

A map of the stars

Activity 2 worksheet

Locate and label the Sun's position at key evolutionary stages on the HR diagram (using reference materials or guided hints) and answer the following questions for each state in the table below.

- How does the Sun's brightness change from one stage to the next?
- How does its temperature change from one stage to the next?
- What processes inside the Sun could explain these shifts?

As the Sun evolves, its position on the HR diagram shifts in ways that reflect changes in both luminosity and surface temperature:

Stage of the Sun	Brightness	Temperature	What processes cause these shifts?
Protostar → main Sequence			
Main Sequence (now)			
Red giant			
Helium-burning stage (horizontal branch)			

Asymptotic giant branch			
White dwarf			

Write a short summary of how a star's life stages determine its track on the H-R diagram.
