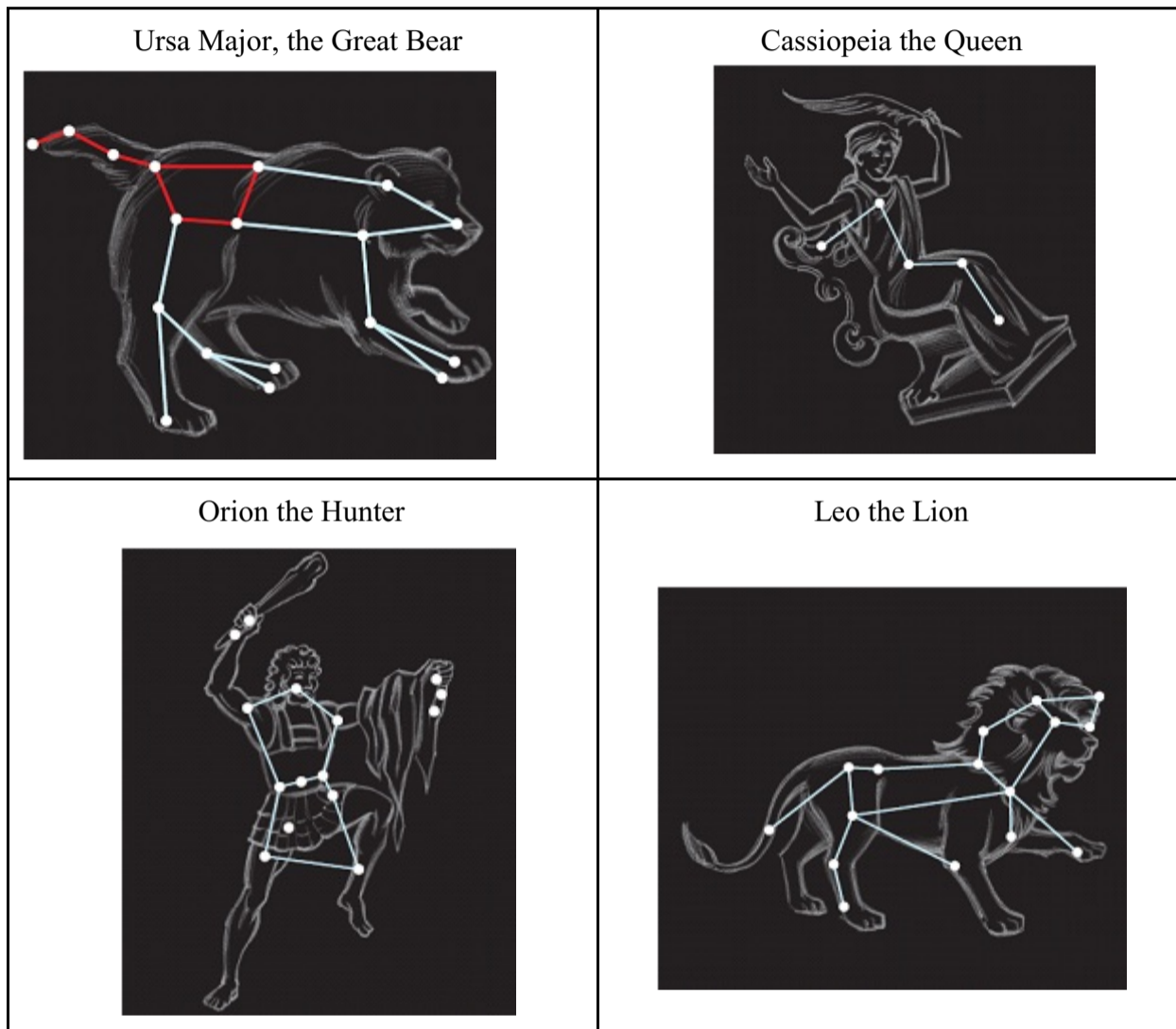


**INTERMEDIATE SCIENCE 9**  
**UNIT 1: SPACE**  
**WORKSHEET #2: CONSTELLATIONS**



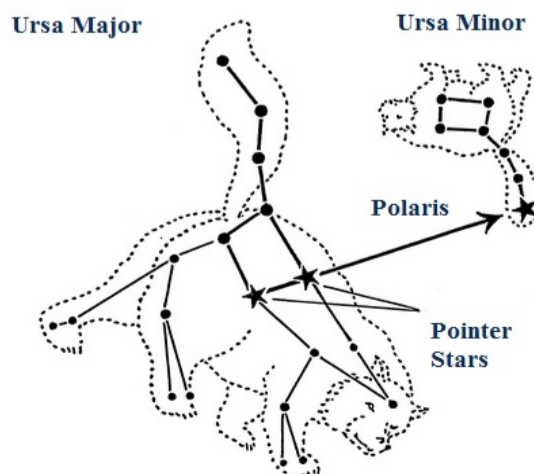
**Constellation** refers to a distinctive pattern in the night sky formed by a group of stars; the pattern often looks like a familiar object, such as an animal. The International Astronomical Union lists 88 constellations.

Here are some examples of constellation:



**Asterism** refers to a star pattern that is not a constellation; may consist of a small group of stars within a constellation or individual stars from different constellations.

