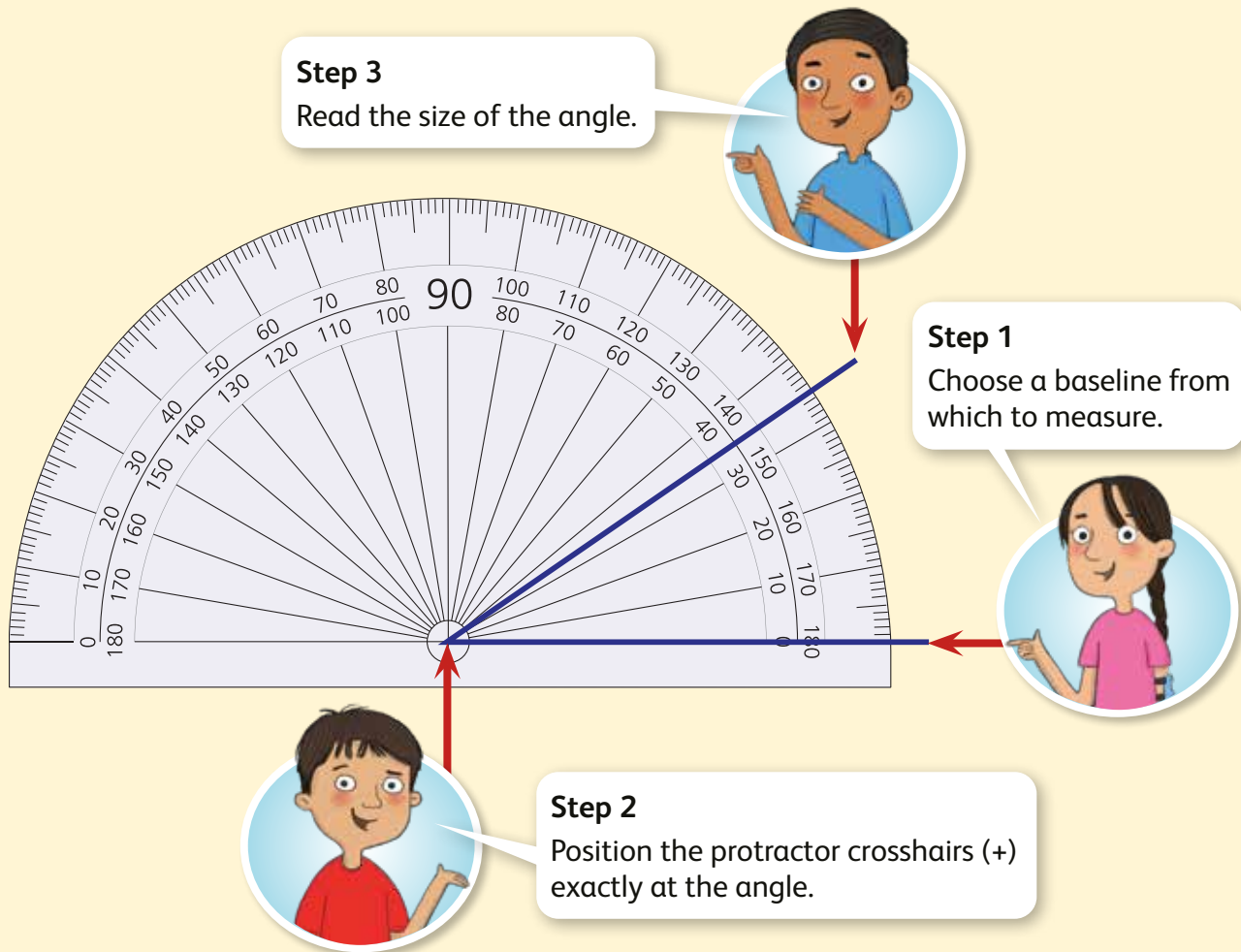
Are your angles as you imagined?

Remember: Acute angles
measure $< 90^{\circ}$. Right angles
measure 90° . Obtuse angles
measure $> 90^{\circ}$.

