

Teaching STEM With Comics

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Creator of *Stinky Cecil*,
Creative Director Schulz Studio

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Math teacher, creator of
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Moderator

Tracy Edmunds, M.A.Ed.

Teacher and education consultant





Science • Technology • Engineering • Math



Science • Technology • Engineering • Art • Math

STEM to STEAM

- A = Art & Design
- Creativity & Innovation
- Communication
- Visual culture

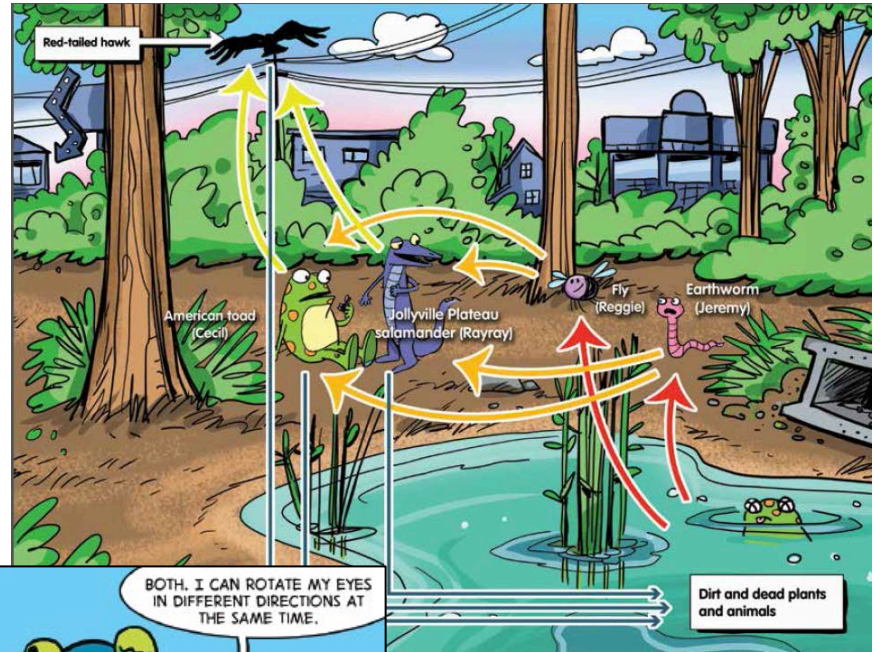


Why Comics?

- Text & images work together
- Visualization of concepts and vocabulary
- Large amount of information in a short time
- Reader controls the pace
- Sequence
- Levels of meaning

STINKY CECIL

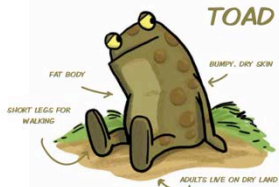
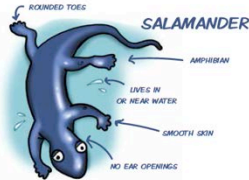
Paige Braddock: Creator of *Stinky Cecil*,
Creative Director Schulz Studio



WHAT'S THE DIFFERENCE?

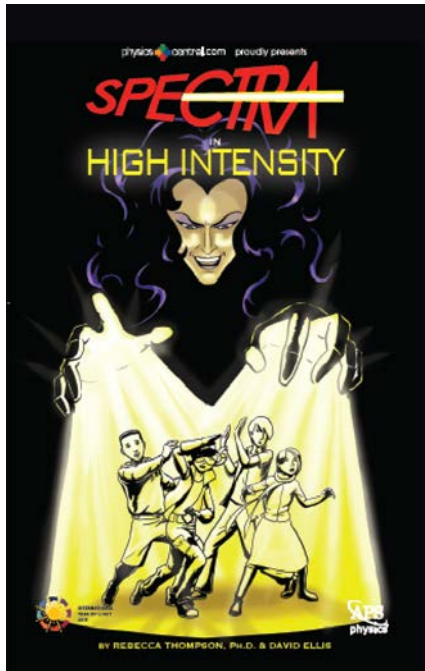
FROGS AND TOADS ARE BOTH COLD-BLOODED AMPHIBIANS THAT LAY EGGS IN WATER AND GO THROUGH THE TADPOLE STAGE.

LIZARDS AND SALAMANDERS BOTH HAVE LONG BODIES WITH TAPERING TAILS AND TWO PAIRS OF LEGS.



