4th Basic

5th Advanced

Helping With Math

USA GRADES

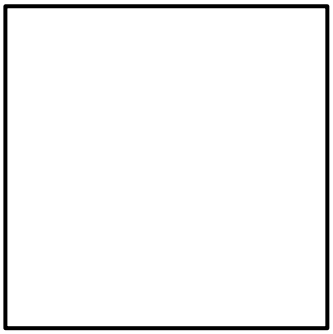
Quadrilaterals

Suitable for students
aged 8-10

This pack is suitable for learners aged 8 - 10 years old or 4th & 5th graders (USA). The content covers fact files and relevant basic and advanced activities involving quadrilaterals.

- A quadrilateral is a 2 dimensional shape which is closed, and has straight sides.
- “Quad” means four and “lateral” means side.
- Quadrilaterals have four sides, four vertices, and interior angles adding up to 360º.
- These shapes can either be regular or irregular.
- These quadrilaterals are present in our daily lives.

TYPES OF QUADRILATERALS

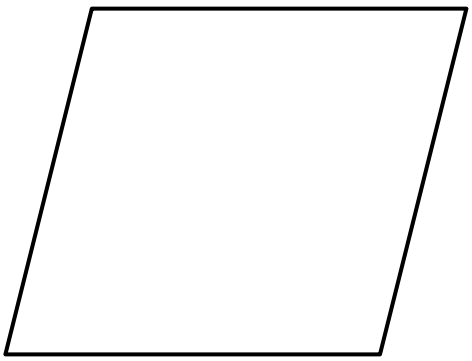


SQUARE

All four sides are equal.
All angles are right angles.
Opposite sides are parallel.
Diagonals bisect each other.

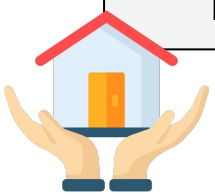
RECTANGLE

All angles are right angles.
Opposite sides are equal.
Opposite sides are parallel.
Diagonals bisect each other.

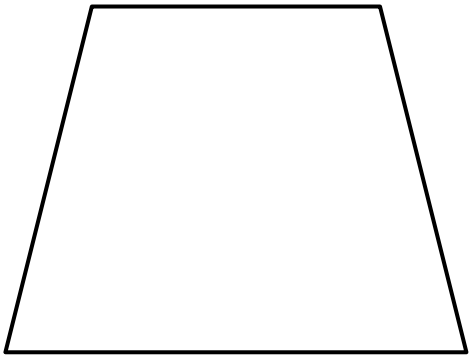


PARALLELOGRAM

Opposite sides are parallel.
Opposite sides are equal.
Opposite angles are equal.
Diagonals bisect each other.

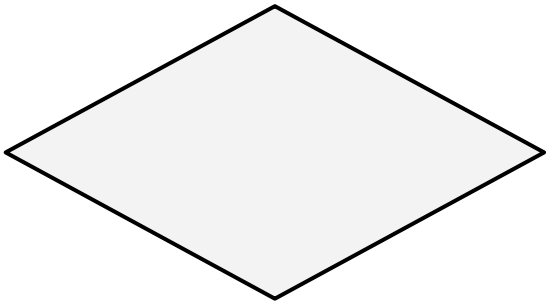


TYPES OF QUADRILATERALS



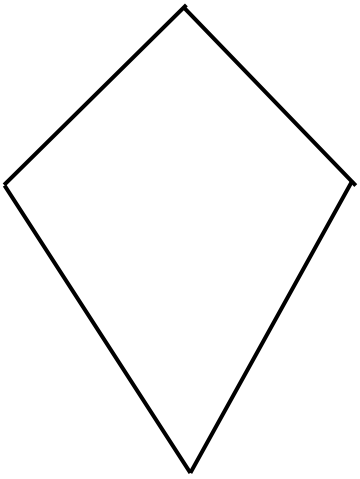
TRAPEZOID

Opposite sides are parallel.
Legs are congruent.
Adjacent angles add up to 180º.