The Big Dipper is an asterism because it is located in the tail of Ursa Major. The two end stars in the Big Dipper's bowl are called "pointer stars" because they point toward the North Star, Polaris. Polaris is found in the handle of the Little Dipper which is in the constellation Ursa Minor



1. Define the term "constellation."

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2. Why are constellations important?

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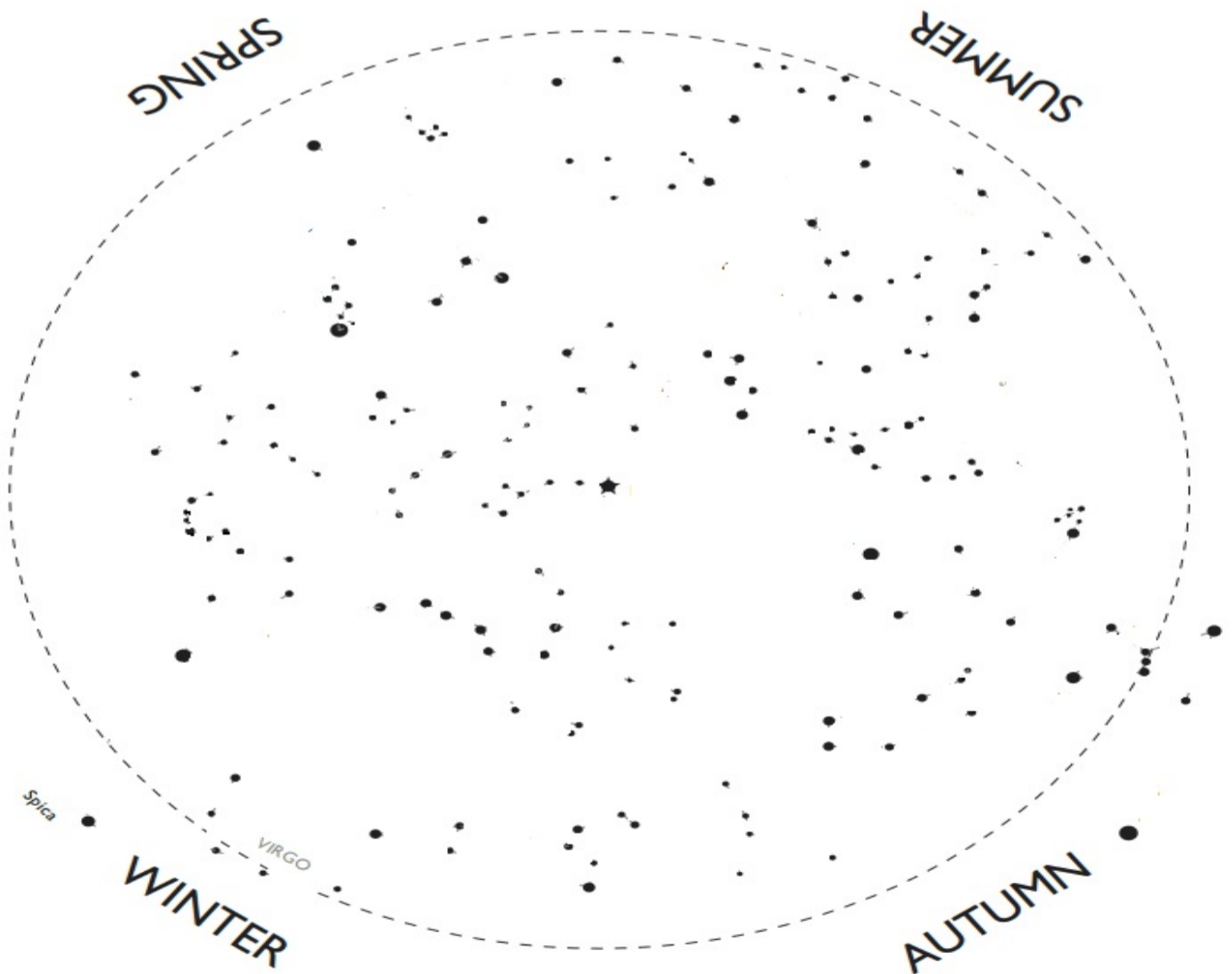
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### Student Activity

