

Papa's Universe Story

Damonia and Destiny: The Tales of Twin Sisters

Vocabulary Preparation for:
“Where do we come from?” — Papa’s Universe Story

Because of the scope and span of this story, there are about 50 vocabulary words to review or learn before reading. The words with * preceding them are selected for *Word Investigations*. Everyone should develop two *Word Investigations* worksheets, with challenges for more. Remind the children that they must look up the base word to get all the etymologies; i.e., instead of looking at *re-ignite*, we look up *ignite*. Review the idea of *morphemes*, the littlest bits of meaning. Review the power-theme from THE BODY OF ENGLISH: understanding language empowers you.

Here we begin to respond to what we read. Please see the “Reflections and Questions” prompts on page 93. Students are to write 2-3 responses about every page, reflecting and questioning what they read.

Learn about these Words:

*awareness
 scattered
 *synergy
 past
 Mesopotamia
 *receded —
 furnaces
 horticulture
 *sensitivity
 swirl
 thus
 *re-ignited
 *fertilizing
 sprouting
 Pangaea

sizzled

erupts

crust

lava

amidst

blasting

exhale

fiery

arrangement

funneling

*perception

Silurian

warming

implies

*extinctions

magma

diaspora

*spontaneously

sophisticated

*vow

Sanskrit

Tibet

subcontinent

*hominids

scarce

*crystallized

cleverness

savannah

divinities

hoe

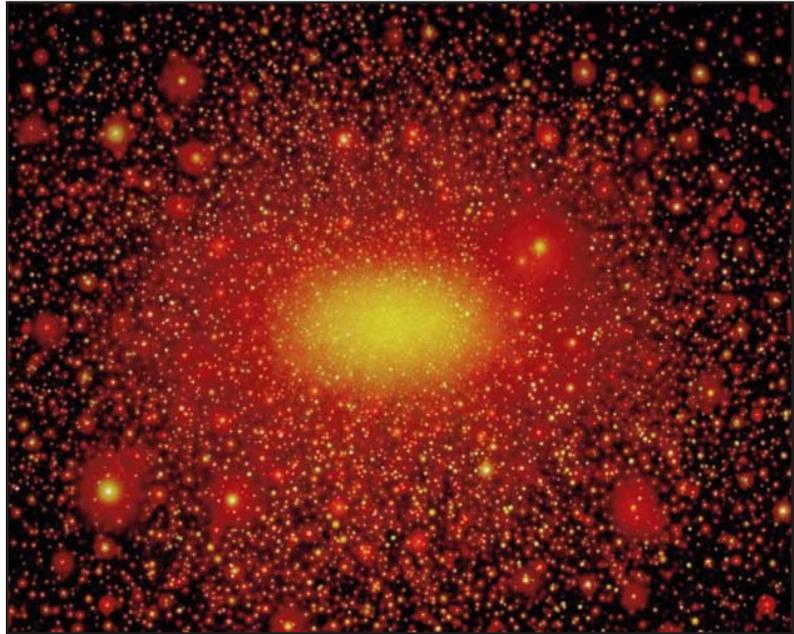
masculine

feminine

Papa's Universe Story

(as told to my young son, Salem, when he asked,
"Papa, where does all of this come from?")

A long, long, long, long time ago, an eon after the mysterious Big Bang, the first giant stars exploded and scattered the dust that they had made in their furnaces out into space. And the dust swirled like the little tornadoes you make in the bathtub when you push your hand quickly through the water.



Well, the big swirls focused great energies and this synergy re-ignited millions of cores and became millions of more stars. The heavier stardust around the big swirls became little swirls or planets around the lighted center.

And the stars themselves swirled in galaxies of billions of stars.



Around one of those galaxies of star swirls revolved a dust vortex that became our planet, about five billion earth-revolutions ago. The cooler space made it possible for many elements and energies to combine in a synergy, like the important combination of the lightest gas, hydrogen, and the important gas, oxygen; this synergy of gases we know as H₂O or water.

At first, our planet was super hot; the ground was hotter than the burner on your stove. Because of the heat, all the water was in steam and clouds. Way up high, where it was cooler, the steam formed clouds and rain, but as the rain fell, the heat from the super hot ground turned it into steam again. The old word for steam is *atmos*, and that's where we get the word, *atmosphere*.



