## SC5 – ES3 Human Impact on Global Systems

SC5 - ES3 People use scientific knowledge to evaluate claims, explanations or predictions in relation to interactions involving the atmosphere, biosphere, hydrosphere and lithosphere

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| Guiding question: | How scientific knowledge about global patterns of geological activity and interactions involving global systems can be used to inform decisions related to contemporary issues? |
| What are your students going to learn? (Objectives) | **Human Impact on Global Systems**   * explains how scientific knowledge about global patterns of geological activity and interactions involving global systems can be used to inform decisions related to contemporary issues  SC5-13ES |
| How are they going to learn it? (Resources and Strategies) | **Resources**:  [National Geographic – great pacific garbage patch](https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/)  [National Geographic – acid rain overview](http://environment.nationalgeographic.com.au/environment/global-warming/acid-rain-overview/)  [Queensland Government – preventing and managing erosion](http://www.qld.gov.au/environment/land/soil/erosion/management/)  [Queensland Government - types of erosion](http://www.qld.gov.au/environment/land/soil/erosion/types/)  [Cool Australia – Climate change](https://vimeo.com/84835327)  [Cool Australia - waste](https://vimeo.com/77933477)  [NSW Department of Planning, Industry and Environment – land and soil](https://www.environment.nsw.gov.au/topics/land-and-soil)  [NSW Department of Planning, Industry and Environment – water](https://www.environment.nsw.gov.au/topics/water)  [NSW Department of Planning, Industry and Environment – air](https://www.environment.nsw.gov.au/topics/air)  **Strategies**  1.Using the online-learning platform, students share their ideas about the different impacts humans have on their environment.  2. Individual activity/reflection: Students write a report on the human impact on global systems |
| Target date for completion | Approximately 3 lessons |
| How are you going to know that they learned it? (Success criteria) | Describe using examples some of the current issues that are the result of the effects of human activity on the biosphere, lithosphere, hydrosphere and atmosphere:   * Effect of CFC’s on Ozone Layer * Pacific Ocean Garbage dump and the  long-term effects of waste management * Enhanced Greenhouse effect and  Global Warming and sea level rise * Industrial pollution increasing Acid Rain * Deforestation leading to habitat loss, increased erosion/runoff + loss of carbon sink * Ocean acidification and their resultant loss of biodiversity * Evaluate the scientific evidence on the effect on society and the biosphere. |
| Collecting evidence of student learning (Verification) | Students write a report and submit it using Google classroom or Class OneNote etc   * Describe at least 3 issues and effect on all spheres * Include pictures * Describe any current research or solutions to stop impact on global system * evaluate the scientific evidence on the effect on society and the biosphere. * Bibliography |
| Feedback (Evaluation) | Format to be communicated clearly by teacher, whether it is by emailing tracked documents, upload of media/audio via online platforms or a blended approach. For example, teacher recording oral feedback on Class OneNote and setting up quizzes to give automated feedback. |
| Communication | This lesson can be completed entirely on line using your school’s preferred platform eg Google classroom, MS Teams. Alternatively students use the internet to find the information to complete worksheets provided as a hard copy. |

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| Lesson sequence |  |  |
| 1 | Watch and read a variety of media about global patterns of geological activity and the impacts it has on our environment | [National Geographic – great pacific garbage patch](https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/)  [National Geographic – acid rain overview](http://environment.nationalgeographic.com.au/environment/global-warming/acid-rain-overview/)  [Queensland Government – preventing and managing erosion](http://www.qld.gov.au/environment/land/soil/erosion/management/)  [Queensland Government - types of erosion](http://www.qld.gov.au/environment/land/soil/erosion/types/)  [Cool Australia – Climate change](https://vimeo.com/84835327)  [Cool Australia - waste](https://vimeo.com/77933477)  [NSW Department of Planning, Industry and Environment – land and soil](https://www.environment.nsw.gov.au/topics/land-and-soil)  [NSW Department of Planning, Industry and Environment – water](https://www.environment.nsw.gov.au/topics/water)  [NSW Department of Planning, Industry and Environment – air](https://www.environment.nsw.gov.au/topics/air) |
| 2 | Connect to the class on your teachers chosen platform to discuss the issues | Answer questions that your teacher may have posted to your class  Let the class know other sites you may have found regarding this topic and influence the way you may think |
| 3 | Write a report using examples of some of the current issues that are the result of the effects of human activity on the biosphere, lithosphere, hydrosphere and atmosphere | Include the following:   * Describe at least 3 issues and effect on all spheres * Include pictures * Describe any current research or solutions to stop impact on global system * evaluate the scientific evidence on the effect on society and the biosphere. * Bibliography |
|  | Submit to your teacher via onenote, google classroom etc |  |