S3 SPACE OUTCOMES

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|  | 1. I know the explanation for days, years and leap years and month in terms of the cosmos |
|  | 1. I can tell the direction of travel of the Earth in space by the motion of the sun and moon. |
|  | 1. I can tell the difference between astronomy and astrology |
|  | 1. I can define the terms, planet, dwarf planet, moon, asteroid, solar system, star, sun, exoplanet, galaxy, universe, meteor, and meteorite. |
|  | 1. I can identify the planets in our solar system in order and can find information about each one. |
|  | 1. I can research space probes that have visited each planet in our solar system and what they have discovered. |
|  | 1. I can tell the difference between a sun and a star. |
|  | 1. I can explain the phases of the moon |
|  | 1. I can explain the reasons for season and identify what would happen if a planet was tilted less or more |
|  | 1. I can explain the terms *mass, weight, gravitational pull, weightlessness, free-fall* |
|  | 1. I can state the evidence for the Moon Landings |
|  | 1. I have a basic understanding of the Universe <https://map.gsfc.nasa.gov/universe/uni_life.html> |
|  | 1. I am aware of the benefits of satellites: for example for GPS, weather forecasting, communications, scientific discovery and space exploration (for example Hubble telescope, ISS). |
|  | 1. I know that geostationary satellites have a period of 24 hours and orbit at an altitude of 36 000 km above the equator on the Earth’s surface. |
|  | 1. I know that the period of a satellite in a high altitude orbit is greater than the period of a satellite in a lower altitude orbit. |
|  | 1. I am aware of the challenges of space travel. |
|  | 1. I have a basic awareness of how astronauts manoeuvre a spacecraft in a zero friction environment, possibly to dock with the ISS |
|  | 1. I have a basic awareness of maintaining sufficient energy to operate life support systems in a spacecraft, with the possible solution of using solar cells with area that varies with distance from the Sun |
|  | 1. I can describe how different parts of the electromagnetic spectrum are used to obtain information about astronomical objects. |
|  | 1. I can describe the risks associated with manned space exploration such as fuel load on take-off, potential exposure to radiation, pressure differential and re-entry through an atmosphere. |
|  | 1. I have knowledge of Newton’s second and third laws and their application to space travel, rocket launch and landing. |
|  | 1. I can use W=mg to solve problems involving weight, mass and gravitational field strength, in different locations in the universe. |
|  | 1. I can correctly use the term light year. |
|  | 1. I can convert between light years and metres. |
|  | 1. I can give a basic description of the Big Bang theory of the origin of the Universe. |
|  | 1. I know that the estimated age of the Universe is approximately 14 billion years or 13.8 billion years old. |