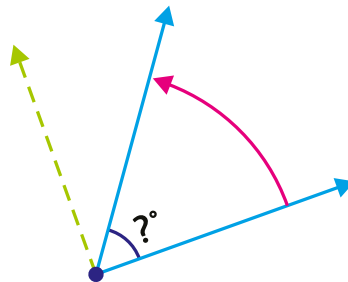


Learn

Follow the steps to measure an angle accurately.
The angle shown is between 30 and 40 degrees, or between 140 and 150 degrees.
You must choose the correct scale.



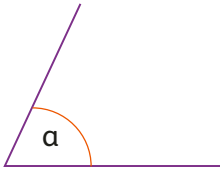
I can see that this is an acute angle, so I know which scale is correct.



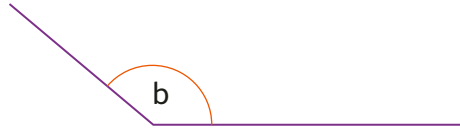
Practise

- 1 Look at each angle. Predict whether the angle is acute, right or obtuse. Then measure the angle with a protractor.

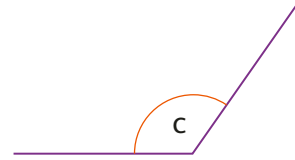
a



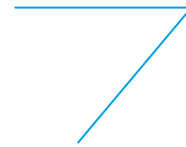
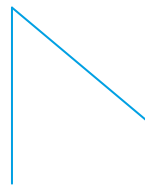
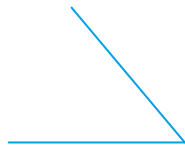
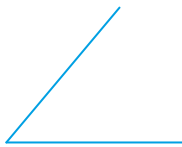
b



c

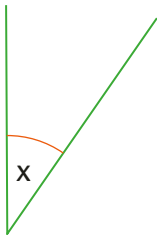


- 2 Draw an accurate angle of 50 degrees in different positions on a page. You could use these positions as examples.

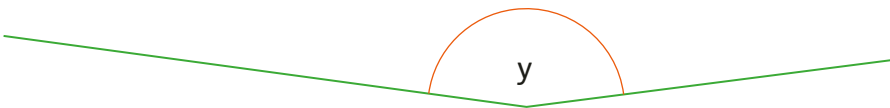


- 3 Measure each angle accurately. Use your knowledge of different kinds of angles to help you.

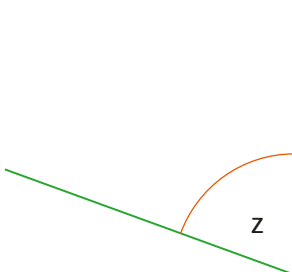
a



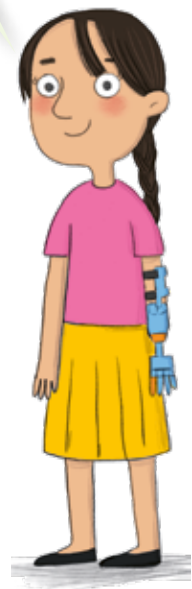
b



c



Drawing angles accurately is a very important skill. It also helps to know the different kinds of angles.



Try this

Here are the first three angles in a sequence.
The size of the angles follows a rule.



Step 1

Predict the rule: I think the rule is ...

Step 2

Measure each angle. Was your prediction correct?

Step 3

Draw the next two angles in the sequence.

Step 4

Describe what you think angles 8 and 9 will look like.

Step 5

Explain your method for working out these angles.

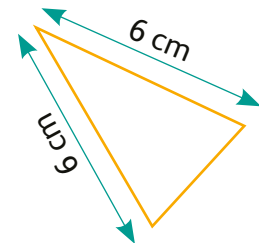
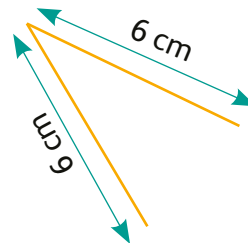
If I can predict the rule in a sequence, I will even be able to work out what angle 80 or 90 looks like!



Let's talk

Draw two lines that are exactly 6 cm long and touch at one end.
Join the two lines to form a triangle.
Measure all three internal angles.
What do you notice?

Try this method to draw three different **isosceles** triangles.
Examine the properties of the angles carefully and be ready to present your findings to the class.
Is it true for all isosceles triangles?



Remember: An isosceles triangle has two sides of equal length.



