**Year 9 SCIENCE: EARTH and SPACE**

**Student term Planner**

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| **Year Level:** | 9 | Student checklist: 🗹 when you know… |
| **Subject:**  | Science | [ ] Assessment due dates[ ] The learning goals and success criteria for this term [ ] Changes to routines e.g. excursions[ ] When assessment practice lessons will occur (exemplars)[ ] When revision lessons will occur |
| **Term/Year:** | 3 / 2024 |
| **Unit Title:**  | Carbon Cycle |
| **Assessment:** | Research Investigation |
| **Key Resource:**  | Stile |
| **WK** | **Wk. Beg** | **Holidays or variations this week** | **Lesson 1** | **Lesson 2**  | **Lesson 3**  |
| 1 | 8 Jul. 24 |  | **Earth’s Spheres*** What are the Earth’s four spheres?
* What are the key features of the lithosphere, hydrosphere, atmosphere and biosphere?
* How do humans interact with each of the four spheres?

SC 1, 3, 5 | **Earth as a Closed System*** Explore Earth as a closed system with limited resources.
* Create a Terrarium

SC 2, 4 | **Carbon Cycle*** What is carbon and where is it found?
* What is the carbon cycle?
* How does the carbon cycle interact with each of the four spheres?
* Why is the carbon cycle important?

SC 6, 7, 8, 9 |
| 2 | 15 Jul. 24 |  | **Photosynthesis*** What is photosynthesis?
* How does photosynthesis interact with the carbon cycle?

SC 10 | **Photosynthesis Investigation*** Investigating the carbon produced during photosynthesis.
* Stile: 3.3 Investigation: Photosynthesis

SC 10 | **Respiration*** What is respiration?
* How does respiration interact with the carbon cycle?
* Lime water pH demonstration

SC 11 |
| 3 | 22 Jul. 24 |  | **Greenhouse Effect*** What is the natural greenhouse effect?
* What causes the natural greenhouse effect?

SC 12, 13 | **Enhanced Greenhouse Effect*** What is the enhanced greenhouse effect?
* What is the difference between the natural and enhanced greenhouse effect?

SC 14, 15 | **My Carbon Footprint*** What is my carbon footprint?
* How can I reduce my carbon footprint?
* My carbon footprint VR- <https://www.youtube.com/watch?v=aCu9rZvXRLg>

SC 16 |
| 4 | 29 Jul. 24 |  | **Human Impact on the Carbon Cycle*** How has the burning of carbon-based fossil fuels led to the enhanced greenhouse effect?
* What are climate tipping points?
* Is it too late to reverse human effects on the carbon cycle?

SC18 | **Biodiversity Loss*** What is biodiversity and why is this important?
* How is increased carbon in the atmosphere resulting in a loss of biodiversity?
* What can we do to reduce this loss of biodiversity?

SC 17, 20 | **Melting Ice*** How is increased carbon in the atmosphere leading to an increase in the melting of ice caps?
* What are the effects of melting ice and permafrost?
* Is melting ice on land or in the sea worse for rising sea levels?
* Stile: 2.4 Modelling Sea level rise

SC21 |
| 5 | 5 Aug. 24 | JET Planning Wed 7/8 | **Rising Sea Levels*** How is increased carbon in the atmosphere leading to rising sea levels?
* Will your house still be here in 100 years?
* What can we do to counteract the effects of rising sea levels?

SC21 | **Ocean Acidification*** How is increase carbon in the atmosphere causing ocean acidification?
* What are the impacts of ocean acidification?
* Dissolving shells prac

SC 17, 22 | **Catch Up + Review*** How does First Nations fire management practices lead to a reduction in the amount of fossil fuels burnt?

SC 19 |
| 6 | 12 Aug. 24 |  | **Renewable Energy*** What renewable energy options are available to reduce the amount of carbon being released?
* How do other countries utilise wind and solar energy?

SC 23 | **Renewable Energy*** What renewable energy options are available to reduce the amount of carbon being released?
* How do other countries utilise hydro and geothermal energy?

SC 24 | **Carbon Storage*** How is carbon naturally captured and stored?
* What are current and future technologies that allow the capture and storage of carbon?

SC 24 |
| 7 | 19 Aug. 24 |  | **Assignment*** Deconstructing assessment task
 | **Assignment*** Predict what renewable energy source would best suit Australia’s climate/properties.
 | **Assignment*** Identify a country to use as a case study.
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| 8 | 26 Aug. 24 | Pupil Free Day Fri 30/9 | **Assignment*** Conduct research.
 | **Assignment*** Conduct research.
 | **Assignment*** Relate this country’s design to Australia.
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| 9 | 2 Sep. 24 |   | **Assignment*** Create a pictorial diagram of your renewable energy idea.
 | **Assignment*** Present this information in a suitable format.
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| 10 | 9 Sep. 24 |  | **ASSESSMENT TASK DUE** | **End of Term Activities** | **End of Term Activities** |