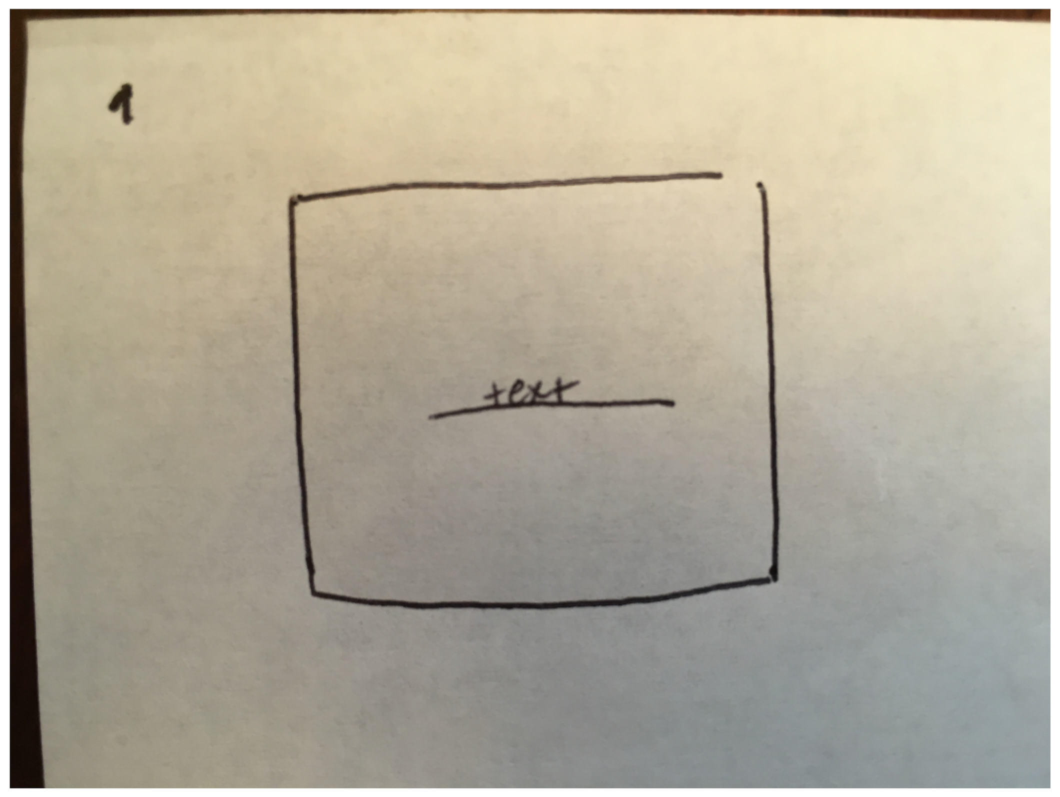
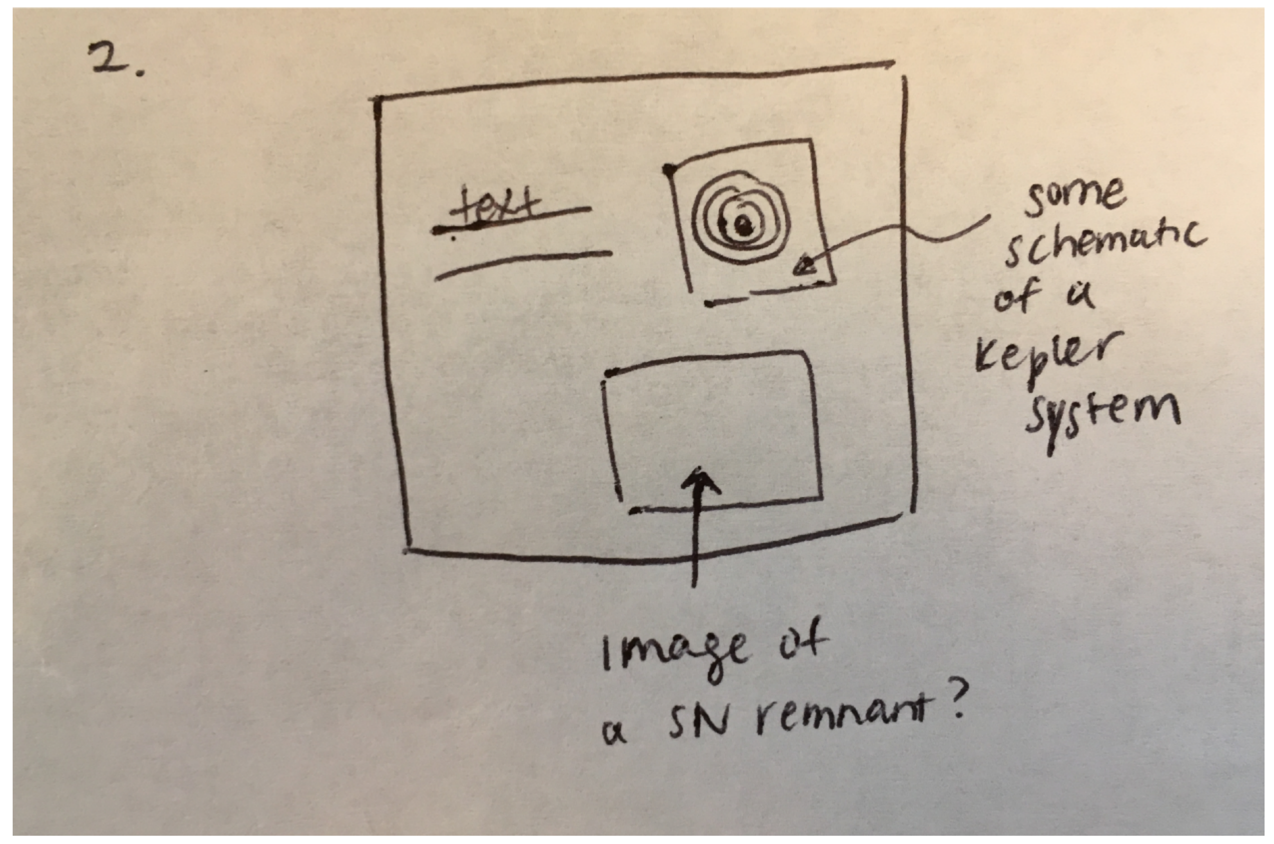
