

We Are Stardust!

(for more information: www.thegreatstory.org/Stardustbackground.html)

- **All the atoms of HYDROGEN within water, within our bodies, and everywhere else throughout the Solar System are more than 13 billion years old.** A way to feel the presence of these oldest atoms is to drink them: the 2 atoms of hydrogen in each molecule of water are the oldest of all the chemical elements. And within any glass of water, at least several of those atoms would once have been inside a dinosaur.
- **Humans and all other creatures are mostly made of water, so we are mostly made of atoms 13 billion years old. As “we” are our bodies, not just our minds, then, in a way, WE TOO ARE 13 BILLION YEARS OLD.** If a child has a “human age” of 7 years, her “cosmic age” (which honors the human age, and then adds on) would be 13 billion and 7.
- **ALL CHEMICAL ELEMENTS besides hydrogen were forged by nuclear fusion inside stars that flared forth and died before our Sun was born. We are made of STARDUST – recycled stardust!** Anointing the hand or forehead of a child with glitter is a wonderful way to make this idea tangible and memorable.
- **Our ANCESTORS include ancient stars.** Both the wart hog and the Lion King were right: stars are big balls of burning gas *and* they are our ancestors! The fishes who crawled out of the sea onto land gave us our bones and our 4 limbs; the furry little mammals who survived the dinosaur extinction gave us our hair and warm blood; the monkey-like primates who lived in the trees gave us our grasping fingers and keen eyesight; and many generations of humans have passed their knowledge onto us in stories and in books. But the very atoms of our bodies are the gifts of ancestor stars!
- **We are star stuff, PONDERING the stars.** Humans are stardust evolved to the point that matter can begin to know and marvel at its own magnificent STORY. No creature on Earth before us ever learned the story of the stars. In fact, yours is the first generation of humans to learn about this amazing story in school, after scientists figured it all out.
- **RED GIANT STARS** (like Betelgeuse in the constellation Orion; Betelgeuse actually looks reddish!) forged most of the nitrogen, oxygen, and carbon now on Earth. A wonderful way to experience these atoms is to breathe in the oxygen and out the carbon-dioxide, and know that most of the atmosphere that colors the sky blue is nitrogen.
- **HOT BLUE-WHITE STARS** (like Rigel, the “right” foot of Orion) forged all of the silicon that makes rocks strong and calcium that makes our bones strong, plus a host of other elements.
- **THE BIGGEST HOT BLUE-WHITE STARS** eventually explode as supernovas, and during that explosion all the heavy metals are created: nickel, copper, silver, gold, mercury, lead. The reason they explode is that iron acts like a fire extinguisher when it is created inside a star, and everything collapses to the core, then rebounds in an explosion.
- **We can be GRATEFUL THAT STARS RECYCLED STARDUST back out to the galaxy when they died,** because there could be no planets or life without the death of stars. How different would attitudes toward death be if the biblical writers had known the story of stars!