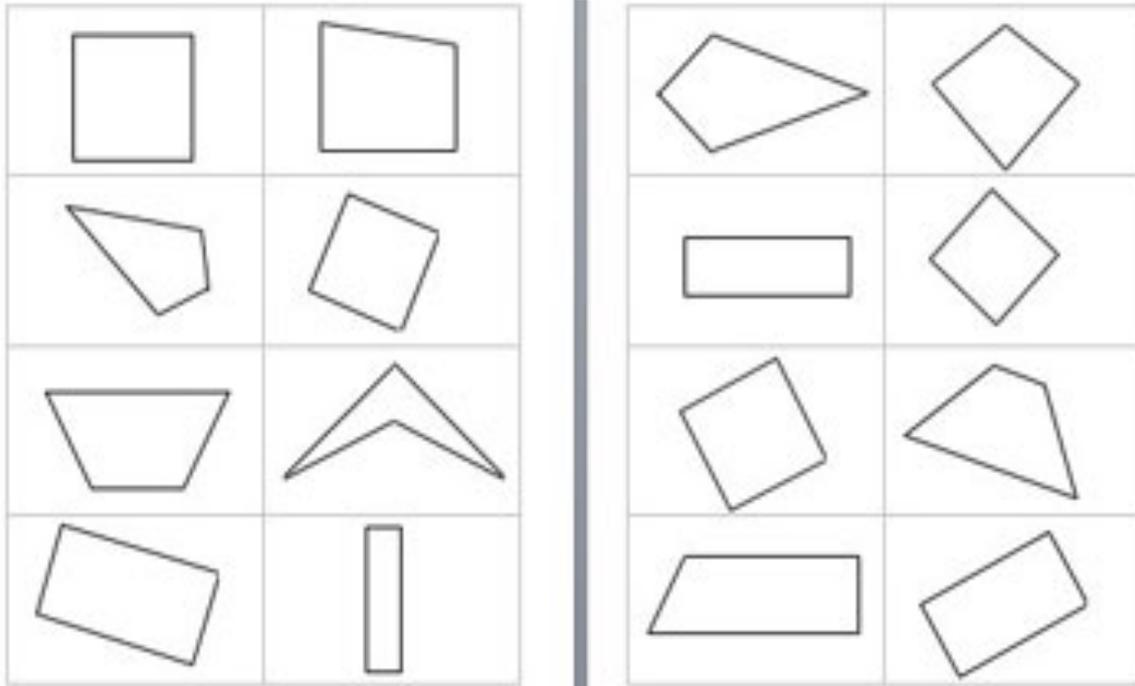


QUAD MATCH

Sort these quadrilaterals into 4 sets of 4 and describe the properties of each set.