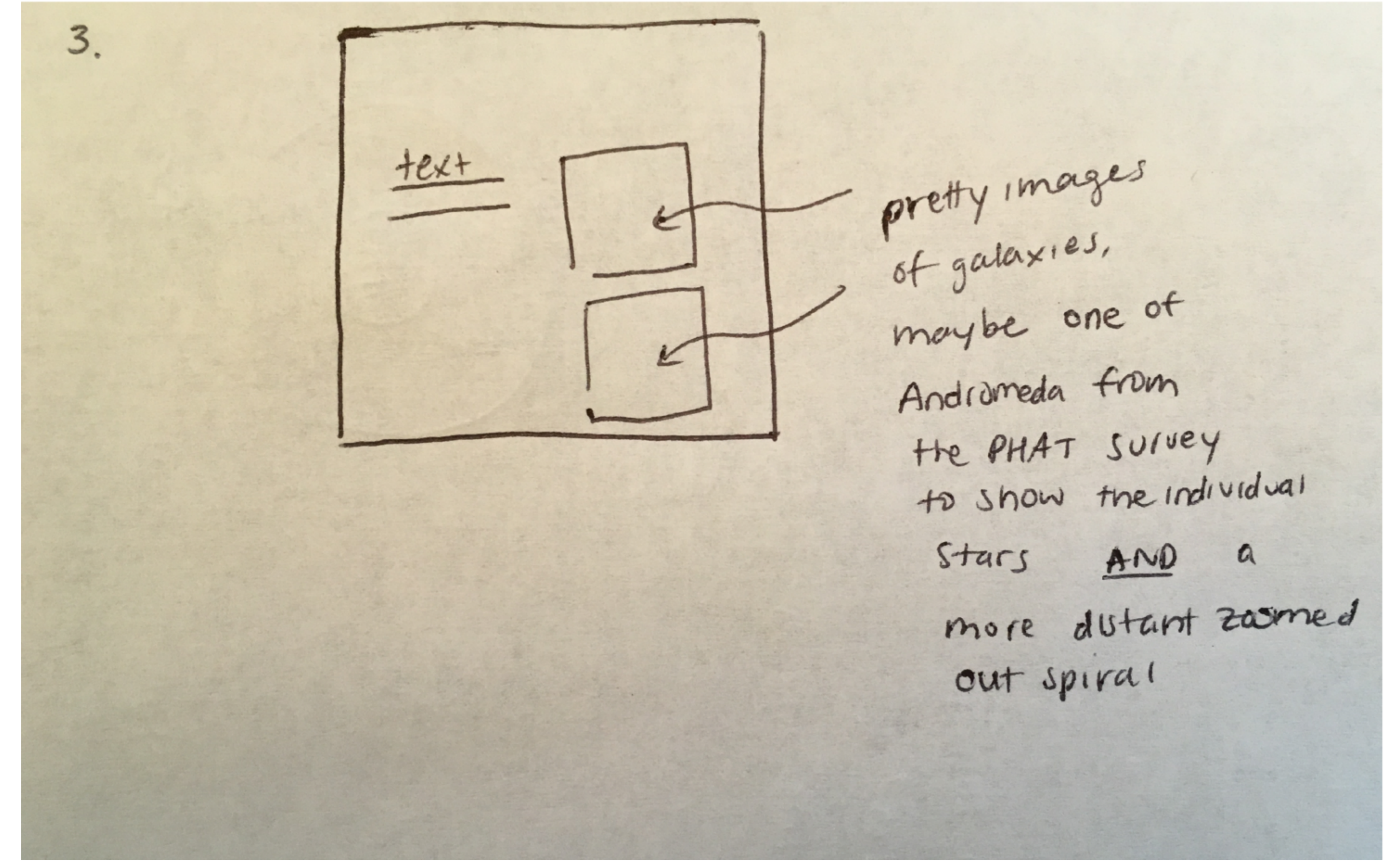


