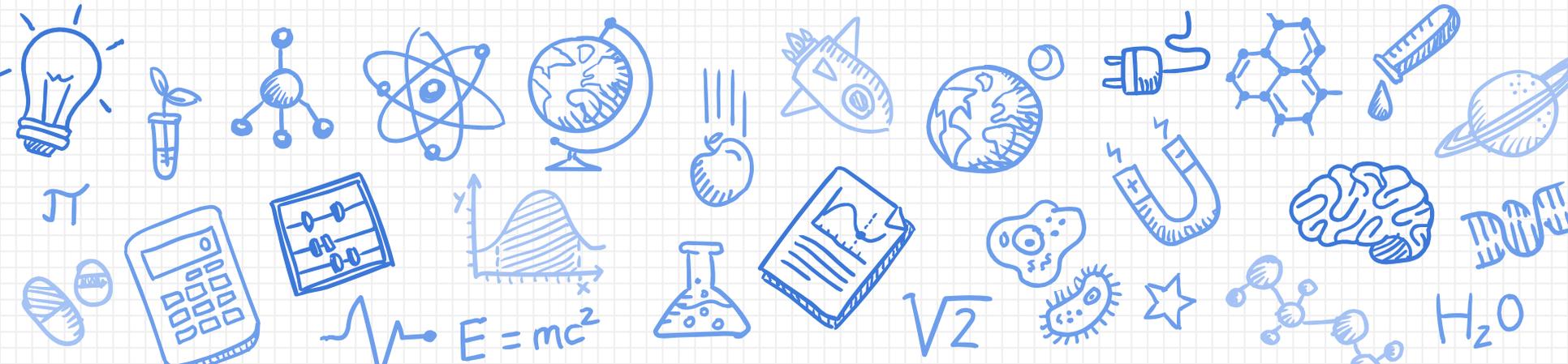


TEACHING BIG THINGS TO LITTLE PEOPLE

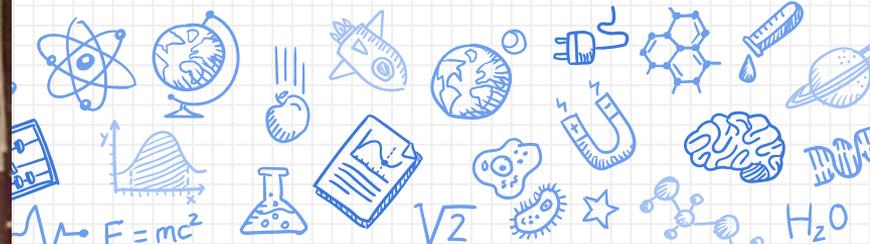
by Jennifer Georgia

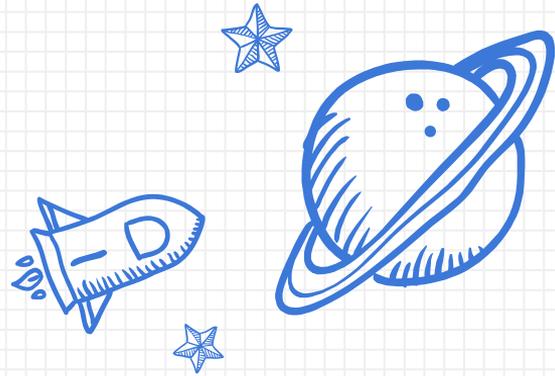


Little People



Children aren't just small adults, but have their own unique learning strengths and weaknesses.





Big Things

The bigger the better.

Jean Piaget



archivespiaget.ch

Stages of Development

- 0 -2 years - Sensorimotor stage: Gather information through 5 senses plus body movements (develop an understanding of object permanence)

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- 8 - 11 - Concrete operational: Develop the ability to think about thinking (meta-cognition)
- 12+ - Formal operational stage: able to reason abstractly, and formulate hypotheses and moral reasoning

What are the strengths and weaknesses of learners in this stage?



What are the strengths and weaknesses of learners in this stage?

Pre-operational stage:

Begin to understand symbolic meaning, cannot yet clearly see points of view outside of their own.

CURIOSITY



MEMORY



IMAGINATION





PASSION/OBSESSION

KYUREM

Boundary Pokémon

Single Form

LEGENDARY
POKÉMON



Black Kyurem



White Kyurem

TYPE: DRAGON-ICE

When the freezing energy inside Kyurem leaked out, its entire body froze. Legends say it will become whole with the help of a hero who will bring truth or ideals.

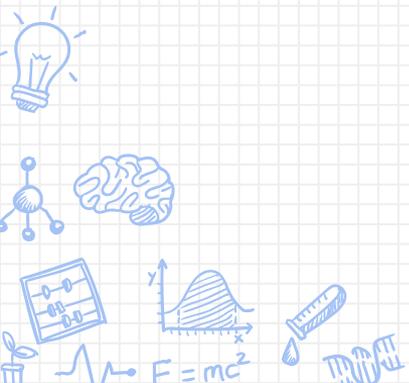
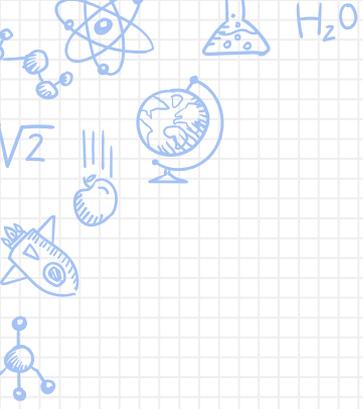
How to say it: KYOO-reeh

Height: 9' 10" Weight: 716.5 lbs.

Possible Moves: Icy Wind, Dragon Rage, Imprison, Ancient Power, Ice Beam, Dragon Breath, Slash, Scary Face, Glaciate, Dragon Pulse, Imprison, Endravor, Blizzard, Outrage, Hyper Voice

Does not evolve

VISUALIZATION



H₂O

$\sqrt{2} =$



$\sqrt{2}$ ☆

$E = mc^2$



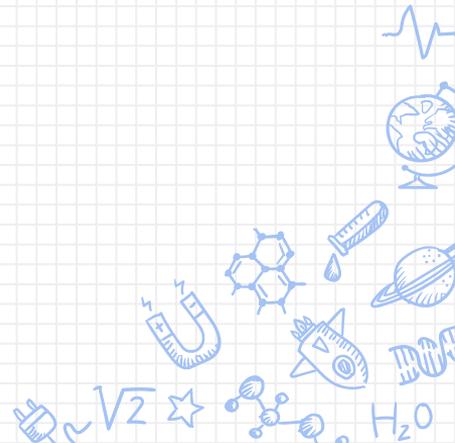


SPEAKING AND LISTENING

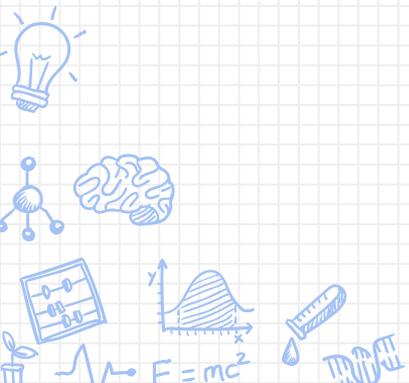
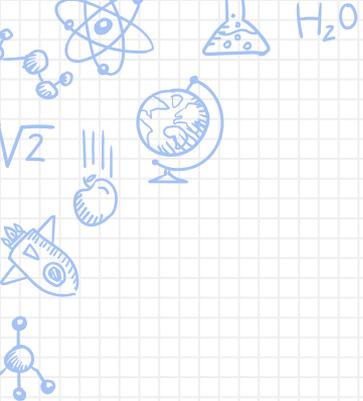


