

Pictures in the Sky *Teacher's Guide*

Presentation Description:

Pictures in the Sky is a program offered by *Northern Stars Planetarium* for children ages four through kindergarten. This program is conducted with our day/night wheel (a wooden board covered with quilted felt to represent the sky) and the planetarium star theater. We introduce the children to what sort of things they can see in the sky during both the day and the night.

We examine numerous sky related objects and decide together when these things can be seen: during the day, the night, or both. Objects examined may include: clouds, the Sun, planets, rain, rainbow, lightning, kites, birds, stars, constellations, snow, bats, airplanes, and more. After examining all the objects and sorting them, *each child will help to make a picture of the sky*--first a day-time picture, then a night-time picture--by placing their individual objects on the day/night wheel.

Following this activity we enter the planetarium to see many of the same objects again projected on the star theater's simulated sky. The program ends with the children all singing "*Twinkle Twinkle Little Star*".



Vocabulary Concepts

Discuss these words with your students.

Moon, Stars, Gravity, Planets, Sun, Air, Sky,
Constellations, Clouds, Space, Meteors, Snow, Birds,
Rainbow, Seasons, Earth, Lightning, Thunder, Friction,
Experiments, Bats, Rain, Big Dipper, Day, Night.

Questions to Make Kids Think !

These questions will all be answered in the presentation.

1. What two things do you need to have in the sky to make a *rainbow*?
2. What is the difference between *thunder* and *lightning*?
3. What is a *Constellation*?
4. Can you name all *eight planets* in our Solar System?
5. What is *gravity*?
6. What is *friction*?
7. What do *bats* eat?
8. Do all *birds* fly only in the *daytime*?
9. Can you name the *seasons* in order?
10. What makes it *daytime*?
11. What is the *planet* we live on?
12. What is a *falling star*?
13. Why do *rain clouds* have dark bottoms?
14. Why is it bad to look at the *Sun*?
15. Is the *Moon* only out at night?

Making Up Stories

Have your kids make up stories about the constellations. Give them several characters from the star chart on page 5, and make up a story aloud in class. Here is a story made up about Cassiopeia and Draco the Dragon.

"Cassiopeia and the Dragon"

by Alison Adams

Once upon a time there lived a beautiful queen named Cassiopeia. On her head she wore a crown which sparkled with jewels. Everyone in the kingdom, especially Cassiopeia, thought that these were the prettiest jewels in all the world.

Every day the queen would travel throughout her kingdom showing off her crown. The people in her kingdom were poor and they often thought to themselves, "We wish we could have something as beautiful as just one jewel from her crown." But they knew this dream would probably never come true.

The years went by and Cassiopeia got older. Her age never stopped her from parading her riches around the kingdom for all the poor people to see.

Then one day as the queen was riding her horse back to her huge castle, a big dragon stepped out from behind some trees. The dragon's name was Draco. He had known that the queen was coming because he saw the sparkling jewels on top of her crown.

Now, back in those days, everyone knew that dragons loved shiny objects. Draco was no exception. When he saw the crown, he knew he must have it for himself. Draco did not, however, wish to harm the queen. Even though she showed off, she wasn't a bad queen.

So turning his head, Draco breathed a stream of fire down the road, just missing the queen's horse. This fire could have melted all the gold in the kingdom, but the dragon aimed it so he would just scare the horse. Cassiopeia's horse was so scared that he reared up, knocking the crown from the queen's head. Before she could get the horse calmed down again, they were already at the castle doors....without the crown.

Meanwhile, Draco the dragon spied the sparkling crown on the ground. He quickly scooped it up into his mouth and swallowed it whole! Just when the crown got into his belly, all the green scales on his back turned to gold.

As Draco walked back to his cave in the woods, he brushed against some trees. Each time he did this, some of the scales would brush off like golden coins being dropped. Very soon, the poor people of the kingdom found these golden scales as they sparkled in the sunlight. The people picked them up and felt very rich.

What happened to Queen Cassiopeia? She sent some guards out to find her crown. After a week of no luck, she had her goldsmith make her a new one. But she did learn her lesson. She left her new crown at the castle when she went visiting the people of her kingdom. And once a month, she would go back to the spot where she lost her first crown and she would leave a golden coin and a diamond for Draco the dragon. Draco the dragon never scared the queen again.

