

# What Do I See When I Picture Saturn?

*Saturn and four small icy moons.*



## LESSON TIME

1 hour

## MATERIALS CHECKLIST

*For the teacher:*

- Easel with paper and marker, or chalkboard or whiteboard

*For the students:*

- Crayons
- Colored pencils
- Pencils
- For Saturn Discovery Log: 12 by 18 inch construction paper (1 sheet for each student) and 8-1/2 by 11 inch paper (1 sheet for each student)

TO SEE EXAMPLES OF STUDENT WORK, [CLICK HERE](#)

## LESSON NO. 1

- Language Arts Focus — Nonfiction Writing Practice: Illustrations with Text
- Science Focus — Pre-Assessing Students: Scientific Ideas and Understandings

### OVERVIEW

Your students begin the unit by creating their Saturn Discovery Logs. They will use the Saturn Discovery Log to chronicle their journey of discovery about Saturn and Cassini through nonfiction writing. For their first log entry, students will draw what they picture when they hear the words “Saturn” and “Cassini,” and add labels and captions to their drawings. Students will share their work with partners. At the end of the unit, students will repeat this exercise, observe their growth, and reflect on increased knowledge.

### WHY THIS WORKS

Saturn is the sixth planet from the Sun and is often called the “jewel of the solar system” because of its beautiful rings. It is the second largest planet in our solar system. Saturn is named for the Roman god of agriculture.

The spacecraft Cassini–Huygens (pronunciation: kuh seen ee / hoy gens) was launched from Earth in 1997 and arrives at Saturn in July 2004. Cassini will explore the mysteries of Saturn and its rings, while the Huygens probe will attempt a landing on Saturn’s largest moon, Titan, in January 2005. If you would like to explore more background about the mission, space travel, or the solar system, the links in the Resources section of this lesson will be useful.

In this unit, students will keep everything related to Saturn and Cassini learning in their Saturn Discovery Logs. Calkins (1986) states that while children spend 44 percent of their classroom time writing, they only spend 3 percent of this time composing, actively thinking, sorting, or organizing while writing. The writing projects in the unit will require students to distill, organize, and reflect on the information they have gathered in their logs.

You are encouraged to learn with your students throughout this unit. Teachers often fear teaching science because of the learning curve a new topic such as this presents. This unit provides your students with the opportunity to see you as a learner too!



### Objectives

- Teachers will:
  - Learn the extent of individual student knowledge about Saturn and Cassini.
- Students will:
  1. Practice organizing and presenting their thinking in illustrations with text format.
  2. Practice noticing strengths in each other's work.

### Teacher Preparation

Decide if you are going to allow the children to choose the color for their construction paper (if there is more than one choice). On the chalkboard or easel paper, write the following Saturn Discovery Log prompt where students can see it — “Draw everything that you picture when you hear the words Saturn and Cassini. Add labels to your drawing.” Try to find a book, newspaper, or magazine article that has illustration with text to use as an example to show the class — the Science Times section of the *New York Times* (in the Tuesday paper) often features excellent illustrations with text to explain new discoveries. Decide if students will have the same partner or will change partners for Saturn Discovery Log sharing throughout the unit. The advantage of having the same partner is that a relationship has time to build and children become more willing to take risks. The advantage of changing partners is that students have opportunities to connect with a larger number of students. Think about the unique strengths and needs of your class to make this decision.

### What to Do

*Introduce the Unit — Suggested time 15 minutes*

1. Tell the class you are going to read something to them, and have them try to picture it. Read the following paragraph:
 

“Imagine space, magnificent space. Now imagine our solar system with a blazing Sun in the center. Spinning around it are beautiful planets. One of these planets is Earth. Another is Saturn. A spacecraft is flying through space to try to find out more about this mysterious planet.”
2. Explain that for the next few weeks, you will be learning about Saturn and the Cassini–Huygens mission. The Cassini spacecraft is traveling to visit Saturn, and the Huygens probe is going to try to land on Saturn’s largest moon, Titan.
3. Explain to the students that as “you learn about Saturn and the mission, you will also learn how to write excellent nonfiction, and will learn strategies to help you read nonfiction writing better.”
4. Ask the class to spend five minutes brainstorming all of the types of nonfiction that they can think of. Jot their ideas on the board.



**teacher TIP**

The format for the Saturn Discovery Log is just one suggestion. Basically you want to create something that can hold student's writing and worksheets for the unit in an organized way. You may have folders or other organizers that you would like to use to accomplish this.

