

One Stone and the Universe
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On March 14, Albert Einstein would be 119, and Wendy Jessen's gifted students at Green Valley Elementary School in Boone, N.C., are celebrating. They'll share wonder in "Imagination Stations" and then dig into party goodies.

And they're not alone: Hundreds of Einstein admirers of all ages have picked up the same idea, which grew out of an online Cybercard that Jessen's students first signed in 1996.

Einstein's name means one stone. Or as Rachele and Andy "One Family" Miller, who created the WonderWare Cybercard, point out, "one wondrous, enlightened, life-bearing stone among the interrelated pebbles of the Unified Universe." The birthday greetings on the card aren't quite that far-ranging, but they do cover Planet Earth: from Younes Benbouchais in Bangui, Central African Republic, to Jon and Carol Goh in Singapore; from Milan Boldizar in Kosice, Slovenia, to Alex and Natalie Pace in Sydney, Australia. Their messages speak of the influence Einstein has had on their convictions as well as their careers.

What did Einstein and other scientists who've had a major impact on the world have in common? Lillian Hoddeson, Ph.D., a science historian at the University of Illinois, summarizes it with two points: "The ability to think ideas that may seem outrageous within a particular time," and a respect for nature that leads them to "try very, very hard to ask meaningful questions that can be answered eventually through experimental or theoretical approaches."

Einstein, who was born in Ulm, Germany, in 1879, shaped modern concepts of the physical universe. Today, as witnessed by the Cybercard, even elementary school students recognize his famous $E=mc^2$, the equation that became the basis of our understanding of nuclear energy. But in the early part of this century, his ideas were revolutionary.

Einstein wrote his *Theory of Special Relativity* in his spare time while working for the Swiss patent office. Published in 1905, the theory — which was formulated mathematically — asserted the equivalence of mass and energy and the interdependence of time and space. That he should do such writing while isolated from the support of an academic environment seems amazing. But it fits the image of the Einstein whose interests grew out of the wonders of a compass he received at age 5. By 10, he was educating himself in the sciences.

In 1919, British studies of a solar eclipse first confirmed Einstein's theory of relativity. Since then, dozens of experiments have verified other predictions he made based on the theory. But one challenge remains: identifying the gravitational waves that Einstein postulated would result from such cosmic events as the death of a star. That challenge has been waiting for instruments sensitive enough to pick up signals arriving from as far as 100 million light-years away. Now, scientists say, the wave detectors should be ready by the turn of the century.

For all of his scientific brilliance (and despite what could be called old-fashioned ideas about women), Einstein may be as respected today for his wisdom as for his theories. He once said: "When you sit with a nice girl for two hours, you think it's only a minute. But when you sit on a hot stove for a minute, you think it's two hours. That's relativity."

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