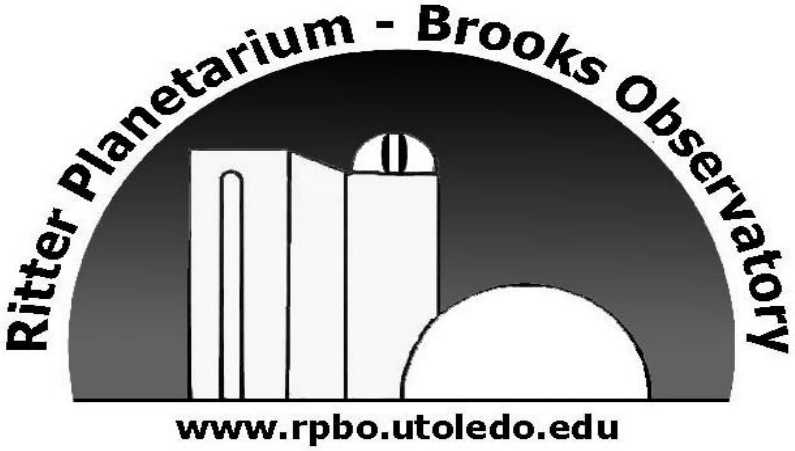


# Don't Duck, Look Up!

Post-visit Packet

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Name _____ Date _____

## Summary

Now that you've seen the program you may be wondering what to do next. We're here to help. In the following pages we've provided some samples of vocabulary, possible questions and discussion topics as well as some activities that could be done in the classroom or at home. These are simply suggestions and we encourage you to modify this packet to suit your particular needs.

Concepts covered in show:

1. **Daytime Sky**
   The daytime sky is introduced. The color of the sky is revealed and students are introduced to a typical day on the farm. This includes how the sky changes with the weather.

2. **Sun's movement**
   Here students learn how the sun moves throughout the day. The path of the sun is tracked from sunrise, to noon, to sunset. This apparent motion of the sun is explained by a discussion of the Earth's rotation. An example is given to help explain day and night.

3. **Nighttime sky**
   After the sun sets, the stars appear. Dudley and the other farm animals take turns looking at the stars and making pictures out of them. These pictures are called constellations.

4. **The Moon**
   The moon's appearance during the day and during the night is discussed. The moon's phases are briefly mentioned and the students are encouraged to watch for the moon's shape when they go outside.

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# Vocabulary

1. **Sun**

2. **Constellation**

3. **Moon**

4. **Cloud**

5. **Earth**

6. **Planet**

7. **Star**

8. **Day**

9. **Night**

10. **Planetarium**

Name _____ Date _____

# Vocabulary-Key

1. **Sun** – Star in the center of the Solar System which gives light to the daytime sky; the closest star to the Earth.

2. **Constellation** – A group of stars connected to form an imaginary picture.

3. **Moon** – A natural satellite of a planet; the Earth's moon is the Moon.

4. **Cloud** – White or grey puffy objects seen in the sky which block the Sun, stars, planets, and Moon from our view; may cause rain.

5. **Earth** – The planet we live on.

6. **Planet** – Any of the nine major bodies in orbit around the Sun.

7. **Star** – Tiny point of light in the sky; the Sun in the day sky.

8. **Day** – When the Sun is in the sky from your location.

9. **Night** – When the Sun is not in the sky from your location.

10. **Planetarium** – Theater using a domed screen and special projector to simulate the night sky.

Special Thanks to Davis Planetarium at the Maryland Science Center for definitions.

Name _____ Date _____

## Short Answer and Discussion Questions

1. Name two things you can see in the daytime sky.

2. Name two things you can see in the nighttime sky.

3. Why can't we see stars during the day?

4. What is a constellation? Give an example.

5. The sun is very bright. Should you ever look at the real sun?

Name _____ Date _____

# Short Answer and Discussion Questions - Key

1. Name two things you can see in the daytime sky.

   Answers will vary. Examples include the sun, clouds, and a rainbow.

2. Name two things you can see in the nighttime sky.

   Answers will vary. Examples include stars, the moon, and constellations.

3. Why can't we see stars during the day?

   During the day the sun is out. The sun is much brighter than the stars so its bright light, overpowers the light of the stars. We can only see the stars after the sun sets.

4. What is a constellation? Give an example.

   A constellation is a group of stars that together form a picture. There are 88 official constellations that make up a map of the sky. Examples will vary.

5. The sun is very bright. Should you ever look at the real sun?

   NO. The real sun is too bright. Never look at the real sun; it could hurt your eyes.

Name _____ Date _____

# Classroom Activity

## The Earth is Turning

This is a class participatory demonstration through which students learn that at all times the Sun shines on the Earth and makes day for different people in different places. In one complete turn, each child experiences both day and night. Morning and evening may be introduced as the times between day and night. Students should know that the Earth is a giant ball on which people, plants, and animals live together. Review the song to the tune of "Are You Sleeping?" from *Songs to Try*, which can be sung during the activity.

You will need:

- Bare bulb, shades to darken room
- A placard of Sun to place near bulb (students can make)
- Placard of the Earth to place on floor for students to step around (students can make)

What to do:

1. Have the light shine at moderate brightness in front of a darkened classroom. To help pretend it is the Sun, place a placard of the Sun near it.
2. Arrange the students in a circle, facing outward, in the center of the classroom. You can use the entire class, but if you don't, allow other students to observe and comment.
3. Have the students link arms at the elbows. The circle should be somewhat tight. Tell them they will pretend to be the Earth turning. Give each student a turn in the circle.
4. Signal the students to begin a very slow baby step to their left. Those facing the Sun are in the daytime, and will see it go off to the right. Those not facing the Sun are in nighttime, and will see it appear from the left.
5. Repeat several times while directing observation of how it seems like the "Sun" is moving from left to right when its really the "Earth" turning.