RHOMBUS

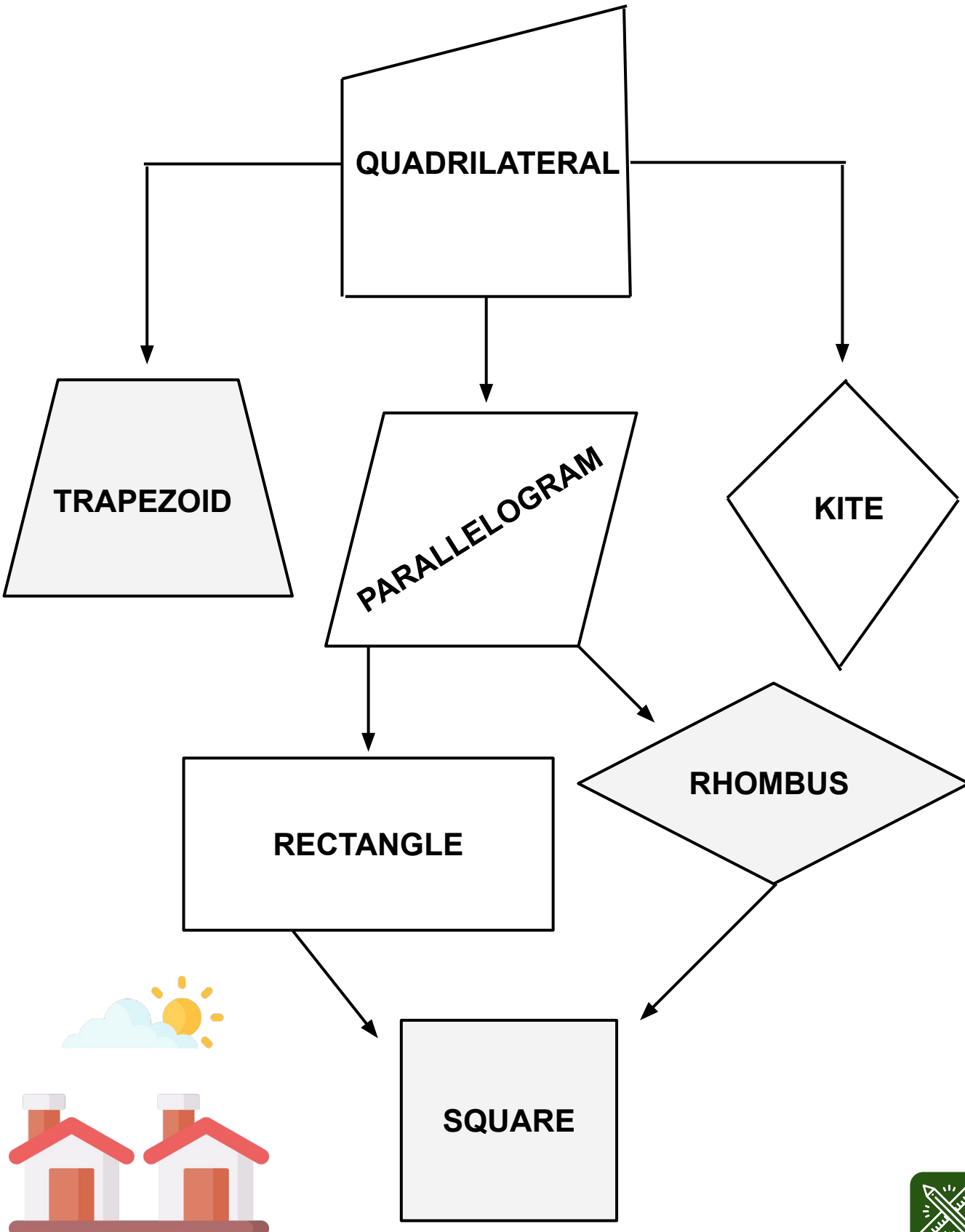
All sides are equal.
Opposite angles are equal.
Opposite sides are parallel.
Diagonals bisect each other.



