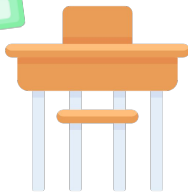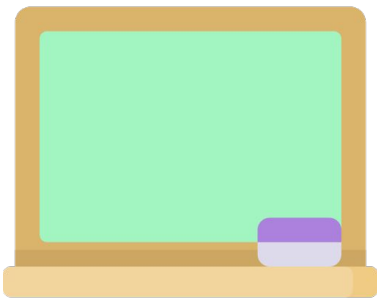# Helping With Math

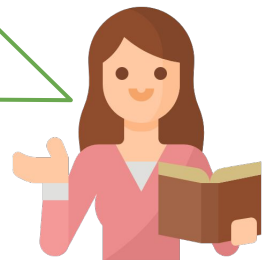## Understanding Properties of Quadrilaterals

GRADE 3

The term quadrilateral can be simply defined as a two-dimensional closed figure with four sides. Basically, there are two-dimensional shapes classified under quadrilaterals such as square which has a certain property.

Good day, students! Can you name the quadrilaterals that you can see in the 'classroom' set-up on the left?

QUADRILATERAL

In geometry, a quadrilateral is defined as a closed, two-dimensional shape which has four straight sides

PROPERTIES OF QUADRILATERALS

A quadrilateral has 4 sides, 4 angles, and 4 vertices

A quadrilateral can be regular or irregular

The sum of all the interior angles of a quadrilateral is 360°

TYPES OF QUADRILATERALS

Parallelogram

- Opposite sides are parallel
- Opposite sides are equal
- Opposite supplementary angles are equal

TYPES OF QUADRILATERALS

Square

- All sides are equal
- All right angles are equal and measure 90°

Rectangle

- Opposite sides are parallel
- Opposite sides are equal
- Opposite right angles are equal and measure 90°

Rhombus

- All sides are equal
- Opposite angles are equal

Trapezoid

- Only one pair of opposite sides are parallel
- Adjacent angles add up to 180°

 Answer here: _____

_____

_____

Square has 1.)_____ sides. The angles are all equal and measure to 2.)_____ degrees.

The *parallelogram's* opposite sides are 3.)_____. Also, it's opposite sides are 4.)_____.

Answer here: _____

_____

_____

 Answer here: _____

_____

_____

Rhombus' opposite sides are 5.)_____. Also, it's opposite angles are 6.)_____.

The *trapezoid's* opposite sides are 7.)_____. The 8.)_____ angles add up to 9.)_____ degrees.

Answer here: _____

_____

_____

_____

TABLE OF ACTIVITIES

1. Shapes' School I.D.
2. Teacher Michelle's Activity
3. Get to Know Each Traits
4. III- Amethyst
5. Ms. Johnson's Class
6. Class Groupings
7. Quadrilaterals Quiz
8. The Color Contest
9. What it Takes to be a Scholar?
10. School Journal

SHAPES' SCHOOL I.D.

It's the start of a new school year! Help Mary to know her new classmates. Write the name of each quadrilateral.

1
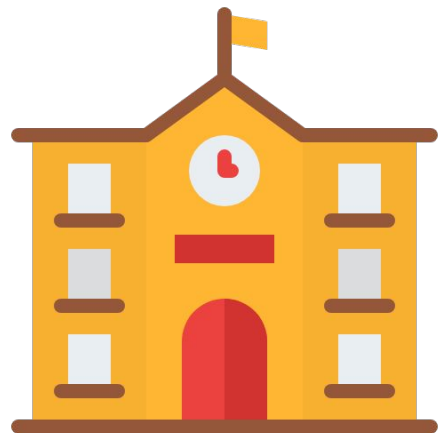
Identity Card

2

Identity Card

3

Identity Card
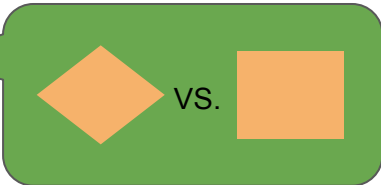
4
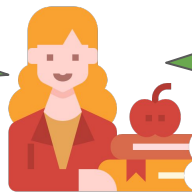
Identity Card

5

Identity Card

TEACHER MICHELLE'S ACTIVITY

Teacher Michelle gave her students their first activity for the school year! Answer the 2 questions below.