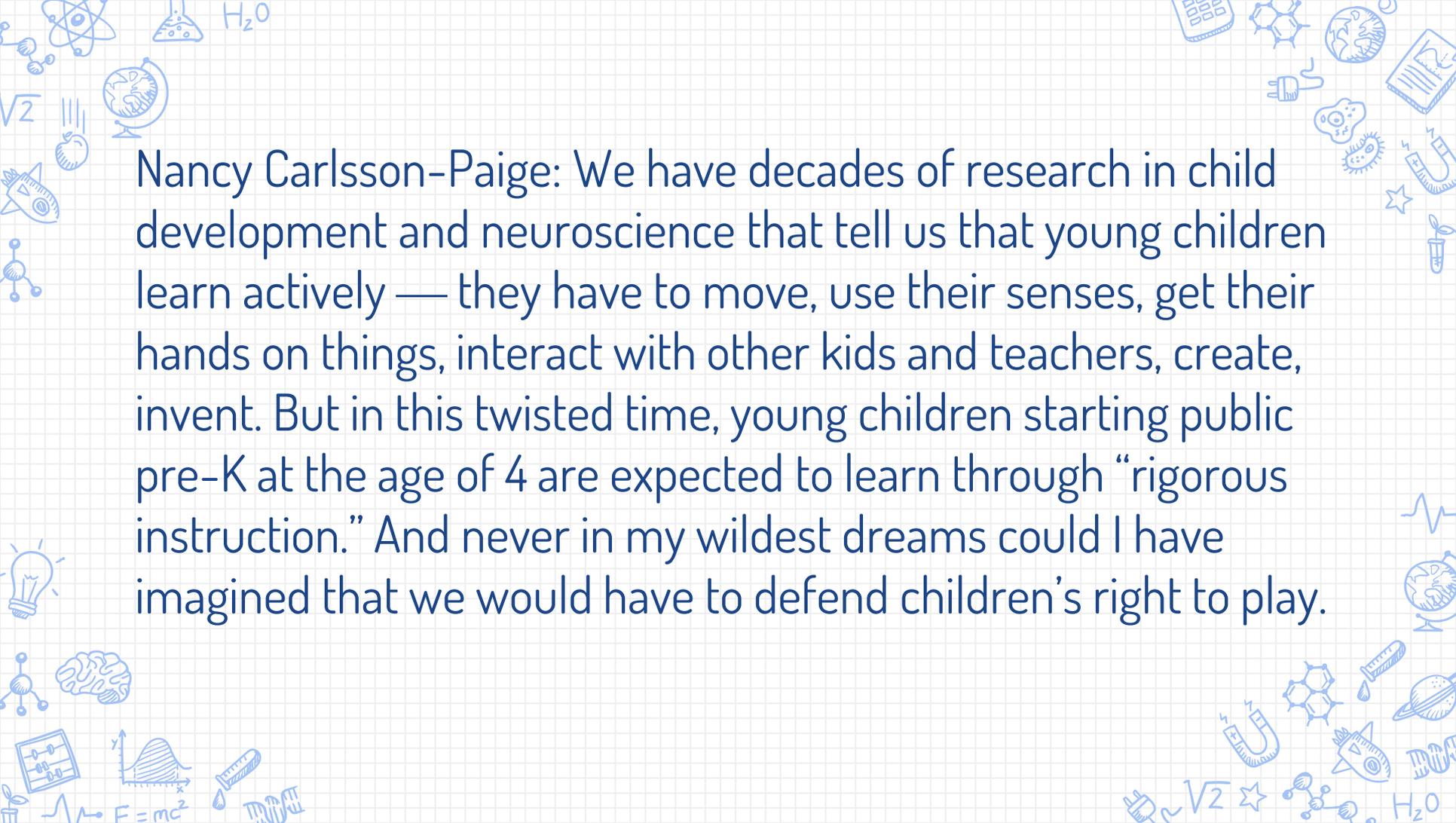


LOGIC, STRATEGY, AND MATH

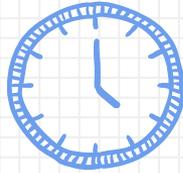


ATTENTION

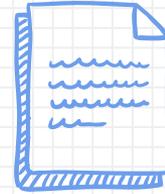




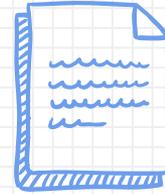
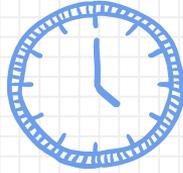
Nancy Carlsson-Paige: We have decades of research in child development and neuroscience that tell us that young children learn actively — they have to move, use their senses, get their hands on things, interact with other kids and teachers, create, invent. But in this twisted time, young children starting public pre-K at the age of 4 are expected to learn through “rigorous instruction.” And never in my wildest dreams could I have imagined that we would have to defend children’s right to play.



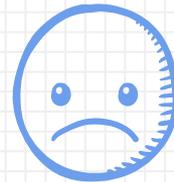
How do we kill a
child's interest?

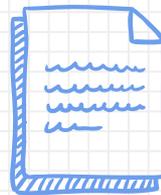
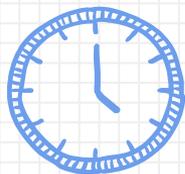


How do we kill a
child's interest?

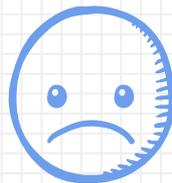
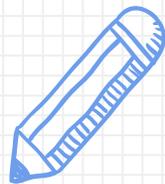


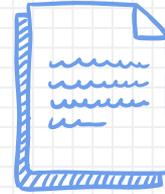
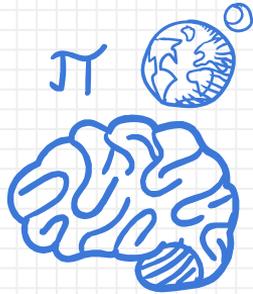
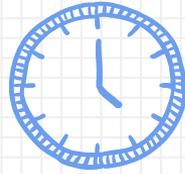
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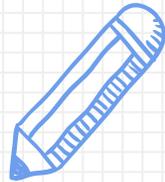


How do we kill a
child's interest?





How do we kill a
child's interest?



