

# For Creative Minds

The “For Creative Minds” educational section may be photocopied or printed from our website by the owner of this book for educational, non-commercial uses. Additional “Learning Links,” cross-curricular “Teaching Activities,” and interactive quizzes are also available online. Go to [www.ArbordalePublishing.com](http://www.ArbordalePublishing.com) and click on the book’s cover to find all the supplemental materials.

## Solar System Fun Facts

Did you know that the sun is a star and that we live on a planet?

There are eight planets that orbit around the sun. Moons orbit around the planets.

We live on Earth, the third planet from the sun. Saturn is the sixth planet from the sun and is easily recognizable because of its bright, colorful rings.

The planets in order of their distance from the sun are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.



We used to think there was a 9th planet named Pluto, but it's actually one of more than 40 “dwarf planets” that orbit our sun.

An asteroid belt, the dwarf planets, and comets also orbit the sun.

Most meteors are “space dust” from the comet tails.

We have 24 hours in a day because it takes the Earth 24 hours to rotate on its axis.

It only takes Saturn 10 hours and 39 minutes to rotate on its axis. A “day” on Saturn would be less than 11 hours!

It takes the Earth 365 days, one year, to revolve around the sun. It takes Saturn 10,759 Earth days to revolve around the sun. If you divide 365 into 10,759, how many Earth years does it take for Saturn to revolve around the sun?



## Saturn Fun Facts:

Giovanni Domenico Cassini, also known as Jean-Dominique Cassini, was a 17th century astronomer who discovered four of Saturn's moons and a space between two of Saturn's rings, which is called the Cassini Division. Although Cassini was married, there is no evidence that Mrs. Cassini was Jeffrey's teacher.

Saturn is yellow when viewed from space.

*Saturn is approximately 4.5 billion years old—the same age as the sun, the Earth and the rest of the planets.*

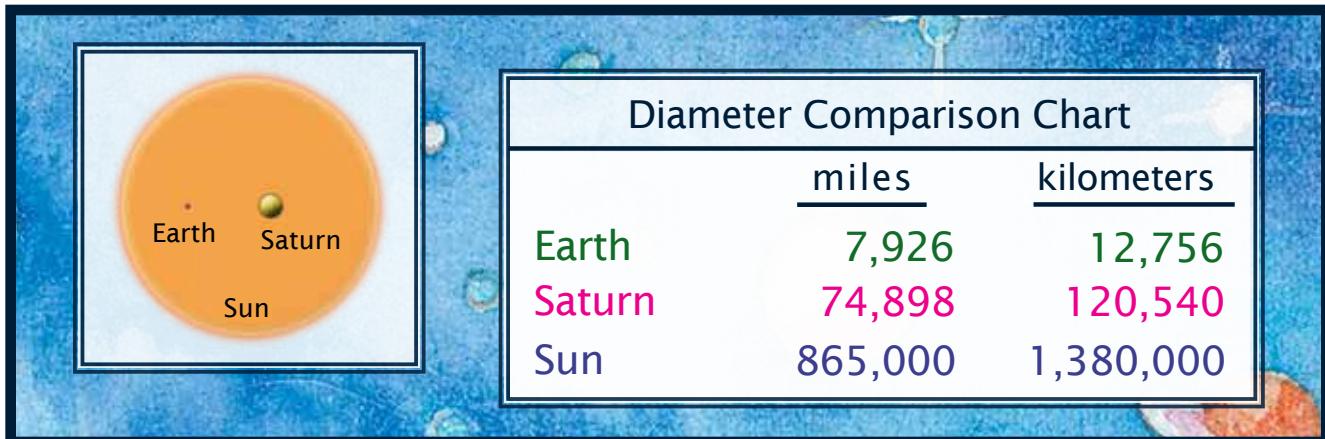
The Cassini-Huygens is a cooperative project among NASA, the European Space Agency, and the Italian Space Agency. The Cassini spacecraft was launched on October 1997. It arrived at Saturn in July 2004 to study the planet for four years.

*Saturn is one of the brightest lights in the night sky and can be easily seen without a telescope. If you use a telescope though, you can see the rings.*

The ancient Romans named Saturn after their god of agriculture. Saturday was named after him too.



