



# the Space Place

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## NEWS AND NOTES FOR FORMAL AND INFORMAL EDUCATORS

The Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

It's colorful!  
It's dynamic!  
It's fun!

It's rich with science, technology, engineering, and math content!

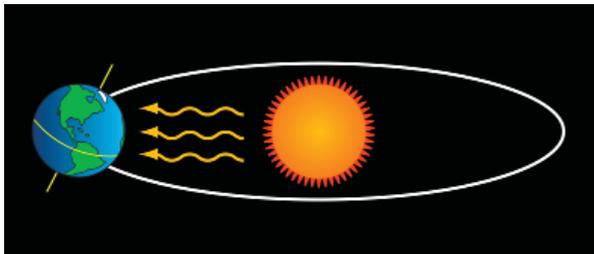
It's informal.  
It's meaty.  
It's easy to read and understand.  
It's also in Spanish.  
And it's free!

It has over 150 separate modules for kids, including hands-on projects, interactive games, animated cartoons, and amazing facts about space and Earth science and technology.

*Earth Day is coming up April 22. What is the most abundant component of Earth's surface? Water, of course. Water is such a big part of life on Earth that we may take it for granted. But where did it come from? What makes it liquid, solid, or gas? And why should we care? Lots of NASA's Earth studies are about water in all its forms.*

### What's new?

Many students are surprised to know that during July, Earth is at its farthest point from the Sun, and during January it is at its closest. But that fact has nothing to do with why there are seasons. This new article explains and illustrates the reason for the seasons



and why some in the U.S. are putting on swimsuits to play in a recently icy lake, just as some in southern Chile and New Zealand are digging out their skates as their lakes freeze over. Check it out to help you enlighten your class at [spaceplace.nasa.gov/seasons](http://spaceplace.nasa.gov/seasons).

### La tierra en español

*¿Es la Tierra en parte un cometa?* Now you can read in Spanish, as well as English, about where our oceans may have originated. With new space telescopes that can analyze the composition of passing comets, we can actually begin to tease apart these 4-billion-plus-year-old mysteries. Find out how they are finding out at [spaceplace.nasa.gov/comet-ocean/sp](http://spaceplace.nasa.gov/comet-ocean/sp).



**Comet Hartley.** Did comets like this contribute to earth's ocean?

### Spotlight on Mission Chronicles

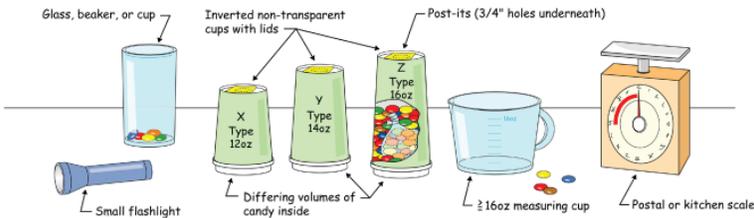
Some NASA missions don't get nearly as far off the ground as you might think. Operation IceBridge is one that uses instruments on an airplane rather than a satellite to study the elevation and thickness of ice at the North and South Poles. So, although it may be a while before any NASA scientists make it to the Moon, they can have a pretty alien-world experience right here on Earth. Christy Hansen, Manager of the Operation IceBridge Mission, and her team took a trip to the South Pole and lived to tell the tale at [spaceplace.nasa.gov/mission-chronicles/#hansen](http://spaceplace.nasa.gov/mission-chronicles/#hansen).



South Pole marker

## For the classroom

Clouds, of course, are another form of water. But it's not easy to tell from the ground how much water is actually in the clouds above us. They may look very threatening, but produce very little precipitation. In the classroom activity called "Sizing up the clouds," the teacher sets up three simulated "clouds" representing three different cloud types. Students use different



methods to estimate "precipitation" contents of each cloud type. Each method is roughly analogous to methods actually used in weather forecasting. Finally, the "precipitation" from each cloud is released, and the students will compare their estimates to what is actually experienced on the "ground." "Precipitation" in this activity is represented by colored chocolate candies (like M&Ms), which may help to keep the students' attention! Find the activity in .pdf form at [spaceplace.nasa.gov/classroom-activities/#cloudcontent](http://spaceplace.nasa.gov/classroom-activities/#cloudcontent).

## For out-of-school time

The "Go with the Flow" game presents puzzles in which the player must figure out how to place salt (which makes water denser) and heat (which makes water less dense) in an underwater grid scenario in order to create a current that will move a tiny, unpowered submarine to a floating key, which will then open a treasure chest at the bottom of the sea. We have watched kids playing this game, with or without their parents, at our "take your child to work days." We can hardly tear them away! Go to [spaceplace.nasa.gov/ocean-currents](http://spaceplace.nasa.gov/ocean-currents).



## Make these days special

### March 5, 1979: Voyager 1 flew past Jupiter.

Another spacecraft is on its way to Jupiter and will spend a lot more time there. [spaceplace.nasa.gov/junoquest](http://spaceplace.nasa.gov/junoquest).

### March 10, 1876: First telephone call.

Alexander Graham Bell called Thomas Watson. How do spacecraft exploring the solar system call home? [spaceplace.nasa.gov/x-ponder](http://spaceplace.nasa.gov/x-ponder).



### March 14: Pi Day! Or $\pi$ Day.

All circles are 3.14 . . . (ad infinitum, as far as we know) times as big around as across, a value called pi. What would pi be in binary numbers? [spaceplace.nasa.gov/binary-code2](http://spaceplace.nasa.gov/binary-code2).

### April 10: Encourage a Young Writer Day.

Invite students to write about our future in space. [spaceplace.nasa.gov/art](http://spaceplace.nasa.gov/art).

### April 22: Earth Day!

It's important, and fascinating, to study Earth's history. Like where did Earth's water come from? [spaceplace.nasa.gov/comet-ocean](http://spaceplace.nasa.gov/comet-ocean).

### April 28: Tell a Story Day.

Check out some of the stories on The Space Place. They could be called "creative non-fiction," always a fun genre! [spaceplace.nasa.gov/storybook](http://spaceplace.nasa.gov/storybook).



## A great Earth resource

Check out other activities and articles under the "Earth" menu on The Space Place. Remember, NASA has many more missions to planet Earth than to all of the other planets in the solar system combined. Earth is a very interesting planet!