Stories About the Sky

There are many stories associated with the night sky, and there are many good books that are available to share with your students. Please be forewarned however, not all books are appropriate for young children, please **be sure to pre-read any stories** you are thinking about sharing with your kids. Here are a few books on sky-lore:

Caduto & Bruchac. *Keepers of the Animals*, Golden CO: Fulcrum Press, 1991.

Caduto & Bruchac. *Keepers of the Earth*, Golden CO: Fulcrum Press, 1988.

Caduto & Bruchac *Keepers of the Night*, Golden CO: Fulcrum Press, 1994.

Hadley, Hadley, & Nesbit. *Legends of the Sun and Moon*, New York: Cambridge University Press, 1983.

Kerven, Rosalind. *Earth Magic, Sky Magic: North American Indian Tales*, New York: Cambridge University Press, 1991.

Lurie & Beisner, *The Heavenly Zoo*, New York: Farrar Straus Giroux, 1979.

Mayo, Gretchen Will. *North American Indian Stories: Star Tales*, New York: Walker And Company, 1990.

Mayo, Gretchen Will. *North American Indian Stories: More Star Tales*, New York: Walker And Company, 1990

Miller, Dorcas. *Stars of the First People*, Boulder, CO: Pruett Publishing Co., 1997.

Monroe & Williamson. *They Dance in the Sky: Native American Star Myths*, Boston: Houghton Mifflin Co., 1987.

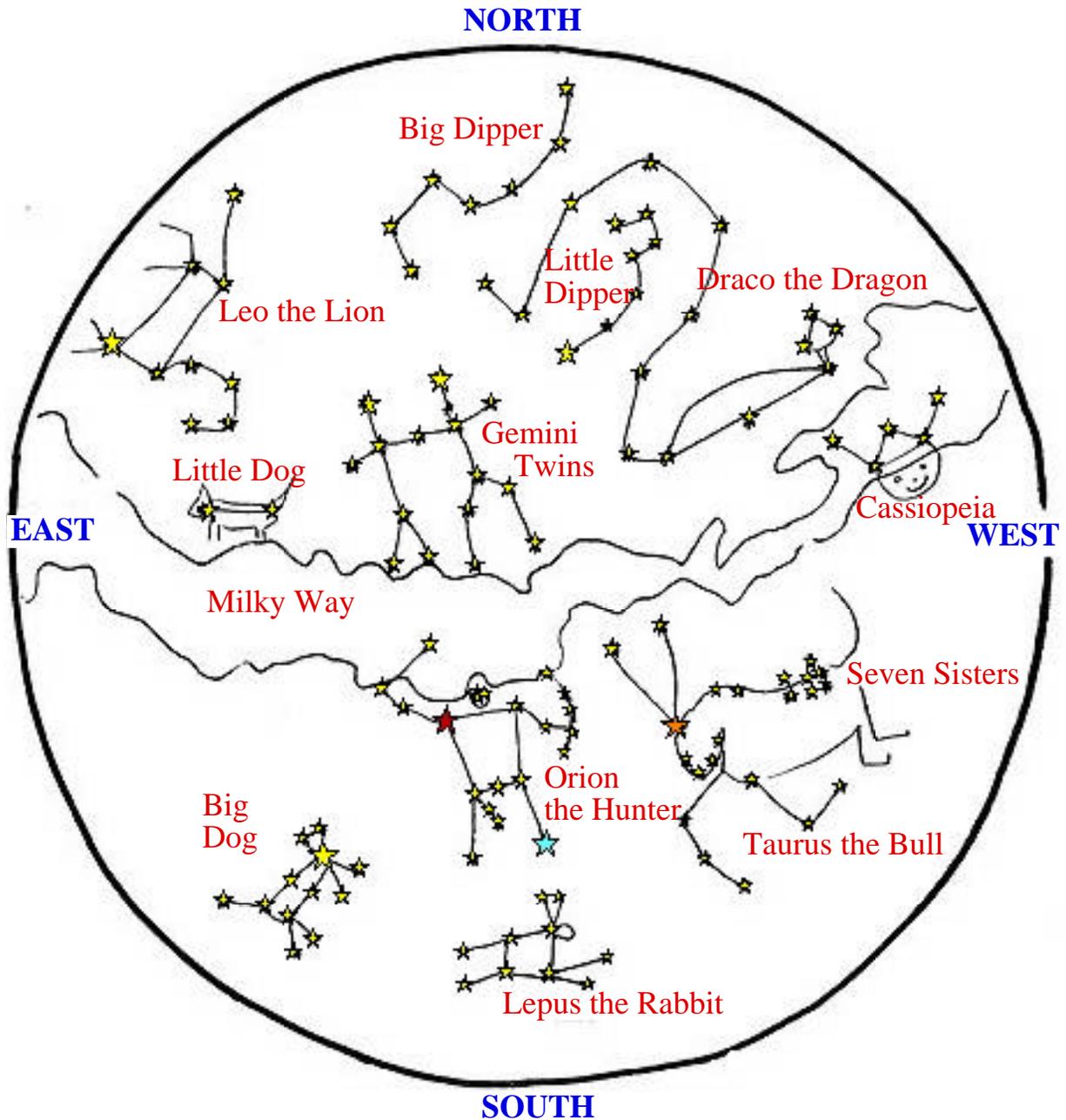
Ridpath, Ian. *Star Tales*, New York: Universe Books, 1988.