## Saturn's Size:



The diameter (length of a straight line going through the center of a planet, star, or across the widest part of a circle) of Saturn is a little more than nine times greater than the diameter of Earth.

### Checklist of Items needed:

- A paper plate that measures just over 9 inches when flattened out
- A ruler
- A pencil
- A quarter (the diameter of a quarter equals one inch)

### Directions:

- Using a ruler, draw a line across the “fattest” part of the plate. It should be just a hair over nine inches. This is the diameter of your circle.
- Starting at either end of line, place the fat part of a quarter on the line and trace around it.
- Repeat this, placing the quarters right next to each other so that you have nine traces of quarters.



Looking at the statement above, what does your paper plate circle represent and what does one of the quarters represent?

Saturn is the second largest planet in the solar system. **Jupiter is bigger!**

The plate represents Saturn and a quarter represents the Earth



## Temperature:

The average temperature on Saturn is about **-220F or -140C**.

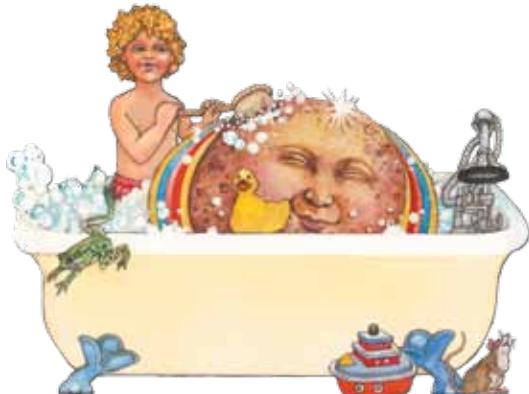
Does that mean it is warmer or colder than freezing on Saturn?

What temperature is it in your house or school?

What temperature is it outside today? Is it above or below freezing?

What is the average temperature where you live during the winter?

At what temperature does water freeze and become ice?



## Density:

Saturn is the only planet in the solar system that's **less dense than water**. That means if you could find a tub big enough to hold it, Saturn would float!

What are some other things that can float?

## Distances:

Saturn is about 888 million miles from the sun.

Saturn is approximately 795 million miles away from the Earth, when they are both on the same side of the sun at its closest point of approach.

## Saturn's Moons:

Saturn has **forty-seven moons** and scientists keep finding more. Thirty-four of the moons have names. They are Albiorix, Atlas, Calypso, Dione, Enceladus, Epimetheus, Erriapo, Helene, Hyperion, Iapetus, Ijiraq, Janus, Kiviuq, Methone, Mimas, Mundilfari, Narvi, Paaliaq, Pallene, Pan, Pandora, Phoebe, Polydeuces, Prometheus, Rhea, Siarnaq, Skadi, Suttung, Tarvos, Telesto, Tethys, Thrym, Titan, and Ymir. The moons don't make their own light but they "glow" by reflecting the light from the sun—just like our moon does.



## Saturn's Rings

Saturn has **seven major rings**. They are listed as D, C, B, A, F, G, & E. The rings are made up of billions of water ice particles.

The rings are not solid. In fact, they are floating pieces of ice and rock that are “held together” by the gravity from both Saturn and its many moons. The rocks vary in size from as small as a grain of sand to as big as a half-mile wide. The ice won’t melt because it is so cold.

The rings look big and wide but they are really narrow: some are only a half-mile thick. Next time you get in the car, ask the driver to help you measure a half mile.

## Edible Rings

The ice & rock mix that make up Saturn’s rings are like rings of dirty, hard-packed snow.

Checklist of What you will need:

Ice cream to represent the ice

Nuts – finely chopped to coarsely chopped to represent the rocks of all sizes

A small plate and plastic wrap that fits loosely over the plate.

Let the ice cream soften enough to stir in the nuts. Put the ice cream around the inside rim of the plate so that it makes a ring. Cover the plate with the plastic and put in the freezer until solid. When frozen, you have your edible Saturn rings!

What would happen to your  
ring if you put it in the oven?

What would happen  
to Saturn's rings if it  
started getting hot?