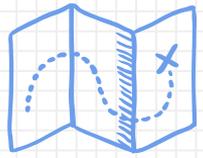


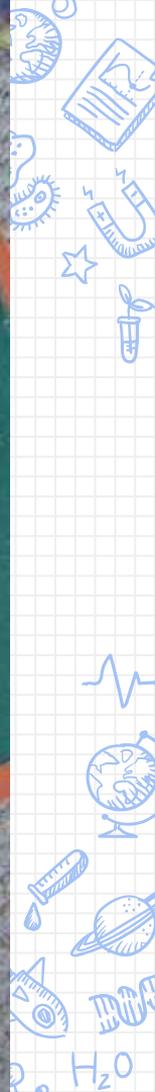


How do we enhance
interest and support
learning (scaffold)?

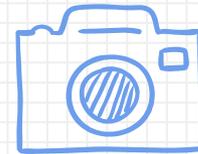
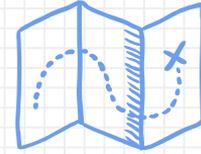


How do we enhance
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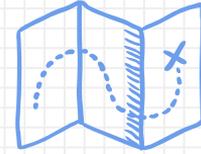


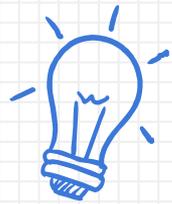


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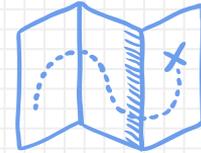
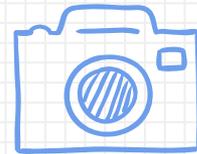


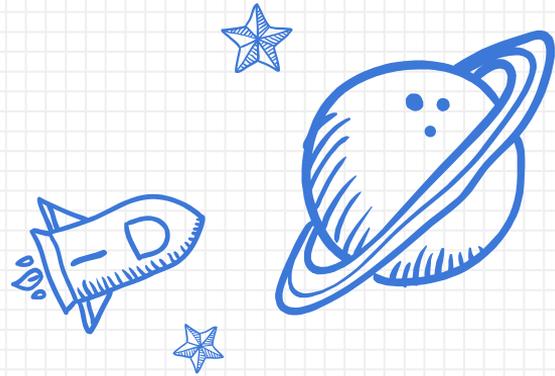
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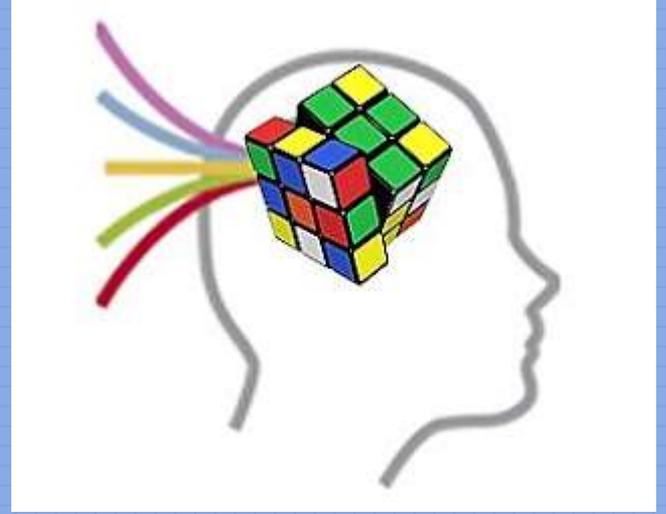




Big Things

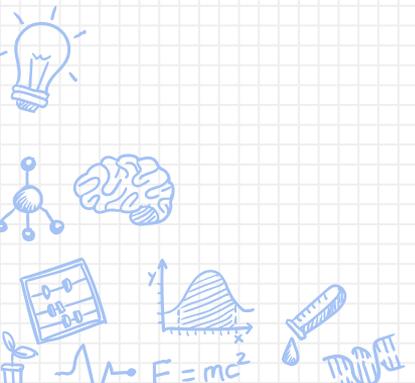
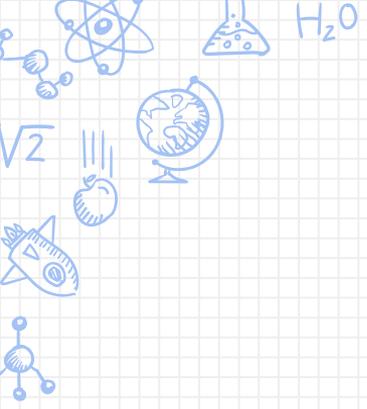
Ideas filled with Wonder

