Fire management and sustainability practices of First Nations Peoples

Glossary
atmosphere: the envelope of gases surrounding the Earth or another planet.

Country: the lands that First Nations Peoples belong to, as well as a belief system. It’s a relationship with all living things that are part of a landscape and includes everything within that landscape; rocks, trees, creeks, animals, plants, medicines, sacred sites, songs, stories, dance and art, as well as all people, ancestral spirits and community connections: past, present and future. Country sustains First Nations Peoples and must be cared for and respected by and for every generation that is and will be.

First Nations people: Aboriginal and Torres Strait Islander people.

greenhouse gas: a gas that contributes to the greenhouse effect by absorbing heat from the sun.

kinetic: relating to or resulting from motion.

regeneration: to renew or restore something, especially after it has been damaged or lost.

Forms of energy
There are many different forms of energy, which can be categorised into two main forms: kinetic (the moving of objects) and potential (stored energy). These different types of energy include heat energy, chemical energy, electrical energy, motion energy, elastic energy, gravitational energy, nuclear energy, light energy and sound energy (Solar Schools 2020).

Conservation of energy
Energy can’t be created or destroyed. Instead, it can be either transferred (the energy form moves from one object to another) or transformed (changed into a different form of energy).

Energy transfers and transformations
An example of an energy transfer is hitting a ball with a cricket bat. When the bat moves to hit the ball, it’s using kinetic energy. The kinetic energy of the bat is transferred to the ball when it strikes it, causing the ball to move in another direction. It’s important to remember that when there’s an energy transfer, there can also be an energy transformation. In this example, when the bat hits the ball, there’s not only the transfer of kinetic energy, but also a transformation of some of the energy to sound and heat.
Another example of an energy transformation is in evidence when using a torch. Chemical energy is stored in the torch battery, and when connected to a circuit, the chemical energy is changed into electrical energy. This is then carried by the electricity from the battery to a light globe, where it’s changed into light and heat.

**Energy flow charts**

When describing an energy transfer or transformation, we use energy flow charts to show the changes from one form to another.

A flow chart of the energy transformation of a torch would look like this:

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Chemical energy       Electrical energy
                      /      \                   /      \
                      |      |                   |      |
                      Heat    Light               Heat    Light
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**First Nations Peoples use of fire for sustainability of the land**

First Nations people have been practising sustainable methods for thousands of years, which has seen them care for the land, which in turn, has cared for them. Their connection to Country has allowed First Nations people to accumulate a vast knowledge of plants, animals, seasons and the night sky (Australian Museum 2021). With this knowledge, they use fire to maintain and manage the land, which allows the regeneration of flora, provides safe environments for animals, limits greenhouse gas emissions into the atmosphere and prevents large scale bushfires during the dry season (The Nature Conservancy Australia 2021).

**Making fire**

Historically, in many cultures it was common for one method of fire making to have been used. In Australia, however, there is evidence of four different methods being used by First Nations people, with the possibility of some having knowledge of at least three of these. Having this knowledge allowed for fire to be created in a variety of conditions, being able to use whatever materials were available in the given locations and climate. These four methods are the fire drill, fire saw, fire plough and percussion (ACARA 2021).

**References**


