# The Life Cycles of Stars: Using the Hertzsprung-Russell (H-R) Diagram

Earth Science/Geology Mr. Traeger

Name: _____ Period: ____ Date: _____

**Purpose**

The purpose of this activity is to become more familiar with the life cycles of stars and how the Hertzsprung-Russell (H-R) diagram is used to plot their life cycles.

**Materials**

- Pencil
- Textbook pages 626-630
- Ruler

**Procedure**

1. Plot the following 25 stars on the H-R diagram on the back. Label each star with a number.
2. Color your plot according to the diagram on page 626 in your book.
3. Label each section on your graph as blue giant, blue supergiant, red giant, red supergiant, main sequence, red dwarf, or white dwarf.

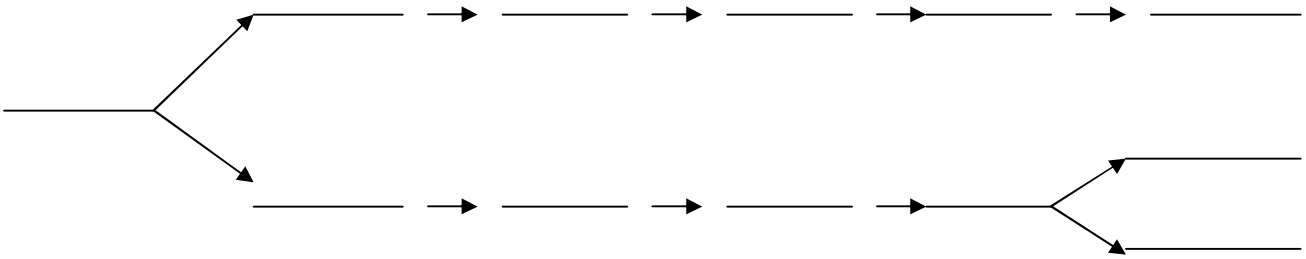
**Questions**

1. How can you use this diagram to plot the life cycle of a star?

2. How does temperature affect what class a star falls in to?

3. How does luminosity affect what class a star falls in to?

4. Use the tuning fork diagram below to label the life cycle of a star



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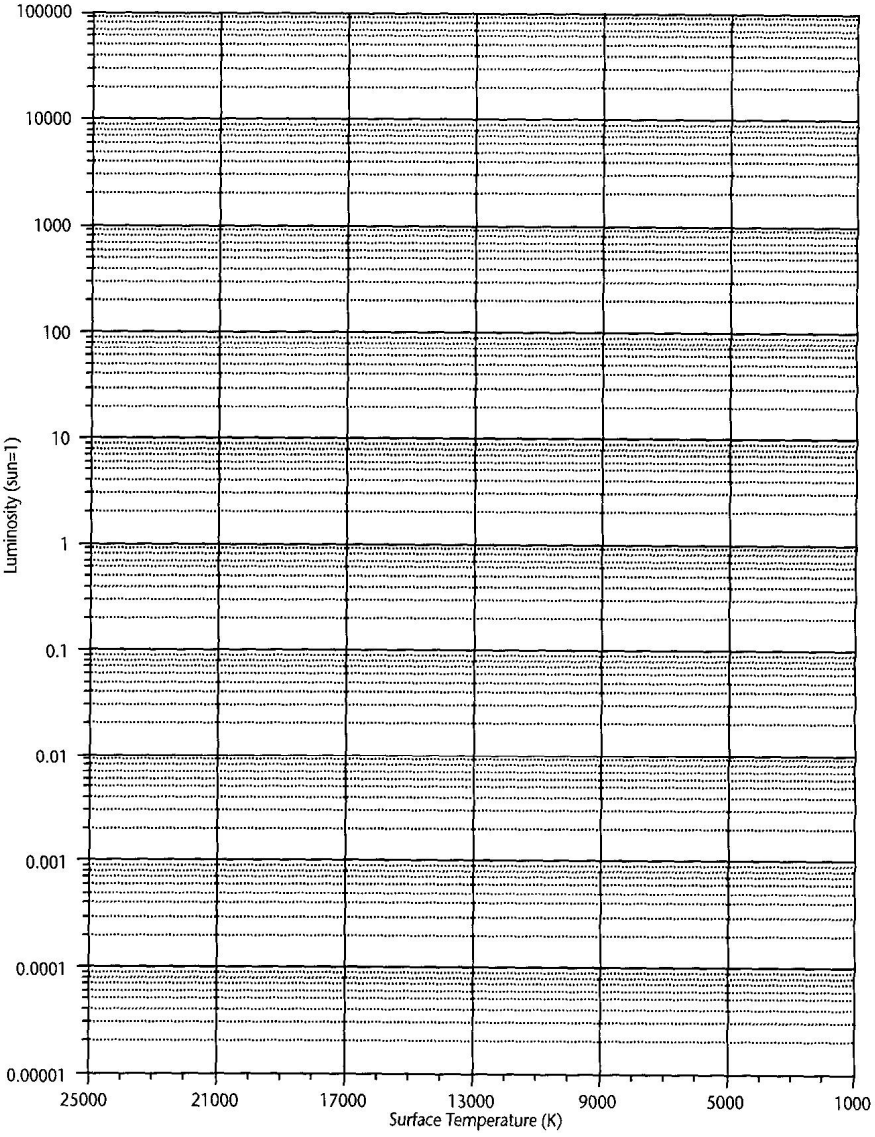
Graph Template




1. Properties of Selected Stars

| Number | Star Name | Visual Luminosity | Surface Temperature (K) |
|---|---|---|---|
| 1 | Sun | 1.0 | 5800 |
| 2 | Luyten 726-8A | 0.00006 | 2600 |
| 3 | Epsilon Eridani | 0.30 | 4600 |
| 4 | Aldebaran | 690 | 3800 |
| 5 | Eta Aurigae | 580 | 16,000 |
| 6 | Rigel | 89,000 | 12,000 |
| 7 | Betelgeuse | 20,000 | 3300 |
| 8 | Mu Camelopardalis | 150 | 3000 |
| 9 | Canopus | 9100 | 7400 |
| 10 | Sirius A | 23 | 10,000 |
| 11 | Sirius B | 0.003 | 10,000 |
| 12 | BD +5° 1668 | 0.0015 | 3000 |
| 13 | Procyon A | 7.6 | 6500 |
| 14 | Iota Ursae Majoris | 11 | 7800 |
| 15 | Zeta Leonis | 50 | 8800 |
| 16 | Wolf 359 | 0.00002 | 2600 |
| 17 | Lalande 21185 | 0.0055 | 3300 |
| 18 | Ross 128 | 0.00036 | 2800 |
| 19 | Spica | 1900 | 20,000 |
| 20 | Arcturus | 76 | 3900 |
| 21 | Alpha Centauri A | 1.3 | 5800 |
| 22 | Beta Canis Minoris | 240 | 12,000 |
| 23 | Antares | 3600 | 3000 |
| 24 | Zeta Ophiuchi | 4500 | 23,000 |
| 25 | Vega | 52 | 11,000 |