SPECTRA

Dr. Rebecca Thompson: Head of Public Outreach, American Physical Society



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LUINDA HENE A.K.A. SPECTRA
OUR HEROINE. SHE HYPERTECHNOLOGICALLY DEVELOPED LASER SUPERPOWERS BECAUSE THE TIME SHE SPENTED TALKING TO HER HIGH SCHOOL BOYFRIEND HAS BEEN SALES THE WORLD, AND THE WORLD, EVER SINCE. REGULAR STUDENT AND STAR WARRIOR HERO OF THE TIME, WHEN IT COMES SHE CAN TURN INTO A LASER AND SAVE THE DAY!



KAS
LEAD OUTCAST OF BARABE SAID "THE ULTRAVIOLET CATASTROPHE" AND SPECTRA'S NUMBER ONE ENEMY. HIS GREATEST ANGER IS TO DO ON TOUR WITH OUR REPUBLIC AND TAKE OUT ALL OVER THE WORLD.



RUBY
LUCY'S BEST FRIEND SINCE SHE WAS A CHILD. SHE HAS AN EYE FOR FASHION, SINCE SHE'S NOT ACADEMICALLY SHE KNOWS SHE CAN BE FOUND BEHIND THE SCENE OF HER DRESS. SHE HAS ALWAYS LOVED WORKING, PARTICULARLY ARCHITECTURE.



GORDY
HE'S A STAR ON AND OFF THE FIELD. THE STARTING QUARTERBACK FOR THE TULLA JUNIOR HIGH CHAMPIONS AND REPUTED A STUDENT. GORDY CAN ALWAYS KEEP HIS HEAD AND SOUL UP WITH A PUN.



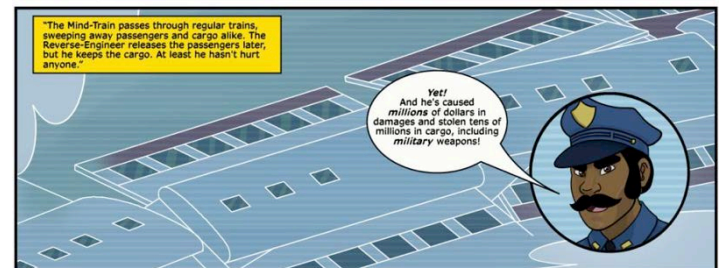
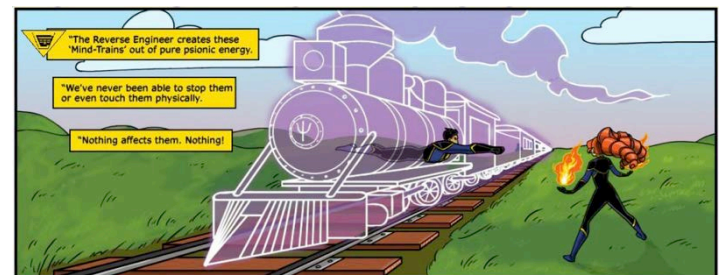
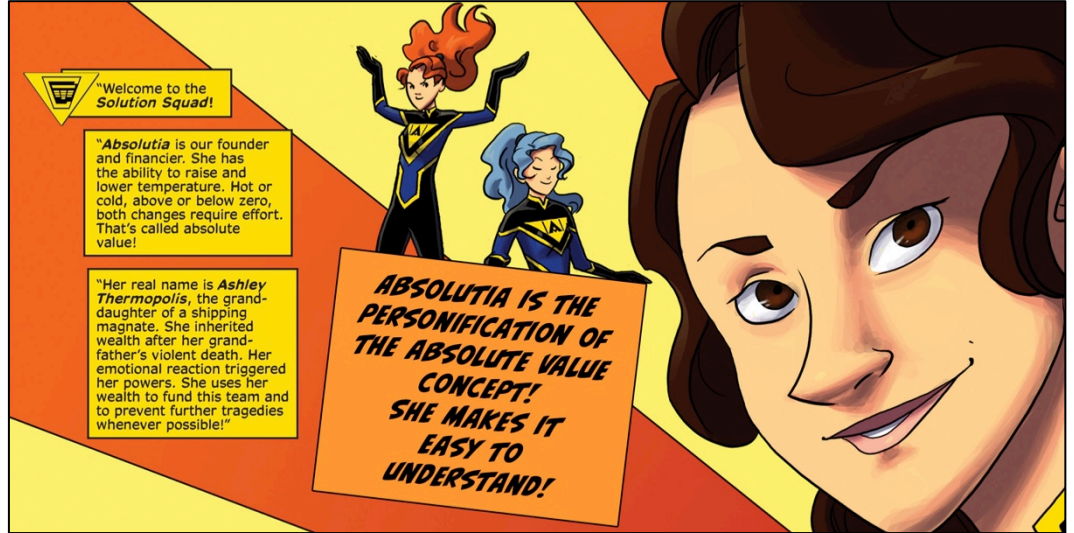
MS. PAULA BLACK
OWNER AND PROPRIETOR OF BLACK BODY REPAIR AUTO BODY SHOP. SHE IS ALSO KNOWN AS THE QUANTUM MENDACIOUS. SHE IS FANTASTIC AT FIXING A CAR AND IS ALSO LEARNING TO CONTROL HER QUANTUM MENDACIOUS POWERS. READ SPECTRA'S QUANTUM LEAP TO FIND OUT MORE ABOUT WHAT SHE CAN DO.



