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about what you are
reading in this space.

Science Shorts -8

How Come The Earth Is Tilted?

If you could watch the Earth circling the Sun you might decide our planet has very poor posture. The Earth revolves around the Sun leaning to one side, like a sailboat listing in a strong breeze. The Earth is tipped over about 23.5° from straight up and down. It got that way, scientists say, in the demolition derby that formed our solar system some 4.6 billion years ago.

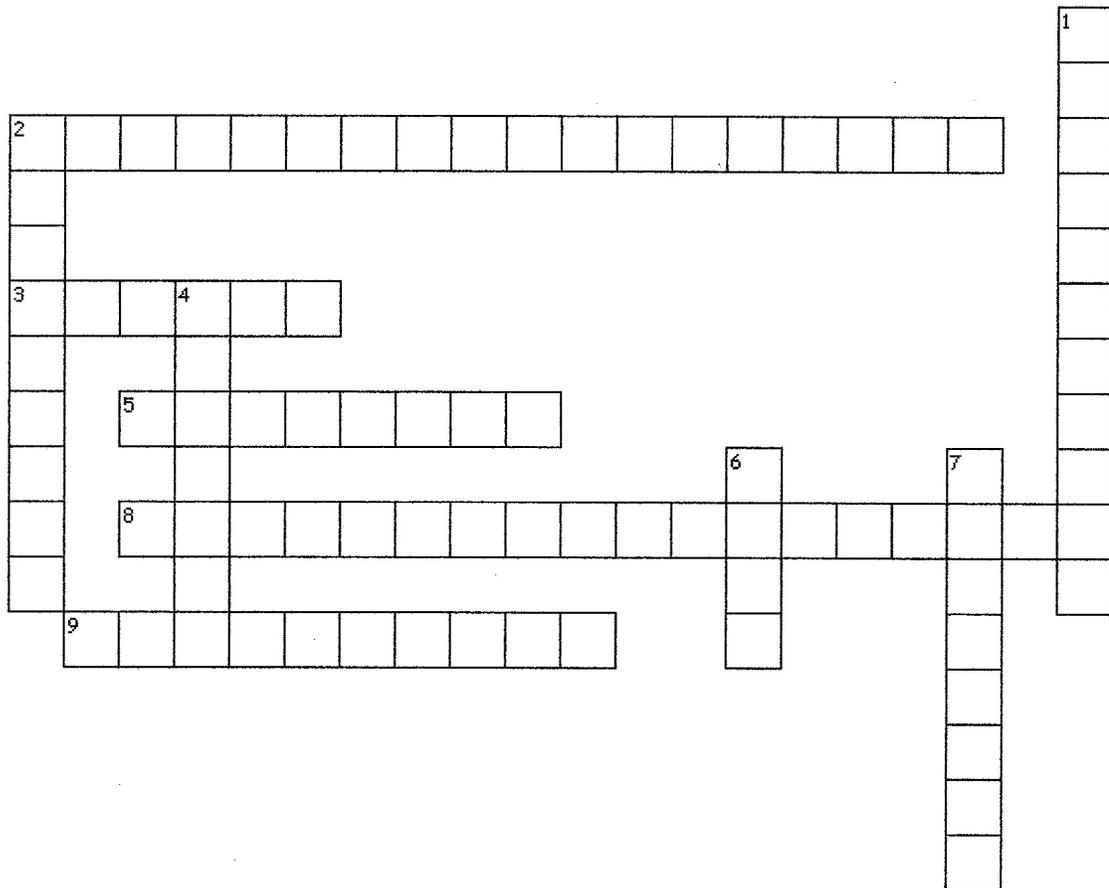
The Sun, the Earth and the other planets in our solar system formed from a rotating cloud of gas and dust in space. Scientists think the Earth grew into a planet-size body as particles collided with other particles, sticking together to make bigger pieces. As millions of years passed, the colliding chunks got bigger, small worlds crashed into other small worlds and planets grew. According to Clark Chapman of the Planetary Science Institute in Tucson, Arizona, there must have been one final enormous collision that knocked the poor battered Earth over into its current position.

The tilt makes life on our planet more interesting. It makes leaves turn red in October in Maine. It bakes Ohio in August, sending kids splashing into swimming pools. And it sometimes delivers January snows that shut New York City down. In short, the tilt makes seasons - four of them.

How? Because of the tilt, the North Pole leans toward the Sun for half the year and away from the Sun of the rest. In the Northern Hemisphere, we get more sunlight and warmer weather when the North Pole is tipped toward the Sun. And we get longer nights and colder weather when it is tipped away from the sun. In the Southern Hemisphere, just the opposite happens: winter in Houston is summer in Sao Paulo, Brazil.

If the Earth were to be pushed straight up on its axis, the seasons would nearly disappear. Since the Earth's orbit around the Sun is not a perfect circle, temperatures would drop a bit as the Earth made its farthest swing from the Sun. Then things would warm up as our planet came close to the Sun again. But these slight variations would be a far cry from real seasons - autumn, winter, spring and summer. Without the Earth's tilt these words wouldn't even be in the language.

How Come the Earth is Tilted?



Across

2. Where Texas is located
3. Where the Planetary Science Institute is located
5. Beat up
8. Where Brazil is located
9. What the rotating cloud in space was made of

Down

1. What formed 4.6 billion years ago
2. What leans toward the Sun for half a year
4. Autumn, winter, spring and summer
6. What makes the seasons
7. The Earth travels around the Sun