5. Tell the class that there are many, many different types of nonfiction, and that you will be focusing on descriptive writing, compare and contrast writing, illustrations with text, and summary writing. Read the following to give brief examples of each of these types of nonfiction writing:

- Saturn is a jewel in the sky. *This is an example of descriptive writing.*
- Saturn has at least 31 moons, and Earth has just one moon. *This is an example of compare and contrast writing. The writer is comparing Saturn and Earth.*
- Here is a sketch of Saturn. [Draw Saturn and its rings, and draw a label connected to the planet that reads Mysterious Planet, and a label that connects to the rings that reads Beautiful Rings.] *This is an example of illustrations with text.*
- In a nutshell, in this unit, we are going to learn about Saturn, the Cassini spacecraft, and the probe that will land on Titan. *This is an example of summary writing.*

*Create Your Saturn Discovery Log — Suggested time 15 minutes*

1. Tell the class that you would like to start the unit by creating a Saturn Discovery Log and that they will use the log to keep track of discoveries they make about Saturn and Cassini. Explain that they will be keeping all of their work during this unit in their own Saturn Discovery Logs, just as scientists keep journals like this to record their thoughts.
2. Tell the class that “today you will make the cover for your Saturn Discovery Log, and write your first log entry.”
3. Pass out construction paper and crayons or markers. Ask the class to fold the construction paper in half to make a folder that will hold 8-1/2 by 11 inch paper. Ask students to write “Saturn Discovery Log” and his or her name on the front cover of the construction paper folder. As students work, check that everyone has written his or her name on the cover.

*Draw and Write in Saturn Discovery Log — Suggested time 20 minutes*

1. Point out the writing prompt to the students that you have previously written on the chalkboard or easel paper — “Draw everything that you picture when you hear the words Saturn and Cassini. Add labels to your drawing.”
2. Explain to the class that they are going to spend 20 minutes drawing everything they picture when they hear these two words — “Saturn” and “Cassini.” Explain that they are going to add labels or captions to the drawing.
3. Give the class an example of a drawing and adding labels or captions. (For example, you can draw Earth and the Moon, and draw a line with words to explain more about each one. You might draw a line from Earth saying, “Where we live,” and a line from the Moon saying, “Our only moon. Humans first landed on the Moon in 1969.” You may want to point out illustrated text in books like *The Magic School Bus*, and point out the method of magnifying a certain portion of the illustration to feature its information in more detail.)



4. Encourage the class to write informative, detailed captions. Explain that this type of illustration and writing is often used by scientists to explain things. Tell the class that this type of drawing and writing is sometimes called illustrations with text.
5. Tell the students that they will be sharing their illustrations with text with a partner at the end of the lesson, and sharing one thing they like about their partner's work.
6. Pass out a sheet of paper for the first log entry. Circulate and ask students to tell you more about what they are drawing. Encourage them to add what they say to the captions.

*Share with a Partner — Suggested time 10 minutes*

Have students share their illustrated text with a partner. Have the partners take turns sharing one thing they liked about their partners' work. Ask students to write their name and the date on their work, and put it inside their Saturn Discovery Log.

### **Extensions**

#### **Buddies**

If your class has a “buddy” class, ask the other class to do the same exercise (perhaps just the drawing portion of the activity if it is a younger class). The buddies can meet to share and talk about what they drew and why.

### **Resources**

*Cassini and NASA Websites for Kids*

You may want to have these websites bookmarked on the computer for the children to explore.

- This site provides background on the solar system. “The planets” section is particularly fun for children to explore — <http://sse.jpl.nasa.gov/index.cfm>
- This site provides child-friendly background about the Cassini–Huygens mission — <http://saturn.jpl.nasa.gov/kids/index.cfm>
- This site provides child-friendly information about space travel. It includes quiz games and a history of space travel — <http://www.jpl.nasa.gov/kids/>



### Assessment

As you read over the children's work, ask yourself the following questions:

1. Who are the students who have had a great deal of experience with this topic?

Ask those students how they learned about it. Children who have a great deal of information about Saturn and Cassini can be honored as experts throughout the unit, as they expand their knowledge of the topic.

2. Who are the students who have not had a great deal of experience with this topic?

If there are a lot of children who have not had strong experiences in space science, you will be able to determine what background you need to provide (basics about how the solar system works, etc.). If your students do not know the basics about the solar system, you might want to use and adapt Lesson 2 of the Grades 1–2 unit as your next lesson in the unit. You can read aloud nonfiction books that provide necessary background knowledge, and make these books available for independent reading.

### Standards

*National Council of Teachers of English and International Reading Association Standards for the English Language Arts*

All students must have opportunities to:

- Employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
- Use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

*National Science Education Standards*

- As a result of their activities in grades K–4, all students should develop an understanding of objects in the sky (Earth and Space Science).



### Examples of Student Work



### Pre-Assessment



### Post-Assessment