It rained for millions and millions of years and not one drop reached the ground. Wow, imagine that. But over a few more millions of years, the earth cooled until finally drops hit the ground, but even then, they sizzled back into steam.



This went on for a few more million years, until at last, a crust formed on the lava-like surface, kind of like the skin of milk that forms on top of your hot-chocolate.

And upon that crust, amidst constant rain, the oceans began to form.

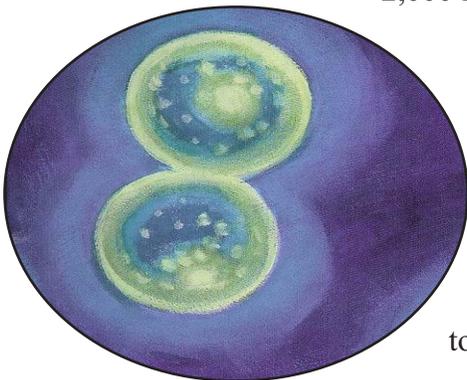
During that time, the energy of the sun kept blasting earth and that energy stirred the soup of elements that was in the ocean waters.



The energy of light bathed the earth's waters in cycles of illumination and darkness. The cycles of light and dark moved the ingredients dissolved in ocean waters to come together in new synergies and complex ways. In a synergy, one may observe a new energy and new synthesis that was greater than the sum of the many energies. To the dawning light, this growing synergy was good.

As the earth and waters accumulated energy, the ocean ingredients began to bake and grow more until one day, about three billion years ago, these components (perhaps sparked by lightning or comet dust) became complex enough to produce more of itself. Water and time, synergy and Light cooked a fertile soup for billions of years and, suddenly, Life began about

2,000 MILLION! years ago.



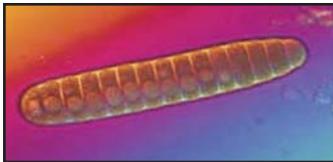
At first, life was just single plant cells, changing sunlight into sugars and using that energy to make more plants. This went on for millions and millions of years.

As you may know, plants breathe in carbon-dioxide, and together with water and sunlight, make sugar and exhale oxygen.

Now oxygen is pretty fiery stuff and it began to bleach or burn the plants. Oxygen was at first a poison! The earth and plants needed something to eat the oxygen. Ta da! A synergy of new energies call forth single-cell animals, who ate the bad oxygen and a few plants.



Well, this happy arrangement went on for millions and millions of years until one day the single celled creatures emerged in a new synergy to grow together, get bigger, eat more, get stronger. These multi-celled creatures had advantages the



single cells did not.

Some of the cells started to do special jobs, like moving or funneling the food and water, while other cells specialized in sensitivity to sensations such as smells, tastes, touches, sound and light. These sensitive cells grew as the **sense** organs of experience: smells, tastes, touch, sound, and light.



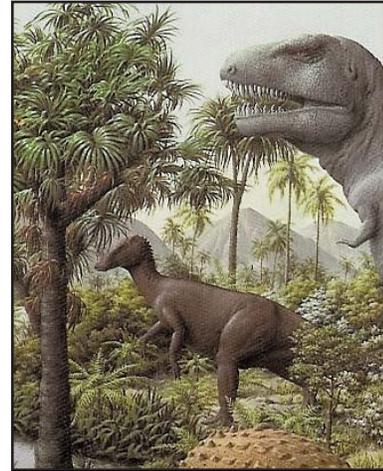
Soon after multi-celled creatures developed, life's synergy took off and scattered across the globe. Life seem to explode ("the Cambrian 'big bang'). In a relatively short time, the oceans were filled with jellyfish, eels, and fishes. About 440 MILLION! years ago was called the Silurian sea time.





Pretty soon after that, some eels and fish used their wiggling and fins to walk up the beach, and relatively quickly there were snakes and lizards.

It wasn't long until life's synergy and light's synthesis had evolved into amazing complexity and there were all sorts of photosynthesizing plants and energetic animals— and many with very developed sense organs and developed perceptivity. Every new form of life scattered where it could or could adapt across the globe. After just a few ice ages and warmings, there were dinosaurs and even a few furry little creatures.