Calculating angles in triangles

Explore

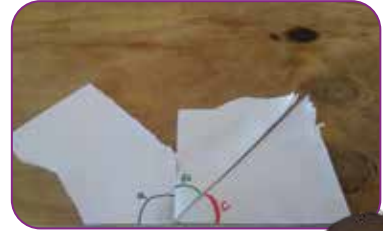
What happens when we tear a **triangle**? Cut a triangle from paper and label each **angle**.



Tear or cut off each angle.



Place the three angles together. What do you notice?



My angles fit together perfectly along the edge of my desk.

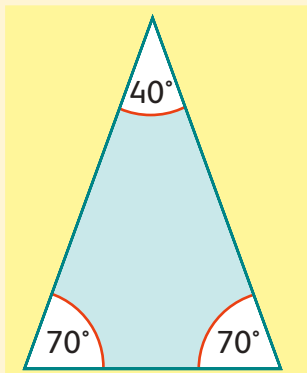


Maths words

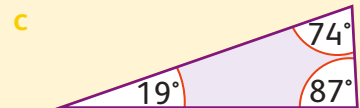
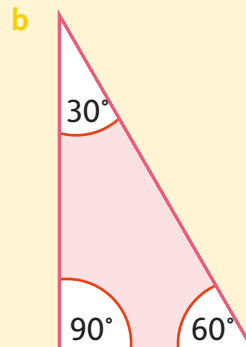
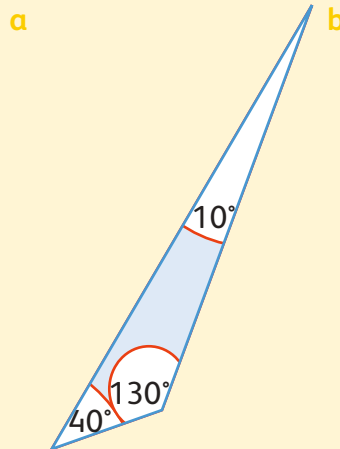
triangle
angle

Learn

Jin has measured the angles carefully. He works out the angle sum of the first triangle.

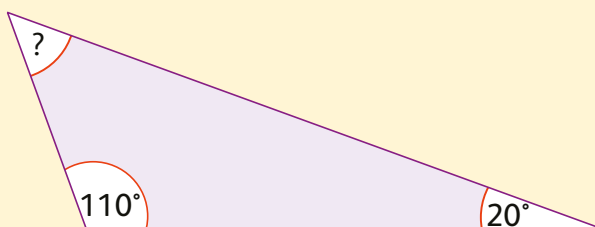


$$70^\circ + 70^\circ + 40^\circ = 180^\circ$$

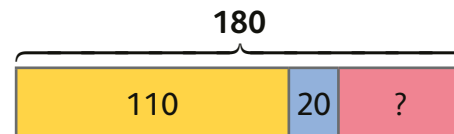


Find the total of the angles in each triangle. Discuss the results as a class.

Now help Jin to calculate the final angle of this triangle.



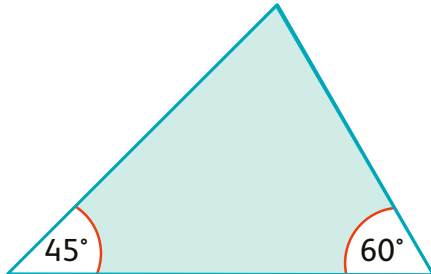
I can work out the size of the third angle without measuring.



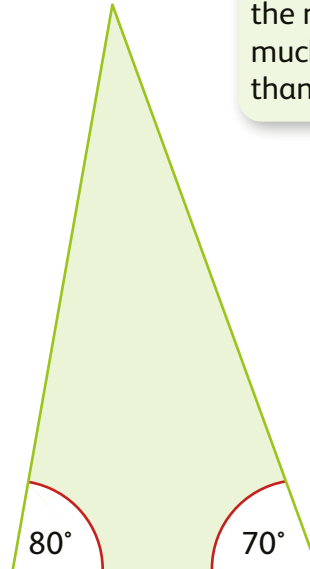
Practise

- 1 Calculate the missing angle in each triangle. Then measure to check your calculation.