KITE

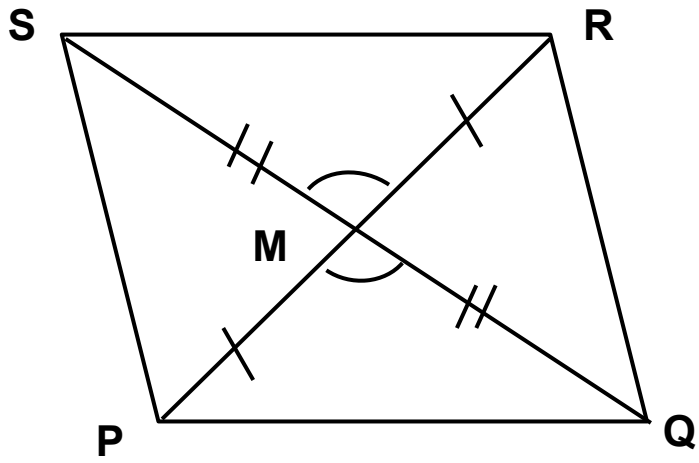
Adjacent pairs of sides are equal.
Diagonals are perpendicular.

HIERARCHY OF QUADRILATERALS



THEOREMS OF QUADRILATERALS

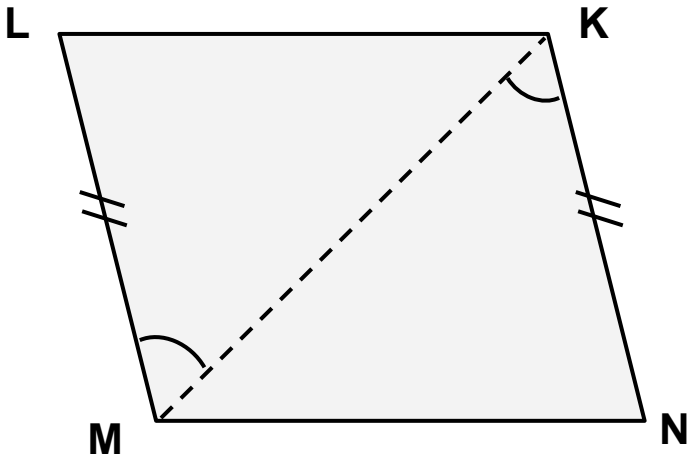
If the diagonals of a quadrilateral bisect each other then it is a parallelogram.



The figure PQRS is a quadrilateral in which the diagonals PR and QS intersect with M.

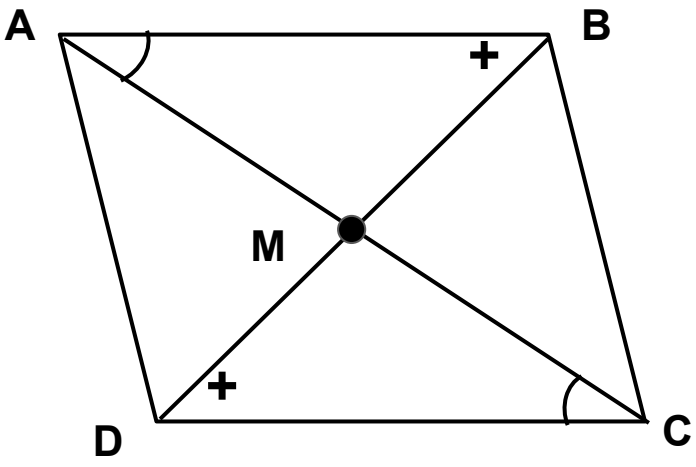
If a pair of opposite side of a quadrilateral is parallel and congruent then the quadrilateral is a parallelogram.

LMNK is the given quadrilateral wherein LM is parallel and congruent to NK.



THEOREMS OF QUADRILATERALS

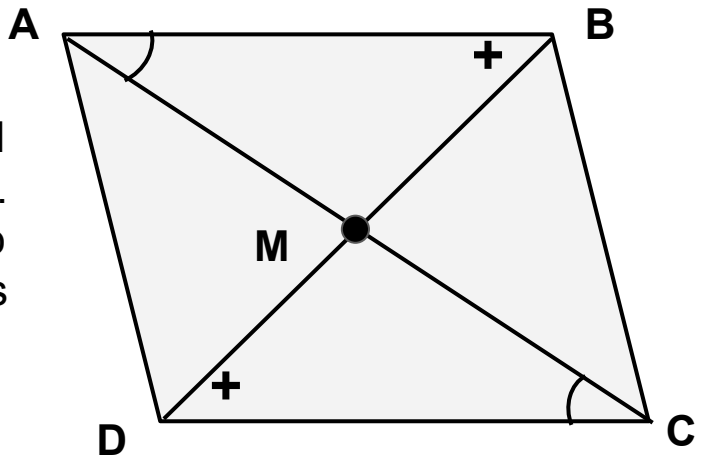
The diagonals of a parallelogram bisect each other.



