At Home Learning – Year 7

In support of students and their Earth and Space Science learning, the following is a sequence of tasks and activities that could be carried out at home.

Objectives:
At the completion of this unit of work students will:

- Be able to define what an Earth resource is
- Understand that some resources are renewable and others are non-renewable
- Be able to explain a number of ways water behaves and how it cycles through the environment
- Understand some different perspectives on water transport and use
- Be able to outline how non-renewable resources, oil and gas, form and are extracted

Focus	Activity/ies	WASP Support Resources
Resources	• Research what a resource is • Create a mind map, table, video (or other) to outline some of Earth's major resources	
Renewable V non-renewable	• Research what it means for a resource to be renewable. What about non-renewable? • Research how long it takes for the given list of resources to renew. Which would be renewable? Non-renewable?	Timescale for renewal – https://www.wasp.edu.au/mod/resource/view.php?id=8
What makes water a renewable resource?	• Research how water might be considered a renewable resource (is there any debate about this?) • View the WASP water cycle animation and answer the questions provided	Water cycle animation – https://www.wasp.edu.au/mod/resource/view.php?id=549
Rain	• Investigate how rain forms with a simple experiment	Rain – https://www.wasp.edu.au/mod/resource/view.php?id=42 (use a clear glass instead of a beaker and be VERY careful with the hot water)

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The behaviour of water	• Carry out a range of easy activities to investigate the properties of water	Surface tension – https://www.wasp.edu.au/mod/resource/view.php?id=16 (use a plate instead of a glass slide and a straw instead of a Pasteur pipette). For the experiment with the balloon – https://www.wasp.edu.au/mod/resource/view.php?id=17 Breaking surface tension – https://www.wasp.edu.au/mod/resource/view.php?id=18 (use a straw instead of a Pasteur pipette and a clear glass instead of a beaker) Adhesion (Capillarity) – https://www.wasp.edu.au/mod/resource/view.php?id=20 (use a clear glass instead of a beaker)
Cleaning water	• Research how water is cleaned naturally (through the water cycle and don't forget to consider what happens below the surface) • Carry out a range of easy investigations to clean water at home	Decanting – https://www.wasp.edu.au/mod/resource/view.php?id=28 (use clear glasses instead of beakers and measuring cups instead of a measuring cylinder) Filtering with sand – https://www.wasp.edu.au/mod/resource/view.php?id=32 (*be careful when puncturing holes in your bottle!) Filtering sand with a sari – https://www.wasp.edu.au/mod/resource/view.php?id=33 (for an easy at home filter funnel cut the top off a cool drink bottle, the base can be used as a beaker) Filtering with a rock – https://www.wasp.edu.au/mod/resource/view.php?id=34 (permeable rocks around you might include sandstone or some limestones) Rate of evaporation – https://www.wasp.edu.au/mod/resource/view.php?id=40 (use measuring cups instead of a measuring cylinder)
Drinking water	• Research how we can source drinking water from one of the following: o Rainfall o Rivers o Groundwater o Seawater o Domestic grey water • Create a flow chart or cartoon for this process • Consider the problem presented in the waste water activity	Sources of water – https://www.wasp.edu.au/mod/resource/view.php?id=47 Waste water – https://www.wasp.edu.au/mod/resource/view.php?id=551

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Water use history	• Research the history of water use in your area	For students in WA (the Perth to Kalgoorlie pipeline) - https://www.wasp.edu.au/mod/resource/view.php?id=557
Perspectives on water use	• Consider an Aboriginal perspective on water • Learn more about an Indian perspective on water	An Aboriginal Perspective - https://www.wasp.edu.au/mod/resource/view.php?id=54 An Indian Perspective - https://www.wasp.edu.au/mod/resource/view.php?id=56
The formation of oil and gas	• Find out more about the formation of oil and gas by watching our animation • Explore this process further with our iPad app • Investigate how sedimentary rocks form (vital to the formation of oil and gas) with a simple experiment • Investigate how oil, gas and water move through some rocks (and not others) • Then investigate how fast they move through the reservoir (store) • Find out how pressure changes the deeper sediments are buried • Explore how we can increase the amount of oil extracted from a reservoir • Create a presentation that outlines the formation, extraction and use of oil and gas	Oil and gas animation - https://www.youtube.com/watch?v=8YHsxXEVB1M iPad app – https://www.wasp.edu.au/mod/page/view.php?id=85 Dewatering of sediments - https://www.wasp.edu.au/mod/resource/view.php?id=60 Porosity and permeability - https://www.wasp.edu.au/mod/resource/view.php?id=67 (use clear glasses instead of beakers and the top third of cool drink bottles instead of filter funnels) Migration rate - https://www.wasp.edu.au/mod/resource/view.php?id=69 (use measuring cups instead of a cylinder and a clear glass instead of a beaker) Pressure and depth of burial - https://www.wasp.edu.au/mod/resource/view.php?id=66 (be careful when poking holes in the bottle!) Viscosity and raising raisins - https://www.wasp.edu.au/mod/resource/view.php?id=74 (use straws instead of transfer pipettes)
Quizzes	• Test how much you have learnt in this unit by taking our online quizzes	Quizzes - https://www.wasp.edu.au/mod/page/view.php?id=108