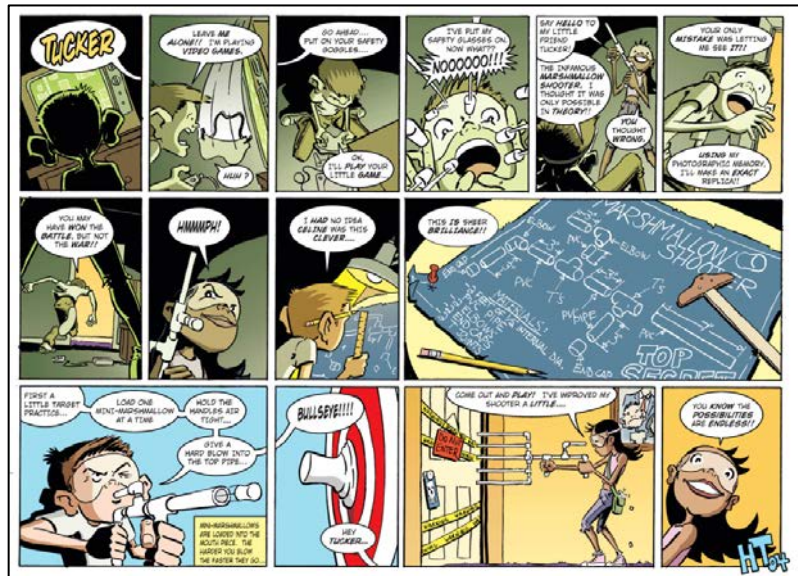
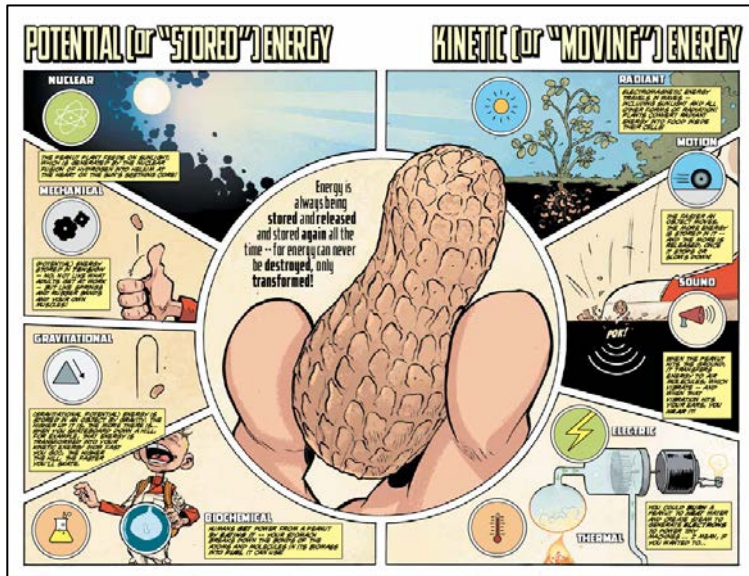
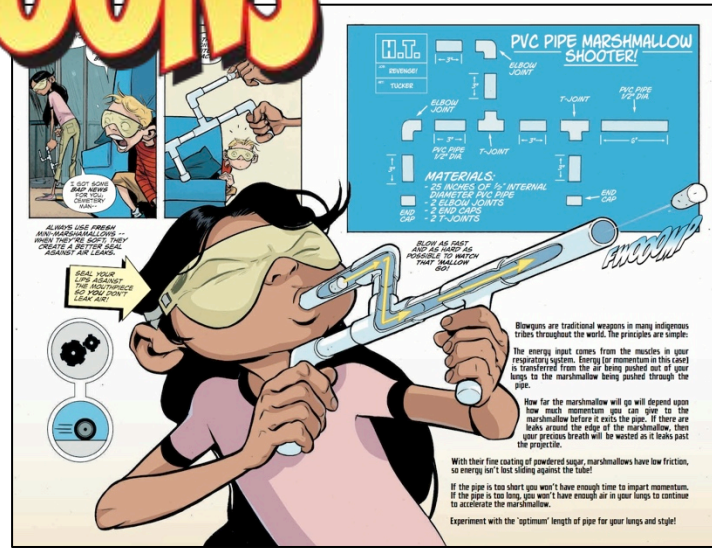
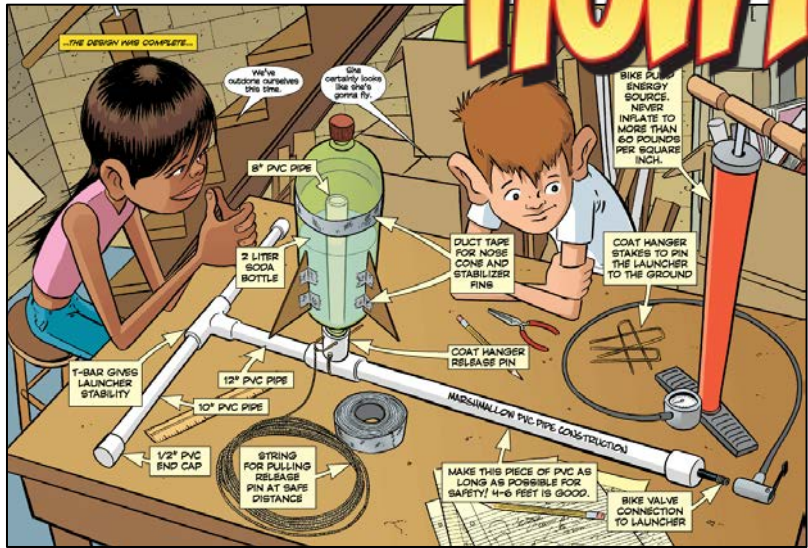
MISS ALIGNMENT
PERSONAL VILLAIN MISS ALIGNMENT BEES HERSELF AS THE SURRENDERING OF SIN. THE WORLD BEES HER BLINDLY OPPRESSIBLE, BUT SHE IS STILL DETERMINED TO KILL THE TOWN. THREATENED BY SPECTRA AND HER SAYS IN "SPECTRA'S POWER" SHE IS HAPPY ON COMING OUT ON TOP IN...

