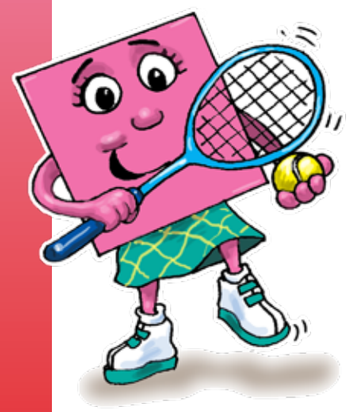
Let's explore!



Ever heard about **mLearning**? Well, this is the place where the world of mathematics and your mobile phone meet! Go to http://www.math4mobile.com with your cellphone or use the Internet on your PC to work through this activity.

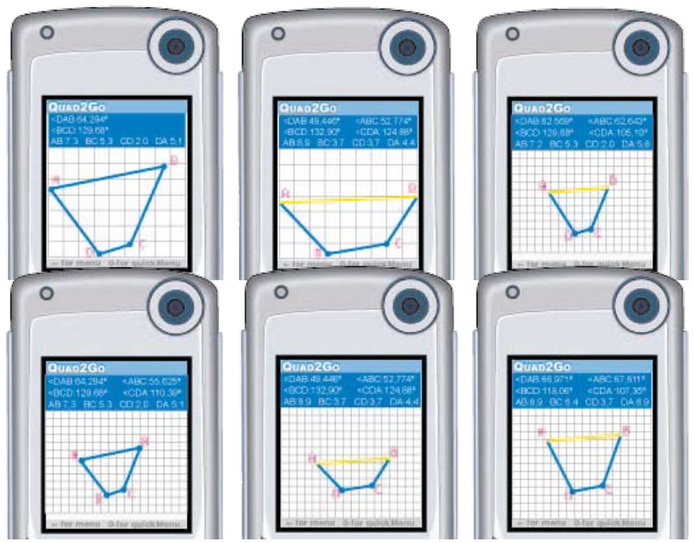
In the Shapes' Club

1. In principle the Quad Sport Club accepts any quadrilateral as a member.

a) Using Quad2Go, design six *different* potential members for the club. Record your shapes and explain why they are different. Make textual, graphical and numerical notes to help you describe each shape. Then write convincing arguments to distinguish each shape from the others.

b) These six quadrilaterals have been constructed with Quad2Go. Can you regard them as six different new members of the club? Explain your answer.

New in our GEOCITY a Quad Sport Club has been inaugurated. The Club opens its doors for ALL Quadrilaterals – all are equal! Each Quadrilateral is a potential member! And ONLY Quadrilaterals!

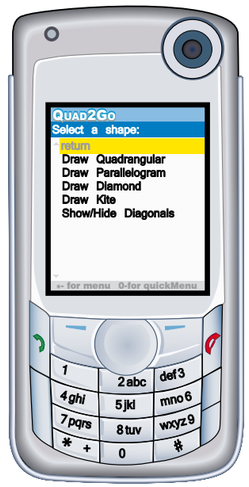


c) To check your documentation send an sms to the learners in your group. Describe the six shapes in as few words as you can. Ask your group to create the shapes with Quad2Go and to send them back to you. Compare the shapes that you receive with your original shapes and explain the similarities and differences.

2. Using Quad2Go, you can select a shape from four options.
If you were a programmer of the Quad2Go application, would you provide the four options shown on the cellphone screen on the right? Or would you suggest that some of the options are redundant since all club members can be described by fewer options?
To help you decide check the following:

a) Rectangles are not on this list and they complain that the club excluded them from membership. Is that correct? Provide geometrical arguments for positive or negative answers. For a negative answer give as many different possibilities to convince the Rectangles that they can be accepted.

b) The Squares were extremely happy! They can be created from all four options. Try this out and support or argue this argument in as many different ways that you can.



3. The Twins athletics team includes pairs of shapes with either two angles or two sides equal.

a) Describe as many possible ways to create members for the Twins team with Quad2Go. Use geometric terms such as Kite and Square.

b) Parallelograms, Diamonds and Kites proposed themselves as candidates for the Twins team. Is this an acceptable proposal? Support your answer with good mathematical arguments.
The Twins who are the champions are reluctant to add new members and you will have to convince them about any new members at the team meeting.

c) Write an sms to other learners and ask them to help you find new Twin members. Ask them to create these members with Quad2Go and to send the potential candidates to you. They may not be a parallelogram, kite or a diamond.
When you receive the smss check that the new members are acceptable and then record them in your book. Then change the shapes sent to you to include two equal sides and two equal angles. Describe in concise notes the shapes that you made using the other learners' data.

4. The Kites leave the Twins team and form a new team. Soon the Parallelograms, Squares and Diamonds petition to join the Kites team. They argue that even if they don't look Kites, they can be transformed easily to do so.
A senior Kite decided that if he could show one reason why these other quadrilaterals would be rejected, the petition would fail. Was he correct? Write down a reason that you would give for rejection.

5. Summarise your findings about quadrilaterals.
Discuss them in your group.