HELP

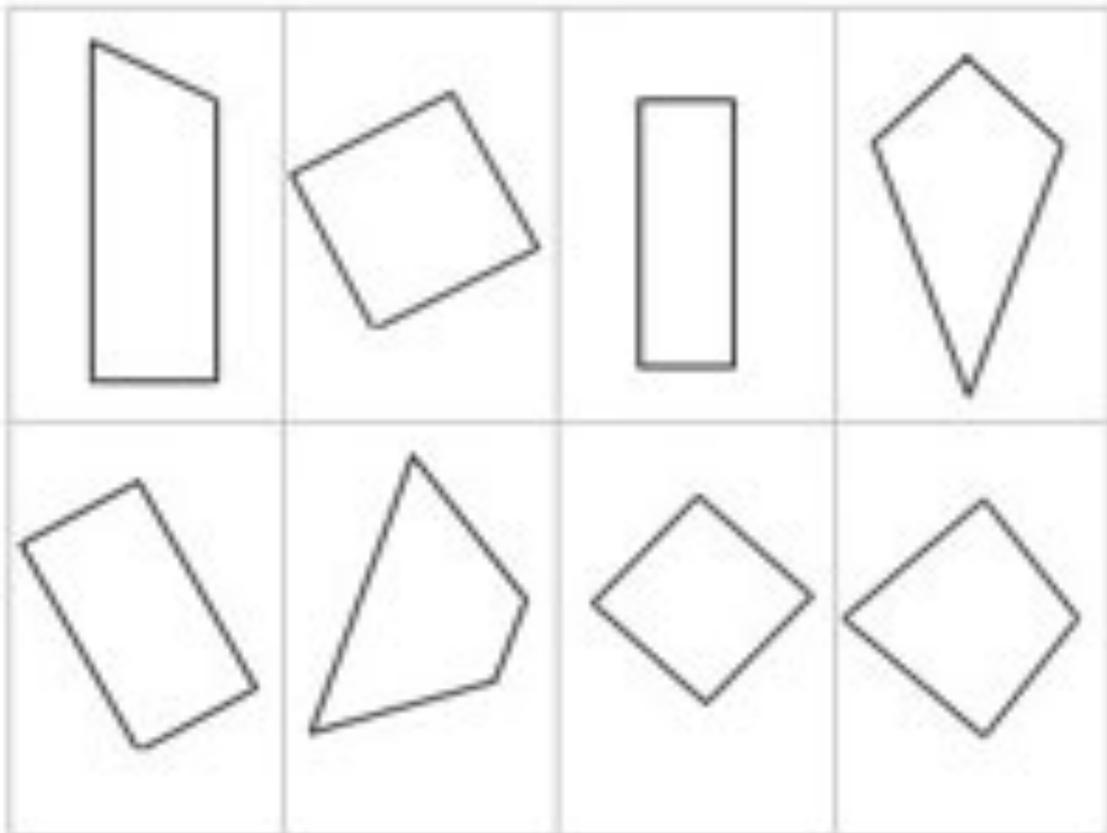
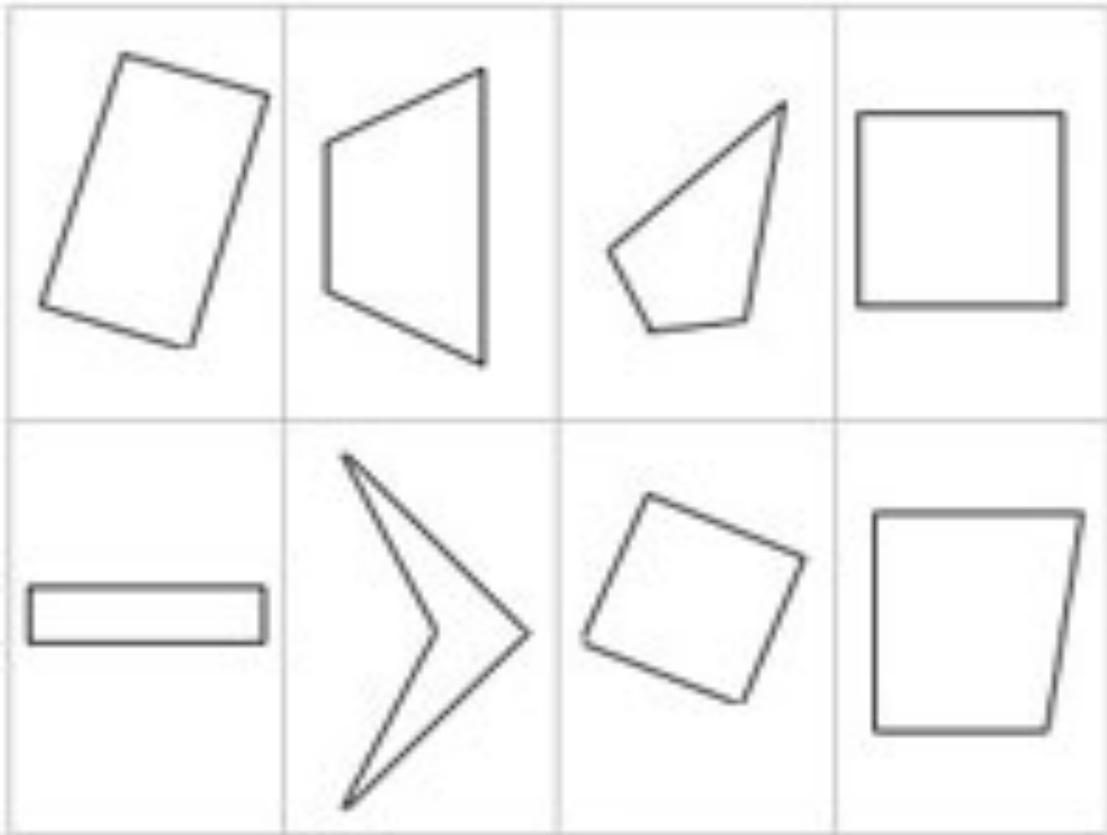
You have 16 cards to sort into 4 sets of 4 cards.

