Outdoor Learning Lesson Plan

Year 5

Science

Chemical Sciences

- Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)

Cross Curricular Links:
Aboriginal and Torres Strait Islander Histories and Cultures:
Aboriginal and Torres Strait Islander communities maintain a special connection to and responsibility for Country/Place (OI.2)

Aboriginal and Torres Strait Islander Histories and Cultures: Aboriginal and Torres Strait Islander Peoples' ways of life are uniquely expressed through ways of being, knowing, thinking and doing (OI.5)

Resources and Preparation:

- Chalk.
- Measuring tape.
- Children's own chosen natural resources for investigations.
- Containers of water.
- Clipboard.

Introduction (20mins)
Discuss together that within the natural environment evaporation of water is the change in state from liquid to gas that occurs when the water surface is exposed to heat from the sun and becomes water vapour.

Activity 1: Puddle Evaporation
Go on a puddle hunt around your school grounds and try to find 2 puddles; in the sun and in the shade. If it has not recently been raining, find suitable dips in a surface such as the tarmac and create your own puddles in both a sun spot and shady space. Draw around each puddle with chalk, and measure and record the diameter of each puddle.

Return to each puddle throughout the day (approx. every 1-2hrs) and redraw a chalk line around the current size of the puddle and remeasure the diameter.

Reflect together how quickly each puddle has evaporated and why. Ask, 'What is happening to the water? What might be impacting the speed of evaporation?'

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Activity 2: Conserving Water Naturally

Discuss together why it is important to conserve our Earth's water. Indigenous Australians attach a deep spiritual significance to water ecosystems and believe water to be a sacred symbol of life that has sustained their communities for millennia. The First Australians had a deep knowledge and understanding of evaporation and how the effect of evaporation can be reduced to conserve water. Prior to colonisation, methods of water conservation included using slabs of flat rock and branches over pools. Large rocks were placed over rock-holes containing water to provide a lid or cap, that slowed evaporation. Similarly, small soakages were always covered with branches, sticks or grasses after use, to reduce evaporation. The covers ensured that, as the water vapourised, the water vapour was contained within the water hole and not lost to the external environment.

In Yankuntjatjara Country, around the Everard Range region of South Australia, there are many rock-holes capable of holding hundreds of litres of water. To prevent evaporation of the water in these rock-holes, the Yankuntjatjara Peoples placed sand in the holes to sequester water into the interstitial space that exists between each sand grain. This effectively covered the water and reduced exposure of the water surface to the atmosphere, thereby reducing evaporation. To access the water, a hole was dug in the sand, into which fresh water drained. This demonstrates deep scientific understanding of water evaporation, as the rate of evaporation from an open water surface exceeds that of water saturated sand. (www.australiancurriculum.edu.au/TeacherBackgroundInfo)

In groups, design and conduct an experiment to discover whether we can slow down evaporation to conserve water using natural resources.