**BTEC Assignment Brief**

|  |  |  |
| --- | --- | --- |
| **Qualification** | | Pearson BTEC Level 3 National Extended Certificate in Applied Science  Pearson BTEC Level 3 National Foundation Diploma in Applied Science  Pearson BTEC Level 3 National Diploma in Applied Science  Pearson BTEC Level 3 National Extended Diploma in Applied Science |
| **Unit number and title** | | **Unit 16: Astronomy and Space Science** |
| **Learning aim** | | **A**: Understand the fundamental aspects of the Solar System |
| **Assignment title** | | The Sun and its family |
| **Assessor** | | Dimitrios Theodorakis |
| **Issue date** | | 02/11/2020 |
| **Hand in deadline** | | 14/01/2021 |
|  | | |
|  | | |
| **Vocational Scenario or Context** | | Your school/college is one of a number of centres which has been asked to demonstrate a range of students’ work about the Solar System for ‘Space Week’, which has been coordinated by the UK Space Agency. You must produce four educational resources which can be viewed by visitors. The presentations will be judged by a prominent British astronomer. |
|  | | |
| **Task** | | Produce planetary factsheets which:  **Describes** the main features of known planets and their composition (rocky, gaseous), prominent moons, ring systems of the four largest planets, and Van Allen radiation belts.  Include **descriptions** of the forces involved (Kepler’s laws), orbital characteristics, rotation (including planetary axes), atmospheric conditions and physical data (e.g. surface features, diameter and mass).  Give a detailed **description** of the internal structure of the Earth and its atmosphere and include surface and composition details of the Moon.  Produce a presentation on the Earth, Moon, and Sun system which:  **Describes** the interaction between the Sun, Moon, Earth and other bodies in the Solar System.  **Explains** through diagrams and supportive annotations, how the interaction between the Sun, the Moon and the Earth gives rise to day and night, the phases of the Moon, lunar and solar eclipses and tidal effects on Earth.  Produce a poster or leaflet on smaller solar system objects which:  **Describes** the main features of the Solar System using diagrams, pictures and charts. This should include dwarf planets, asteroids, comets (short and long period), meteorites – composition, origins and shower characteristics, and finally the Edgeworth-Kuiper belt and Oort cloud.  Produce a report on the Sun which:  **Explains** the composition of the Sun using a clear diagram which illustrates the layered structure and gases. **Explains** the process of nuclear fusion and the surface features produced as a result of magnetic forces.  **Analyses** how the sun remains in equilibrium and subsequent effects on the Sun and the Solar System when these forces change. |
| **Checklist of evidence required** | | * A report on the components of the Solar System with supporting data, compositions, **descriptions** and forces involved. * A report which **describes** the Earth-Moon system and interaction with the Sun and other Solar System objects * A report **explaining** the main features of the Sun and the important processes which take place within its structure. This will also include an **analysis** of the impact of the Sun on the Solar System. |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria, you must show that you are able to: | |
| **A.D1** | Analyse the importance of the Sun in its solar system | |
| **A.M1** | Explain the effects of interaction between the Sun, Earth and Moon and other solar system objects | |
| **A.P1** | Describe the main features of the solar system and the Sun’s influence | |
|  |  | |
| **Sources of information to support you with this Assignment** | | <https://www.e-education.psu.edu/astro801/content/l9_p8.html> (lessons 1, 11 and 12)  https://store.bbc.com/wonders-with-brian-cox/bundles/the-wonders-collection  The Solar System by Kenneth R Lang ISBN 0521198577  The Life and Death of Stars by Kenneth R Lang ISBN 110701638X |
| **Other assessment materials attached to this Assignment Brief** | | N/A |