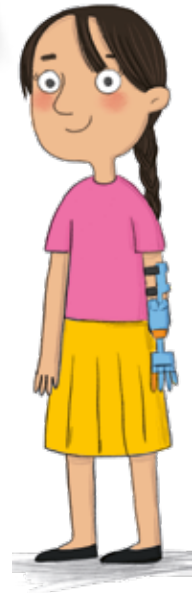
a



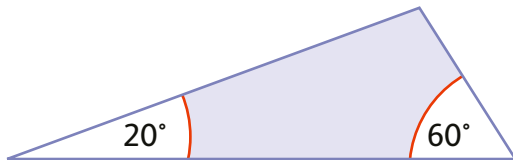
b



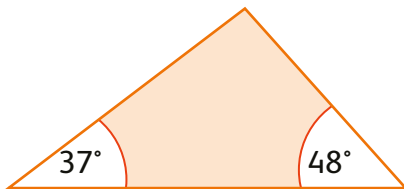
I think that calculating the missing angle is much more accurate than measuring.



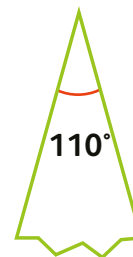
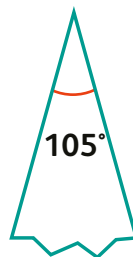
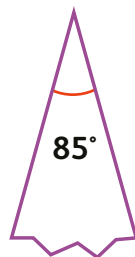
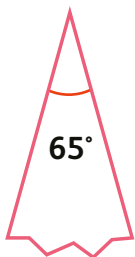
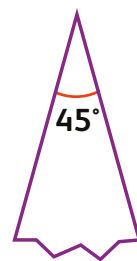
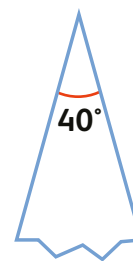
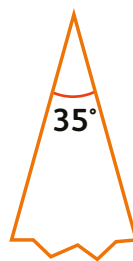
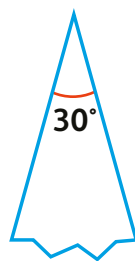
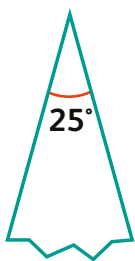
c



d



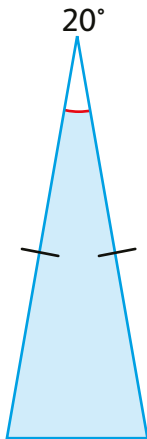
- 2 Banko draws three different triangles. He tears all the angles apart and mixes them up. Sort the angles into groups of three to make three different triangles.



Practise

- ★ 3 a Each isosceles triangle shows only one measured angle. Use what you know about triangles to calculate the angles in each triangle.

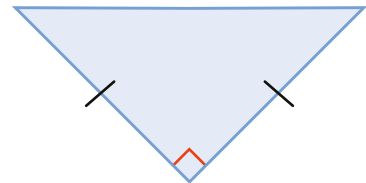
A



B



C



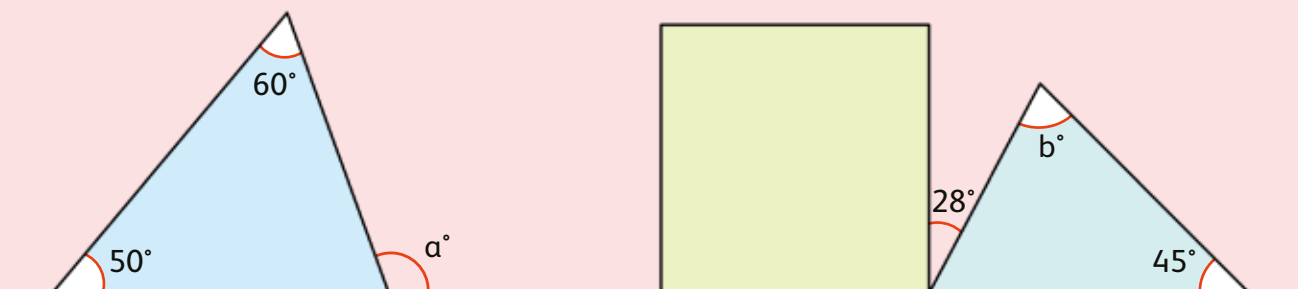
- b One angle of an isosceles triangle is 36° . What are the remaining two angles? Sketch a diagram of any solutions that you find.

