**SACE Stage 1 Physics Name:**

**Science as a Human Endeavour Task – Transport Technology**

Transport used by humans has evolved through many forms over history.

* On land, transport has changed from the horse and cart to trains and the automobiles, both petrol-driven and electric.
* On the sea, transport had changed from rowing to sailing, motorboats, and submarines.
* In the air transport has changed from hot air balloons to aeroplanes.
* Rockets, space shuttles, and spacecraft have been developed to explore space.
* Human-powered technology such as the bicycle has also evolved.

Physics has been essential to the development and understanding of all these technologies.

You have been commissioned by an online magazine to publish an article on the development and physics of one particular mode of transport, showing how it demonstrates at least one of the key concepts of science as a human endeavour (see subject outline pages 11 and 12). You need to select a specific form of modern transportation, identifying the model of car, train, boat, plane, spacecraft etc.

The magazine editor has requested that you:

* describe the propulsion system used by the mode of transport you have chosen as your focus, using relevant physics concepts such as energy transformations, forces, speed, acceleration, energy efficiency and power
* include ONE safety feature that is incorporated into the technology and describe it using the relevant physics (e.g. Newton’s Laws of Motion)
* describe the major factors in society that led to the development of that mode of transport (i.e. did some ‘need’ or ‘desire’ drive the development or was it ‘blue-sky’ fundamental research that led to the technology) and how it links to at least one of the key concepts of science as a human endeavour
* discuss the impact that the change in the technology in this mode of transport has had on society.
* justify your conclusion to the readers of the magazine about the technology, its use in the mode of transport researched, and how it shows the interaction between science and society.

You may either focus on a selected specific example (e.g. the Toyota Prius) or a general form of the transport technology (e.g. the automobile).

You may prepare a written article (1000 words maximum) or a video (6 minutes) suitable for publishing online.