

9 Science: EARTH and SPACE

LEARNING GOALS and SUCCESS CRITERIA

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| **Year:** | | **9** | **Unit:** | |
| **Subject:** | | **Science** | **Assessment:** | |
| **LG** | **LG and SUCCESS CRITERIA** | | | **Where is this in my notebook?** |
| **1**  **2 Lessons** | **SC1** | I can **define** the terms lithosphere, hydrosphere, atmosphere and biosphere. | |  |
| **SC2** | I can **describe** how Earth is a closed system of limited resources. | |  |
| **SC3** | I can **describe** the key features of each sphere. | |  |
| **SC4** | I can **describe** how the fours spheres interact. | |  |
| **SC5** | I can **explain** how humans interact with each of the four spheres. | |  |
| **LG1** | **Students can explain Earth as a system, describing Earth’s spheres and discussing examples of interactions between different spheres.** | |  |
| **2**  **4 Lessons** | **SC6** | I can **define** the terms photosynthesis, respiration, combustion and decomposition. | |  |
| **SC7** | I can **draw** and **describe** the carbon cycle. | |  |
| **SC8** | I can **identify** how each sphere is involved in the carbon cycle. | |  |
| **SC9** | I can **discuss** the importance of the carbon cycle. | |  |
| **SC10** | I can **explain** the role that photosynthesis plays in the carbon cycle. | |  |
| **SC11** | I can **explain** the role that cellular respiration plays in the carbon cycle. | |  |
| **LG2** | **Students can construct a diagram of the carbon cycle and explain the role of photosynthesis and respiration in that cycle.** | |  |
| **3**  **3 Lessons** | **SC12** | I can **define** the greenhouse effect and the enhanced greenhouse effect. | |  |
| **SC13** | I can **explain** the causes and effects of the greenhouse effect and how this relates to maintaining temperature on Earth. | |  |
| **SC14** | I can **compare** the greenhouse effect and the enhanced greenhouse effect with respect to maintaining temperatures on Earth. | |  |
| **SC15** | I can **identify** sources of carbon that contribute to the enhanced greenhouse effect. | |  |
| **SC16** | I can **calculate** my carbon footprint and **identify** ways to reduce this. | |  |
| **LG3** | **Students can analyse the greenhouse effect and relate it to the role carbon plays in maintaining temperatures that support life on Earth.** | |  |
| **4**  **8 Lessons** | **SC17** | I can **define** biodiversity and ocean acidification. | |  |
| **SC18** | I can **explain** how the burning of carbon-based fossil fuels has led to the enhanced greenhouse effect. | |  |
| **SC19** | I can **explain** how First Nations Australians are reducing Australia’s greenhouse gas emissions through the reinstatement of traditional fire management regimes. | |  |
| **SC20** | I can **explain** how increased carbon in the atmosphere results in changes in biodiversity, in the biosphere. | |  |
| **SC21** | I can **investigate** how increased carbon in the atmosphere results in changing sea levels due to melting of sea ice and permafrost, in the hydrosphere. | |  |
| **SC22** | I can **investigate** how increased carbon in the atmosphere results in ocean acidification. | |  |
| **SC23** | I can **analyse** how renewable energy, including solar, hydro, wind and geothermal, leads to a reduction in carbon release. | |  |
| **SC24** | I can **analyse** how carbon is captured and stored naturally or through the use of technologies. | |  |
| **LG4** | **Students can analyse the effect of human impact on the Earth’s spheres through the disruption of the carbon cycle.** | |  |