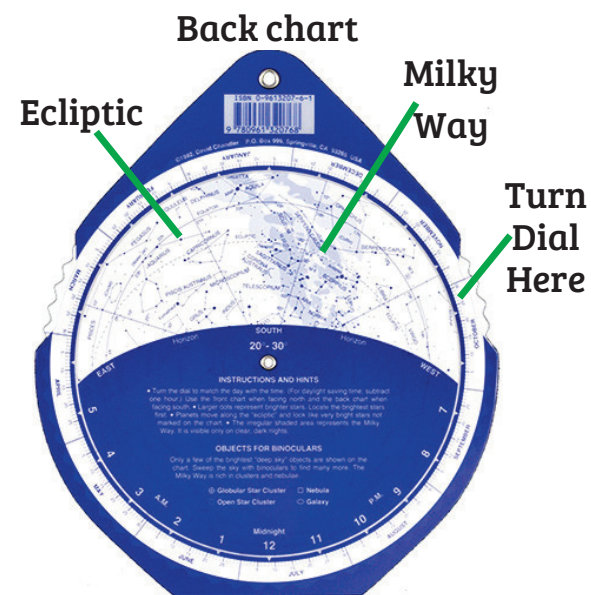
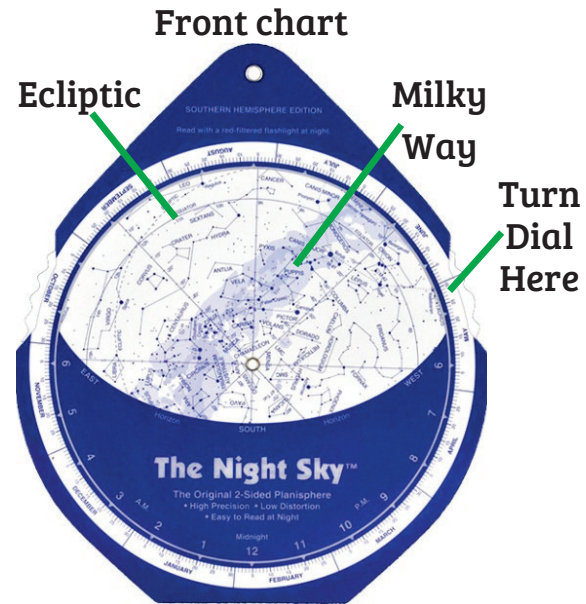


## How to use a Planisphere

- Turn the **dial** on the Planisphere to match today's date and time (for daylight saving time, subtract one hour).
- Use your compass to face yourself either north or south. When facing north use the **front chart** of the planisphere. When facing south use the **back chart**.
- The planisphere shows the stars that are visible in the night sky. Larger dots represent brighter stars. Try to locate the brightest stars first.
- Planets move along the **ecliptic**, which is the circle on the planisphere representing the sun's path. Planets are not marked on the planisphere but look like very bright stars along the **ecliptic** in the night sky.
- The irregular shaded area on the chart represents the Milky Way. It is only visible on clear, dark nights.
- Use your binoculars to search the night sky for the different stars and constellations. How many stars or planets could you identify?
- It is best to use a red-filtered flashlight when using the planisphere in the dark to preserve your night vision. You can make your own red-filtered flashlight by covering a normal flashlight with red "holiday" plastic-wrap or cellophane. Secure the plastic to the flashlight using rubber band.



Best places to use your Planisphere are areas with less light pollution such as . . .

Beaches

Natural  
Areas/Parks

Rural areas

# Nighttime Activity - Nocturnal Animals 14

While outside at night with your planisphere look or listen for signs of nocturnal animals

Animals that are awake during the night and sleep during the day are called nocturnal. Why do you think these animals are more active at night?



Where do you think you would find these nocturnal animals living?

## Special Hearing



Some animals, like coyotes, have special shaped ears to enhance their hearing. Cup your hands behind your ears to hear like a nocturnal animal.

## Nocturnal Animal Adaptations

Nocturnal animals have special sensory adaptations that allow them to survive at night. Some of these include:

## Big Eyes



Some animals, like owls, have extra large eyes so they can see easily even in the dark.

## Great sense of smell



Many animals, like raccoons have an acute sense of smell. This allows them to sniff out food and potential predators.

## Echolocation



Animals, like bats, use this to navigate in the dark. They release a sound wave which reflects off objects and returns to the bat. This lets the bat know which object to avoid and which to eat.

Pick a nocturnal animal you find during your nighttime adventure.

Draw or describe the following:

How is this animal adapted to survive at night?

My nocturnal animal

Which nocturnal adaptation does this animal use?

What does this animal eat?

Where does this animal live?