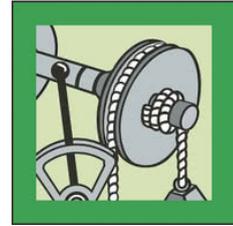


Engineer

Level 1

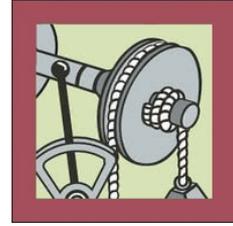


Do three of the following:

1. Name and explain the use of five different kinds of machines such as trucks, construction machinery or farm machinery.
2. Explain the functions of the following items:
 - a. pulley.
 - b. lever.
 - c. wheel and axle.
 - d. demonstrate how each of the above items makes heavy work easier to manipulate and complete.
3. Explain how solar power works through appliances such as a solar hot water system.
4. Make a small model of a boat with a rudder and demonstrate how it can be made to move by itself. Explain the use of a rudder.
5. Complete a working drawing of a machine such as a wind pump or water turbine, showing top/bottom and side views and explain how it works with the appropriate power source.
6. Make a working machine model using a mechanical construction set and explain the possible functions your machine could perform.
7. Find out about a famous engineer and share what you have learnt.

Engineer

Level 2



Do four of the following:

1. Name and explain the use of seven different kinds of machines such as a radio, sewing machine, dishwasher, food processor or mixer, juicer, toaster, dynamo, electric light, public address system, television, video or CD/DVD player.
2. Explain the functions of the following:
 - a. telephone or electric wires.
 - b. fibre optics and cabling.
 - c. antennae.
3. Draw one of the following and explain how it works:
 - a. Radar systems.
 - b. Satellite communication systems.
 - c. Sonar systems.
 - d. GPS navigation systems.
4. Make a gadget for a specific function, which moves or has moving parts, and explain the function of your gadget.
5. Draw up plans (top and side views) for a machine with many moving parts and power source. Explain the function of the moving parts and how they work as an integrated unit.
6. Build a flashing device using a light-emitting-diode (LED) and explain the function of your device.
7. List two engineering discoveries which have been, in your opinion, of benefit to mankind. List two engineering discoveries which have been, in your opinion, harmful to mankind. Explain your opinions by talking about your research, any evidence you have found and the reasons for your conclusions.