The parallelogram, ABCD, has diagonals, AC and BD that bisect M. Segment AM is equal to segment CM; segment BM is equal to segment DM.

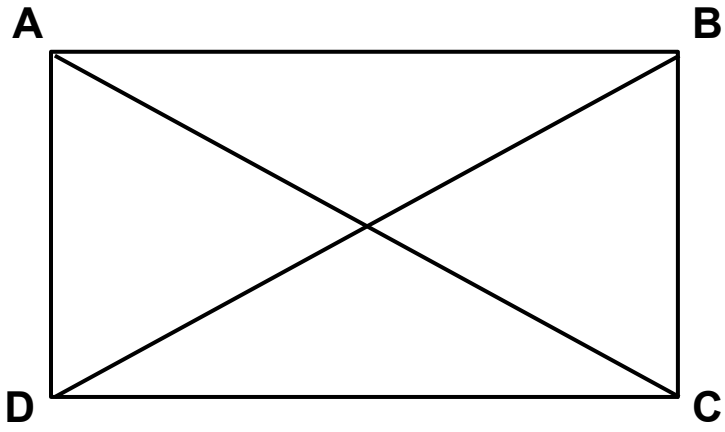
If the diagonals of a quadrilateral bisect each other at the right angle then it is a rhombus.

In the figure ABCD, diagonal AC is perpendicular to BD. Segment AM is equal to segment CM; segment BM is equal to segment DM.



THEOREMS OF QUADRILATERALS

If the diagonals of a parallelogram are congruent, then it is a rectangle.



ABCD is a parallelogram in which AC is approximately equal to BD.

PRACTICE TIME!

Draw the different types of quadrilaterals.