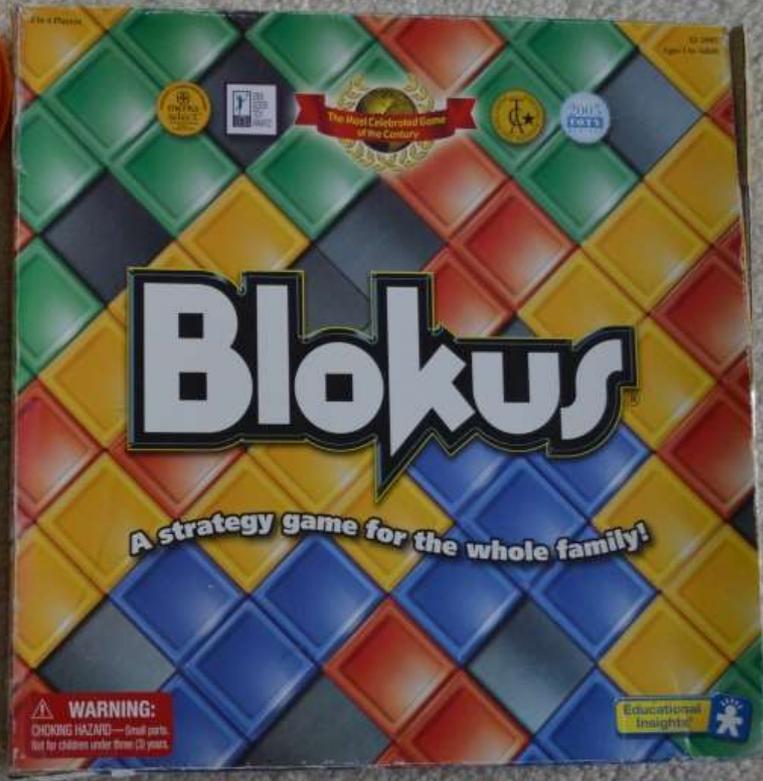
Meet your new BFF, Math

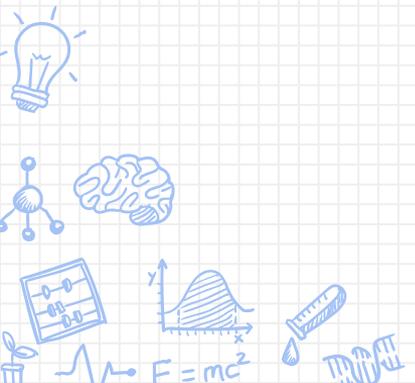
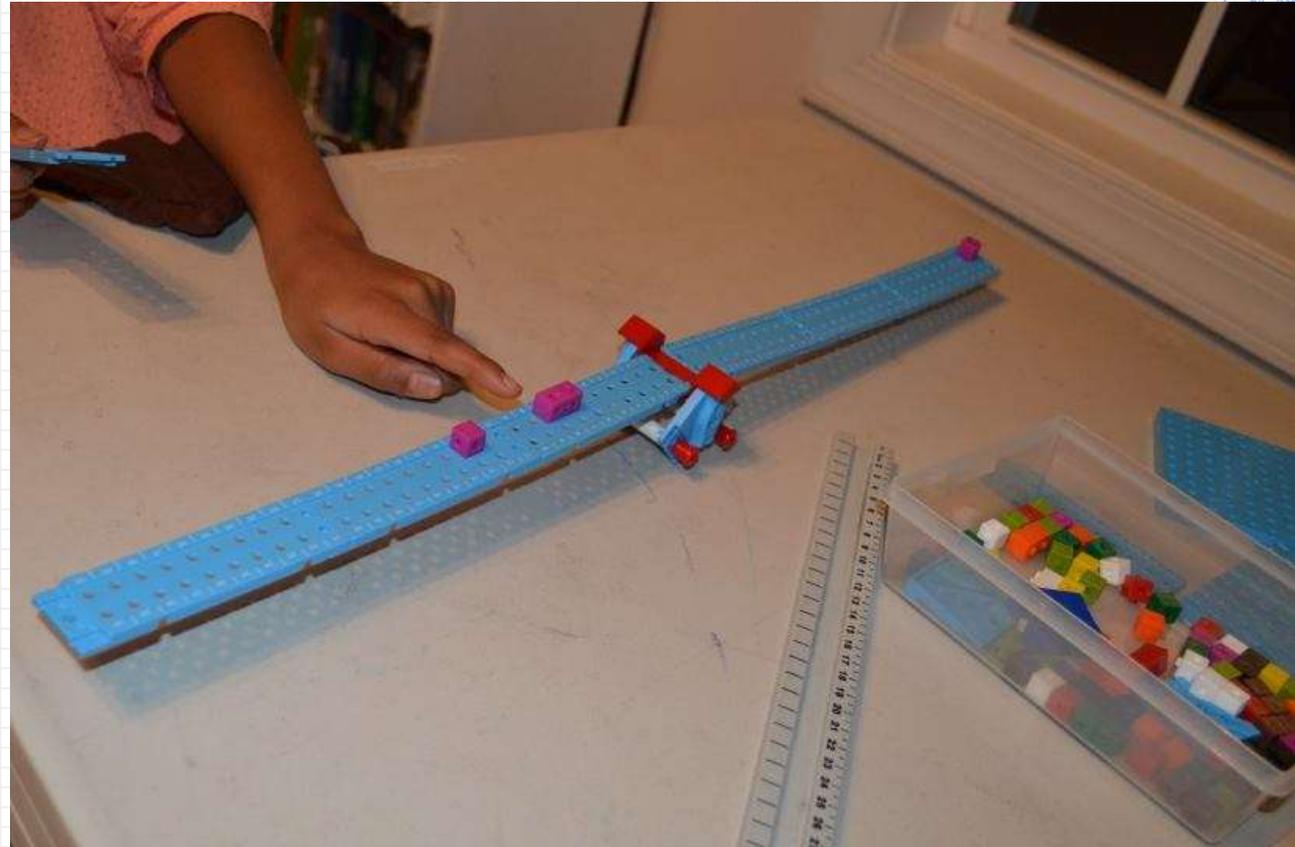
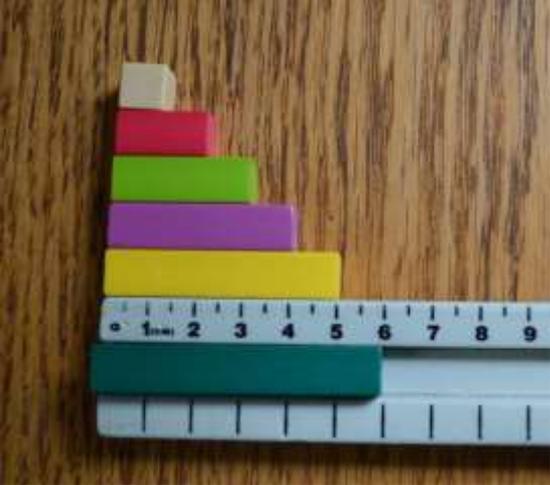


Logic
and

Visual-spatial processing

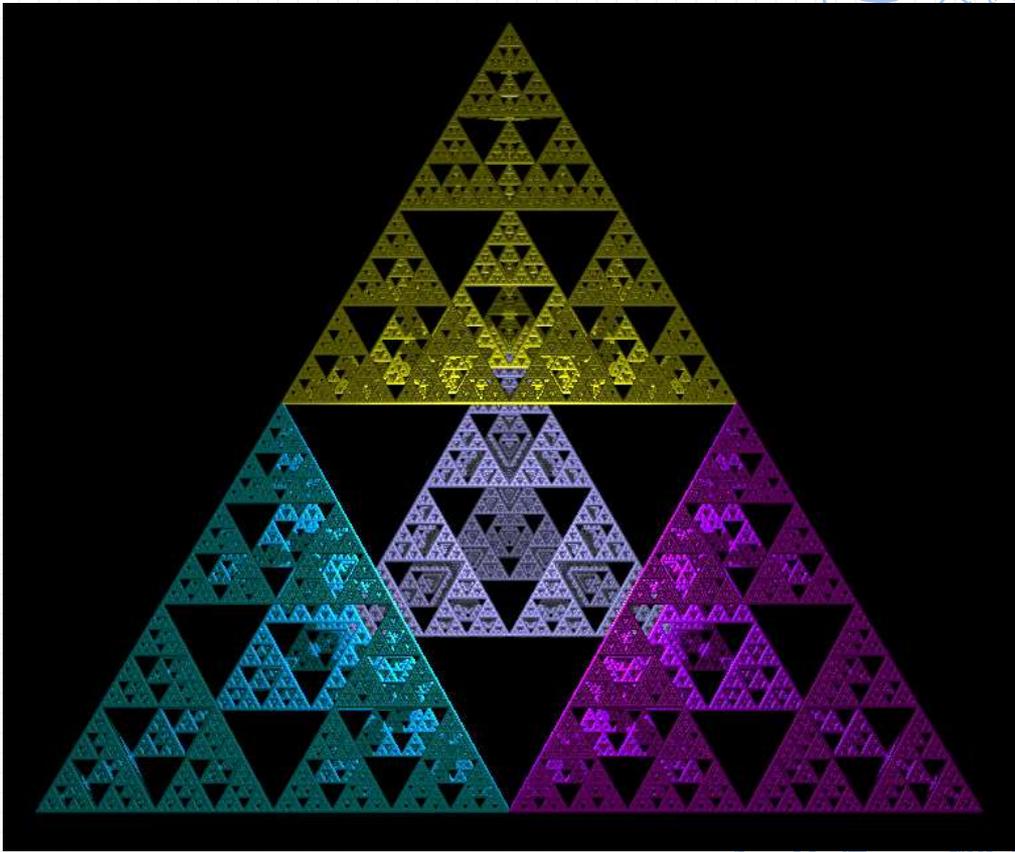
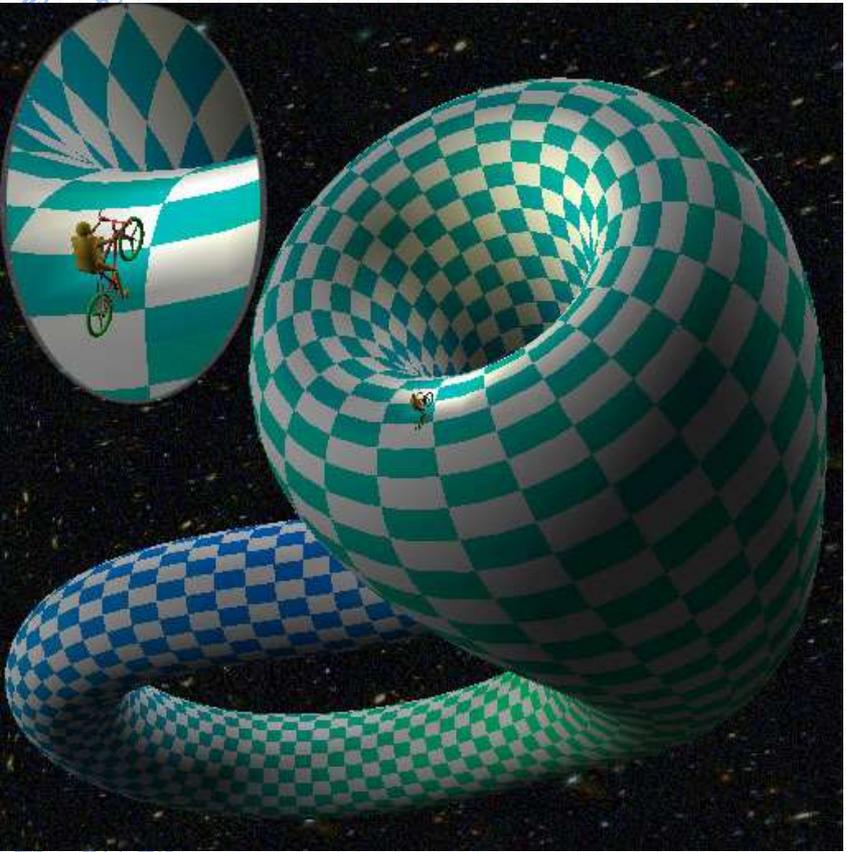






