

Middle School

STUDENT NAME: _____

CLASS: _____

TEACHER NAME: _____

UNIT: Space
ISSUE TOPIC 2D shapes and 3D objects
ASSESSMENT TASK: Investigation

ASSESSMENT DESCRIPTION: In this investigation, students must:

- identify selected 2D shapes and 3D objects from famous megastructures or landmarks around the world – a ‘treasure hunt’.
- produce a powerpoint with photos and graphical overlays of the identified shape or object.
- draw, label and describe relevant physical attributes ie dimensions, faces, edges, vertices.
- reflect on the use of the shape or object in the structure, identifying other alternatives if applicable
- a 2 minute oral presentation of material

CONDITIONS OF ASSESSMENT:

- **Length: 2 weeks** – the amount of class time to be determined by the teacher.
- **The use of presentation software is expected ie powerpoint, word processing.**

SUMMARY OF RESULTS

CRITERIA ASSESSED	STANDARD
KNOWLEDGE & UNDERSTANDING	
THINKING AND REASONING	
REFLECTING	
COMMUNICATING	

Mathematics

YEAR 6/7

2010/2011

TERM 2

TASK:

Investigation

*‘Around the World in
Eighty Shapes’*

Around the World In Eighty Shapes

DUE DATE: Sunday, March 6th, 2011

Context:

“The Amazing Race” is a television show, first produced in America in 2001, which asks contestants to race around the world, solving problems, facing challenges and identifying details at each destination.

Producers at ‘CBS TV NETWORK’ in America have decided to create a children’s version of the top-rating television show “The Amazing Race” here in the UAE.

In order to help decide eligible contestants for the show, CBS is running a competition in all schools in the UAE, which tests student’s ability to research, identify and present information about details of structures around the world, similar to a ‘*Treasure Hunt*’.

Competition details are as follows;

Your Task

1. Research several famous megastructures or landmarks (4 or 5) from around the world to identify the use of a range of 2D and 3D shapes.
2. Produce a Powerpoint with photos and graphical overlays using 2D shapes.
3. For each 2D shape or 3D object, you must draw, label and describe the physical attributes ie dimensions of the life-size shape if known, sides, faces, edges and vertices. For 3D objects, you must represent these attributes on a net also (except for the sphere).
4. For each 2D shape or 3D object, you must also reflect on the use of the shape or object in the structure ie how and why have the 2D shapes or 3D objects have been effectively used in the selected structure.
5. A 2 minute oral presentation of your assignment using PowerPoint. A focus will be on content, organization of material and presentation skills.

Remember, to be a successful on the show, contestants must have a keen eye for detail, so start looking!

2D Shapes to Find

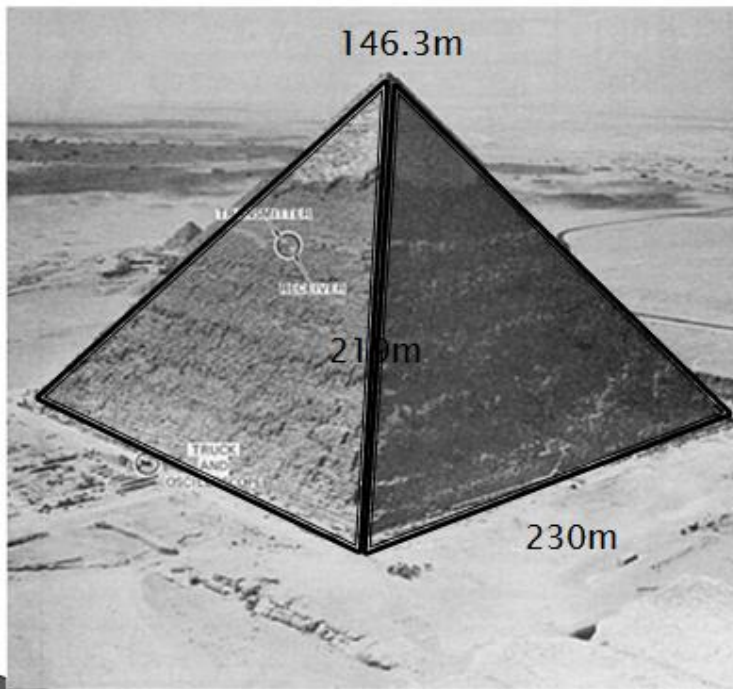
- Square
- Triangle
- Rectangle
- Circle
- Rhombus
- Trapezium
- Another polygon

3D Objects to Find

- Pyramid (not from Egypt) – any base
- Cylinder
- Cube
- Cone
- Sphere
- Another Prism

An example of 2 Powerpoint slides has been done for you (see overleaf). You can choose to present your information in even greater detail in a style of your choice using Powerpoint. **Remember to include a net diagram of 3D objects (except the sphere of course) with labelled dimensions.**

Egypt



3D Shape – Great Pyramid
Square- Based Pyramid
5 Faces – 4 Triangles, 1 Square
8 Edges
4 Corners – 1 Apex
Length of Base – 230 metres
Height of Pyramid – 146.3 metres
Slope length – 219 metres

Why did the ancient Egyptians use the pyramid shape?

- ▶ Egyptologists have developed many theories about why the tombs of the early pharaohs were built in the pyramid shape. Here are three different ideas:
- ▶ The pyramid had sloping sides so that the dead pharaoh could symbolically climb to the sky and live forever.
- ▶ The pyramid represented the rays of the sun.
- ▶ **It is simply the most natural and logical shape for building for height without using any supporting framework or skeleton**