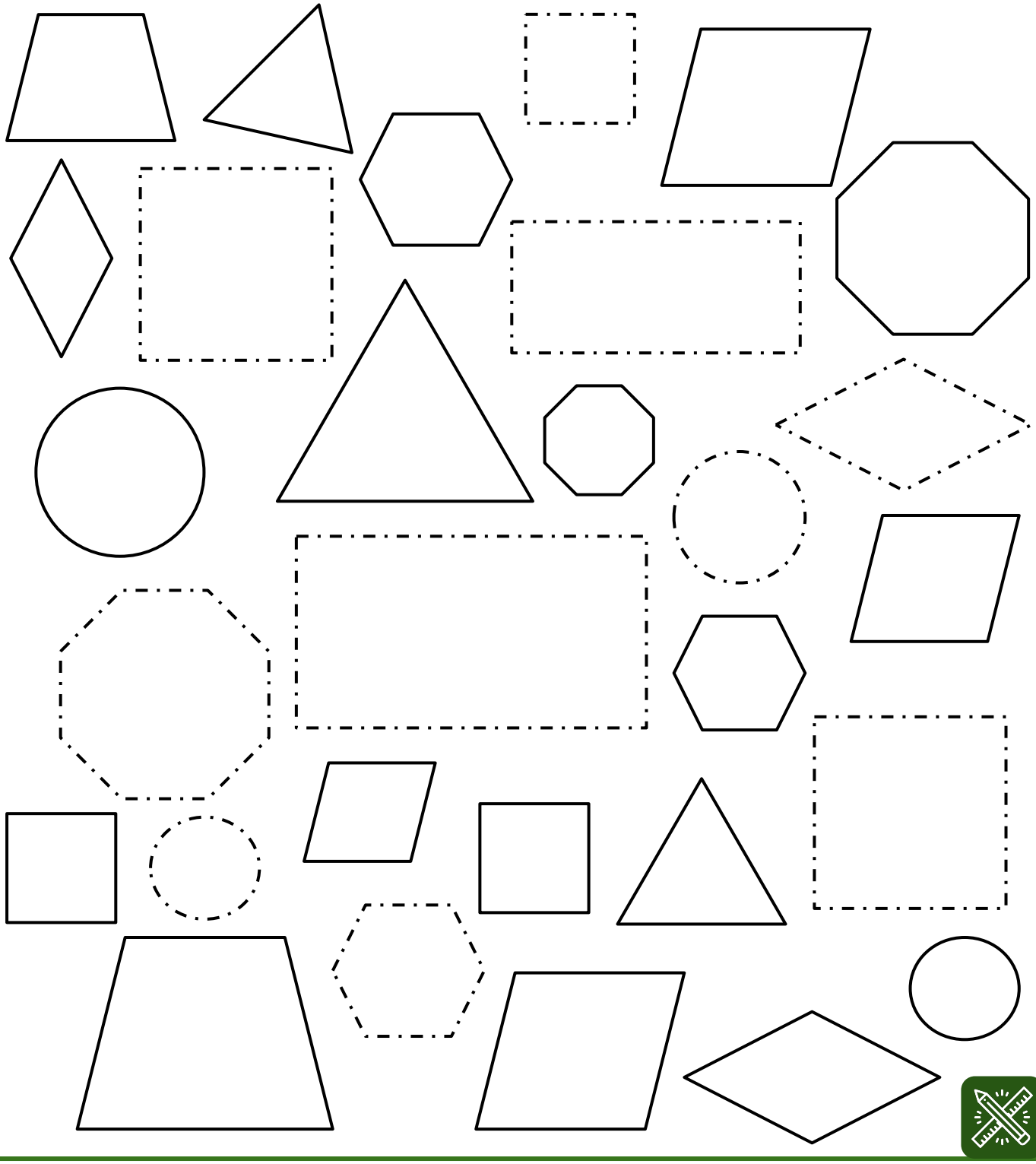
TABLE OF ACTIVITIES

Ages 8-9 (Basic)		4th Grade
1	First Day	
2	The Perfect House	
3	Scheduled Inspection	
4	Who Am I?	
5	Everyday Quadrilaterals	
Ages 9-10 (Advanced)		5th Grade
6	Unit Turnover	
7	What's Missing?	
8	Own Design	
9	The Similarities	
10	Important One	

FIRST DAY

G4
Basic

It is your first day at the construction site. As your first task, find all the quadrilaterals and shade it with your favorite color. Identify each type.



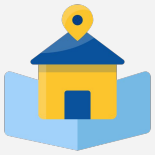
THE PERFECT HOUSE

G4 Basic

You are looking for a house to fit your needs. While doing so, identify the answers for the statements below. You may find your answers in the word bank provided for you.

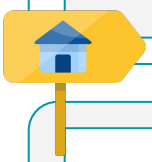
Trapezoid **Rhombus** **Quadrilateral**

Quad & Lateral **Kite** **Rectangle**



These words mean “four” and “sides”.

Its opposite sides are equal and angles are at 90º.



All of its sides and opposite angles are equal.

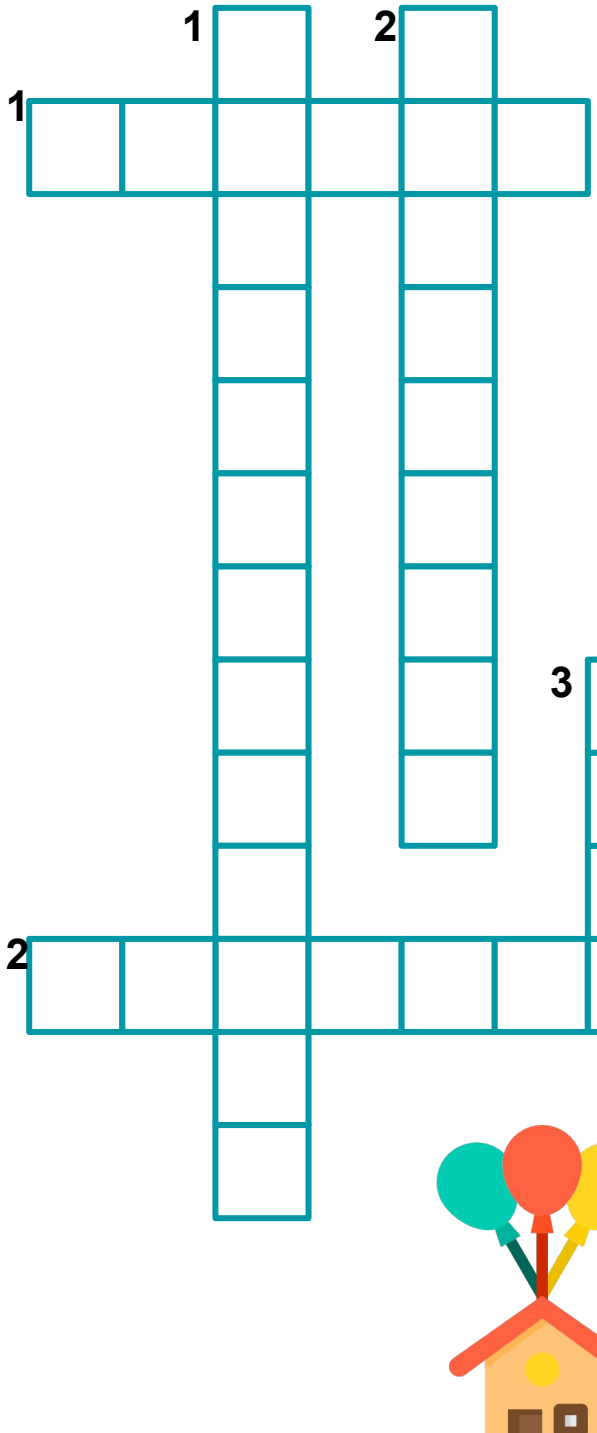
Its adjacent pair of sides are equal.