I ran out of time while doing this class because of technical difficulties getting the PowerPoint going. So I'm adding a few slides to this that have more details about each topic—things I was going to say about them.

There is a demand for mathematicians for the same reason that there is a demand for chemists: unanswered questions. Chemists may come up with a cure for cancer, but mathematicians may come up with a way to ... teleport from one place to another, provide defense against alien attacks, you name it. But even these quests are too practical for the pure mathematicians, who are trying to discover the nature of the universe as revealed in the patterns of mathematics: pi, prime numbers, etc. Mathematicians themselves are amazed at the fact that, sitting at a desk doing math, they can and do predict things like quantum particles and black holes...and then we go out and find them in the real universe. Understanding a bit of the wonder of math yourself will allow you to break free from a view that math is about memorizing facts and formulas. Galileo said *“The Universe is a great book which ever lies before our eyes — but we cannot understand it if we do not first learn the language and grasp the symbols, in which it is written. This book is written in the mathematical language, and the symbols are triangles, circles and other geometrical figures, without whose help it is impossible to comprehend a single word of it; without which one wanders in vain through a dark labyrinth.”*



"Highly informative... [shows] Schneider's particular gift of transforming everyday experience into something magical... Highly recommended."—*New Frontier*

A Beginner's Guide to Constructing the Universe

THE MATHEMATICAL
ARCHETYPES OF NATURE,
ART, AND SCIENCE

A VOYAGE FROM 1 TO 10

MICHAEL S. SCHNEIDER



Constructing The Universe: A Journey From 1 to 12

Michael S. Schneider



Introduction



First Principles
1 & 2



Numbers of
Structure
3, 4, 6, 8, 12



Numbers of Life
5 & 10



Numbers of
Mystery
7, 9, 11

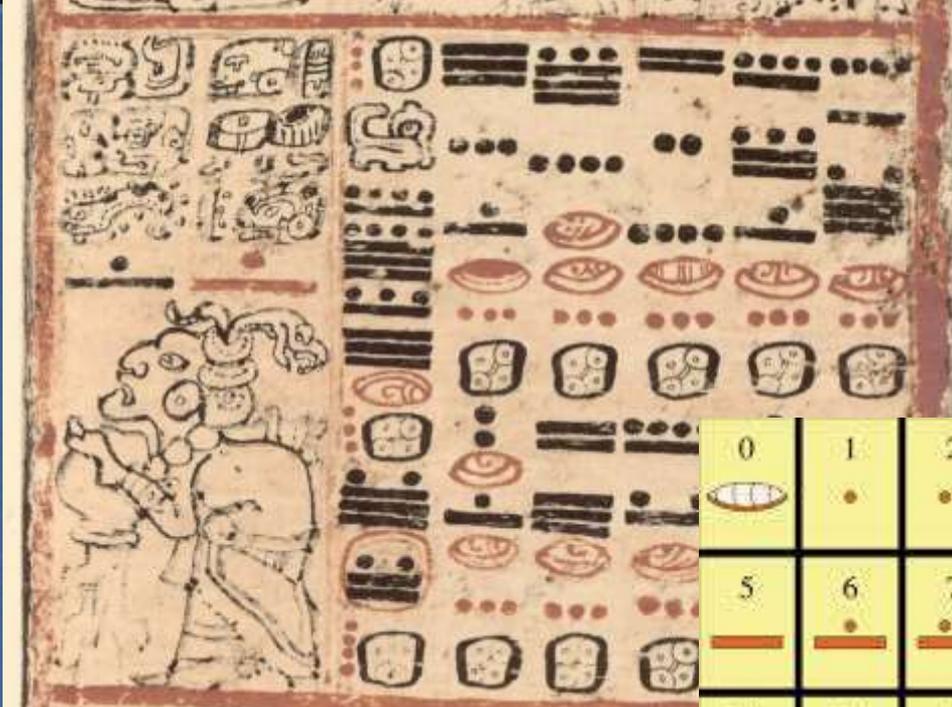


www.constructingtheuniverse.com

WRITTEN AND ILLUSTRATED BY
Leonard Everett Fisher

NUMBER ART

Thirteen 1 2 3s
from around
the world



| | | | | |
|----|----|----|-----|------|
| 0 | 1 | 2 | 3 | 4 |
| | • | •• | ••• | •••• |
| 5 | 6 | 7 | 8 | 9 |
| | | | | |
| 10 | 11 | 12 | 13 | 14 |
| | | | | |
| 15 | 16 | 17 | 18 | 19 |
| | | | | |
| 20 | 21 | 22 | 23 | 24 |
| • | • | • | • | • |
| | • | •• | ••• | •••• |

Meet Mr. History and Mrs. Herstory

I know someone who is very intelligent, a homeschooling mom, who says she hates history--always has. This colors her perception of the place of history study in her home. It's sad--her introduction was probably a poor one. One thing is essential--begin with real stories. The stories that children hear strongly influences their belief that they can affect the world around them in good and positive ways. They are empowering. They fill up their toolbox with choices of how to act and what to do when facing problems.