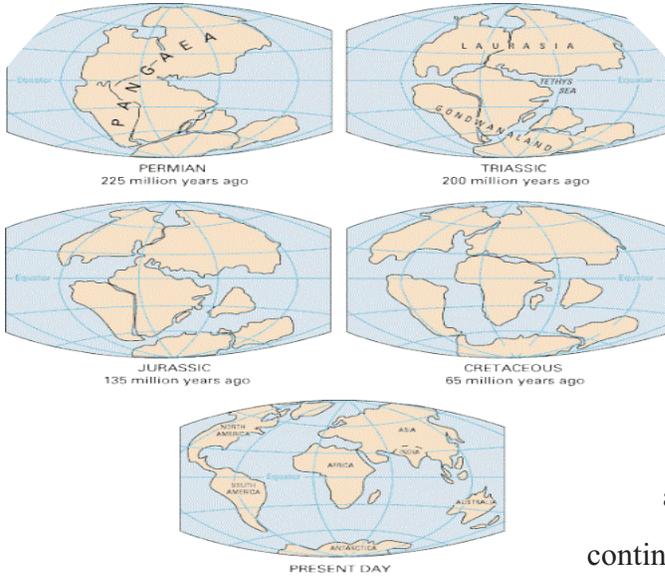
The dinosaurs ruled for about 200 million years until about 65 million years ago (so implies the evidence), a gigantic meteorite hit the earth and blew so much dust into the air that the sun couldn't get through and the earth got so cold that 9 out of every 10 living things on earth died, including the dinosaurs. (In the history of the whole earth, it appears that near extinctions like this have happened at least five times.)



Now those furry little muskrat-like creatures (with their four-chambered hearts and warm blood) were the best suited for the new earth. Following the cold snap was a long warming time, and the mammals thrived and grew and changed. Over the next 40 MILLION! years, they diversified into rabbits and antelope, cats, canines, horses and then about 25 MILLION! years ago, the monkeys.

Now remember how all the ground is just like crust on chocolate milk? Well, it really is like that,

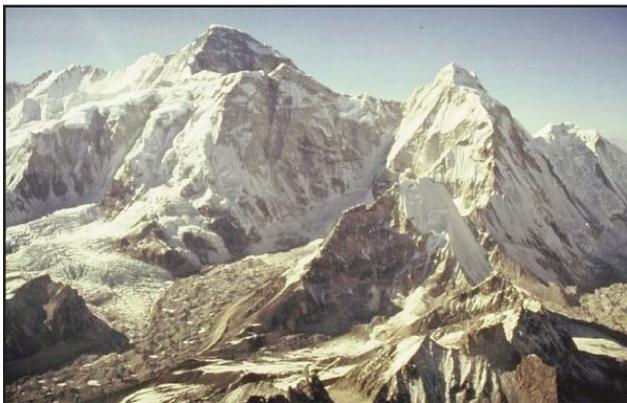
the ground is just a thin crust floating on top of melted rock or magma. (It's 4000 miles to the core and the crust is 30 miles thick.) Sometimes the melted rock erupts as lava through holes in the crust and those are volcanoes. You've seen pictures of volcanoes erupting, right? Well, back about the time of the dinosaurs, all the continents of the earth



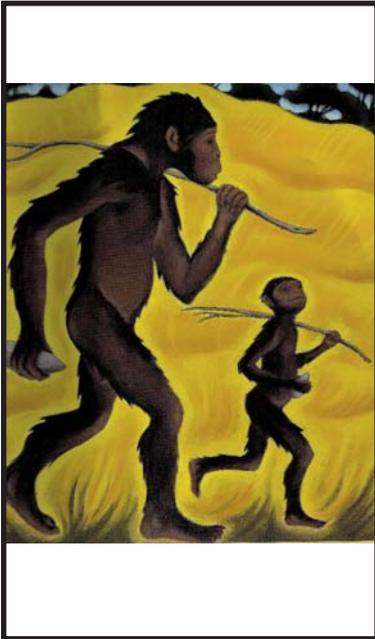
were all together, in a super land mass called Pangaea. But the crust is thin and the lava is boiling and the gigantic land mass started being moved around and the continents separated. You can look at a globe and see how the Americas fit with Europe and Africa like a puzzle.



All the continents are still moving, they move about as slowly as your fingernails grow. And when they move suddenly, we feel that as an earthquake, that's right.