Try this

Look at the two triangles and a square that I placed on the straight line.



Calculate the size of the angles marked a° and b° .



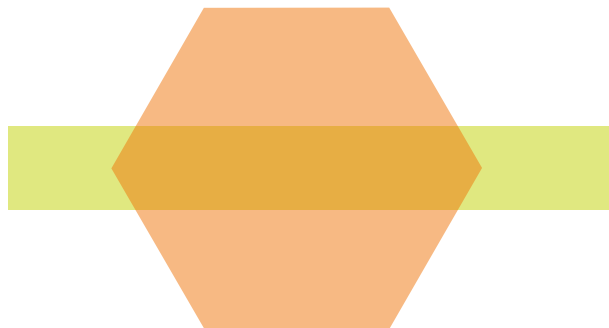
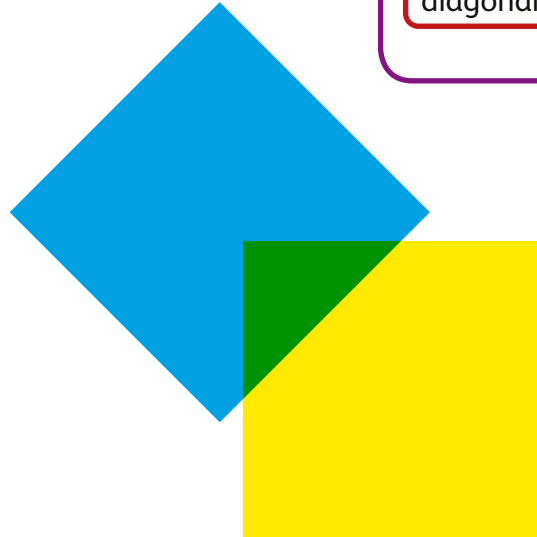
Properties of quadrilaterals

Explore

What happens when we overlap shapes?
 Sanchia overlaps two squares of tissue paper. The overlap makes a triangle.
 What types of triangles can Sanchia make like this?
 What types of triangles can she not make?

Maths words

quadrilateral
 parallel
 diagonal



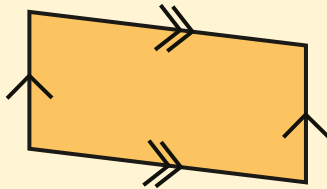
What types of **quadrilaterals** could you make by overlapping two squares?
 What types of quadrilaterals could you not make?
 Think about angles, symmetry, length and **parallel** sides.
 Explore overlaps using other shapes of tissue paper.



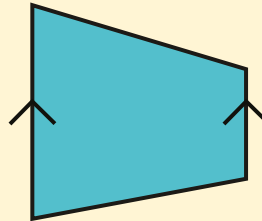
Learn

Drawing parallel lines in quadrilaterals

A parallelogram has two pairs of parallel sides.

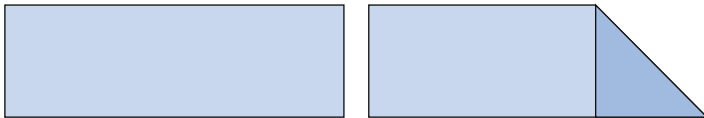


A trapezium has one pair of parallel sides.



Practise

- 1 One fold has turned a rectangle into a trapezium.



Investigate how many different quadrilaterals you can make by folding a rectangle.

Cut out a rectangle and fold it into these shapes.

- a Three different trapeziums
- b Two different parallelograms
- c A kite
- d A quadrilateral with three or more lines of symmetry

Then sketch the folds you need to make for each shape.

Mark any pairs of parallel lines, and the length or angle measurements.

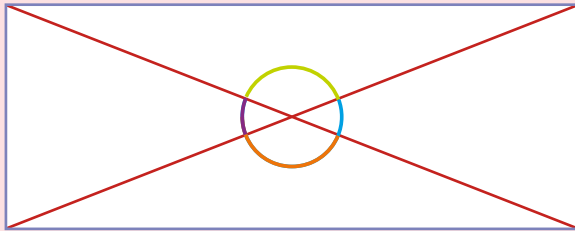
- 2 a Draw a circle. Mark four points on the circle. Join the points to make a quadrilateral.
- b What different types of quadrilaterals can you make?
Sketch them and describe their properties with as much detail as you can.
- c Are there any quadrilaterals that are IMPOSSIBLE to form like this? Explain why.