The most important story to begin with is your own family history. It could possibly be because I'm a family history consultant in my ward, but I feel that when a child knows a bit about his family history, it primes the pump for the study of all history. Also, it has been shown that Children who know more about their family stories are better set up to succeed in life. They can bounce back from tragedies better. So put the FamilyTree app on your phone, and when you're waiting in a doctor's office or something, pull it out and read some stories to your kids. Play the games that are on there now--lots of cool new stuff.

The second best way to begin to study history is to begin where you're standing. Find out about your local history going back in time decades, centuries, and maybe even millenia. Visit antique shops and old buildings. Talk to some of the old timers who live near you. Stop in at your county historical library or records office and ask for a tour (OK, that's not one I'd take my 6 year-old on, but yes my 8 year-old). There is TONS of local history available to us if we look for it.

Another approach is to begin at the beginning, and go chronological and world-wide. This year is the first year I've been able to homeschool my new kids who were recently adopted from foster care. I decided that, though the oldest was going into 6th grade, we'd start at the beginning of SWB's Story of the World--Ancient History. I love how she puts a story-ish feeling into her writing, and often includes real stories from all over the world, like the Anansi the Spider folktales from Nigeria (where my kids' grandfather is from--which made them proud).









H₂O

V₂

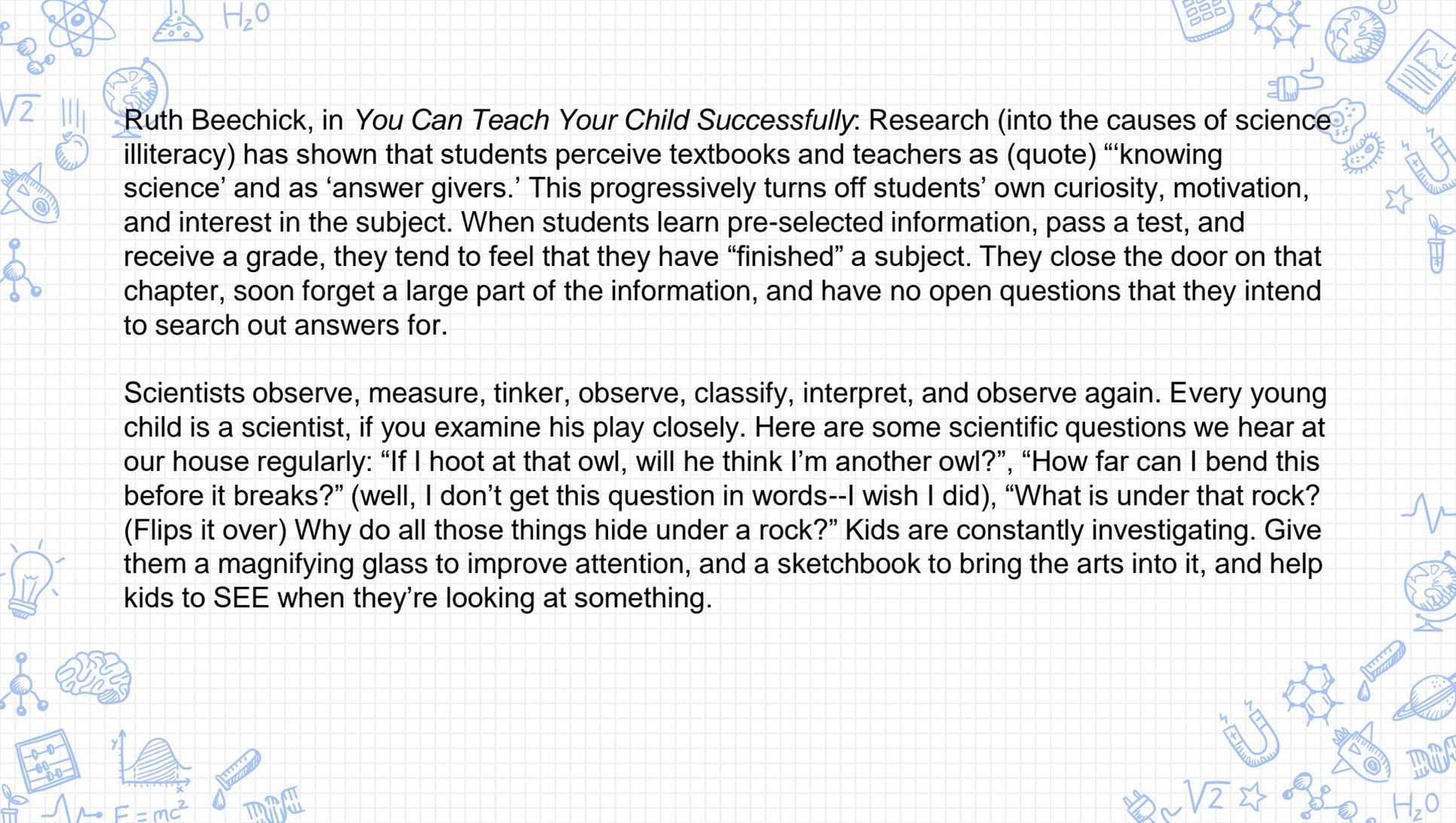
$E = mc^2$

DOCT

V₂

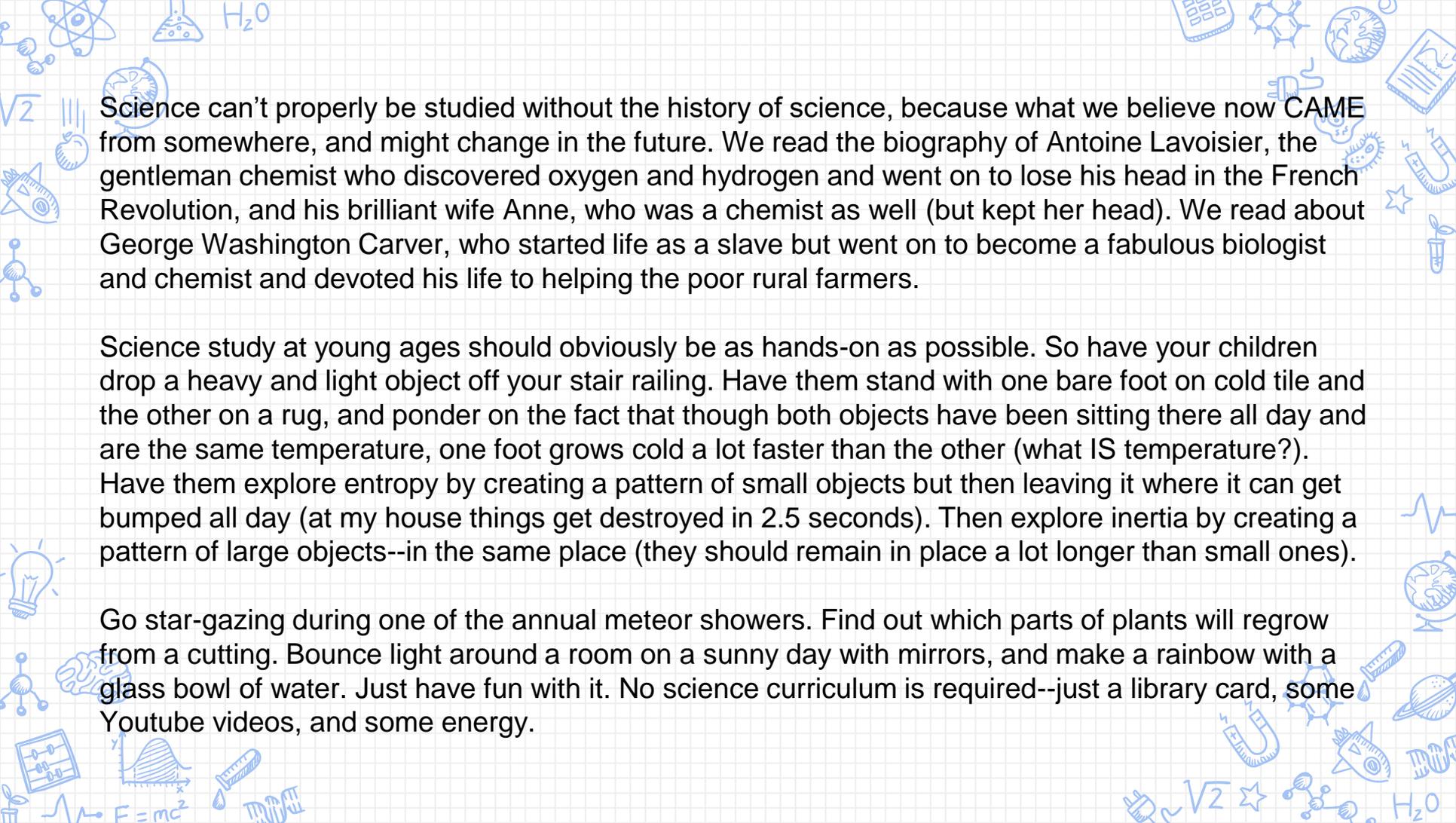
H₂O

Shake hands with Science



Ruth Beechick, in *You Can Teach Your Child Successfully: Research* (into the causes of science illiteracy) has shown that students perceive textbooks and teachers as (quote) “‘knowing science’ and as ‘answer givers.’ This progressively turns off students’ own curiosity, motivation, and interest in the subject. When students learn pre-selected information, pass a test, and receive a grade, they tend to feel that they have “finished” a subject. They close the door on that chapter, soon forget a large part of the information, and have no open questions that they intend to search out answers for.