It may help you to see which cards go together if you turn some of the cards so that they all have at least one edge horizontal

NEXT

Draw other quadrilaterals of types not represented here and explain why they are different.

For example draw a rhombus, or draw a quadrilateral with no edges equal or parallel and no equal angles.



NOTES FOR TEACHERS

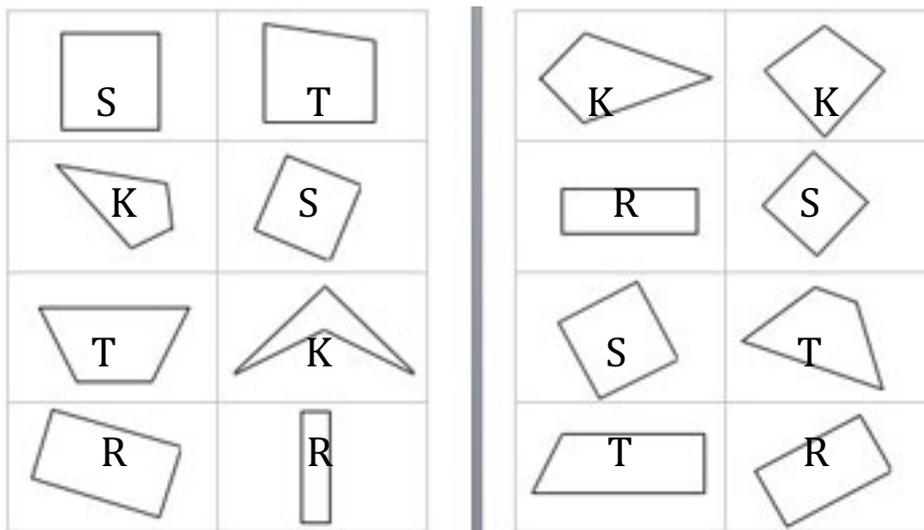
SOLUTION

The quadrilaterals marked S are squares.

The quadrilaterals marked R are rectangles.

The quadrilaterals marked K are kites.

The quadrilaterals marked T are trapeziums.

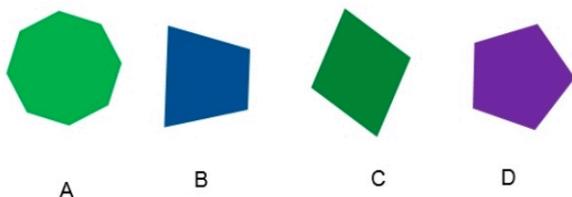


Diagnostic Assessment

This should take about 5–10 minutes.

- Write the question on the board, say to the class:
“Put up 1 finger if you think the answer is A, 2 fingers for B, 3 fingers for C and 4 fingers for D”.
- Notice how the learners responded. Ask a learner who gave answer A to explain why he or she gave that answer and DO NOT say whether it is right or wrong but simply thank the learner for giving the answer.
- Then do the same for answers B, C and D. Try to make sure that learners listen to these reasons and try to decide if their own answer was right or wrong.
- Ask the class again to vote for the right answer by putting up 1, 2, 3 or 4 fingers. Notice if there is a change and who gave right and wrong answers.** It is important for learners to explain the reason for their answer otherwise many learners will just make a guess.
- If the concept is needed for the lesson to follow, explain the right answer or give a remedial task.

Which shape is a pentagon?



You can also ask:

- Which shape is the octagon?
- Which shape is the rhombus?
- Which shape is the trapezium?

D. is the correct answer.

Common Misconceptions

Learners who gave answers **A.**, **B.** and **C.** do not know the names of the polyhedral.

<https://diagnosticquestions.com>

Why do this activity?

