Astronomy End of Semester Assessment:

Problem: The earth is an amazing place capable of sustaining all known life. What would happen if you were to change one variable about the earth? In this report you will investigate what would happen to the earth if one thing changed. You will investigate one of the following:

- The tilt of the earth is changed to 90^o
- The tilt of the earth is changed 90^o and always faces the sun.
- The tilt of the earth is changed to 0^o
- The tilt of the earth is changed 180^o
- The rotation of the earth is reversed.
- The Earth does not rotate on its axis
- The Earth's orbit has the same eccentricity as that of Pluto
- Jupiter is 20 times more massive it would be a sun. (Binary Star System)
- The Earth rotates every 12 hours
- The Earth rotates every 48 hours

Topics to Address

A. **Main Diagram:** Draw a diagram of what the earth looks like from space.
B. **The Sky:** You need to have a detailed description of the day and night sky. This should include
    - *The Day and Night Cycle*
    - *The motion of the constellations*
    - *The moon (if applicable)*
    - *The planets*
    - *The sun.*
    - *The celestial sphere (the ecliptic, the zodiac, celestial coordinates, the Celestial North and South Pole*
C. **Seasons:** In most cases the seasons will change. Comment on:
    - *Length of the seasons*
    - *The angle of insolation*
    - What are the seasons like at:
        - The North Pole
        - 45^o Latitude
        - Equator

Report Expectations

The project is in three parts: The Diagram, the Sky and the Seasons. Italicized bullets require a diagram and each section requires a detailed description. The project needs to be typed and turned into http://turnitin.com. For pictures and diagrams, digital images will need to be either scanned in or obtained and **cited** from reputable sources.

Honors/Bonus

Make a powerpoint presentation about the most significant change(s) that occurs with your variable and make a 5 minute podcast explain the effect on the earth.

Earth Science End of Semester Assessment:

Problem: The earth is an amazing place capable of sustaining all known life. What would happen if you were to change one variable about the earth? In this report you will investigate what would happen to the earth if one thing changed. You will investigate one of the following:

- The tilt of the earth is changed to 90^o
- The tilt of the earth is changed 90^o and always faces the sun.
- The tilt of the earth is changed to 0^o
- The Earth does not rotate on its axis
- The Earth has no moon.
- The heat output of the Earth's core is doubled
- The Earth's moon is five times closer
- The Earth rotates every 12 hours
- The Earth rotates every 48 hours
- The Sun's output is increased 100%
- The magnetic field of the earth is gone

Topics to Address

A. **Main Diagram:** *Draw a diagram of what the earth looks like from space.*

B. Climate: Discuss the following

- What would the climate be at:
  - The North Pole
  - 45^o Latitude
  - Equator
- *Discuss the flow of global winds (Direction, location, speed)*
- Incidence of severe weather (Increase, decrease, where?)
- Changes to the water cycle

C. Habitable Zone:

- *Where would organisms live?*
- What types of organisms would live at:
  - The North Pole
  - 45^o Latitude
  - Equator

D. Oceans:

- Magnitude of the ocean tides
- Frequency of the ocean tides
- *Size of the Oceans*

E. Plate Tectonics & Geology

- *Frequency of earthquakes and volcanoes*
- Magnitude of earthquakes
- Rate of the Rock Cycle

Report Expectations

The project is in five parts: Italicized bullets require a diagram and each section requires a detailed description. The project needs to be typed and turned into http://turnitin.com. For pictures and diagrams, digital images will need to be either scanned in or obtained and **cited** from reputable sources.

Honors/Bonus

Make a powerpoint presentation about the most significant change(s) that occurs with your variable and make a 5 minute podcast explain the effect on the earth.