- ★ 3 Here are some challenges. Explore and explain what you notice.

- a Draw a kite with two right angles.
- b Draw a parallelogram with at least one line of symmetry.
- c Draw a trapezium with exactly one right angle.
- d Draw a quadrilateral with no parallel lines and no right angles.

Try this

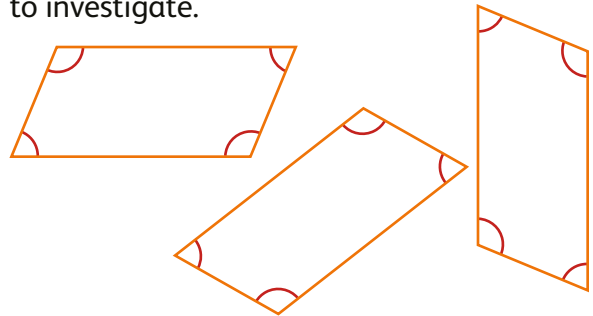
Pia investigates the **diagonals** of this quadrilateral. She draws lines from corner to corner. She measures the angles where the two lines cross. Pia notices that none of the four angles is a right angle.



- a Draw a rectangle and measure the angles where the diagonals cross.
- b Investigate different quadrilaterals. Which have diagonals that cross at right angles?

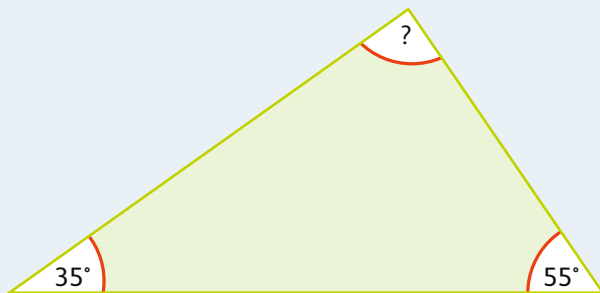
Let's talk

Explore the angles of a parallelogram. What questions would be interesting to investigate?
Investigate and then discuss what you notice.
Decide which other quadrilaterals to investigate.



Quiz

- 1 Draw the following angles accurately.
 - a 25 degrees
 - b 90 degrees
 - c 160 degrees
- 2 Calculate the third angle of this triangle.



- 3 Sketch, label and describe the properties of the following shapes.
 - a A parallelogram
 - b A kite
 - c A trapezium

Cambridge Primary

Mathematics

Second Edition


Learner's Book 6

Master the essential mathematical concepts that underpin the new Cambridge Primary Mathematics curriculum framework, with specifically sign-posted tasks and activities rooted in the mastery approach.

- Get learners thinking mathematically with engaging activities designed to focus on key concepts and principles.
- Embed knowledge across all areas of learning, enabling learners to make connections between different areas of mathematics.
- Develop vocabulary with probing questions designed to encourage learners to use accurate language to describe how they solve particular problems.



For over 25 years we have been trusted by Cambridge schools around the world to provide quality support for teaching and learning. For this reason we have been selected by Cambridge Assessment International Education as an official publisher of endorsed material for their syllabuses.

This resource is endorsed by Cambridge Assessment International Education 

- ✓ Provides support as part of a set of resources for the Cambridge Primary Mathematics curriculum framework (0096) from 2020
- ✓ Has passed Cambridge International's rigorous quality-assurance process
- ✓ Developed by subject experts
- ✓ For Cambridge schools worldwide

Registered Cambridge International Schools benefit from high-quality programmes, assessments and a wide range of support so that teachers can effectively deliver Cambridge Primary. Visit www.cambridgeinternational.org/primary to find out more.



Boost

This series includes eBooks and teacher support.

Visit www.hoddereducation.com/boost to find out more.

HODDER EDUCATION

e: education@bookpoint.co.uk

w: hoddereducation.com



We are working with Cambridge Assessment International Education to gain endorsement for this forthcoming series.

ISBN 978-1-3983-1026-1



9 781398 310261