Include **sketches, diagrams and notes** in your answers. Click on the 'circles' for helpful links.

COMPOSITES, SMART AND MODERN MATERIALS - INTERACTIVE KNOWLEDGE MAP

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COMPOSITE MATERIALS

1. WANT IS A COMPOSITE MATERIAL?
2. WHY CAN NATURAL WOOD BE REGARDED AS A COMPOSITE? INCLUDE A DIAGRAM
3. IS CONCRETE A COMPOSITE? EXPLAIN YOUR ANSWER AND INCLUDE A PRACTICAL APPLICATION.
4. SKETCH REINFORCED CONCRETE. INCLUDE A LABELLED DIAGRAM. DESCRIBE AN APPLICATION.
5. WHAT IS GRP? WHO INVENTED GRP? EXPLAIN ITS USES. INCLUDE IMAGES OF USES.
6. WHAT IS CFRP? INCLUDE AN IMAGE OF ITS WOVEN NATURE. WHAT ARE ITS PRACTICAL APPLICATIONS?
7. WITH REFERENCE TO A SKETCH, EXPLAIN THE NATURE OF PLYWOOD
8. HOW ARE LAMINATED PARTS / PLYWOOD FORMED / SHAPED IN THE MANUFACTURE OF THE EAMES LOUNGE CHAIR?
9. WHAT IS KEVLAR ® ? LIST 5 APPLICATIONS OF THIS MATERIAL. WHAT ROLE DOES IT PLAY IN MODERN CARS?
10. HOW IS FLEXI-PLY DIFFERENT TO PLYWOOD?

MODERN MATERIALS

1. DESCRIBE POLYMORPH. INCLUDE A DIAGRAM SHOWING HOW IT IS PREPARED IN A SCHOOL WORKSHOP FOR USE.
2. HOW CAN A MOULD BE USED TO FORM POLYMORPH?
3. WHAT IS PLA? LIST SOME PRACTICAL APPLICATIONS.
4. WHAT IS BIOPOL? DESCRIBE SOME DISADVANTAGES OF THIS MODERN MATERIAL.
5. WHAT MAKES OXO-DEGRADABLE POLYMERS DIFFERENT TO OTHER POLYMERS?
6. WHAT ARE THE PROPERTIES AND PRACTICAL APPLICATIONS OF TITANIUM?
7. WHAT MAKES GRAPHENE SO INTERESTING TO SCIENTISTS AND ENGINEERS? WHAT ARE ITS POTENTIAL USES?
8. WHAT ARE NANOMATERIALS? INCLUDE ONE PRACTICAL APPLICATION OF THESE SPECIAL MATERIALS.

SMART MATERIALS

1. SELECT FIVE OF THE SMART MATERIALS BELOW. EXPLAIN / DESCRIBE EACH ONE. INCLUDE PRACTICAL APPLICATIONS.