Tell the difference between a parallelogram and a trapezoid
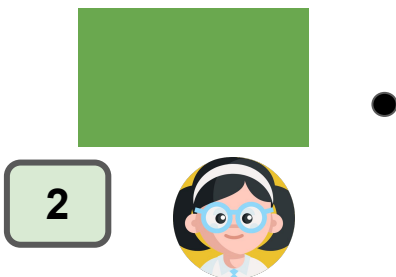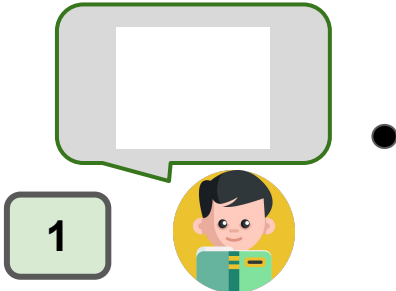
VS.

_____

_____

_____

_____

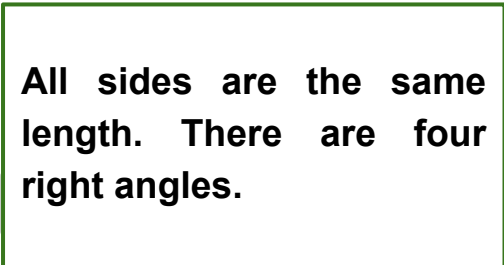Tell the difference between a square and a rhombus
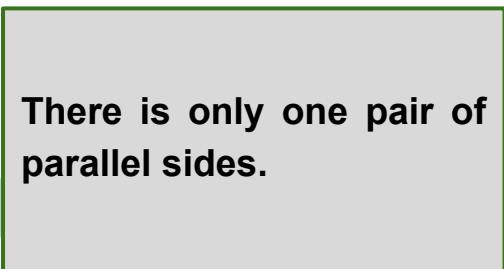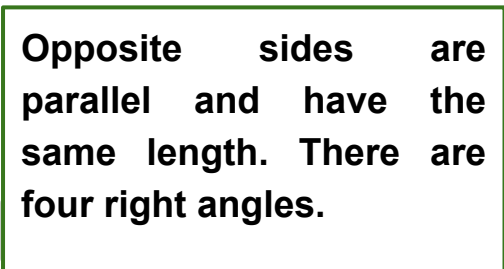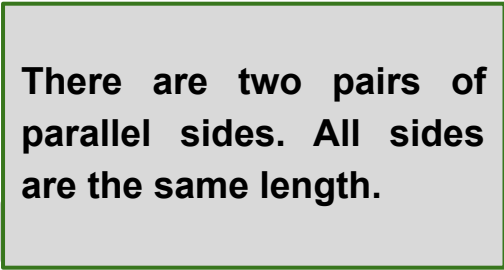
VS.

_____

_____

_____

_____

GET TO KNOW EACH TRAITS

Let's get to know the new students' traits! Match the quadrilateral with its definition. Draw a line to connect.

1 ●

2 ●

3 ●
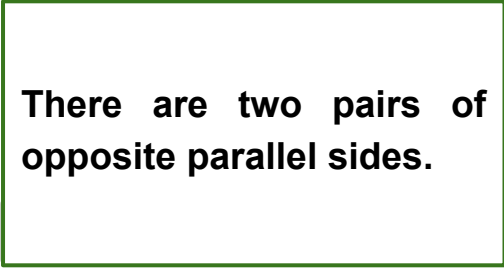
4 ●

5 ●

● **A** All sides are the same length. There are four right angles.

● **B** There is only one pair of parallel sides.