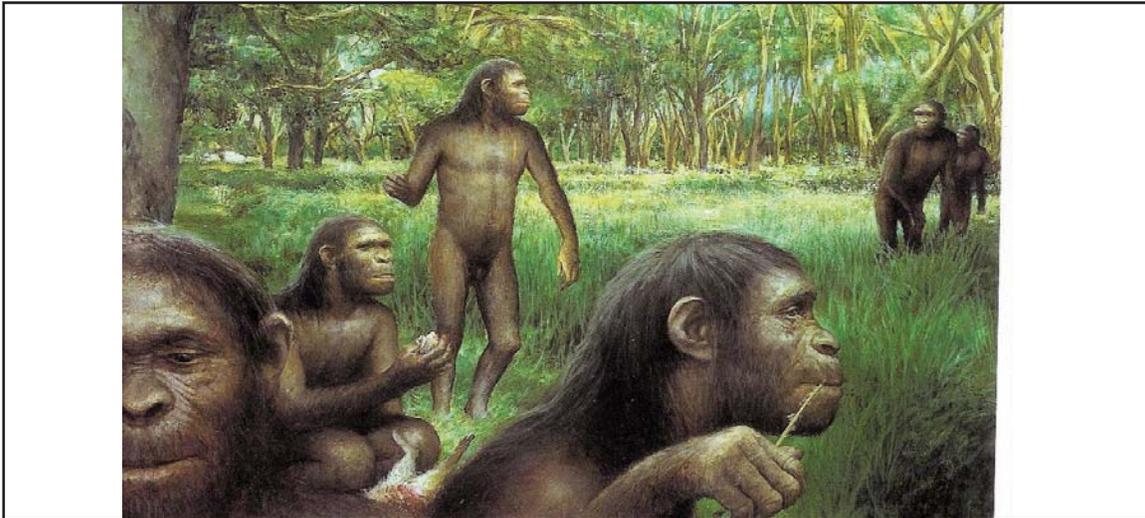


About 4 million years ago, the India subcontinent floated up to Asia and when they smacked into each other, India squished under Asia, pushing up the highest mountains in the world, the Himalayas. Tibet and the world's tallest mountain, Mt. Everest, are there at the high, squished place.



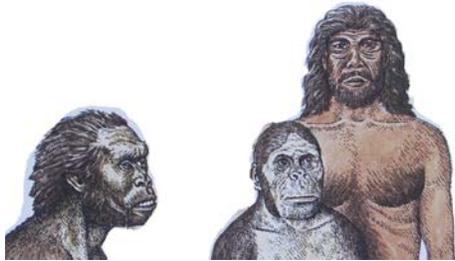
These super-high mountains changed the way the wind was blowing all the way to Africa, where all of these smart monkeys were living in the jungle. The jungles got less rain and the great grass plains or savannah of Africa formed. No longer could the monkeys just hang around all day and eat tons of food that was everywhere. One group of primates started looking for something to eat. They stood up on two feet (“bipedal”) and wandered into and across the grassy areas. They developed a slightly larger brain

(about the size of a grapefruit). The ones who were best at standing up and looking out and walking further upright didn’t get eaten by lions and tigers as much as the ones who staid on all fours, and so in Southern and



Eastern Africa the upright apes flourished. They are known as *Australopithecus* (*Australis* is Latin for "of the south", and the Greek *pithekos* means "ape") and the first fossil was found and named after a Beatles song, “Lucy”.

Then about a million and a half years ago, with the hands freed from regular duties in walking along, the brain size increased again and these smarter primates began to make stone tools to get inside of bones for the very nutritious core. These primates are called *homo habilis*, or “handyman”, the first primate to have “man” in its name. These smarter primates are the beginning of the line that are called hominids and are our great, great, great, (X100,000 or so), grand parents.



Homo Habilis *Australopithecus*
Homo Erectus

Good nutrition doesn’t just make you feel better and stronger, it really helps the brain to grow. A new synergy of intelligence was possible as the brain grew. This surge of intelligence created a new hominid about 1.7 million years ago — called *homo ergaster*



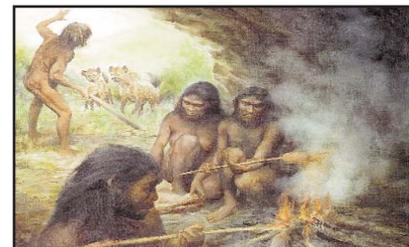
Homo Ergaster

“working man”, with a brain about twice as large as “Lucy’s”. After a couple hundred thousand years, they stood up all the time and so were called *homo erectus*, (“man upright”).

