

Astronomy Badge



Otter: Do 4 requirements including the 2 starred.

- ____ 1.* Learn what safety precautions to take when making observations at night. What is the proper clothing for observing at night when it is cold? When it is warm? How can you safely observe the sun, objects near the sun, and the moon? Why is it dangerous if you do it incorrectly?
- ____ 2.* Learn to identify at least 3 different constellations in the night sky.
- ____ 3. What are we seeing when we see the Milky Way?
- ____ 4. Be able to name the 8 major planets in our solar system (you may add Pluto if you wish, though it is now considered a Dwarf Planet.) Know their position from the sun.
- ____ 5. Read a book about astronomy.
- ____ 6. Explain the difference between binoculars and a telescope. How do they work and what should each be used for.
- ____ 7. Visit a Planetarium or Observatory.

Dolphin: Do 5 requirements including the 2 starred.

- ____ 1.* Learn what safety precautions to take when making observations at night. What is the proper clothing for observing at night when it is cold? When it is warm? How can you safely observe the sun, objects near the sun, and the moon? Why is it dangerous if you do it incorrectly?
- ____ 2.* Learn to identify 5 constellations in the night sky.
- ____ 3. Learn what the different parts of an astronomical telescope are called and how to care for a telescope.
- ____ 4. Be able to identify the North Star
- ____ 5. Explain what light pollution is and how air pollution affects astronomy.
- ____ 6. Be able to name the 8 major planets in our solar system (you may add Pluto if you wish, though it is now considered a Dwarf Planet.) Know their position from the sun. Which are the 3 most visible?
- ____ 7. Read a book about astronomy.
- ____ 8. Visit a planetarium or Observatory.

Butterfly: Do 6 requirements including the 2 starred.

- ____ 1.* Learn what safety precautions to take when making observations at night. What is the proper clothing for observing at night when it is cold? When it is warm? How can you safely observe the sun, objects near the sun, and the moon? Why is it dangerous if you do it incorrectly?

Explain first aid for injuries or illnesses that may occur during observation such as bites and stings, dehydration, damage to your eyes, or heat and cold reactions

- _____2.* Identify at least 10 constellations in the night sky. Be able to identify the North Star.
- _____3. Sketch the face of the moon and indicate at least five seas and five craters. Label these landmarks. Sketch the phase and the daily position of the Moon at the same hour and place, for a week. Include landmarks on the horizon such as hills, trees, and buildings to help show the position. Explain the changes you observe.
- _____4. Read a book about astronomy.
- _____5. Learn about careers that involve astronomy. What education do you need for this career? What is the pay and work schedule you can expect? If possible, shadow someone with this job for a day.
- _____6. Be able to name the 8 major planets in our solar system (you may add Pluto if you wish, though it is now considered a Dwarf Planet.) Know their position from the sun. Which are the 3 most visible?
- _____7. Plan and participate in a two-hour observation session that includes using binoculars or a telescope. List the celestial objects you want to observe, and find each on a star chart or in a guidebook.
- _____8. Visit a Planetarium or Observatory. Create a written report, a scrapbook, poster, or video presentation to share with your troop that includes what activities you did, what exhibits or displays you saw, the telescopes or other instruments you used, and the celestial objects you observed.
- _____9. Describe the composition of the sun and the effects of its radiation on Earth's weather. What are sunspots and what effects can they have on solar radiation. Identify at least one red star, one blue star, and one yellow star (other than the Sun). Explain the meaning of these colors.

Eagle: Do 7 requirements including the 2 starred.

- _____1.* Learn what safety precautions to take when making observations at night. What is the proper clothing for observing at night when it is cold? When it is warm? How can you safely observe the sun, objects near the sun, and the moon? Why is it dangerous if you do it incorrectly? Explain first aid for injuries or illnesses that may occur during observation such as bites and stings, dehydration, damage to your eyes, or heat and cold reactions
- _____2.* Identify at least 12 constellations, at least 3 of which are in the zodiac. Be able to identify the North Star.
- _____3. Identify 8 stars, five of which are of magnitude 1 or brighter.
- _____4. Plan and participate in a two-hour observation session that includes using binoculars or a telescope. List the celestial objects you want to observe, and find each on a star chart or in a guidebook.
- _____5. Compare several types of astronomical telescopes. What are their different features? Costs? Quality? Choose at least 3 instruments that can be used with astronomical telescopes and explain their purpose.

- _____6. Learn about careers that involve astronomy. What education do you need for this career? What is the pay and work schedule you can expect? If possible, shadow someone with this job for a day.
- _____7. Visit a Planetarium or Observatory. Create a written report, a scrapbook, poster, or video presentation to share with your troop that includes what activities you did, what exhibits or displays you saw, the telescopes or other instruments you used, and the celestial objects you observed.
- _____8. Plan and host a star party for your troop or other group such as your class at school. Use binoculars or a telescope to show and explain celestial objects to the group.
- _____9. Read a book about astronomy.
- _____10. Take a series of photographs or digital images of the movement of the Moon, a planet, an asteroid meteoroid, or a comet. In your visual display, label each image and include the date and time it was taken. Show all positions on a star chart or map. Show your display at school or at a troop meeting. Explain the changes you observed.

