

Astronomer Project

Intro: Create a presentation to teach how various scientists have enhanced our knowledge of the Universe.

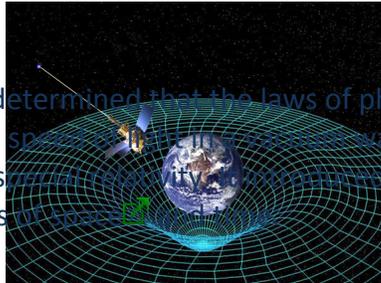
You may use any electronic presentation method you choose. Google Slides, Keynote, Prezi, imovie, etc. Bonus points will be given for Prezi, imovie and any other presentation that goes above and beyond just being a regurgitation of information.

- Use images, pictures, etc. and fewer words.



Einstein born in 1879 in

- Be sure the font is large enough to read and contrasts with background. NOT LIKE THIS:



In 1905, Albert Einstein determined that the laws of physics are the same for all non-accelerating observers, and that the speed of light in a vacuum was independent of the motion of all observers. This was the theory of special relativity, which provided a new framework for all of physics and proposed new concepts of space and time.

- Be sure your information is accurate.
- Check your spelling.

Many of these scientists are discussed on these sites that have been linked to via the Moodle:

<https://www.windows2universe.org>

<http://phys.kent.edu/~manley/astronomers.html>

<http://abyss.uoregon.edu/~js/ast121/lectures/lec02.html>

<http://www.solarviews.com/eng/people.htm>

Create an electronic presentation IN THIS ORDER:

Item 1: Title page including your astronomer's name, your names, and "jazzed up". We will begin each presentation for the first few weeks with you introducing yourselves.

Item 2: Biography slide

- when/where (s)he was born, a map works better than words.

Item 3: Scientific Contribution

- where (s)he worked:
- what (s)he contributed. Include pictures/diagrams related to your astronomer and his/her work equipment used, what was discovered, etc.
- how your scientist's work was related to, conflicted with or expanded on what was already known

An idea: Write a brief eulogy that contains what may have been said about your astronomer at the funeral. This should be a statement that displays you understand and want to emphasize to the rest of us how outstanding, revolutionary, or remarkable the work was that your astronomer did.

Item 4: A page citing at least 3 references. Include as much of the following as you are able: author, website, date, publisher and any other info related to where you found your information. Extra Credit if **one of your sources is a book or encyclopedia**. **Be sure to point this out when you present so I can give you the points!**

Item 5: Present your astronomer to the class for constructive criticism. We are using this time to improve and make presentation better. ALL will contribute. This is not critical like "you stink", it is critical like "here is what I noticed when you were presenting..."

Another idea: Create some dialogue between your astronomers. For Example: Create a fake twitter conversation between your astronomers. Make this related to what (s)he did for astronomy. The tweets emphasize what each astronomer did.

Albert Einstein

@eequalsmcsquared

Perplexed, puzzled, and played out. I believe the universe is static, but my relativity work indicates the universe is expanding. Perhaps somebody can prove that the universe is expanding with observation?!?!?!?

Edwin Hubble

@spacetelescopeguy

Yo, Al, I have recently been looking at island universes...galaxies outside of our own and they are moving away from us...it's as if the universe is expanding!!!

be excellent to each other!!

Astronomer List

14 students, 15 astronomers

1. Eratosthenes
2. Claudius Ptolemy
3. **Nicholas Copernicus**
4. **Tycho Brahe**
5. **Johannes Kepler**
6. **Galileo Galilei**
7. **Isaac Newton**
8. **William Herschel**
9. Urbain Le Verrier
10. **Annie Jump Cannon**
11. **Henrietta Swan Leavitt**
12. **Albert Einstein**
13. **Edwin Hubble**
14. **Georges Lemaitre**
15. Clyde Tombaugh
16. Jan H. Oort
17. **Hisako Koyama**
18. **George Gamow**
19. **Arno Penzias & Robert Wilson**
20. **Vera Cooper Rubin**