Now it wasn’t just the strong who survived and flourished, it was the smarter ones too. These hominids made better and better tools and even developed better and better sounds to help each other. Like life disperses itself in dandelions, *homo erectus* dispersed out of Africa in the first major *diaspora* of pre-humans.

For a million years the smart upright *Erectus* flourished — until new synergies called forth another jump in brain size: This new brain capacity announced the appearance of the *archaic homo sapiens*. Their bodies below the brows were almost identical ours today. They are described in today’s standards as “tall, strong, and stupid”!

They did not survive by being the biggest or strongest animal, but they flourished because, in comparison to the hominids before them, they were the smartest and the most cooperative. Because they could make tools with sounds, they developed a sophisticated



social structure, getting smarter and smarter, and finally learned how to control fire. Cooking began — and their teeth (and skull) didn't have to be as big or as strong.



About 200,000 years ago, our brain grew to be about as large as it is now and rudimentary language was born, changing *Erectus* to *Sapien* (meaning “wise”). According to DNA research, a tribe or maybe even one woman in Africa (some scientists call “Eve”), gave birth to a family that would eventually be called “the human race”. Her children looked like us and like plants and animals and pre-humans before them, these new *Homo Sapiens* made another dispersal or *diaspora* out of Africa. But we are ONE species and any differences are cosmetic and minor, like between siblings. Indeed, we are one family. Really. We are like cousins and sisters and brothers. For real. We are one family. We can presume community with everyone. This is certain.

Then, about 120,000? years ago, there were two of these proto-humans who were friends, and one of them died. Before when animal and hominid friends died, one was sad, but only for a short while, then they got another meal and made another friend and forgot about the friend that died.



That's because they didn't think with words. But when the hominid noticed his friend was dead and felt sad, suddenly, for the first time, the early-human realized that he or she would die too. For the first time, there was the thought something like, "Oh, that means I am going to die," and "My friend is dead." That hominid became human. We are the hominids that realized they are going to die and thus invented human language.

Language gave us the ability to talk about the cycles of life and death. As soon as there was language, people talked about seeds growing into living forms, forms making fruit and reproducing, and fruits falling into the ground, and another life sprouting anew.



About 100,000 years ago, people mimicked the natural cycle and started burying their friends who died, like seeds of a great fruit, and they put flowers and shells in and on the graves. Language was growing and humans spread out of Africa across the continents, hunting and wondering.

About 50,000 years ago, there was a great leap forward and our vocal mechanisms and brain pathways became almost identical to what we are today — three times bigger than the “Lucy” brain. People started making art, and imaginatively described hunting as well as the cycles of life and death. Like beginning school kids, we began counting the movements of the moon and the sun and naming the patterns of stars.



The capacity for holding images in your brain became imagination and primitive mind began to flourish. Imagine looking into the night sky, evening after evening, observing the stars and patterns. After a time, you will see how all the stars and patterns revolve around one point or one star, the Arctic (“Bear”) Star. After a few generations, we would realize that the patterns of stars rise in the night sky in yearly patterns. The old word for being-with-the-stars is *consideration*, and it is through contemplation and consideration that a new synthesis of intelligence appeared: real thinking and developed languages. People were

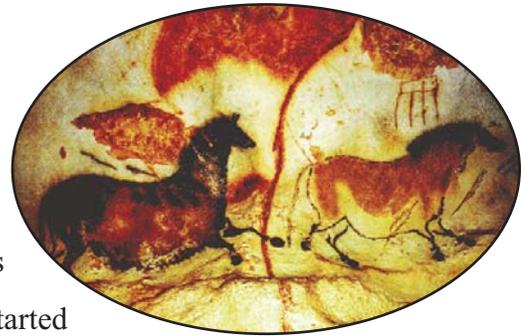
not only smart about things in their world, they started being aware of their inside feelings and thoughts. This is the time that true human culture exploded, with all the evidence of developed consideration and strong contemplation.

Humans became so good at cooperative hunting that many larger animals were hunted to extinction.

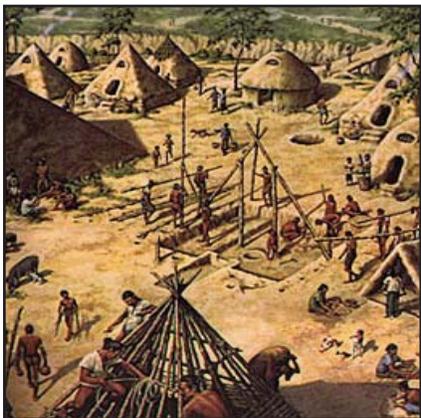
Human sensitivity to cooperation and life cycles grew until maybe 30,000 years ago, we



developed primitive horticulture in Africa, Middle East, India, and China. The Land beside and between the rivers was a garden of Eden. For almost twenty thousand years, human cultures grew and flourished, and is called the Upper Paleolithic time.