To orient yourself with the stars, face north and rotate the chart until the current season shows at the bottom. The constellations at the bottom of the chart will be in the northern sky, while the stars at the top of the chart will be to the south. This is based on midnight stargazing. As the night progresses, the stars will appear to rotate counter-clockwise due to the rotation of the earth



**Procedure:**

You will use the star map to locate famous star constellation found in the northern hemisphere at different times of the year. Hundreds of years ago, sailors used to rely on the stars to find their way across the northern oceans.

**Part A: The Circumpolar Constellations**

1. Near the middle of the star map, locate the Big Dipper - **Ursa Major**. Use a ruler to draw lines joining the stars that make up the Big Dipper. Label this asterism #1



2. Find the two stars of the Big Dipper that are farthest from the handle. Use a ruler and draw a dotted line through these two stars to **Polaris**, found in the middle of the star map. These stars are called **Pointer Stars**. Pointer Star can be used to locate other constellations that are more difficult to find. Label Polaris #2



3. Now that you have found Polaris, use a ruler to join together the other stars in the Little Dipper- **Ursa Minor**. Label the Little Dipper #3
4. Using the same pointer stars from #2, continue your dashed line for another 2 cm. Off to the right of the dashed line you will notice a constellation that looks like a "W". This constellation is known as **Cassiopeia**. Use a ruler to join up the stars of Cassiopeia and Label it #4



5. What is another name for the North Star ?

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6. Why was the Northern Star the most important star in the sky for sailors?

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## Part B: Seasonal Constellations

Most constellations can only be seen for part of the year. We refer to these constellations as Seasonal Constellations

7. In the autumn part of the map you will find three stars that line up to make up **Orion's Belt**. Draw straight lines joining the stars that make up Orion. Label Orion #5. Also label the two bright stars located in Orion; Rigel (as #6) and Betelgeuse (as #7)



8. Use the star of Orions' Belt as pointer stars to the brightest star in the night sky, **Sirius**. Draw a dashed line from Orions' Belt downwards about 2.5 cm. Label Sirius #8
9. Using the arm of the Big Dipper, continuing the curve of the handle to the left you will locate a bright star in the winter sky called **Arcturus**. Label Arcturus #9.



10. Using a ruler, connect the stars of the constellation that Arcturus is a part of, **Bootes**, Label Bootes #10