INDUSTRIAL TECHNOLOGY & DESIGN

WOOD TECHNOLOGY

ENERGY	DESIGN BRIEF	LEVEL 2

SITUATION:

Early forms of transportation used natural sources of energy such as wind, water, animals and people for power. Energy from these sources was converted for use by the technology of the day, such as sails, wheels, levers, pulleys and gears.

DESIGN BRIEF:

1. DESIGN AND MAKE AN EFFICIENT WIND POWERED VEHICLE

LIMITATIONS

Materials

a) Wheelbase of vehicle must fit within a sheet of A4 Size paper
b) A reasonable quantity supplied *as required* by negotiation with your teacher
c) Special requirements supplied by students (special wheels etc;)
d) Fabrics supplied by students

AREAS YOU MAY NEED TO CONSIDER:

SUITABLE MATERIALS (WHAT MATERIALS ARE AVAILABLE? TIMBERS, METALS, PLASTICS, FABRICS ETC;) JOINING METHODS - *MAKE A LIST* TIME RESTRICTIONS - *CAN YOU MAKE IT WITHIN THE ALLOWED TIME?*	**HOW WILL YOU HARNESS WIND ENERGY?** *Research: make a list of possible solutions* *Test your Ideas.*(Complete the **EVALUATION** stage of the Design Process) and redesign and rebuild if required.

The following concepts are significant to the end of semester theory assessment.

ENERGY

THE CONVERSION OF ENERGY FROM ONE FROM TO ANOTHER IS ONE OF THE MOST IMPORTANT JOBS OF TECHNOLOGY. THE PRINCIPLE OF CONSERVATION OF ENERGY AND THE NOTION OF POTENTIAL AND KINETIC ENERGY, ARE SCIENCE CONCEPTS THAT ARE CENTRAL TO DEALING WITH ENERGY IN A TECHNOLOGY WORKSHOP.

Energy = ½ (Mass) X (Velocity) ^{2}

MAJOR CONCEPTS:

- Work is equal to the distance an object moves, multiplied by the force in the direction of the motion.
- Energy is the ability or capacity for doing work. It is the source of the force that is needed to do work.
- Kinetic energy is energy in motion. Potential energy is energy stored in an object due to its position, shape, or other feature.
- Potential energy can be converted into kinetic energy, and vice versa.
- The principle of conservation of energy states that energy cannot be created or destroyed, but it can be changed from one form to another.
- Energy sources can be classified as limited, unlimited, or renewable.
- Most of the energy used by Australia currently comes from limited energy sources.