● **C** Opposite sides are parallel and have the same length. There are four right angles.

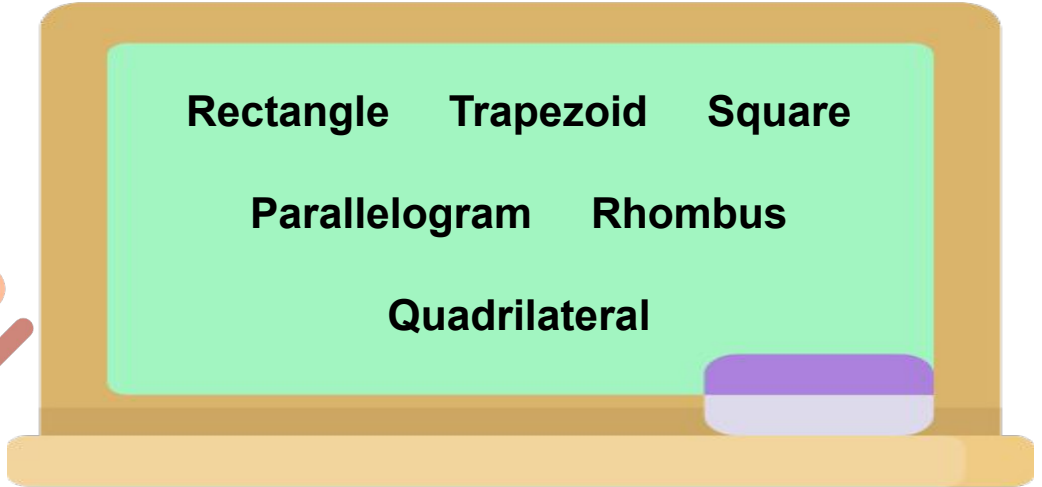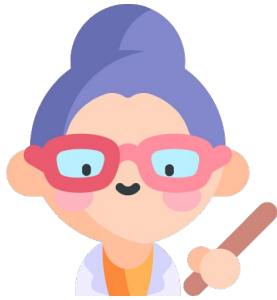● **D** There are two pairs of parallel sides. All sides are the same length.

● **E** There are two pairs of opposite parallel sides.

It's time for the class of Mrs. Smith! Fill in the blanks with words from the word bank.

Rectangle   Trapezoid   Square

Parallelogram   Rhombus

Quadrilateral

1

A shape that has two pairs of parallel sides.

2

A shape that has one pair of parallel sides

3

A shape where all right angles are equal and opposite sides are equal

4

A shape where opposite angles are equal and all sides are equal
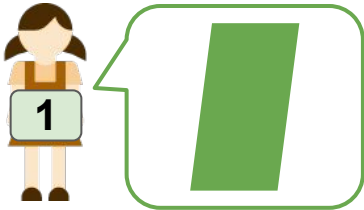
5

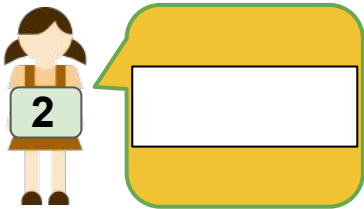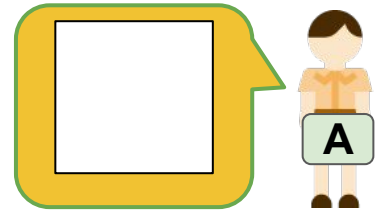A shape that is both a rectangle and a rhombus. It has all right angles and all sides are equal.

MS. JOHNSON'S CLASS

Find a pair to do the activity of Ms. Johnson. Match the shapes to their names.