The opposite sides are parallel and its adjacent angles sum up to 180º.

SCHEDULED INSPECTION

G4
Basic

There are houses that are scheduled for inspection. Check the houses with your team, then answer the crossword puzzle below.



ACROSS

1. All sides are equal and angles measure 90º.
2. Opposite sides are parallel and equal. All angles are equal.

DOWN

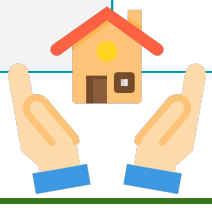
1. A 2-D shape which is closed and has straight sides.
2. Opposite sides are parallel and adjacent sides are at 180º.
3. Adjacent pair of sides are equal.
4. All sides and opposite angles are equal.

WHO AM I?

G4
Basic

You are having a hard time getting to know your neighbors, but this might help you with it. Identify which type of quadrilateral is being described, and draw it on the space provided.

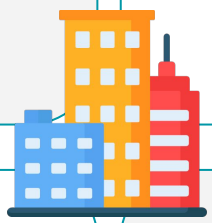
I am a quadrilateral who has adjacent angles that add up to 180º. My opposite side are parallel. Who am I?	
I am a quadrilateral whose four sides are equal. All my angles are 90º. Who am I?	
I am a quadrilateral whose four sides are equal. My opposite angles are also equal. Who am I?	
I am a quadrilateral who has equal adjacent pair of sides. Who am I?	



EVERYDAY QUADRILATERALS

G4
Basic

We encounter different quadrilaterals in our day-to-day lives. Draw 6 quadrilaterals that you may see inside your homes.



UNIT TURNOVER

G5 Advanced

The condominium unit is already for turnover and needs to be inspected. Check also if the statements below are true, if false, underline the word/s that made it incorrect.

If the diagonals of a quadrilateral bisect each other then it is a triangle.

The diagonals of a parallelogram bisect each other.

A quadrilateral with four angles measured at 90º and has four equal sides is called a rectangle.

A quadrilateral is closed and has three sides.

If a pair of opposite side of a quadrilateral is parallel and congruent then the quadrilateral is a parallelogram.

If the diagonals of a parallelogram are congruent, then it is a rectangle.

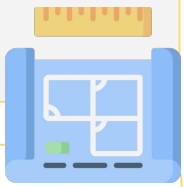
WHAT'S MISSING?

G5 Advanced

There are missing details in the blueprint of the house. Complete the details, and fill in the missing word/s to complete the statements below.

If the diagonals of a quadrilateral bisect each other at the right angle then it is a _____.

If the diagonals of a parallelogram are _____, then it is a rectangle.



The diagonals of a parallelogram _____ each other.

If the diagonals of a quadrilateral bisect each other then it is a _____.

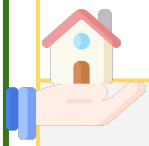
If a pair of opposite side of a quadrilateral is _____ and _____ then the quadrilateral is a parallelogram.