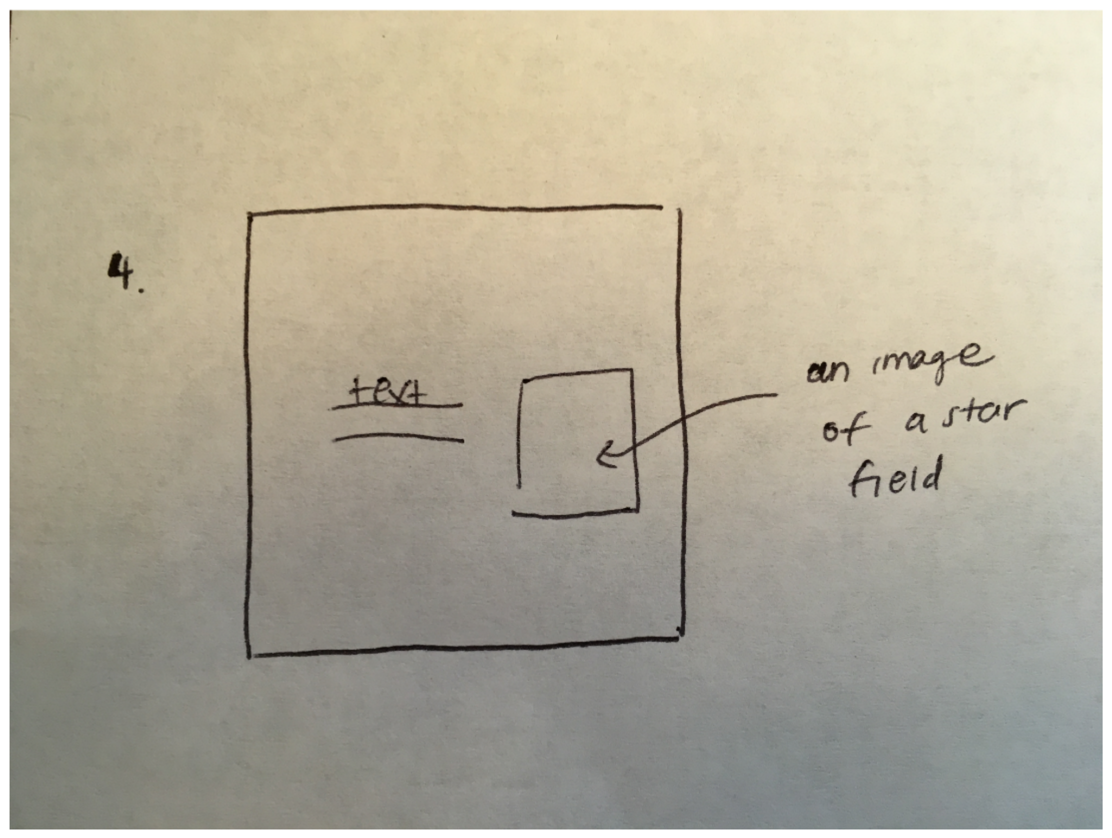
Stars are ubiquitous objects in our Universe.