1

SQUARE

 A

2

RECTANGLE

 B

3

TRAPEZOID

 C

4

RHOMBUS

 D

5

PARALLELOGRAM

 E
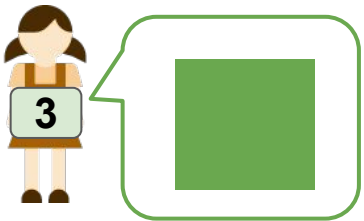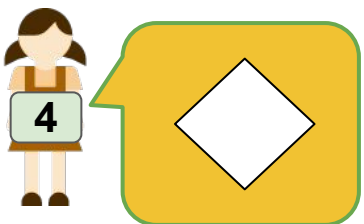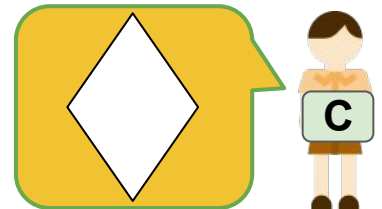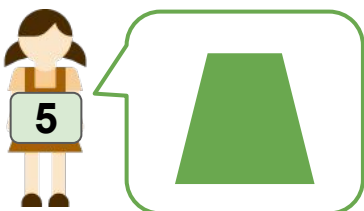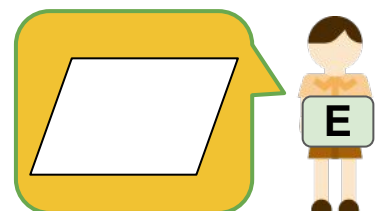
CLASS GROUPINGS

Form a group to complete the task given by Mrs. Smith. Each shape has a given number. Write the number/s for the names of following quadrilaterals below.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
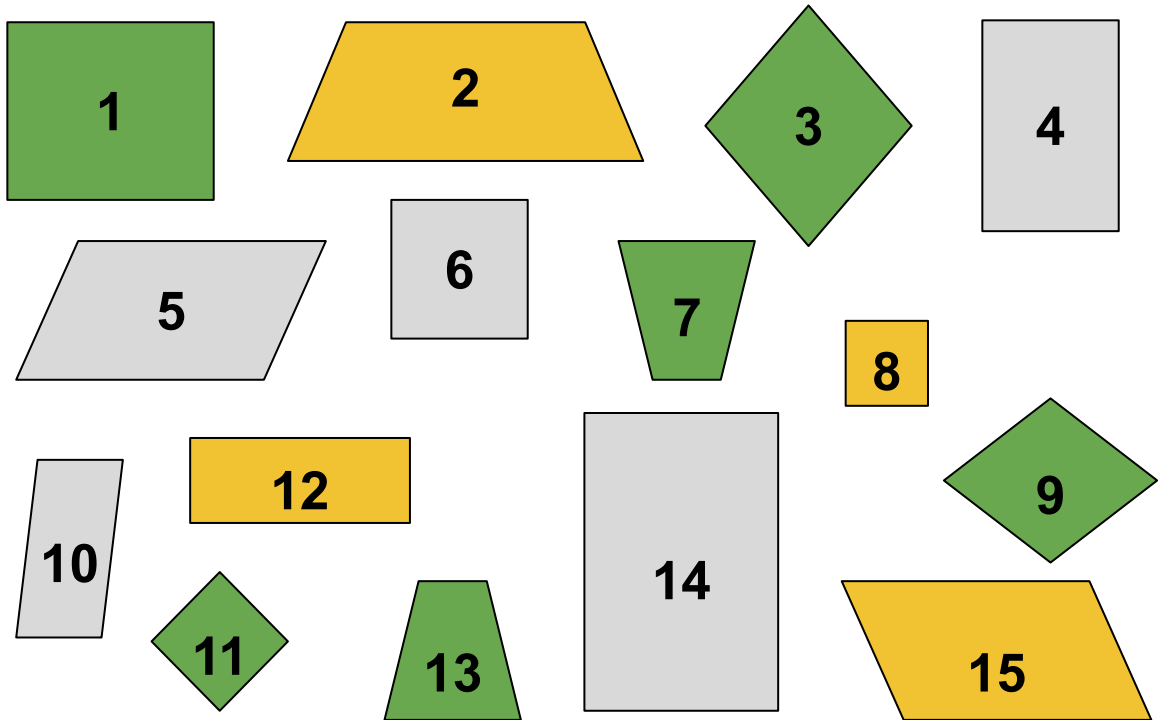
SQUARE:

RECTANGLE:

PARALLELOGRAM:
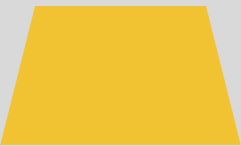
TRAPEZOID:

RHOMBUS:

QUADRILATERALS QUIZ

It's quiz time! Write the name and its descriptive attributes for each shape.

