**LEARNING ACTIVITY SHEET IN SCIENCE 9**

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| Name of Learner; | John Russel Jandonero | Score: | /130 |
| Grade and Section: | Grade 9 TAE | Week & Date: |  |

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| **Title of the Topic:** | **CONSTELLATIONS** | | |
| **Most Essential Learning Competency:** | | **Code:** | **S9ES-IIIf-31** |
| * Show which constellations may be observed at different times of the year using models   Summer Constellations  Summer Constellations | Constellation Guide  Winter Constellations    Spring Constellations    Fall/Autumn Constellations | | | |
| **I. Learning Activities:** | | | |
| 1. **Learning Activity 1: (60 points)**   **1A: Direction:** Read the information below and answer the questions it follows:  **Constellations**  The word “constellation” comes from the Late Latin term ***constellation,*** which means **set of stars.** The brightest constellation is **Crux (**the southern cross). The constellation with the greatest number of visible stars in it is **Centaurus (The centaur-with 101 stars).** The largest constellation is **Hydra** (**The water snake)** which extends over 3.158% of the sky.  There are also **asterisms,** smaller apparent star patterns within a constellation, like the **big dipper (ursa major), little dipper (ursa minor), keystone (Hercules)** and the **Pleiades (Taurus)**  Observers in ancient times also imagined **group of stars that form pictures of animals, objects and people.** **These imaginary group of stars are called constellation.**  Many of these constellations have names that can be traced back to early Babylonians and Greek civilizations, but nearly all cultures have different names for the constellations. For example, the Greek called the large constellation **Orion, which means hunter** and is prominent in the night sky all over the world during winter. Early Filipinos visualized the same group of stars as **Balatik,** a trap used in hunting wild pigs. Christian Filipinos named the three stars (Orion’s belt) Tatlong Maria or Tres Maria.  By observing Sun’s movement and position in the sky, we can tell what time of the day it is. **When it seems to rise in the east, it is morning.** When it is **above us, it is noon**. When it seems to move **towards the west, it is afternoon.** At night, stars are used to tell the time. Just like the Sun, **stars also seem to move from East to West.**  **THE POLARIS**  Commonly known as **North Star**, is the brightest star in the constellation **Ursa minor (**little dipper). It is very close to the north celestial pole, making it the current northern pole star. Because it lies nearly in a direct line with the axis of the Earth’s rotation “above” the north pole, Polaris stands almost motionless in the sky, and all the stars of the Northern sky appear to rotate around it.  In Metro Manila, when you face North, Polaris, which is 11.3° from the horizon, is seen at around 15° due to atmospheric refraction. In some parts of the country, it would be very difficult to locate Polaris since starlight near the horizon are washed out by lights lit by men, and/or obstructed by man-made topographical structures and/or trees.  **Different Star Patterns through the Year**  While the rotation of the Earth on its axis causes the apparent nightly movement of the stars across the sky, the revolution is responsible for the fact that we can see different parts of the sky and different constellations at different parts/time of the year.  **How early people used the constellation?**  While constellations were associated with religion, they also have practical uses. Here are some of the uses:  1. Before the calendars, people had no way of determining when to sow or harvest except by looking at these patterns in the sky. Ancient people developed a way to remember the patterns by giving these patterns names and stories.  **For example,** in the northern hemisphere, the constellation Orion indicates the coming of cold season.  Gemini is seen in the Philippines during the months of April and May. Farmers interpreted the appearance of Gemini as the end of planting season and it signified rich harvest.  **Other Uses**  Constellation was also used as **navigation.** The Polaris is widely used in navigation because it does not change its position at any time of the night or year. Also, one can figure out his/her latitude just by looking at how high Polaris appears in the night sky. This allowed sailors to find their way as they sail across the seas.  **Instruction:** Read the information found above. (38 points)  1. What is the latin term of constellation?constellation  2. What is a constellation? An imagined group of stars that form pictures of animals, objects and people.  3. What is the brightest constellation? Crux  4. What constellation that has the greatest number of visible stars in it?Centaurus  5. What is the largest constellation?Hydra  6. Give the different constellations with smaller apparent star pattern within a constellation?  - Big dipper (ursa major)  - Little dipper (ursa minor)  - Keystone (Hercules)  - Pleiades (Taurus)  7. Tracing back the history of constellation, some of the names of constellations can be traced back to early Babylonians and Greek civilizations.  8. It is a prominent constellation in the sky during winter, it is called Orion which means hunter.  9. Filipinos, use the term Balatik instead of Orion. And name the three stars (Orion’s belt) as Tres Maria or Tatlong Maria.  10. What is the direction of the sun’s movement in the sky? East to West  11. Explain the movement of the Sun as observed everyday. Every day, the Sun rises in the east, rides across the sky, and sets in the west. The sun's motion is apparent, caused entirely by the movement of the Earth.  