Name _____ Date _____ Period _____ 132

Milankovich Cycles

Long Term Climate Change

Activity 1 – How does it Spin?

Materials – a jack and spinning top

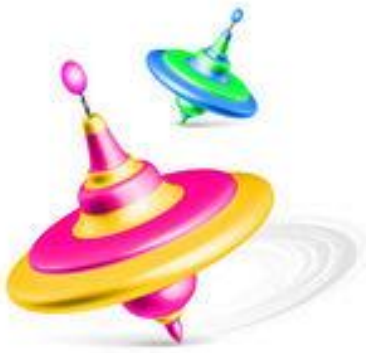
Procedures

1. Clear the table off as much as possible, leaving only something to write with and this worksheet.
2. Please use the jack (and top) as the amazing tools of physics that it is intended for in this activity.
3. Use the jack first and have the most talented person at the table cause the jack to spin.
4. Look at the top of the jack as it is spinning on the table.
5. Describe the motion of the top of the jack.

6. Use the spinning top and have another talented person at your table cause it to spin.
7. Look at the top of the spinning top and observe the motion as it spins.
8. How is the spinning the same as the jack?

9. How is the spinning similar to the jack?

10. Use the top again and have a different talented person spin the top.
11. Describe how the top moves as it spins on the table.



12. After all of the amazing sciency observations, if something is spinning, does it spin perfectly balanced without shifting? Please explain.

Activity 2 – Understanding the Milankovich Cycles

Go to dixiemiddlescience.weebly.com and click on the "Understanding the Milankovich Cycles" button. Then scroll a little down the webpage until you see "The Orbital Motions of the Earth" to identify the 3 main orbital motions that lead to naturally occurring climate changes.

1. Why are the Milankovich Cycle considered long term climate change?

Eccentricity

2. How does the Earth orbit the Sun?

3. What is the measure of the shape of Earth's orbit around the Sun?

4. How many years does it take for this change in shape?

Diagram of Eccentricity

5. Explain why the climate would change as the eccentricity of the Earth's orbit around the Sun changes.

Axial Tilt/Obliquity

6. How many years does it take the tilt of the Earth to change?

7. What is the tilt range of the Earth?

8. Is the Earth's current tilt increasing or decreasing?

9. How will the current tilt effect climate?

Diagram of Obliquity

Precession

10. What is a precession?

11. How many years does it take the Earth to make a full round?

12. What 2 stars does Earth's procession wobble between?

13. How will Earth's climate change when it tilts towards Vega?

Diagram of Precession

14. Explain how a spinning top or jack, model the Milankovich Cycles?