OWN DESIGN

G5 Advanced

Create your own design for the houses. As you are doing this, draw and describe the given types of quadrilaterals below.

QUADRILATERAL	DRAW IT!	DESCRIBE IT!
SQUARE		
RECTANGLE		
PARALLELOGRAM		
TRAPEZOID		
RHOMBUS		
KITE		

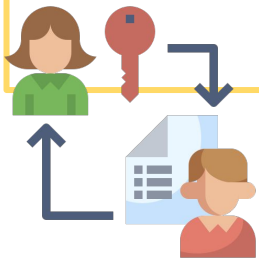


THE SIMILARITIES

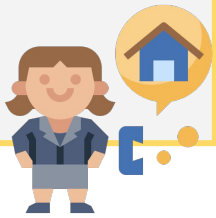
G5 Advanced

Houses have lots of similarities and differences, same with quadrilaterals. Provide the quadrilaterals being asked below based on the given properties.

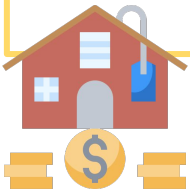
2 Quadrilaterals with four right angles



3 Quadrilaterals with two parallel sides



4 Quadrilaterals with diagonals that bisect each other



IMPORTANT ONE

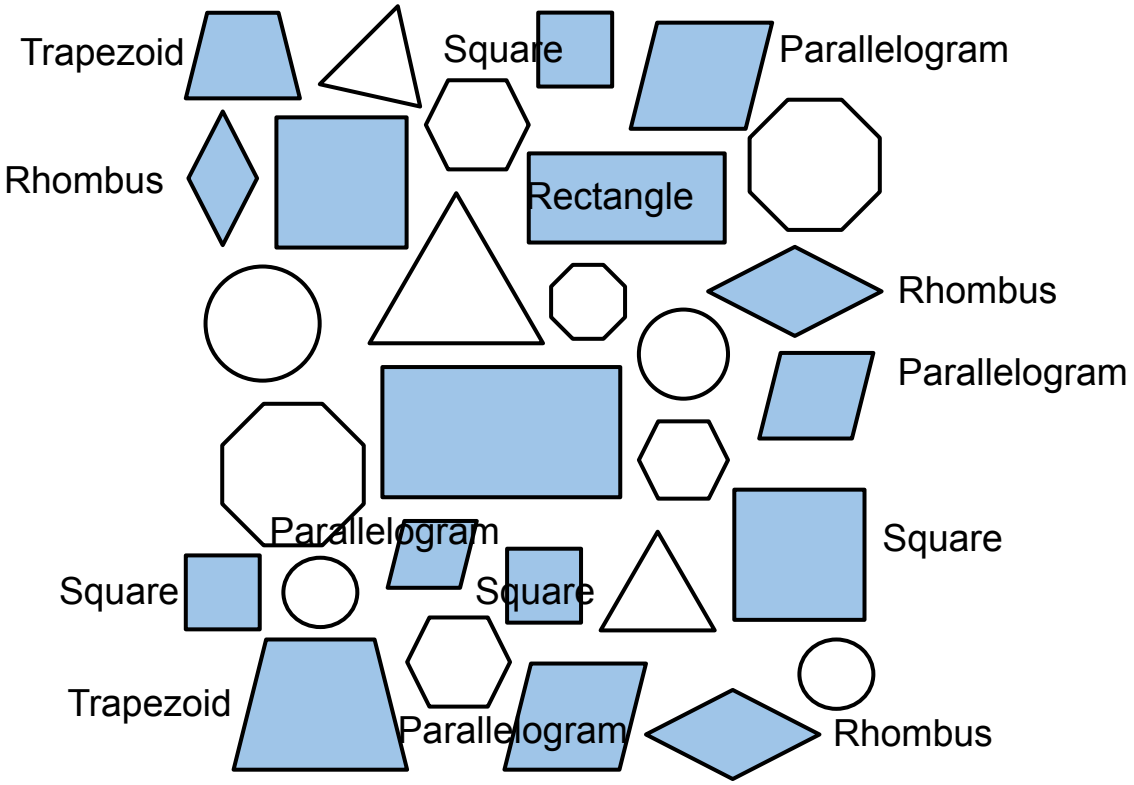
G5 Advanced

A house is as important as a quadrilateral. For you, what is the importance of a quadrilateral? Write down your answer below.