Russell, William F. *Classic Myths to Read Aloud*, New York: Crown Publishers, 1989.

Vautier & McLeish. *The Shining Stars: Greek Legends of the Zodiac*, New York: Cambridge University Press, 1989.

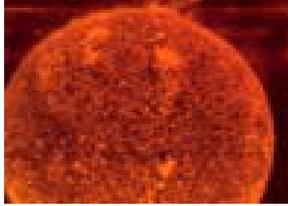
Vautier & McLeish. *The Way of the Stars: Greek Legends of the Constellations*, New York: Cambridge University Press, 1989.

Stars & Constellations found on our Sky Wheel



Sun & Planets Information

Have your students color the planets on page 7 as described below. You may have to read the descriptions to your students, then see if they can figure out which planet is which and color it.



The Sun: The Sun is not a planet but a star. It seems bigger, brighter, and hotter than the stars we see at night only because it is closer to us. It is 93 million miles from Earth and has a surface temperature of 12,000°F! The highest temperature of all is in the Sun's core, 27 million °F! Over one million Earth's could fit inside the Sun if it were hollow!



Mercury: Mercury is a gray planet covered with craters. It looks very much like the Moon and is only slightly larger. During the daytime the temperature will rise to 700°F, while at night it will drop to -150°F. Mercury has no moons.

Venus: Venus is covered with swirling clouds of acid. If you lived on Venus you would never have a sunny day. It is the hottest planet with a temperature of 900°F. There is so much air on Venus that the air's weight would squish you! Venus has no moons.



Earth: Earth is the only known planet to have life. From space it looks like a beautiful blue marble with white swirls; the blue is the oceans, the white swirls are the clouds, and the darker regions the land. Earth has one moon.

Mars: Mars is called the red planet. It is red because it is rusty. It has craters, mountains, canyons, volcanoes, and a thin atmosphere. Mars has two small moons.



Jupiter: Jupiter is the biggest planet. It has sideways cloud bands of different colors. Jupiter has no solid ground. There is also a huge red spot that is actually a hurricane three times bigger than Earth. Jupiter has 67 moons and one thin ring going around it.

Saturn: Saturn has light yellowish clouds. Like Jupiter, Saturn has no solid ground. Saturn is famous for its thousands of rings. It also has 62 moons. Many people think that Saturn is the most beautiful planet.