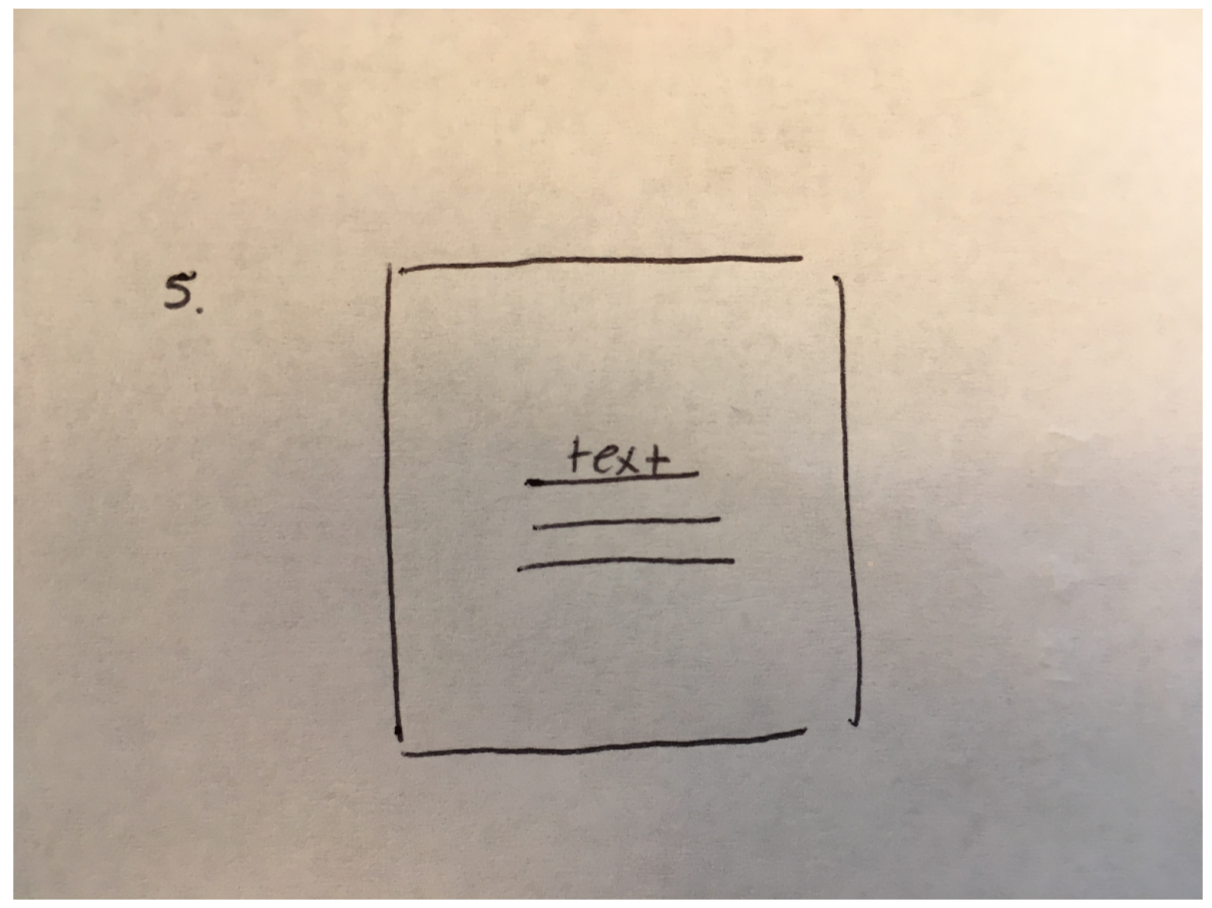
Many Sun-like and low-mass stars are at the centers of rich exoplanet systems discovered in recent years, and the rarest, most massive stars end their lives through spectacular supernovae explosions.