But then it happened. About thirteen thousand years ago, as the hunter/gather culture was flowering (as seen in the beautiful cave art), and the great ice sheets started to melt. This released water for great storms that overflowed the rivers, already full of melting ice. The oceans rose and flooded almost half of human habitat. Great civilizations were lost — giving rise to mythologies of a distant “golden ages”— such as Atlantis, Eden, and the Age of Gods). Golden-age and great-flood stories around the globe account for over 500 such tales in the history and mythology of people world wide.



With such quick loss of habitat, humans began to live even closer. The arts of horticulture were transformed into the science of agriculture and cooperative and stable villages formed. About 10,000 years ago in India, China, and the Middle East, what we call “civilization” was born, with specialized jobs, writing, organized leadership, and leisure and spirited learning.

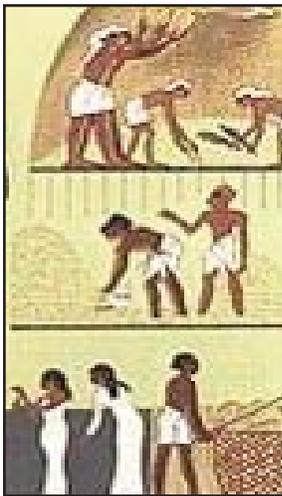


These new settlements provided a foundation for more developed stories about the Great cycle of life where death is seen within a greater Life and Light. Primitive fears began to relax as primitive wisdom grew, and people felt connected again to Life, nature, and each other. The old word for “connected” is *ligere*.



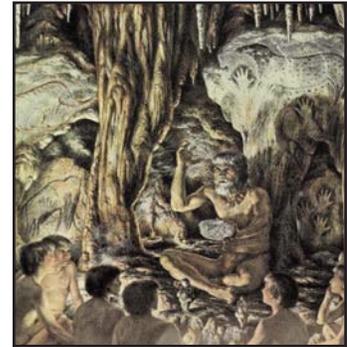
That’s where we get the word, “ligament”. Ligaments are what connect all of our bones together.

If you want to feel “connected again”, that would be *re-ligere*, and that’s what the word *re-ligion* means. This heightened capacity for connectedness enabled a new synthesis to come forth and cities and societies formed. There were places in India and China, Egypt and Mesopotamia where you would feel right at home. With nice foods, art, music, leisure, play, learning, cooperation, and celebration, these ancients were the first moderns.



Cooperative societies began to help the earth grow more food by turning the soil, fertilizing, and irrigating. Agriculture was born and villages began to form, and the great stories of pre-history were crystallized.

When the hoe and basket were the tools of food cultivating, the world was full admiration for both the feminine and masculine powers, and the Earth Goddess was worshiped everywhere. Then as the villages grew into cities, the demand for food combined with human cleverness and the plow was invented—which requires the strength of the male. In these cities, many divinities ascended rose from the earth to the sky and the masculine took the highest position.

