UNIT 5 LESSON 1

START (15')

Show all types of 3D boxes.

Ask questions such as what shapes can be stacked; if all 3d shapes can be stacked in any position; what shapes can roll, what shapes can roll into any position; what shapes can roll only into some positions:

What shapes can we stack?
Can we stack all the 3D shapes in any position?
Which shapes can roll?
Which shapes can roll into any position?
Which shapes can roll into some positions

Establish two basic classifications and analyse the main properties. The 3D shapes that can be piled are called POLYHEDRONS and the 3D shapes that can not be piled are called CURVED SHAPES.

Ask if someone knows the meaning of three-dimensional. Agree that it is a figure that has length, width or breadth and height:

Who knows the meaning of three dimensional?

MAIN TEACHING (35')

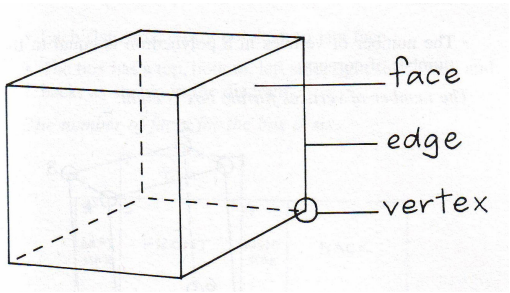
Introduce them to the names of the most common 3D shapes.

Split the class into groups of two.

Give out different shapes of boxes.

Ask children to observe the shapes (similarities, differences, properties,..).

Introduce the new vocabulary such as edge, vertex and face.



Tell children to write a list of the properties they have been observing (they can look at the polygon's properties learnt in previous lessons).

Discuss the list. Ask which properties they found and write them on the board:

What properties did you find?

Remind them that they should think of regular and irregular shapes, convex and concave, symmetries, parallel lines, shape of the faces, number of faces number of edges , types of angles,…:

Can you see any similarities between some boxes?

What did you write on your list?
Who remembers what a regular shape is?
How can we classify angles?
Who remembers what convex and concave is?

Show a set of 3D figures. Ask about their properties:
Is it a polyhedron or a curved shape?
What shape is the base?
What is this figure called? Why?
How many faces, vertices or edges does it have?
Give out worksheet 5.1.

"A polyhedron is a three-dimensional shape with faces that are polygons".
"A Curved shape is a three-dimensional figure with curved sides"

ENDING (10')

Write on the board the sentence "The sum of the number of faces and vertices is always equal to the number of the edges plus two".

Tell children the sentence was written in the 18th century by a Swiss mathematician, Leonard Euler.

Ask children if they think Euler's claim was true or false:
Do you think Euler was right?

RESOURCES

A set of shopping boxes, worksheet 5.1, P.Point classifying shapes 3D U5 L1
http://www.bbc.co.uk/schools/ks2bitesize/maths/activities/shapes.shtml