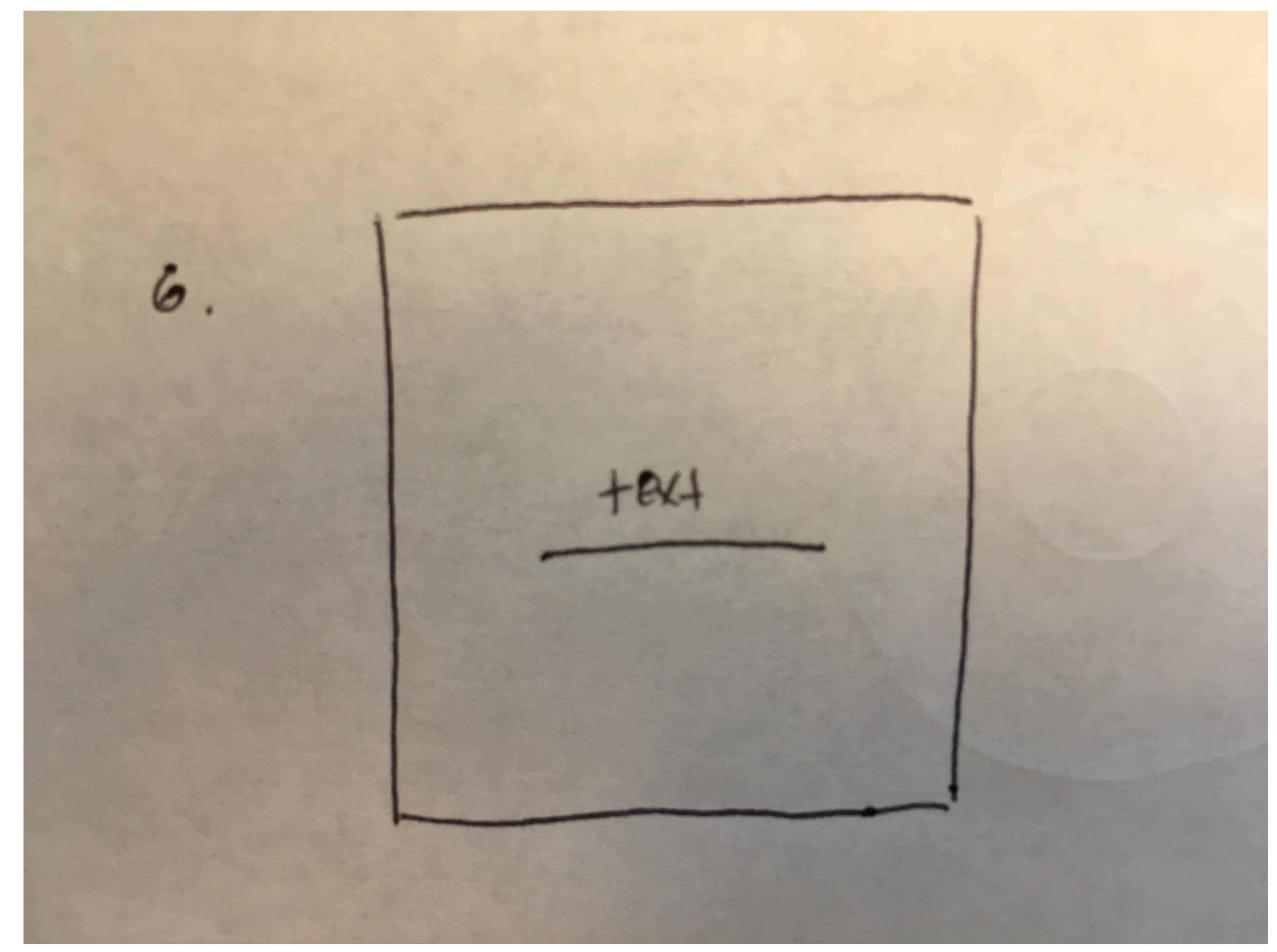
Populations of stars residing in galaxies like our own Milky Way not only emit most of the light we observe from the distant Universe, but they also play a major role in shaping their environments, ultimately influencing the evolution of galaxies through cosmic time.



