NAIROBI SCHOOL
DRAWING & DESIGN
FORM TWO HOLIDAY ASSIGNMENT

(b) *Magnetic Attraction*
Iron and steel would be attracted to a magnet but non-ferrous metals and non-metals would not be attracted.

(c) *Conductivity (Heat and Electricity)*
All metals are good conductors of heat and electricity. However, some are better than others. Non-ferrous metals are known to be better conductors than ferrous metals. Non-metals are poor conductors and in most cases are used as insulators.

(d) *Weight*
By taking equal volumes of material and weighing them by elimination, one can tell ferrous metals from non-ferrous metals. Ferrous metals have an average relative density of about 7.8. It is also possible to tell the difference between non-metals and metals. Non-metals are generally lighter.

(e) *Fire Resistance*
When materials like wood, plastics, grass and sisal are subjected to open fire, they catch fire readily.

EXERCISE

1. State with reasons, the materials you would recommend for making the following:
   (a) The bit of a solding iron.
   (b) Car body.
   (c) Sewage pipe.
   (d) An oil can.
   (e) Acid water bottle.

2. (i) If the following materials were heated, in which order would they melt? Zinc, mild steel, aluminium, cast iron, glass.
   (ii) What happens when the following metals are brough to a red heat and hammered? Mild steel, cast iron, copper.

3. You have been asked to sort out a heap of scrap metal containing, cast iron, mild steel, aluminium, lead, copper and tin. How would you identify each metal?

4. What is meant by "ferrous metal" and "non-ferrous metal?"

5. (a) Explain clearly what is meant by each of the following terms applied to materials: tensile strength, malleability, ductility, brittleness and hardness.
   (b) Using these terms, compare the mechanical properties of three of the following materials: Grey cast iron, copper, limestone, wood and glass.

6. What are the advantages of:
   (a) air timber seasoning?
   (b) kiln seasoning?