IMPORTANCE OF QUADRILATERALS

ANSWER GUIDE

Activity 1



Activity 2

1. Quad & Lateral
2. Rectangle
3. Rhombus
4. Kite
5. Trapezoid

Activity 3

ACROSS
1. Square
2. Parallelogram

DOWN
1. Quadrilateral
2. Trapezoid
3. Kite
4. Rhombus

ANSWER GUIDE

Activity 4

1. Trapezoid
2. Square
3. Rhombus
4. Kite

Activity 5

1. Chess board
2. Playing cards
3. Kite
4. Road signs
5. Picture frame
6. Money

**Answers may vary.*

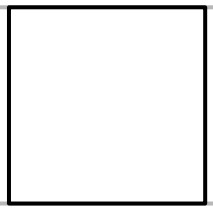
Activity 6

1. False - triangle
2. True
3. False - rectangle
4. False - three
5. True
6. True

Activity 7

1. Rhombus
2. Congruent
3. Bisect
4. Parallelogram
5. Parallel & Congruent

Activity 8

1. 

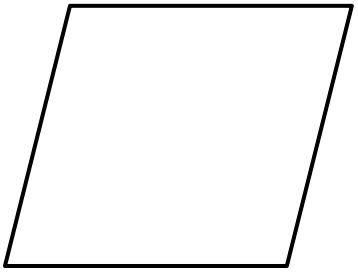
All four sides are equal; All angles are right angles; Opposite sides are parallel; Diagonals bisect each other.

ANSWER GUIDE

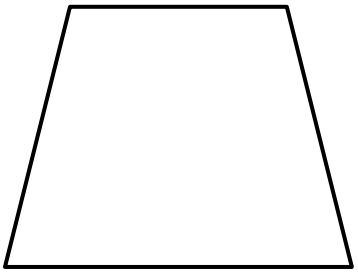
Activity 8

2.

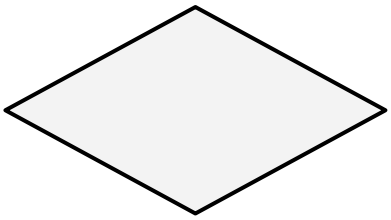
All angles are right angles; Opposite sides are equal.; Opposite sides are parallel; Diagonals bisect each other.

3. 

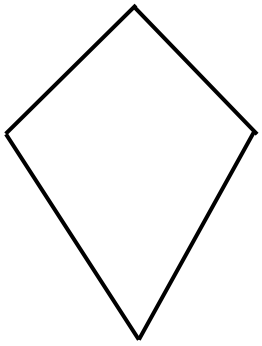
Opposite sides are equal.; Opposite sides are parallel; Opposite angles are equal. Diagonals bisect each other.

4. 

Opposite sides are parallel; Legs are congruent. Adjacent angles add up to 180^{o}.

5. 

All sides are equal; Opposite angles are equal; Opposite sides are parallel; Diagonals bisect each other.

6. 

Adjacent pairs of sides are equal; Diagonals are perpendicular.

ANSWER GUIDE

Activity 9

1. Square & Rectangle
2. Square, Rectangle, Parallelogram
3. Square, Rectangle, Parallelogram & Rhombus

Activity 10

**Answers may vary.*

Copyright Notice

This resource is licensed under the Creative Commons Attribution-NonCommercial 4.0 International license.

You are free to:

- **Share** — copy and redistribute the material in any medium or format
- **Adapt** — remix, transform, and build upon the material

Under the following terms:

- **Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **NonCommercial** — You may not use the material for commercial purposes.

For more information on this license, visit the following link:

http://creativecommons.org/licenses/by-nc/4.0/

Where possible, free-use images are sourced from online repositories such as Wikipedia and Wikimedia Commons. References and sources for images are provided in the speaker notes section of this document.

Thank you!

Thank you

Thank you so much for purchasing and downloading this resource.

We hope it has been useful for you in the classroom and that your students enjoy the activities.

For more teaching and homeschooling resources like this, don't forget to come back and download the new material we add every week!

Thanks for supporting **Helping With Math**. We can provide teachers with low-cost, high-quality teaching and homeschooling resources because of our loyal subscribers and hope to serve you for many years to come.

- The Entire Helping With Math Team :)