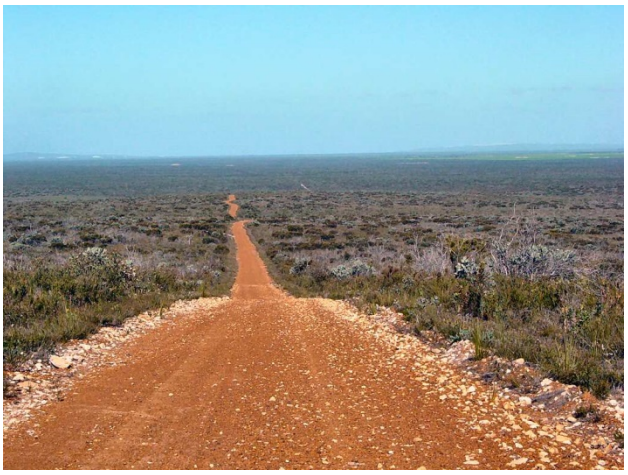
Water in the Desert – Teacher Notes

Water in the Desert
Finding water in the desert has always been important to Aboriginal people and anyone who lives in the Australian Outback. The bush is an enormous place, however, and no one wants to wander aimlessly looking for water. What are some things you could look for in the landscape that can be seen from a distance?
Hills (for gnammas, which are pools in rocks which collect rain water – see Year 7 Water activities for further information) and trees can both be seen from a distance in a mostly-flat Australian Outback.



Plants need water to grow, but some plants need more or less water than others. For example, a cactus or succulent needs very little water, whilst a great big karri tree (common in the forests in southwest Western Australia) needs lots of water. Some types of soils hold more water than other types. For example, a clay-type soil retains much more water than a sandy soil. Some eucalypt trees prefer to grow in clay-type soils, particularly wandoos (tall white eucalypt trees, pictured left), whilst other trees like jarrah and marri prefer the sandy soils.

Why would clay soils retain more water than sandy soils?
Permeability: sandy soils have lots of inter-connected pore spaces which allow water to drain away, whilst the tiny particles of clay in clay-type soils allow water to 'stick' to them. Additionally, clay has very low permeability and if there is enough of it, it will act as a barrier to liquids (whether that's to prevent water from draining into the ground, or oil & gas from escaping up to the surface).

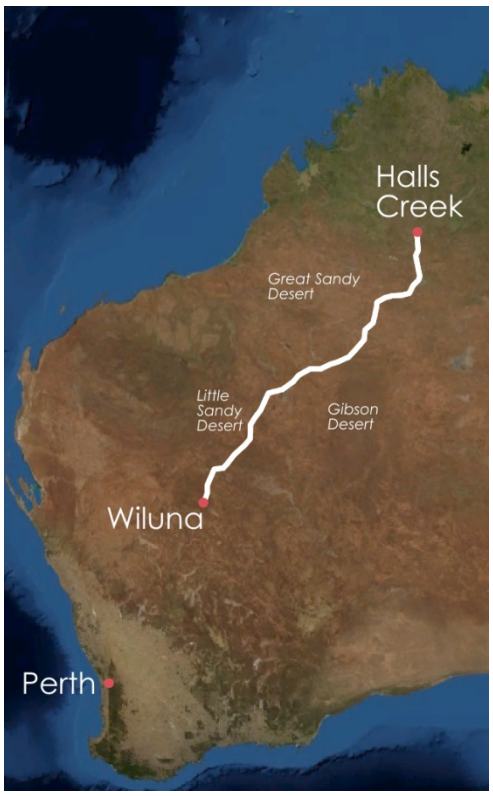
If you spotted a wandoo tree all by itself out in the desert, what might that tell you?
That tree might be located at a wet spot or water hole. If we dig underneath it, maybe there would be water for people to drink too.

For more information, visit:

- Review of how indigenous people managed water in desert regions of Australia. Journal of the Royal Society of Western Australia, 82:17-25, 1999. http://www.rswa.org.au/publications/Journal/82(1)/82(1)bayly.pdf
- Aboriginal people built underwater tunnels. News in Science, ABC Radio. http://www.abc.net.au/science/news/ancient/AncientRepublish_1590192.htm

Water in the Desert – Teacher Notes

The Canning Stock Route



In 1906, the cattle industry was an important part of life in Western Australia. There were many cattle stations in the Kimberly, but it was difficult and expensive to transport the grown cattle to the big cities of Perth and Kalgoorlie (a booming mining town) down south. The government appointed a man named Alfred Canning to explore and map out a track through the desert for the purpose of more easily transporting cattle. To make the route viable for stockmen, it was critical to find water on the way.

Alfred Canning was able to find water underground and to build wells all along his route by using the knowledge of the local Aboriginal people. However, he mistreated local Aboriginal people in the process, and his approach of sealing off the wells created problems for many more. The Canning Stock Route crosses lands belonging to 15 different language groups. These Aboriginal people had lived near their water sources, carefully managing them so the wells gave water to everyone over the long term. Alfred Canning put lids and locks on wells to restrict their use, and droving cattle used a lot of water at one time. These lids and locks also affected the quality of the water, and sometimes resulted in animals and people drowning due to falling into the deep wells. People soon began dismantling the wells in order to more safely reach the water. The route was never used by stockmen as much as the government had anticipated, but it had a lasting impact on the Aboriginal people from that area. Today, the Canning Stock Route is a 4WD track hardy adventurers can drive in the winter months.

The Great Sandy Desert receives an average of 370 mm of rain per year; in comparison, Perth receives an average annual rainfall of 730 mm. Using what you know about rainfall and aquifers, discuss possible differences in water use between these two regions.

People living in the Great Sandy Desert must conserve rainwater more carefully than people in Perth. You probably can't rely on rain barrels to supply drinking water, and must instead use bore water/aquifers. Aquifers must be replenished by filtration of surface water, so if there is very little rain, then aquifers take a long time to replenish. People in Perth might use water in non-critical ways, such as to water lawns and fill swimming pools, but this would be a waste of precious drinking water in the Great Sandy Desert. Drinking water is vital to survival in the Great Sandy Desert, and water sources would be deeply important to people living there.

For more information, visit:

- The Canning Stock Route. Australian Stories. Australian Government. http://www.australia.gov.au/about-australia/australian-story/canning-stock-route
- History of the Canning Stock Route. Education at the National Museum of Australia. http://www.nma.gov.au/__data/assets/pdf_file/0015/19410/Yiwarra-Kuju-history.pdf
- Visiting the Canning Stock Route. Kuju Wangka. http://canningstockroute.org.au/