It is a good way to engage learners in looking carefully at different quadrilaterals and talking about their properties.

Learning objectives

In doing this activity students will have an opportunity for learners to gain familiarity with the properties and names of different quadrilaterals.

Generic competences (some suggestions, select from list or write your own)

In doing this activity students will have an opportunity to:

- **collaborate and work together in a group:**
 - have empathy with others, listen to different points of view
 - develop life skills and consideration for others
 - working for the good of the community
 - develop leadership qualities;
- **communicate** in writing, speaking and listening:
 - exchange ideas, criticise, and present information and ideas to others
 - analyze, reason and record ideas effectively.

Suggestions for teaching

Approach 1 (Whole class activity)

You can use one set of cards and engage the whole class in this sorting activity. Stick the 16 cards in a random arrangement onto your board using Prestik or similar putty like adhesive. Choose one card and move it to a space on its own. Then ask the learners to come up one by one to choose other cards with the same shape and to fix them near the chosen one. Ask about the properties. What is the name of that quadrilateral? What properties does it have? Then choose a different shape and repeat, then a third shape. Finally you will have 4 quadrilaterals and the class can check that they are the same shape and talk about the properties.

Approach 2 (Group activity)

This activity works well as an activity **for groups of 4 learners** to develop team working skills.

Resources: **You will need a sufficient number of copies of the cards so that you can divide your class into groups of 4 and each group will have a set of 16 cards.**

As a team:

- Responding to the needs of others
- Helping others to do things for themselves.

If any group has a fifth person – that person should be an observer to check that the team obeys the rules and to keep a record of when members of the team help someone else (rather than, for example, when they just pass a piece on without looking at what the other person or team actually needs).

For the task: Every member of the team has to end up with a set of four cards in front of them that are related to each other in a similar way. The task is only successfully completed when everyone on the team has completed their set.

Getting started

Distribute the 16 cards randomly amongst the team (four cards each).

Tackling the problem

How to play

In silence: Players pass cards to other team members in order to help one another complete their set.

Rules

- No one can talk or give non-verbal signals to other members of the team.
- Each member of the team starts with four cards in front of them.
- The cards in front of each person should be visible to everyone.
- Team members can only give cards; they cannot take cards from someone else.
- Each team member must have at least two cards in front of them at all times.

When all the members of the team have 4 cards that belong together they can ask the teacher to check that they have matched the cards correctly. Then the team can discuss the properties of the shapes and the similarities and differences between the 4 types of quadrilateral.

For the last part of the lesson the teacher asks the class to state the properties of the shapes and the similarities and differences between the 4 types of quadrilateral. Drawings and lists of properties can be made on the chalkboard.

Key Questions

- What is the name of that type of quadrilateral?
- What properties does that type of quadrilateral have?
- Can you find any more properties of that type of quadrilateral?
- What are the differences between this type and that type of quadrilateral?
- What are the similarities between this type and that type of quadrilateral?
- What are the differences between the 4 different quadrilaterals there of the same type?

Follow up

Is a Square a Rectangle <https://aiminghigh.aimssec.ac.za/years-5-10-is-a-square-a-rectangle/>

Note: The Grades or School Years specified on the AIMING HIGH Website correspond to Grades 4 to 12 in South Africa and the USA, to Years 4 to 12 in the UK and up to Secondary 5 in East Africa. New material will be added for Secondary 6. The mathematics taught in Year 13 (UK) and Secondary 6 (East Africa) is beyond the school curriculum for Grade 12 SA. For resources for teaching A level mathematics see https://nrich.maths.org/12339				
	Lower Primary or Foundation Phase Age 5 to 9	Upper Primary Age 9 to 11	Lower Secondary Age 11 to 14	Upper Secondary Age 15+
South Africa	Grades R and 1 to 3	Grades 4 to 6	Grades 7 to 9	Grades 10 to 12
USA	Kindergarten and G1 to 3	Grades 4 to 6	Grades 7 to 9	Grades 10 to 12
UK	Reception and Years 1 to 3	Years 4 to 6	Years 7 to 9	Years 10 to 13
East Africa	Nursery and Primary 1 to 3	Primary 4 to 6	Secondary 1 to 3	Secondary 4 to 6