Scientists observe, measure, tinker, observe, classify, interpret, and observe again. Every young child is a scientist, if you examine his play closely. Here are some scientific questions we hear at our house regularly: “If I hoot at that owl, will he think I’m another owl?”, “How far can I bend this before it breaks?” (well, I don’t get this question in words--I wish I did), “What is under that rock? (Flips it over) Why do all those things hide under a rock?” Kids are constantly investigating. Give them a magnifying glass to improve attention, and a sketchbook to bring the arts into it, and help kids to SEE when they’re looking at something.



Science can't properly be studied without the history of science, because what we believe now **CAME** from somewhere, and might change in the future. We read the biography of Antoine Lavoisier, the gentleman chemist who discovered oxygen and hydrogen and went on to lose his head in the French Revolution, and his brilliant wife Anne, who was a chemist as well (but kept her head). We read about George Washington Carver, who started life as a slave but went on to become a fabulous biologist and chemist and devoted his life to helping the poor rural farmers.

Science study at young ages should obviously be as hands-on as possible. So have your children drop a heavy and light object off your stair railing. Have them stand with one bare foot on cold tile and the other on a rug, and ponder on the fact that though both objects have been sitting there all day and are the same temperature, one foot grows cold a lot faster than the other (what IS temperature?). Have them explore entropy by creating a pattern of small objects but then leaving it where it can get bumped all day (at my house things get destroyed in 2.5 seconds). Then explore inertia by creating a pattern of large objects--in the same place (they should remain in place a lot longer than small ones).

Go star-gazing during one of the annual meteor showers. Find out which parts of plants will regrow from a cutting. Bounce light around a room on a sunny day with mirrors, and make a rainbow with a glass bowl of water. Just have fun with it. No science curriculum is required--just a library card, some Youtube videos, and some energy.

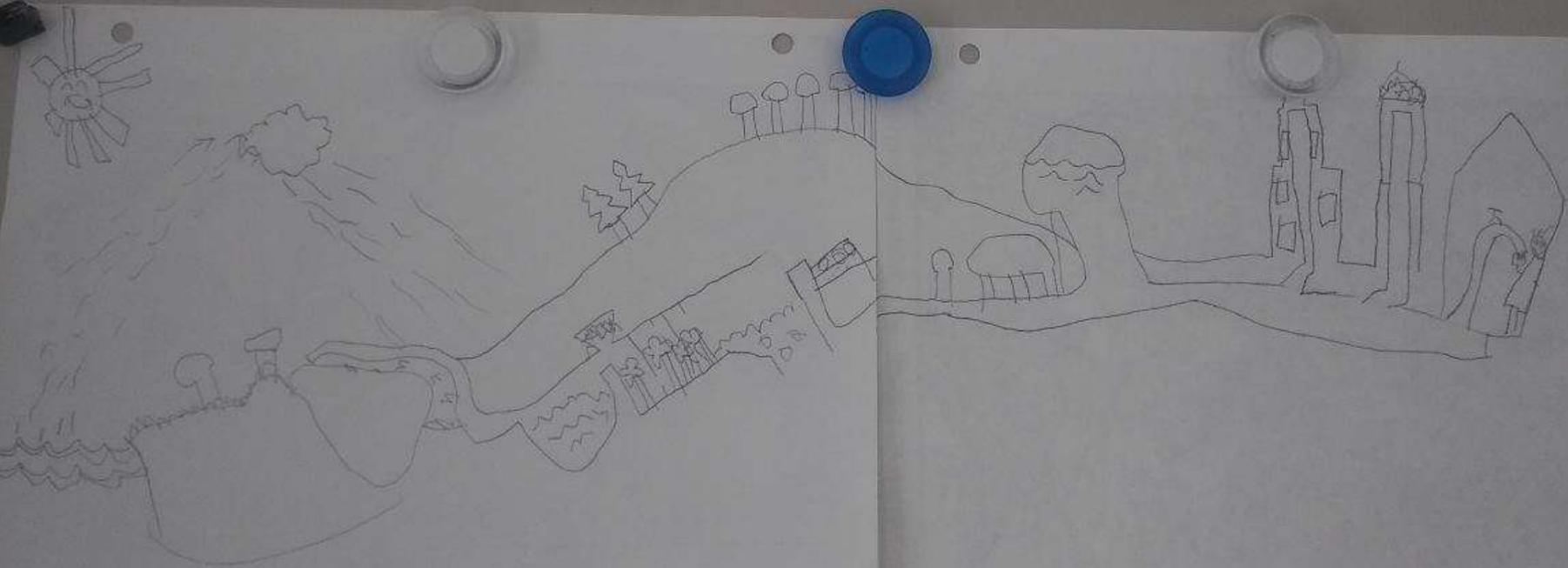


Insect circulatory systems





Heavenly Father lives and
loves His children.



