

# NEWSLETTER

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LET us take a deeper look at a topic in basic Mathematics in schools. Geometry covers around 23% in the WAEC syllabus. A deep knowledge in it, gives a lead way to success in mathematics and the future of a student.

**GEOMETRY** is a part of mathematics concerned with questions of size, shape, and relative position of figures and with properties of space. Geometry is one of the oldest sciences.

It is classified into plane, solid and analytical or Cartesian geometry. It has its application in all neural networks, cognitive systems, mathematical finance, statistical mechanics, quantum information etc .

Geometry being used in :

(a) **Computer graphics** is based on geometry - how images are transformed when viewed in various ways.

(b) **Computer-aided design** computer-aided geometric design. Representing shapes in computers, and using these descriptions to create images, to instruct people or machines to build the shapes, etc. (e.g. the hood of a car, the overlay of parts in a building construction, even parts of computer animation).

(c) **Robotics**. Robotic vision, planning how to grasp a shape with a robot arm, or how to move a large shape without collision.

(d) **Medical imaging** - how to reconstruct the shape of a tumor from CAT scans, and other medical measurements. Lots of new geometry and other math was (and still is being) developed for this.

(e) **Structural engineering**. What shapes are rigid or flexible, how they respond to forces and stresses. Statics (resolution of forces) is essentially geometry. This goes over into all levels of design, form, and function of many things.

(f) **Protein modeling**. Much of the function of a protein is determined by its shape and how the pieces move. Mad Cow Disease is caused by the introduction of a 'shape' into the brain (a shape carried by a protein). Many drugs are designed to change the shape or motions of a protein - something that we are just now working to model, even approximately, in computers, using geometry and related areas (combinatorics, topology).

(g) **Physics, chemistry, biology, ....** . Symmetry is a central concept of many studies in science - and also the central concept of modern studies of geometry. Students struggle in university science if they are not able to detect symmetries of an object (molecule in stereo chemistry, systems of laws in physics, ... ) etc



## For Students and Teachers WASSCE TOPICS DISCOURSED

IT is great to remember that the WASSCE 2012 is barely 5 months away. It is amazing to start digging deep towards better results in Mathematics now. NOW! Invest your time and energy on worthy goals.

Topics such as *Arithmetic, Algebra, Geometry, Trigonometry, Functions & Graphs, and Principles of Analysis, Sets and Probability* are treated with helps, questions and solutions.

Visit the Mathematical Web High School. Click

➔ <http://www.bymath.com>

- Geometry
- Trigonometry
- Functions & Graphs
- Principles of Analysis
- Sets
- Probability
- Analytic Geometry



### QUESTION OF THE MONTH

Eight cubes are glued together to form the figure shown. The length of an edge of each cube is 3 cm. The entire figure is covered in paint.



How many square centimeters are covered in paint?

## JOIN US ! SUPPORT US !!

in the Mathematical Outreach.

## We wish you a Merry Christmas

