PowerPoint WebQuests

a) Fuzzy Stars
b) Astrochemistry Basics
c) Radio Telescope Basics
d) The Amazing Spectral Line
e) MASERS
f) Mechanism of Radio Wave Emission
g) Chemistry Review
h) Dark Matter
i) Nucleosynthesis
j) List of Chemicals in Space
k) Auroras: How & Why
l) Introduction to the Ionosphere
m) The Ionosphere as Plasma

QUESTIONS:

1. (a) What are some things astronomers look at besides stars?

2. (b) How are chemicals detected in space? In what part of the electromagnetic spectrum are they found?

3. (b) What is interferometry?

4. (b) What are some similarities / differences between atomic spectroscopy and molecular spectroscopy?

5. (c) What are some similarities / differences between optical telescopes and radio telescopes?

6. (d) Light is a wave with frequency, wavelength and energy. Are these three quantities related? How?

7. (d) Spectral lines can be used to identify elements and compounds. What else can they tell us about a region of space?

8. (e) What do the letters in the acronym MASER represent?

9. (e) Describe all the ways in which the radiation emitted from a MASER is different from the radiation emitted by a light bulb.

10. (f) Describe three different mechanisms through which a region of space can emit radiation.

11. (g) Describe qualitatively some of the types of chemical reactions that take place in outer space.

12. (h) If we can't see dark matter, why do we think it exists?

13. (h) Is dark matter the same as dark energy? If not, how are they different?

14. (i) Were all the atoms in the universe created during the Big Bang? If not, where were they created?

15. (j) [true of false] Only a very few different chemicals have been detected in space.

16. (k) What causes the Aurora Borealis?

17. (k) Is there an equal likelihood of seeing the Aurora Borealis on any given night? What event makes seeing it more likely?

18. (l) Name one reason why the magnetosphere is important to life on Earth.

19. (m) Define plasma.

20. (m) Name one way in which scientists study the ionosphere?