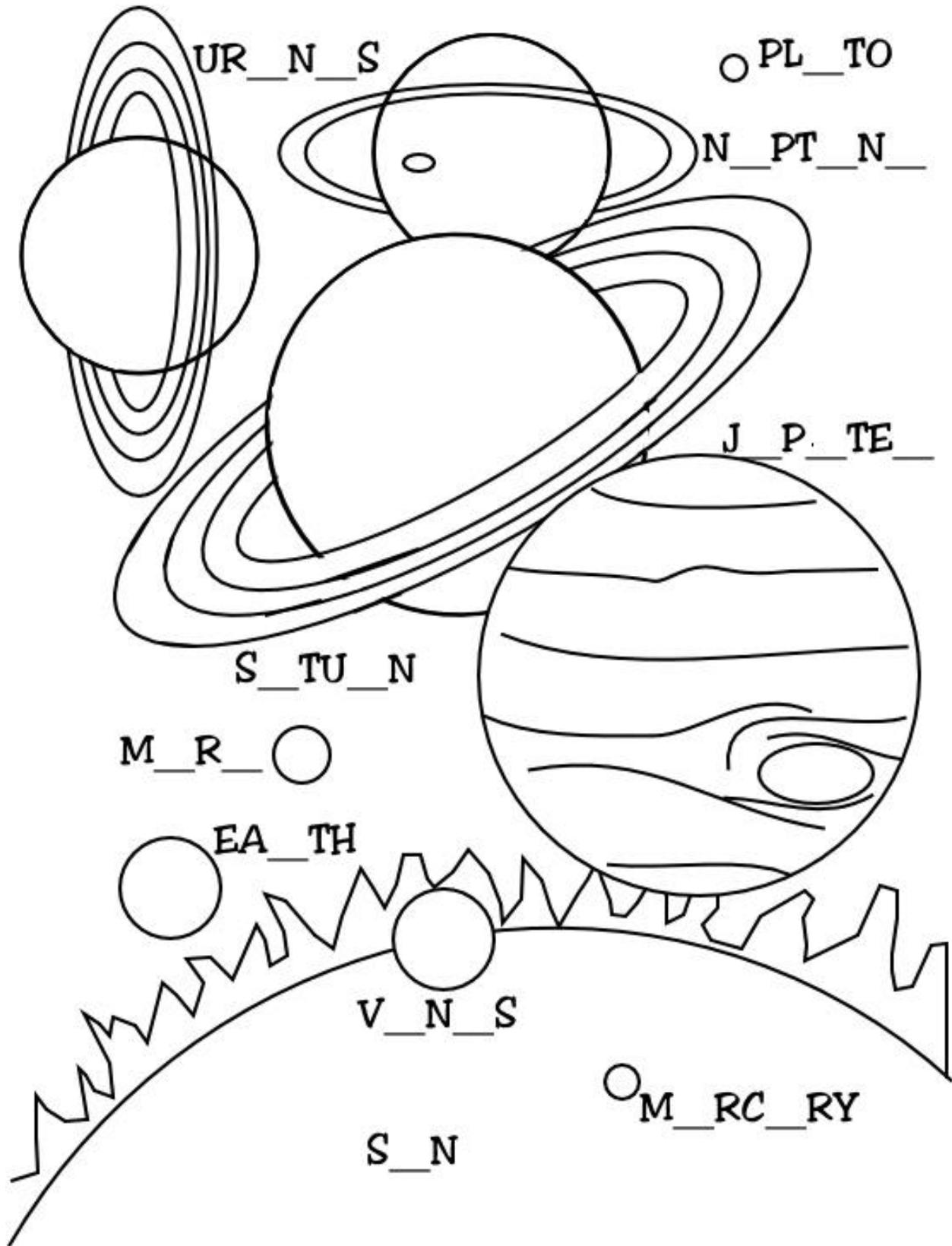
Uranus: Uranus is light blue in color and is tipped over sideways. It has no solid surface. It has about a dozen thin rings that go around the planet up and down (vertically). Uranus has 27 moons.

Neptune: Neptune is bluish in color, slightly darker than Uranus. It is just slightly smaller than Uranus. It has no solid surface. It has three brighter rings, and a couple of thin faint rings. It has 13 known moons.



Pluto: Pluto is no longer considered a planet, instead it is called a "Dwarf Planet." It has 5 moons with one that is nearly as big as Pluto.

