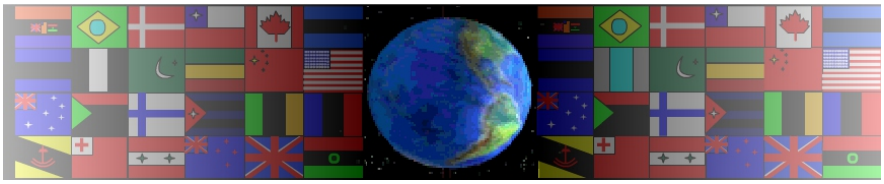
GRAPHENE - EXAMINATION QUESTIONS

On behalf of The World Association of Technology Teachers

W.A.T.T.



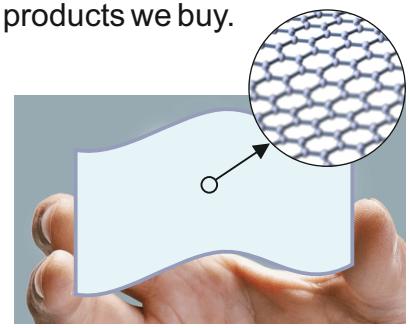
World Association of Technology Teachers

This exercise can be printed and used by teachers and students. It is recommended that you view the website (www.technologystudent.com) before attempting the design sheet .

GRAPHENE - PROPERTIES AND PRACTICAL APPLICATIONS

WHAT IS GRAPHENE?

Graphene is a two dimensional material, composed of a single honeycomb layer, a hexagonal lattice of carbon atoms. It is one atom thick and yet it is the strongest and lightest material ever tested, plus it has the highest conductive qualities of any material. www.technologystudent.com Graphene has the potential to radically change our consumer world, from manufacturing processes, to many of the products we buy.

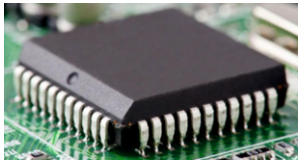


PROPERTIES OF GRAPHENE

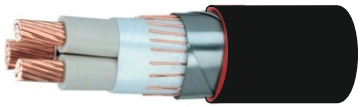
1. A 2D material, one carbon atom thick.
2. The lightest of all materials.
3. The strongest material ever tested.
4. Highly conductive - for heat and electricity - almost no resistance.
5. Can be stretched and is flexible.
6. More transparent than a pane of glass.

POTENTIAL PRACTICAL APPLICATIONS OF GRAPHENE

POTENTIAL TO IMPROVE THE EFFICIENCY OF INTEGRATED CIRCUITS



POTENTIAL TO DRAMATICALLY IMPROVE THE CONDUCTIVE EFFICIENCY OF ELECTRICAL CABLES



POTENTIAL TO IMPROVE THE EFFICIENCY AND FLEXIBILITY OF SOLAR PANELS

1. What is graphene? Include three of its main physical properties *5 marks*

2. Describe the potential improvements that graphene could make to two products. *4 marks*