

- ① Read the pages outlined and/or follow the instructions given.
- ② Unless space has been given, answer the questions on a separate sheet and then staple it to this sheet.
- ③ Use complete sentences when necessary (i.e. explain, describe, why, ...). Also, watch your spelling and grammar and be sure to write neatly!

A. Definitions/Check & Reflect on Your Reading (P.294-305)

- {3} 1. Define the following terms:
- (a) asterism (b) constellation (c) Hertzsprung-Russell diagram
- {3} 2. With respect to distance, explain how our view of constellations in the sky and on star charts is misleading.
- {6} 3. Explain briefly, using numbered steps, how a star is born.
- {2} 4. Refer to Figure 8.5/P.297 and use it to rewrite the following terms in the correct order of evolution: protostar, supernova, nebula, blackhole, star, supergiant
- {4} 5. Stars can be classified as low-, medium-, and high-mass stars.
- (a) Most stars in the universe are what type?
- (b) In terms of mass, what kind of star is our Sun?
- (c) High mass stars end their existence in an explosion that can produce one of two types of results. What are those two results?
- {4} 6. Use the Hertzsprung-Russell diagram (P.301) to answer the following.
- (a) What colour of star is the hottest?
- (b) Which star's surface temperature is cooler, Antares or Vega? Explain how you made this decision.
- (c) How many times more luminous is Polaris than Procyon A?

B. Activity #1 (Reading Star Charts P.295 & 551)

- {5} 1. Star charts are maps that show some or all of the 88 constellations and key stars that are visible from Earth. Looking at the star chart (P.551), answer the following questions in the space provided.
- (a) In which constellation is Polaris (the North Star) located? (a) _____
- (b) What planet is shown in the constellation Capricornus? (b) _____
- (c) What star is located in the shoulder of the constellation Orion the Hunter? (c) _____
- (d) Is the star Aldebaran located east or west of Betelgeuse? (d) _____
- (e) In which constellation is the star Vega located? (e) _____

Hints? (a) look N (b) look SW (c,d) look E (e) look NW

C. Activity #2 (Using a Star Chart P.302)

1. Follow the procedure given (steps 1 to 5). You may want to perform the activity using the web-based planisphere viewer before you attempt them outside.

NOTE!

- ① You will need download and construct a planisphere viewer. Be sure to submit this with the rest of your work for this assignment.
- ② There is also a web-based version that allows you to (a) select a date in order to see the stars that visible in the night sky at midnight and (b) move your mouse over the star chart to see the constellations and learn more about them. The URLs are listed below.
 - internet  www.nrc-cnrc.gc.ca/eng/education/astronomy/constellations/planisphere.html
 - paper  www.nrc-cnrc.gc.ca/eng/education/astronomy/constellations/planisphere-2.html

- {8} 2. Answer the following questions:
- (a) The star Sirius is brighter than Polaris. Would it make more sense to call Sirius the North Star, instead of Polaris? Explain your answer.
- (b) Using the web-based planisphere viewer, identify and then briefly explain the story/history of two other constellations in the northern sky.