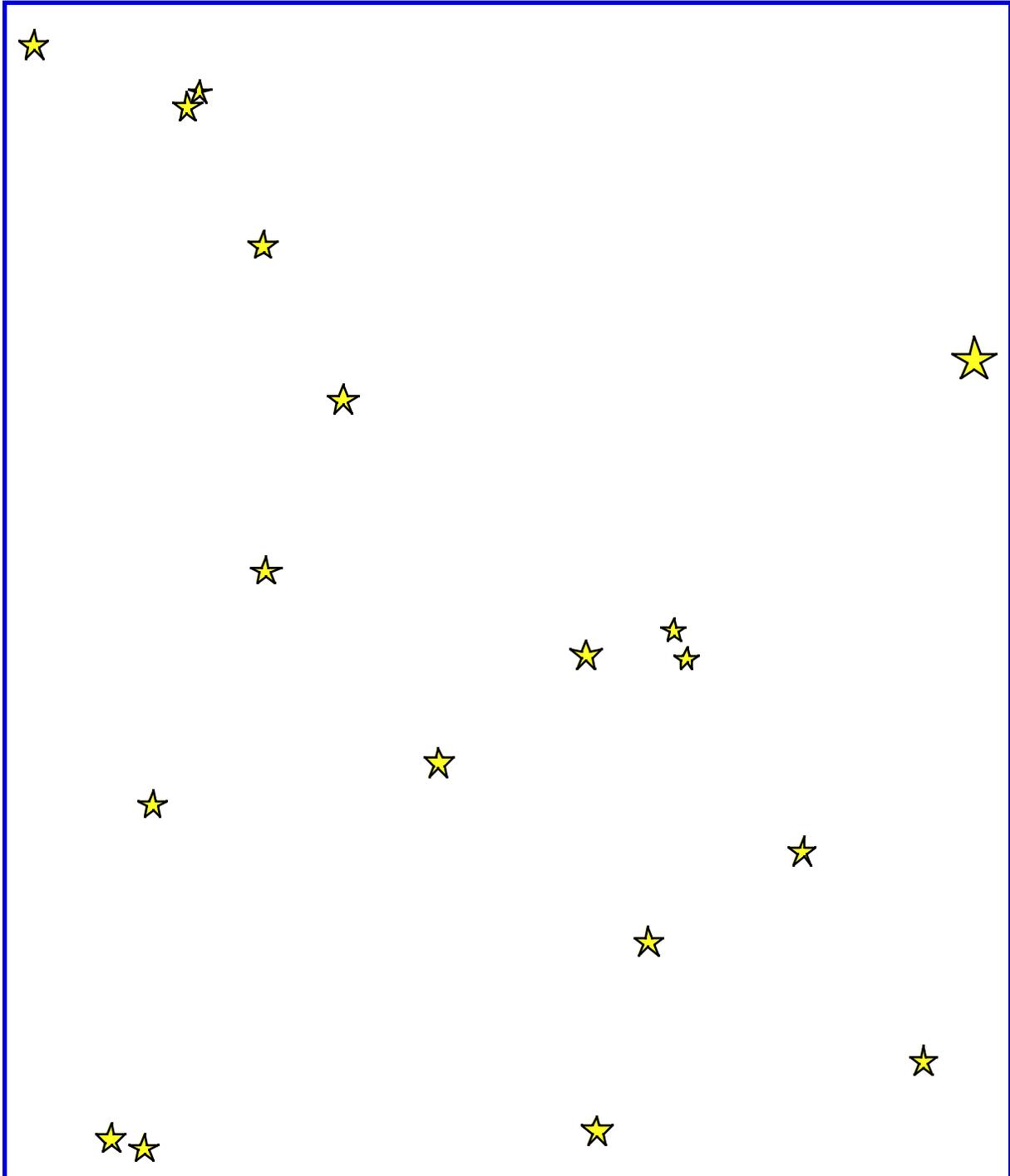
Color & Name the Planets



Create A Constellation Name _____

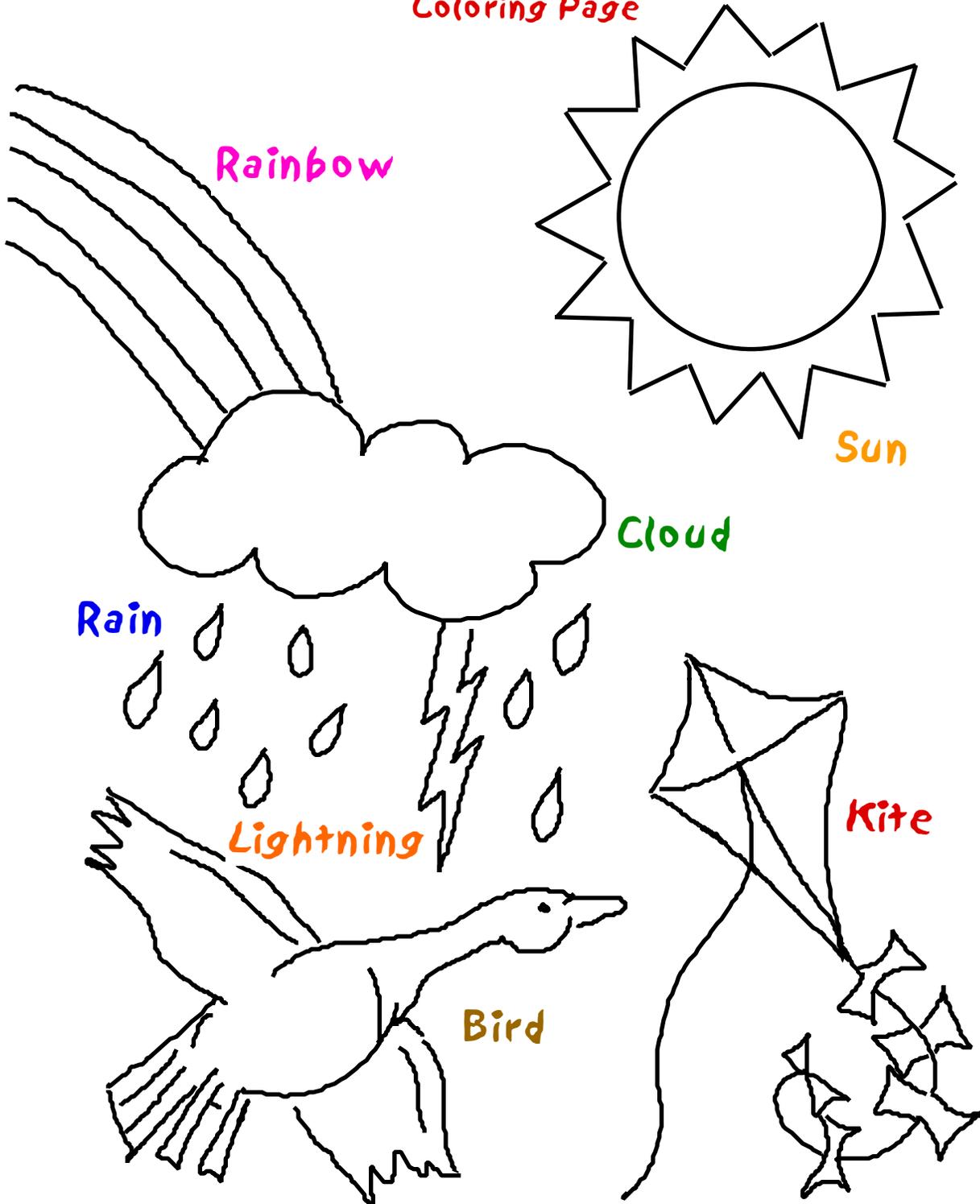
What do you see in the stars. Some people look at these stars and see a dipper, some people see a great bear, some people see a wagon, some a plough, and some a gourd. What picture do you see when you look at these stars?

Draw lines between the stars and make a picture of your own!



