Name(s) Block

DUE DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Grading Rubric:*** *Unit 2 Project - Foundations of Astronomy*

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| --- | --- |
| 1. **Research** | **70 points** |
| * 1. Required questions/areas of study were adequately and accurately addressed. | 60 points |
| * 1. There are at least 3 credible references, cited appropriately. | 10 points |
| * 1. Research is exceptionally thorough. | *Bonus up to*  *10 points* |
| 1. **Presentation** | **30 points** |
| * 1. Presentation is within time limits [10-20 minutes]. | *minus 3 pts./min outside of time limits* |
| * 1. Visual aspects of presentation: |  |
| * + 1. adequately convey the research findings. | 5 points |
| * + 1. effectively convey the research findings. | 5 points |
| * + 1. accurately represent research findings. | 5 points |
| * 1. Presenter(s) are |  |
| * + 1. clearly informed of their topic(s). | 5 points |
| * + 1. not merely reading off of slides. | 5 points |
| * + 1. educating. | 5 points |
| **Total Points** |  |

|  |  |
| --- | --- |
| **Constellations** (choose three) | **60** |
| * 1. What does it look like in the night sky? | 2x3=6 |
| * + 1. Which stars comprise it (names)? | 4x3=12 |
| * + 1. How far are the stars from Earth? | 4x3=12 |
| * 1. When is it visible in the Northern Hemisphere? | 2x3=6 |
| * 1. How is the constellation viewed by various cultures? |  |
| * + 1. What is the significance of the constellation to various cultures? | 4x3=12 |
| * + 1. What story(ies) are associated with the constellation? | 4x3=12 |
| **Ancient Astronomy** | **60** |
| 1. How did ancient cultures use astronomy? |  |
| 1. How did their knowledge/understanding of astronomy influence |  |
| * + - 1. daily life? | 4x3=12 |
| * + - 1. their religion/spirituality? | 5x3=15 |
| * + - 1. their understanding of the Earth, solar system, etc.? | 4x3=12 |
| 1. What (if any) ancient ideas are evident in today’s world cultures? | 3x3=9 |
| 1. Constrast ancient cultures’ understanding of astronomy with modern, Western understanding. | 4x3=12 |
| **Historical Developments in Astronomy** | **60** |
| 1. What did each person contribute to our modern, Western understanding of astronomy? |  |
| 1. Where is the person from? When did they live? What was the cultural climate with respect to the science of astronomy? | 5x3=15 |
| 1. Describe the person’s contribution to astronomy. | 10x3=30 |
| 1. What is the modern, Western understanding of the Earth’s place in the universe? |  |
| 1. Where is the Earth with respect to other stars/galaxies? | 6 |
| 1. How big is the known universe? Is the size changing? | 6 |
| 1. How old is the known universe? | 3 |
| **Timekeeping and Astronomy** | **60** |
| 1. How has humanity’s study of astronomy influenced our sense of time? |  |
| 1. Give examples of how knowledge of astronomy has influenced our modern, western methods of timekeeping. | 12 |
| 1. What other methods of timekeeping, used by other cultures have been influenced by astronomy? | 8 |
| 1. Chose one area of study: |  |
| 1. *Build* a sundial. Test it for accuracy against a cell phone, or other time keeping device that references an atomic clock (include a data table) | 40 |
| 1. Describe how astronomy effects the four seasons. | -OR- |
| 1. What about Earth’s rotation causes the seasons? | 6 |
| 1. How does latitude influence length of day? | 10 |
| 1. How does latitude influence the magnitude of the sun’s intensity? | 10 |
| 1. How are the four seasons experienced at different latitudes? | 6 |
| 1. List some constellations that are visible in the Northern Hemisphere during different parts of the year. | 8 |
| **Navigation** | **60** |
| 1. Describe how astronomy has influenced navigation. |  |
| 1. How can the sun be used to navigate? | 10 |
| 1. How can other stars be used to navigate? |  |
| 1. Give specific examples. | 10 |
| 1. What is a sextant, and how is it used? | 6 |
| 1. How are modern day GPS systems similar to celestial navigation? | 4 |
| 1. Use the sun to determine your latitude. Include a data table, diagram, and percent error | 30 |