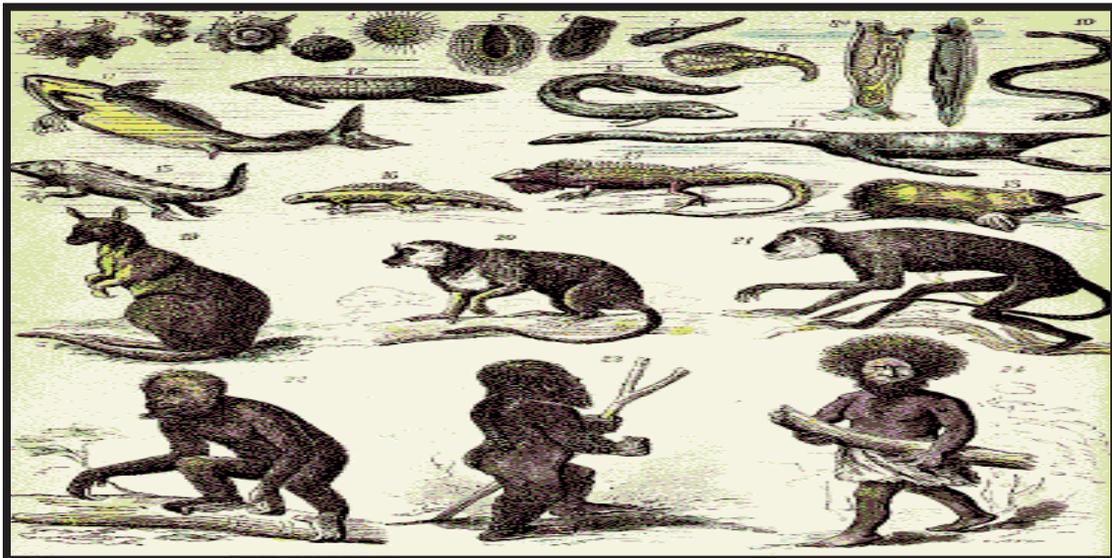




Then strong leaders guarded the food supply in special buildings so everyone could survive times when food was scarce. Those buildings became banks, and the marks used to indicate how much someone stored in the bank became writing. Regular writing began and prehistory came to an end. Writing was the greatest invention of all time. Knowledge too could be preserved, grown, and widely shared. What we call civilization was born, but civility was really there from the beginning.

You see, the words city, civilization, and civility, are in a word family with the Sanskrit word *siva*. *Siva* is the Indian name of the god of both pure awareness and death. Listen and hear how “si” can be heard in dissolve, hiss, snake, silent, and va can be found in voice, voluntary, vote, vow. Si-va. The awareness of dying is spontaneously followed by the voice of self-awareness. I die, therefore I am. Siva, civil, cities, citizen. We die, we are. The words *city* and *civilization* mean the group of people who know that they are going to die and so live with civility, honor, and care.

We are the inheritors of an unfathomable synergy and synthesis that made the stars and galaxies and countless worlds and you and me, and makes us reach out to one another. Remember, it’s a fact: humans are one community, one very big family.



Writing Possibilities

WOW. That was about 10-15 Billion years of history—as astronomers and geologists, anthropologists, and other scientists have recently tried to state it.

There is a bounty of thinking that has gone into this story and we want to make sure that we harvest all the riches we can. Therefore, make it clearer. Look up the following words and write a simple definition to further comprehension. For the salient words that are starred *, fill in the “Word Research” form to deepen understanding and empower vocabulary.

- Try it. After your word research is done (which includes the Mathematics mini-lesson on large numbers below), read through Papa’s Universe Story again. Be sure of every word and number. Imagine you are reading it to a smaller kid who is asking you to tell them what the words mean. After you Word Research, you’ll be a great teacher.
- To give your kids an appreciation of large numbers, ask them to guess when it would be if you started NOW, and counted seconds, 1, 2, 3, that you got to one million. Write every guess on the board.

Now ask for ideas on how you would go about figuring out the answer. Have everyone copy the working of the problem on the board (by you or volunteer(s)). After calculating the seconds in one day, you’re up to 86,400; anyone want to revise their guess? Once you arrive at 11.6+ days, recant the proposition. One million seconds is a little over 11 and a half days. One billion seconds is about 33 years. Ask the kids to imagine how old they’ll be in 33 years, tell them that’ll be in a billion seconds. (Also see the book, *How Much is a Million?*)

- Now read or watch Papa’s Universe Story again! Look at the back side of every page and you’ll see a place to take notes, write appreciations and understandings, AND a place to ask questions.

- A. What did you learn?
- B. What new ideas do you now understand?
- C. What is confusing?
- D. What more would you like to know?

As you go through the story again, try and write a reflection or ask a question or say what you liked about what you read or draw a picture that comes to mind on the opposite page. Share your questions, observations, and doodles with someone else. Later, report one favorite thing your partner shared with the larger group. As a class, make a list of these questions and appreciations.

- Sixth Graders can include creation stories from all the cultures they study.

Understanding all the words deepens and supercharges your learning. There are all kinds of language uses: song, talking, reading, writing, poetry, describing, persuading, and ???

One easy way to power our language is to learn about its history. We need to know the

REFLECTIONS and QUESTIONS

A. What was the first thing that came to your mind when you read this page?

B. What new ideas do you now understand? What did you learn?

C. What was confusing?

D. What more would you like to know?