Names _____ Astronomer _____

_____ (3) your astronomer's name, your names, and "jazzed up".

_____ (20) Biography slides

- when/where he was born, worked and died.
- pictures/diagrams related to your guy and his work.
- Did anybody influence him and his work? Who and what work
- Did his work influence any other scientists? Who and what work
- Is his work still accepted as "truth"? If not, what was inaccurate with his work?
- Eulogy

_____ (5) twitter account, NOT just his name, tweet something related to what he did for astronomy.

_____ (4) two **general-information** test-type questions and the answers

_____ (3) at least 3 references .

_____ (15) presentation, creativity, accuracy, participation

_____ (50) Total

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1. Eratosthenes (1st) several discoveries and inventions including a system of latitude and longitude. around 240 B.C. the first Greek to calculate the circumference of the Earth (with remarkable accuracy), and the tilt of the earth's axis (also with remarkable accuracy)
2. Claudius Ptolemy (5th) ~ AD 140, his description of the universe as an earth-centered system known as the Ptolemaic system
3. Nicholas Copernicus (24th) 1520, first to propose a sun centered universe (heliocentric) with planets in perfectly circular orbits, came under heavy fire from the church for this blasphemy
4. Tycho Brahe (24th) 1580 best known today for his theory of the solar system which is based on a stationary Earth round which the Moon and Sun revolve. The other planets, according to Tycho's theory, revolve round the Sun. lost his nose in a duel, died as a result of burst bladder?
5. Johannes Kepler (25th) 1600 used his mentor (Brahe's) data to create 3 laws of planetary motion more confirmation of Copernicus' sun-centered universe theory
6. Galileo Galilei (25th noon) 1620 first to use an optical device to view the night sky (telescope), viewed 4 moon of Jupiter and Venus' phases, confirmed Copernicus' sun-centered universe theory, came under heavy fire from the church for this blasphemy
7. Isaac Newton (26th) 1680 invented gravity (HA!)... Universal Law of Gravity and three laws of motion, explained planet motions and proved Kepler's Laws
8. William Herschel (27th eve) 1781 discovered Uranus (first planet discovered as all others have been known for all time), discovered infrared radiation
9. Urbain Le Verrier (28th) 1846 debated discoverer of Neptune he calculated where Neptune should be, Galle actually spotted Neptune
10. Annie Jump Cannon (29th) 1900 worked to create an easy star-classification system. (O,B,A,F,G,K,M), classified about 350,000 stars
11. Henrietta Swan Leavitt (29th) 1900 discovery of relationship between brightness of stars and distance allowed astronomers to measure distances in the universe which led to discovery of galaxies outside of our galaxy.

12. Albert Einstein (29th) 1916 theories of special and general relativity, predicted among other things: black holes, gravity waves and expanding universe.
13. Edwin Hubble (29th) 1922 first to measure distance to the Andromeda “nebula”, establishing it as a separate galaxy; later measured distances to other galaxies and discovered that more distant galaxies travel faster (Hubble's law) which supports the Big Bang
14. Georges Lemaitre (29th) 1927 first to propose expanding universe which would be come known as Big Bang theory. Used Einstein’s theory of general relativity

15. Clyde Tombaugh discovered Pluto, 1930’s

16. Jan Oort (29th late) 1930s showed Milky Way rotated, measured solar system to be 30,000 ly from galactic core (not at the center!), proposed comets reside far from Sun, proposed “dark matter” responsible for stars clumping to make galaxies and galaxies cmump to make galactic clusters.

17. Hisako Koyama sun spots (29.9th) 1947 <http://www.syfy.com/syfywire/star-stuff-meet-hisako-koyama-japans-queen-of-sunspots>

18. George Gamow (29.9th) 1948 first suggested hydrogen fusion as source of solar energy, showed how present levels of hydrogen and helium in the universe could be largely explained by reactions that occurred during the "big bang".

19. Arno Penzias & Robert Wilson (30th) 1964 while searching for a source of telephone interference discovered Cosmic Microwave Background Radiation (CMBR) energy thumbprint from the Big Bang

20. Vera Cooper Rubin (30th) 1970 dark matter detective, showed the stars in the outskirts of other galaxies behave similar to Milky Way, they travel faster than they should based on the laws of gravity and what we know about matter. *Something* with gravitational power is causing this