Stars Webquest

**CHARACTERISTICS OF STARS**

**Click** [**Stars: Lights in The Sky**](http://www.google.com/url?q=http%3A%2F%2Fwww.seasky.org%2Fcelestial-objects%2Fstars.html&sa=D&sntz=1&usg=AFQjCNGptm-EpqcRrlX28L5m19Tn2YPJ7w)**. Read the paragraph under “Lights in the Sky” and write the answers to the following questions on your paper.**

1) – Without stars there would be no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2) - Name the brightest star in the known universe.

3) - What is its magnitude?

4) – Do the brightest stars have a high or low magnitude value?

5) – What is the relationship between a star’s color and its temperature?

6) – Do stars in the sky actually twinkle? Explain.

7) - Do a search on the internet for "brightest stars as seen from Earth" and create a top 5 list on your paper of their names.

**HERTZSPRUNG-RUSSELL DIAGRAM**

*Two of the most important characteristics of stars are* ***temperature*** *and absolute* ***magnitude****. About 100 years ago, Ejnar Hertzsprung in Denmark and Henry Norris Russell in the United States each made graphs to find out if temperature and luminosity (or brightness) of stars are related. They plotted the temperatures of stars on the x-axis and their brightness on the y-axis. The points formed a pattern.*

*The graph they made is still used by astronomers. It is called the Hertzsprung-Russell diagram, or H-R diagram. Click on the image of the* [*Hertzsprung-Russell Diagram*](https://www.google.com/url?q=https%3A%2F%2Fupload.wikimedia.org%2Fwikipedia%2Fcommons%2F1%2F17%2FHertzsprung-Russel_StarData.png&sa=D&sntz=1&usg=AFQjCNH9za_dmYo119bHFARLXTKHLSiUNw)[*.*](https://www.google.com/url?q=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FHertzsprung%25E2%2580%2593Russell_diagram%23%2Fmedia%2FFile%3AHertzsprung-Russel_StarData.png&sa=D&sntz=1&usg=AFQjCNHj6j8-y0PfF0jiaMuZ8bN7t66XMA) *As you can see, most of the stars form a diagonal line called the ‘main sequence.’ More than 90% of all stars are main-sequence stars. The sun is among the stars on the main sequence.*

8) – As surface temperatures of the main sequence stars increase, what happens to their brightness?

9) – Which is hotter – a red star or a blue star?

10) – Which star is hotter: Rigel (a Supergiant) or Aldebaran (a Giant)?

11) – Choose a star that is not on the main sequence. List its characteristics.

**The Life Cycle of a Star**

**Click on the** [**image**](http://www.google.com/url?q=http%3A%2F%2Fwww.astro.keele.ac.uk%2Fworkx%2Fmagellanic%2Fimages%2FStarlifecycle.GIF&sa=D&sntz=1&usg=AFQjCNFWPQUGBw1lUOxQuIr-60UTHiPCJQ) **that shows the life cycles of two different types of stars: low-mass stars (like our sun) and high-mass stars (huge/giant stars).**

12) – What does a neutron star and a black hole have in common?

13) – What do we call stars that are 3 times the mass of the sun?

**Black Holes**

**Click on the link to learn more about** [**black holes**](http://www.google.com/url?q=http%3A%2F%2Fspaceplace.nasa.gov%2Fen%2Fkids%2Fblackhole%2Findex.shtml&sa=D&sntz=1&usg=AFQjCNHhc44AklkXj0s6TN7U8Z1VmjW8RQ)**.**

14) – Are black holes ACTUALLY holes?

15) – What exactly is a black hole?

16) – Fill in the blank: The gravity of a black hole is so strong that not even \_\_\_\_\_\_\_ can escape!

17) – Fill in the blank: A black hole with all of Earth’s mass would be the size of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!

**Have some extra time? Play “**[**Black Hole Rescue**](http://www.google.com/url?q=http%3A%2F%2Fspaceplace.nasa.gov%2Fen%2Fkids%2Fblackhole%2Findex.shtml&sa=D&sntz=1&usg=AFQjCNHhc44AklkXj0s6TN7U8Z1VmjW8RQ)**”! Be sure to read the directions and let your teacher know your high score!**