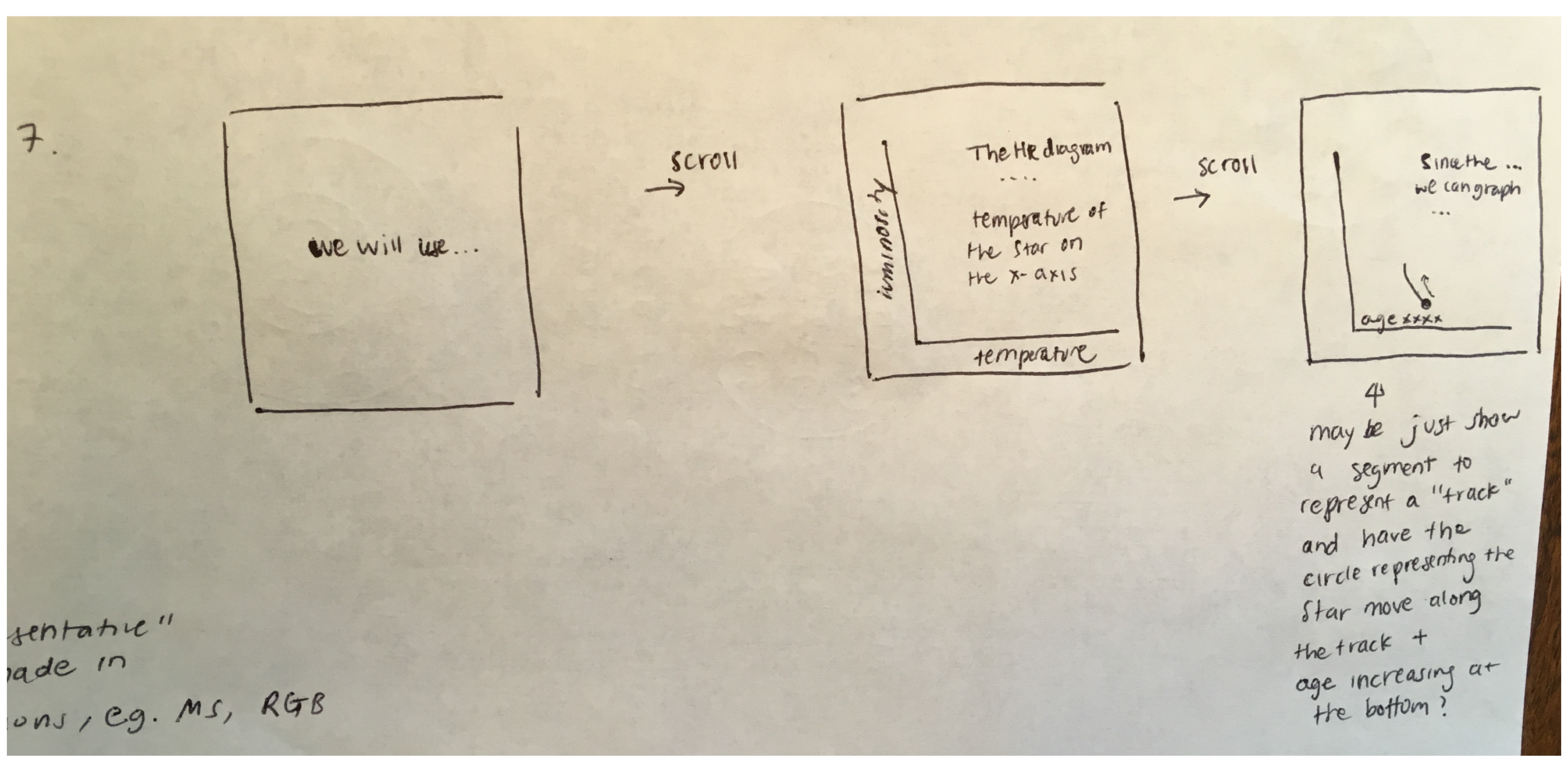
In order to better understand and interpret these systems and phenomena, we need to improve our understanding of what is at the heart of it all: stars, and in particular, how different types of stars evolve over time.