12. It is commonly known as the North Star. Polaris  13. Explain the movement of the Northern Star. Earth's spin causes the sun in the daytime – and the stars at night – to rise in the east and set in the west. But the North Star is a special case.  14. Give the reasons why it is impossible to see the Polaris star in the Southern part of the Philippines. You are not able to see Polaris on the south pole, since Polaris is pointing directly towards the north pole.  15. What is the reason why we can see different types of constellation in different parts of the year? This is due to the motion of the Earth in its orbit around the Sun. Each day a few stars are visible in the east that were not visible the night before.  16. Give the constellations that we can see during Summer, Winter, Spring, Fall/Autumn.  Summer –   * Aquila * Cygnus * Hercules * Lyra * Ophiuchus * Sagittarius * Scorpius   Winter –   * Canis Major * Cetus * Eridanus * Gemini * Orion * Perseus * Taurus   Spring –   * Bootes * Cancer * Crater * Hydra * Leo * Virgo   Fall/Autum –   * Andromeda * Aquarius * Capricornus * Pegasus * Pisces   17.What does the presence of Orion means if it can be seen on the sky?Coming of the cold season  18. What does the presence of Gemini means by the Filipinos?Farmers in the Philippines say it signifies “rich harvest”  19. Looking at the stars and constellations used by Maligsalug Manobo of Bukidnon, What constellation can we see during February? Orion’s Belt  20. What is the Western equivalent of Pandarawa?Pleiades  **1B: Constellation “Think” Questions** : (22 points)  **Directions:** Analyze and answer the following questions:   1. Look at the picture on the left. In what constellation would you see the Sun?   Pisces     1. Look at the picture on the right. In what constellation would you see the Sun?   Gemini  3. Look carefully at the picture.  a. In what constellation would you see the sun if it were in Position D?  Pisces  b. In what constellation would you see the sun if it were in Position A? Scorpius  c. In what constellation would you see the sun if it were in Position B?  Leo  d. In what constellation would you see the sun if it were in Position C?  Taurus  4. Look carefully at the picture.  a. What constellation would you see at night if the Earth were in position D?  Leo  b. What constellation would you see at night if the Earth were in position A?  Taurus  c. What constellation would you see at night if the Earth were in position B?  Pisces  d. What constellation would you see at night if the Earth were in position C?  Scorpius  In the picture above, when Earth is at position A, it is Winter. When Earth is at position B, it is Spring. When Earth is at position C, it is Summer. When Earth is at position D, it is Autumn.  List four constellations that can be seen during that season.  **Winter**  a.Canis Major  b.Orion  c.Taurus  d.Gemini  **Spring**  a.Ursa Major  b.Hydra  c.Cancer  d.Leo  **Summer**  a.Lyra  b.Scorpius  c.Hercules  d.Cygnus  **Autumn**  a.Aquarius  b.Pisces  c.Aries  d.Pegasus | | | |
| 1. Learning Activity 2:   **2A: Constellations (20 points)**  **Objective:** Identify the different constellations.  **Direction:** Read the following instruction  Each constellation on the Reference chart is included in the image below. Find them and trace them out using the same connecting lines. Here are some things to remember as you search…   1. Constellations are plotted the same size as on the reference chart, but… 2. Constellations may be **rotated** from how they appear on the reference chart. 3. There are over 100 additional stars plotted, beyond those in the constellations. 4. Other false stars may appear inside the constellations (like planets do in the real sky).   **Hint: Keying off the brightest stars in a constellation is the easiest way to spot it. Happy stargazing!** | | | |
| 1. Learning Activity 3:   **3A: My Constellation: (40 points)**  **Instruction:**   * Write your name on the Personal Constellations worksheet. * Get some sticky stars and make a constellation using the position of the “stars” on your Personal Constellation worksheet. Write a name for your created constellation. * Create a myth that explains why the constellation is in the sky. Write it below your constellation. Remember, ***your myth has to apply to today. You can’t use Zeus or any other*** * ***Greek gods. It must be a story people would recognize today!***   **Directions:**  1. Write your name vertically down the Y axis. (Skipping a space between each letter of the name will spread the picture out better.)  2. Start with the first letter in the written name. Follow along that row parallel to the X axis until you come to the column with that letter of the alphabet and draw a star in that square (see example). Cont inue with the other  letters.  3. Look at the stars and find a pattern. The paper may be held in any orientation, and one or several constellations could be created.  4. “Connect-the-dots” and draw a picture of your constellation.    My Constellation name: Kickerita  My Myth: At the start of the first civilization the Earth was covered in fear, many people died because of the dreadful demon named Washimbu. Washimbu killed almost half of the population and continued for countless years. The people was in shock until the Goddess of Kicking came. She fought the demon night and day. Then one day the demon became weaker and suddenly fell to the ground. Kickerita the goddess kicked the demon back below the surface, because of her powerful kick she flew to the sky leaving the mark on the sky which appears every summer on the southern part of Earth. Remembering the greatest and most powerful goddess which they devoted to until now. | | | |
| **III. Reflection: (10 points)** | | | |
| I learned a lot about constellations and the different constellation depending on the season. I was happy I made my own constellation.. lol | | | |

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