SHAPES	NAMES	DESCRIPTION OF SIDES	DESCRIPTION OF ANGLES

Adjacent   Congruent   Equal   Isosceles

Opposite   Parallel   Parallelogram   Rectangle

Rhombus   Right   Square   Trapezoid

THE COLOR CONTEST

It's the school's foundation week! Color the quadrilaterals using the color key.

1

2

3

4

5

6

7

8

9

10

11
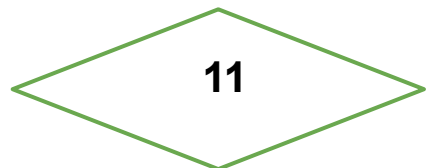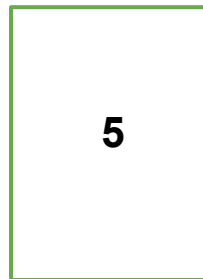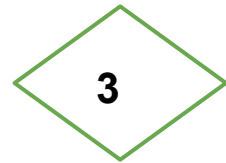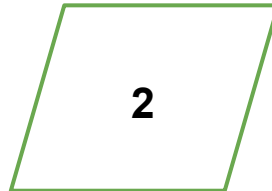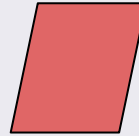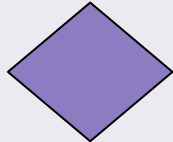
WHAT IT TAKES TO BE A SCHOLAR?

Are you then next scholar? List down the 3 properties of quadrilaterals in the spaces below.

QUADRILATERALS

_____

_____

_____

_____

_____

_____

_____

_____

_____

SCHOOL JOURNAL

Write your experience in dealing with the properties of quadrilaterals. How significant is this lesson to everyday life? Cite instances when you can use your knowledge about it.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ANSWER GUIDE

Activity 1

1. Rhombus
2. Square
3. Parallelogram
4. Trapezoid
5. Rectangle

Activity 2

1. Both sides of a parallelogram are parallel while a trapezoid has only one pair of parallel sides.
2. The angles of a square are right while the opposite angles of rhombus are equal.

Activity 3

1. A
2. C
3. B
4. E
5. D

Activity 4

1. Parallelogram
2. Trapezoid
3. Rectangle
4. Rhombus
5. Square

ANSWER GUIDE

Activity 5

1. Square: 3,A
2. Rectangle: 2, D
3. Trapezoid: 5, B
4. Rhombus: 4, C
5. Parallelogram: 1, E

Activity 6

1. Square: 1, 6, 8
2. Rectangle: 4, 12, 14
3. Parallelogram: 5, 10, 15
4. Trapezoid: 2, 7, 13
5. Rhombus: 3, 9, 11

Activity 7

NAMES	DESCRIPTION OF SIDES	DESCRIPTION OF ANGLES
Square	equal	All angles are right
Rhombus	equal	Opp. angles are equal
Rectangle	equal	Opposite right angles are equal and measure 90°
Parallelogram	Parallel and equal	Opposite supplementary angles are equal
Trapezoid	One pair of opposite sides are parallel	Adjacent angles add up to 180°

ANSWER GUIDE

Activity 8

Blue: 8
Purple: 3, 11
Green: 1, 5, 9
Red: 2, 7, 10
Yellow: 8

Activity 9 & 10

Answers may vary as the questions are requiring subjective answers.

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