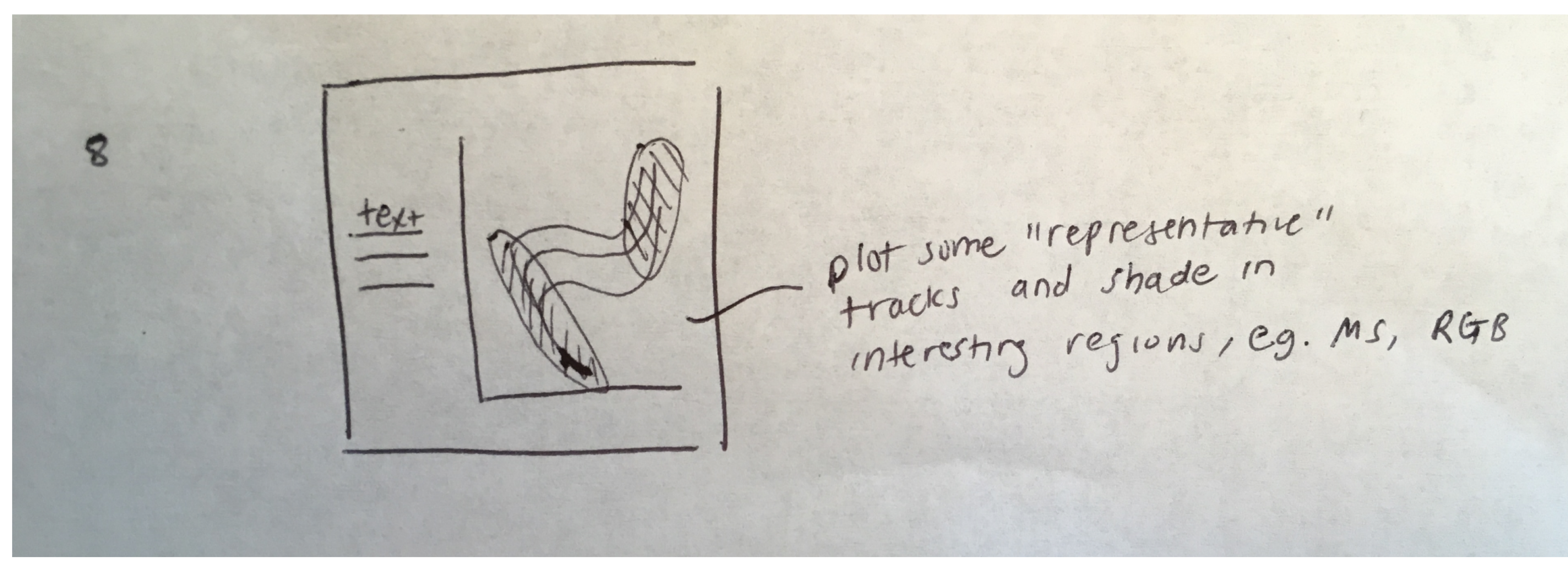
Fundamentally speaking, stars are simple, gravitationally-bound balls of gas powered by nuclear fusion. We run computer simulations to model their evolution, which we can then compare to observations. Any discrepancies can be investigated in more depth and what we learn from this process can be used to help improve the models.



The following page will guide you through the life of a star that is only slightly more massive than our own Sun.



We will use something known as the Hertzsprung-Russell diagram (HR-diagram) to guide our exploration. (SCROLL) The HR-diagram is a graph that shows the brightness of a star (luminosity) on the y-axis and the temperature of the star on the x-axis. (SCROLL) Since the star's brightness and temperature change over the course of its lifetime, we can graph its life trajectory on the HR-diagram.



The HR-diagram is a powerful visualization and diagnostic tool frequently used by stellar astronomers. Different types of stars show similar trends and behaviors when placed on the HR-diagram, and we can make use of that fact to draw some physical meaning and intuition.