Hola, Bon Jour,

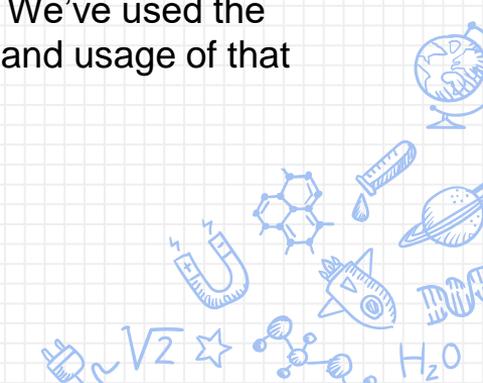


Caveat - though I am fluent in Spanish, I have not raised any children who are also fluent. They are all familiar with it and heard some Spanish from me from the time they were small, and we have books in Spanish that I read to them. Some studied it formally for a few years during their schooling. But none has been called on a Spanish-speaking mission, so their Spanish usage has never fully matured--both my missionaries have been called to English-speaking missions.

What we ARE good at is *dabbling* in languages—exposure! From the time they are small we watch videos in other languages--we can get the *Little Pim* language videos from our library. This develops the auditory processing center of the brain to be more flexible with handling speech sounds that don't occur in English.



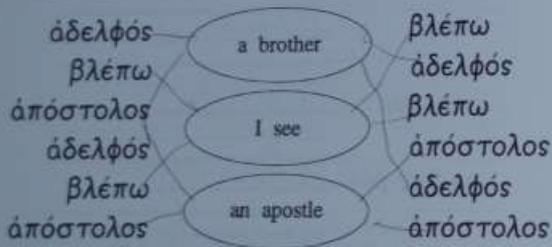
We have things like placemats for the dinner table with the Hebrew alphabet, and when we do *Come Follow Me* study one of our New Testaments is an interlinear Greek/English version. We have books of Egyptian Hieroglyphics, and they've learned to write their names in Egyptian. We've used the series *Hey Andrew, Teach Me Some Greek* to have a beginning understanding and usage of that language.



Circle the Greek words that match the word in the big box.

| | | |
|------------|---|---|
| a brother | βλέπω | <input checked="" type="checkbox"/> ἀδελφός |
| | ἀπόστολος | ἄνθρωπος |
| an apostle | <input checked="" type="checkbox"/> ἀπόστολος | βλέπω |
| | ἄνθρωπος | ἀδελφός |
| I see | ἄνθρωπος | ἀπόστολος |
| | ἀδελφός | <input checked="" type="checkbox"/> βλέπω |

Connect the Greek words to the words in the ovals that mean the same.



I practiced my flashcards today.

Write the meaning of these Greek words.

ἀπόστολος AN APOSTLE
 ἄνθρωπος A MAN
 βλέπω I SEE
 ἀδελφός A BROTHER

Draw a line from the word to what it means.

βλέπω — a brother
 ἀδελφός — I see
 ἄνθρωπος — an apostle
 ἀπόστολος — a man

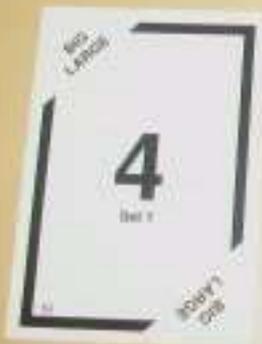
I practiced my flashcards today.

Hey, Andrew! Teach Me Some Greek!

A BIBLICAL GREEK
WORKTEXT

LEVEL 4

BY KAREN MOHS



**PRE-RUMMY ROOTS
WORD LIST**

NET 1

white -- ovis
eyes -- oculus
big legs -- crura
sheep -- ovis
year -- annus
for every -- omnia
german -- germania
light -- lucis
right -- dexter
study of -- studium
relates -- relatio
maple -- fraxinus
water -- aqua
relates -- relatio
prime -- prima
shades -- umbra
week -- septimana
sound -- sonus
study of -- studium
pub -- pubes
side -- lateralis
fore -- anterior
to see -- visio
to write -- scriptura
sided -- lateralis
sideview -- lateralis
water -- aqua
wheel -- rota
1000 -- milia



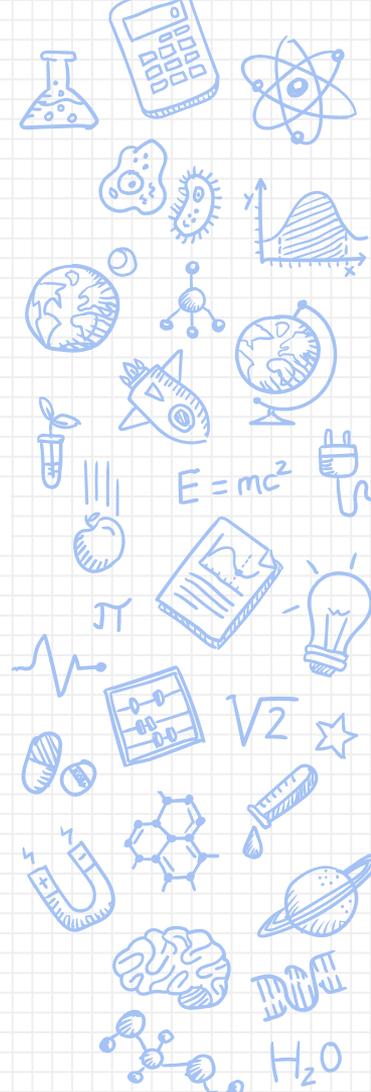
“Jesus wants me for a Sunbeam!”



I am responsible for my own learning.

“As learners, you and I are to act and be doers of the word and not simply hearers who are only acted upon. Are we agents who act and seek learning by faith, or are we waiting to be taught and acted upon? ... Learning ANYTHING by faith requires spiritual, mental, and physical exertion and not just passive reception”

Elder David A. Bednar, “Seek Learning by Faith,” *Ensign*, Sept. 2007





1- Demonstrate looking for patterns... in math, nature, words, and music.



2 - Don't attempt to introduce new topics without a few good examples, photos or video clips, or models



3 - Don't just tell me; show me and let me draw a conclusion--make the discovery myself



Sometimes they are just NOT ready for something we think they should be. Back away and trust that they will get there with a bit more brain development. Patience is a virtue.



The goal: To help your child be “caught” by learning