DAY SKY

Coloring Page



Rainbow

Sun

Cloud

Rain

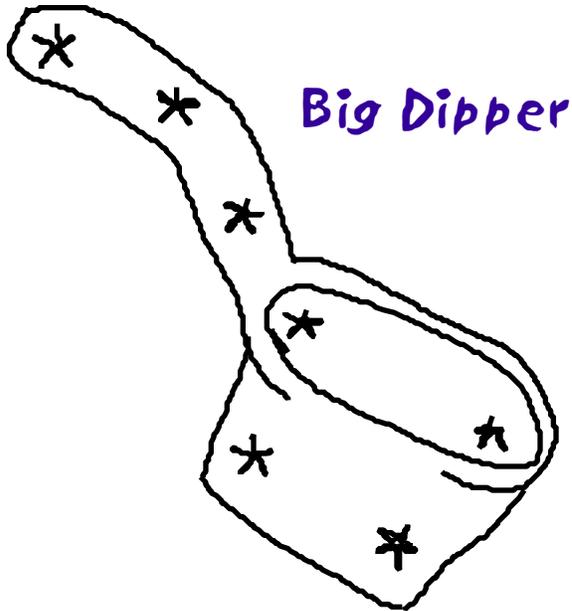
Lightning

Kite

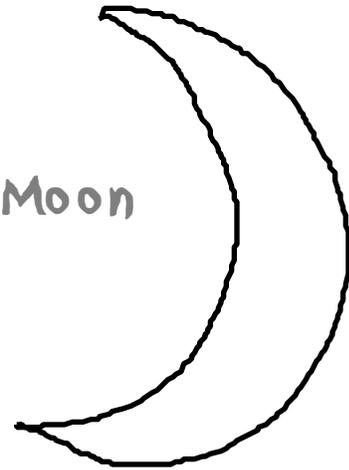
Bird

NIGHT SKY

Coloring Page

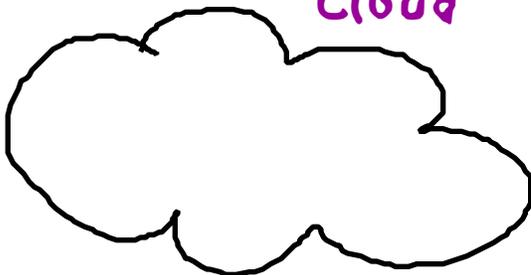
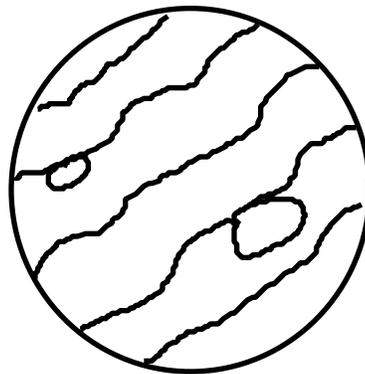


Big Dipper



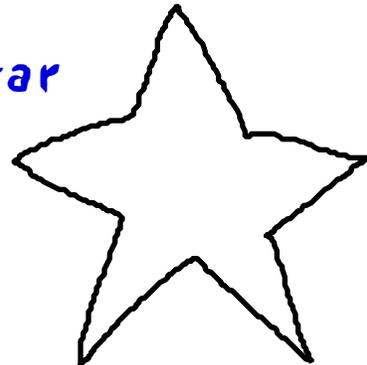
Moon

Planet
Jupiter



Cloud

Star



Planetarium Program Evaluation

After the Northern Stars Planetarium has visited your class, please take a moment to fill out this evaluation. Your suggestions are very valuable to us!

Mail the completed evaluation to:.....Northern Stars Planetarium
15 Western Ave.

Fairfield, Maine 04937

Or Email To:.....info@northern-stars.com

1. Show Name: _____

2. Group grade/age level: _____

3. Was the material presented at an appropriate level for your class? _____

4. Was the amount of material discussed: Enough Overwhelming Not Enough

5. Should any parts of the presentation be developed further? _____. If so, which parts?

6. Was there sufficient time for questions and answers? Yes No

7. Were you studying astronomy or another related subject at the time of the planetarium's visit?

Yes

No

If so, was the planetarium visit helpful? _____

8. Was the Teacher's Guide helpful in preparing your class for the planetarium visit? Yes No

Which parts were most helpful? _____

Which parts were least helpful? _____

9. Did the presenter present the material in a clear and understandable fashion? _____

10. How would you rate the overall program given to your class in the planetarium? _____

11. (Optional) Your name & school: _____

Please feel free to write any *further comments* on the back.

Thank you for your time! Your Comments Make a Difference!