



Expert Tips and Hints

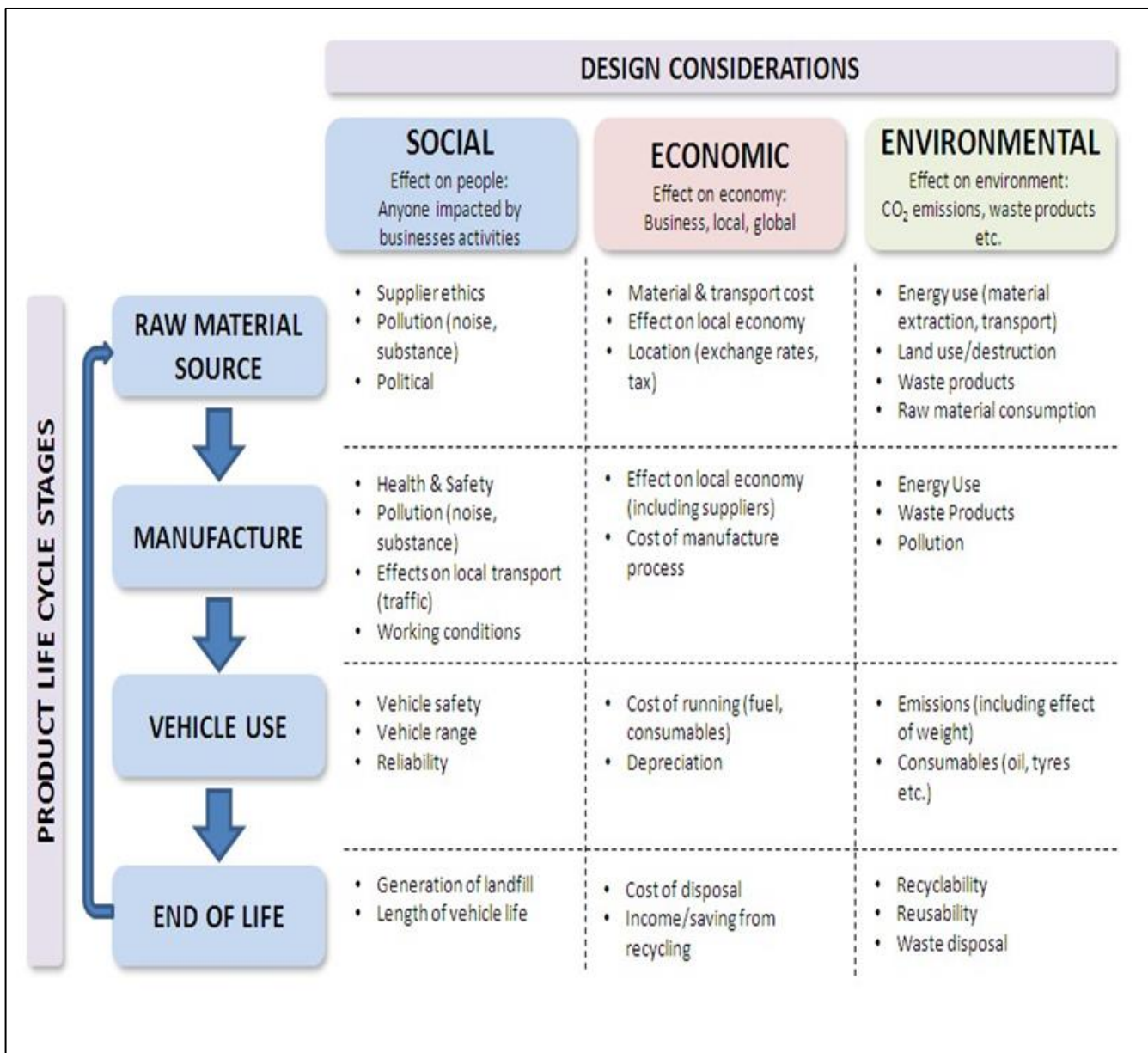
Environmental Sustainability

Sponsored & Supported by:



Advice for Teachers

Sustainability is the ability for an activity or business to continue with minimal negative long term social, economic or environmental effects. Awareness and effective management of the impacts of commercial and industrial activities, at all stages of the product life cycle. This is a crucial factor in driving long term success and profitable growth. Below is a brief outline of the product life cycle, and the typical environmental, social and economic aspects that would be considered by a car manufacturer. Where appropriate, consider these throughout the design process. Teams should use reasoned assumptions where information is not readily available.



Sponsored & Supported by:

Sustainability

Sustainability can be defined in many different ways and this can be confusing to define the correct meaning. The definitions below detail what Sustainability is in terms of the 4 x 4 in Schools Challenge. Sustainability is a sub-component (that is an integral part) of a process or state that can be maintained at a pre-determined level or condition indefinitely.

The different applications of Sustainability are what create the various levels of understanding while trying to preserve the environment for the future by better understanding how the physical world works through observation and physical evidence by way of:-

- Continuous improvement to enhance a better Quality of Life within the limitations and constraints of the supporting eco-system(s).
- Applying both the natural laws of physics and chemistry on natural raw resources (iron ore, rubber, oil, wood, coal etc.) in order to design, produce and implement machines, structures, component parts, devices and systems that help human demand.
- The application of knowledge from one or more natural scientific field(s) to solve practical problems in engineering, policy and education taking whatever methods, processes and procedures are necessary

Natural Resources

These are naturally produced products of the environment that exist undisturbed or unchanged by human contact (water, wind, trees, oil, iron ore, solar etc.) Some of them are essential for our survival while most are used for satisfying our wants and needs and therefore it can be said that, "Every man-made product is composed of some natural resources at some level". Some natural resources may only be found sporadically, in small quantities or more specifically to a particular geographical location/ area. This type of scarcity reinforces the understanding that very few, (if any) of our natural resources could be considered inexhaustible and consequently means that our natural resources can be depleted if managed improperly.

Carbon Footprint

Is a measure of cost in terms of the amount of carbon dioxide or its equivalent of other Greenhouse gases that are produced and emitted. It is usually expressed as a numerical value, sometimes as kg of CO₂. Greenhouse gases can be discharged through transport, land clearance, the production and consumption of food, fuels, manufactured goods, materials, wood, roads and buildings. Calculating the total carbon footprint can be impossible due to smaller immeasurable inputs. CO₂ that contributes to Carbon Footprint in Industry can also be produced by natural occurrences.

Sponsored & Supported by: