Shapes - Teacher's notes

Level	Pre-intermediate / Intermediate
Topic	Shapes
Subject(s)	Mathematics
Time (approx)	Activity 1: 10 – 15 minutes. Activity 2: 10 – 15 minutes. Activity 3: 15 – 30 minutes
Preparation:	Activity 1: One photocopy for each student. Activity 2: One photocopy for each student. Activity 3: One photocopy for each pair / group of students.

Procedure

Activity 1

1. On the board draw a square and a cube and ask students what the difference is between the two shapes. Elicit answers, accepting all explanations, and write them up on the board.
2. Ask students to read the definitions on 2D and 3D. Then go back to the two shapes on the board and ask them which is which.
3. Put students in pairs and ask them to decide which of the shapes in Part 1 are 2D and which are 3D.
4. Check as a class.
5. Next, ask students to work in pairs and label the shapes using the words in the box in Part 2 (see **note** below).
6. Pair the pairs and ask them to check and discuss their answers together before checking as a class.

Note: For Part 2 students might not know the answers and it becomes guess work. Either pre-teach the vocabulary before starting the worksheet, let students write the names in L1 or tell them not to worry and just do the ones they are sure about.

Key

Part 1
2D = a), c), e), g) and i)
3D = b), d), f), h) and j)

Part 2
a) Diamond b) Cylinder c) Rectangle d) Sphere e) Pentagon
f) Cube g) Triangle h) Cone i) Square j) Pyramid

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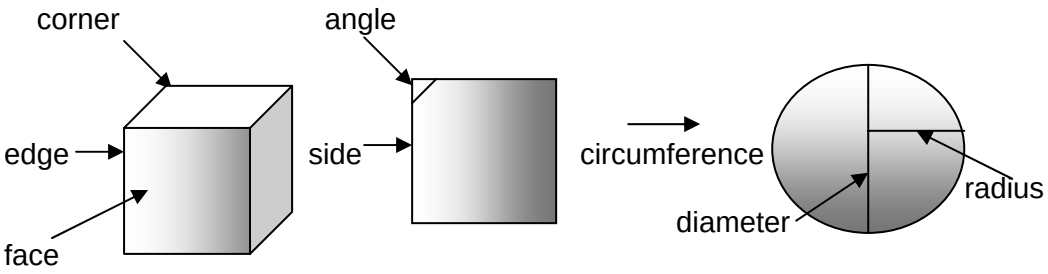
Activity 2

1. Ask students to read the text and tell them not to worry about any new words.
2. Tell them to look at the diagrams below and to label them using the words in the text that are bold.
3. Encourage them to read the text again and look at the words in context.
4. Put students in pairs and ask them to compare and discuss their answers.
5. Check as a class (and go back through the text to clarify the answers).

Key



Activity 3

1. Put students into pairs or small groups. (Move the students around so that they are working with new people).
2. Give them the quiz and set a time limit (about 10 minutes should be plenty of time).
3. Tell them to work together and use the other activities to help them answer the questions.
4. For those groups who finish quickly ask them to write a few questions of their own.
5. Check the quiz answers and then ask the students who have written their own questions to ask the other students.

Key

1 b) radius 2 b) five 3 a) two 4 b) 3D 5 a) three 6 b) five 7 a) Yes 8 b) two

Useful websites

http://www.bbc.co.uk/schools/revisewise/maths/shape/
http://www.bbc.co.uk/schools/ks3bitesize/maths/shape_and_space/index.shtml
http://www.mathleague.com/help/geometry/polygons.htm
http://www.gokidding.com/math.htm

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Shapes - worksheets

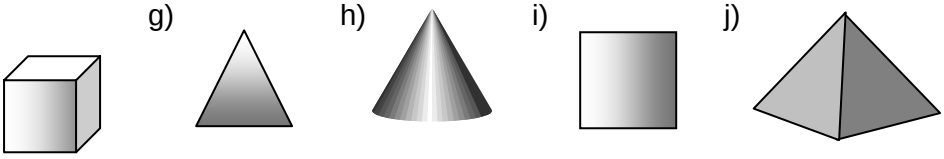
Activity 1

Part 1

- Are these shapes 2D or 3D?

a) b) c) d) e)

f) g) h) i) j)



[design up definitions below to look like dictionary definitions]

A 3D (three-dimensional) shape is not flat. You can measure the height, width and depth of the shape.

A 2D (two-dimensional) shape is flat.

Part 2

- Label the shapes in Part 1 with the names from the box below

[box]
cube cylinder diamond square triangle
cone pyramid rectangle sphere pentagon

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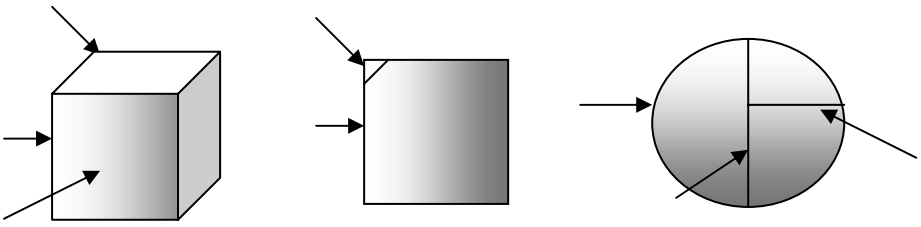
Activity 2

- Read the text about shapes and then label the shapes below with the words in **bold**.

When we learn about shapes there are some important words that we need to know so that we can describe each shape.
Two-dimensional, or 2D shapes have **sides**. So a square has four sides and a pentagon has five. Where two sides meet they make an **angle**. On a square each angle is 90º.

A circle only has one side and the distance all the way round this is called the **circumference**. When we measure a circle the distance from one side to the other through the centre is the **diameter** and the distance from the side to the centre is called the **radius**.

3 dimensional, or 3D shapes are more complex because you can measure the height, width and depth. The surfaces on a 3D shape are called **faces**. The number of faces on a cube is six and on a cylinder only three. Where two faces meet are the **edges**. A cube has twelve edges. Where two edges meet there is a **corner**. A cube has eight corners.



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Activity 3

- Answer these quiz questions.

1. The diameter of a circle is twice the _____?
   a) circumference b) radius

2. How many corners does a (square based) pyramid have?
   a) four b) five

3. How many faces does a cone have?
   a) two b) three

4. A sphere is …
   a) 2D b) 3D

5. How many sides does a triangle have?
   a) three b) four

6. How many angles does a pentagon have?
   a) four b) five

7. Does a sphere have a diameter?
   a) Yes b) No

8. How many edges does a cylinder have?
   a) one b) two

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