Suggestions:

1. A globe may come in handy for further demonstration.
2. Try singing the "Are You Sleeping?" song to help designate time spent turning
3. Stop the "Earth" to ask for those students having day or night to stand on tip toes.
4. When the "Earth" has made one complete turn, the question "How long does it take for the world to do what you just did?" relates to how it takes the Earth 24 hours to complete one rotation.
5. Ask the students to name some things seen in the sky during the day and/or night.

Name _____ Date _____

**Classroom Activity**

**The Earth is Turning (cont.)**

# Songs to Try

## Sing to the tune of "Are You Sleeping?"

Earth is turning.

Earth is turning.

All the time.

All the time.

Day becomes the nighttime.

Night becomes the daytime.

On and on.

On and on.

Special Thanks to Davis Planetarium at the Maryland Science Center for this activity.

Name _____ Date _____

# Classroom Activity

## Match Game

This activity exercises recognition skills by matching icons of sky objects. The Sun/star, Earth/planet, and Moon icons may be used in a variety of match-type games. Emphasis can be placed on the idea that even though objects don't always look the same, as a whole, they may not change. Explain to students: 1) The Sun and stars are shaped like balls, but are often represented with points; 2) Even though the shape of the Moon doesn't look round all the time, it is always shaped like a ball; 3) Land masses on the Earth are different shapes. Different sides of the Earth look different; 4) Planets look different from one another.

You will need:

- crayons, markers, or colored pencils
- scissors
- glue or paste
- 3 x 5 index cards

What to do:

1. Have students draw icons of astronomical bodies such as sun, planets, earth(perhaps have students look at a model of the earth)and the moon in different phases.
2. Teacher may organize "Match Game" for a class activity, small group, or one-on-one.
3. Arrange a mixed group of icon cards and ask students to pick out which is the Sun/star, Moon, or Earth/planet.
4. Arrange a mixed group of shapes and ask students to pick out which is not the Sun/star, Moon, or Earth/planet.
5. Repeat as desired with as many cards as appropriate for your age group.
6. Spread a duplicated set of cards face down for a concentration-type game. Match pairs by exact icon or similar subject (i.e. star, planet, moon).

Alternate activity: Make a mobile

What to Do:

1. Have students make and color icons or use those from Match game.
2. Optional — glue page to paperboard for more sturdy mobile, but remember to color both sides.
3. Cut out shapes and punch holes where marked.
4. String parts together and hang over student's desk

Special Thanks to Davis Planetarium at the Maryland Science Center for this activity.

Name _____ Date _____

# Classroom Activity

## Birthday Moon

Students become familiar with lunar phases by locating and then drawing the Moon phase of their own birthdays. After listening and discussing lunar myths and legends they create their own Birthday Moon Stories. This activity is most effective after a lesson on the moon and its phases.

You will need:

- crayons, markers, or colored pencils
- access to the internet

What to do:

1. During the class, the teacher can go to one of the following sites:

   http://liftoff.msfc.nasa.gov/academy/universe/MOON.HTML
   http://www.googol.com/moon/
   http://tycho.usno.navy.mil/vphase.html

   Then, as each student gives his/her birthday, that date can be entered in, and the proper Moon picture generated. Each student then can record (by drawing) the Moon picture for his/her birthday. (If all students have internet access at home this step may be assigned as homework.)
2. Have the teacher read at least one moon myth to the students. Several are available at the following website:

   http://btc.montana.edu/ceres/html/birthdaymyths.htm

   (You may also choose other moon stories.)
3. Have the students observe the moon and make up their own moon myths that may explain things like the moon's coloring, shape or position in the sky. The students may either write them down or take turns telling them to the class.

Special Thanks to NASA/MSU-Bozeman CERES project for this activity.

Name _____ Date _____

# Recommended Astronomy Web Sites

After seeing a program you may be interested in finding out more about a particular subject. These are some of our favorite websites.

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|---|---|
| **Misc** | |
| **Ritter Planetarium-Brooks Observatory** | **www.rpbo.utoledo.edu** |
| Search for Extra-Terrestrial Intelligence Inst. | www.seti.org |
| SETI@home | setiathome.ssl.berkeley.edu |
| Space.com | www.space.com |
| Space Ref | www.spaceref.com |
| Heavens Above (Satellite Tracking) | www.heavens-above.com |
| **Education** | |
| Windows to the Universe | windows.arc.nasa.gov |
| Bad Astronomy | www.badastronomy.com |
| The Nine Planets | seds.lpl.arizona.edu/nineplanets/nineplanets |
| **NASA** | |
| NASA Homepage | www.nasa.gov |
| NASA Human Space Flight | www.spaceflight.nasa.gov |
| NASA Jet Propulsion Laboratory | www.jpl.nasa.gov |
| Space Telescope Science Institute (Hubble) | www.stsci.edu |
| **Telescopes** | |
| Meade | www.meade.com |
| Celestron | www.celestron.com |
| Orion | www.telescope.com |
| Astromart | www.astromart.com |
| **Magazines** | |
| Sky and Telescope | www.skyandtelescope.com |
| Astronomy Magazine | www.astronomy.com |
| **Societies and Organizations** | |
| International Dark-Sky Association | www.darksky.org |
| The Astronomical Society of the Pacific | www.aspsky.org |
| International Astronomical Union | www.iau.org |
| The Planetary society | planetarysociety.org |