SOLUTION SQUAD™

Jim McClain
7th grade math teacher



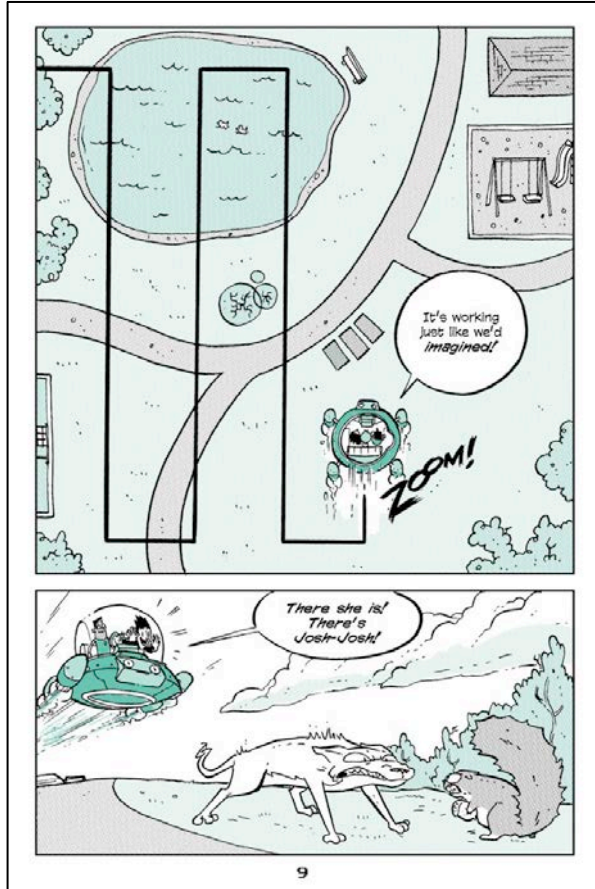
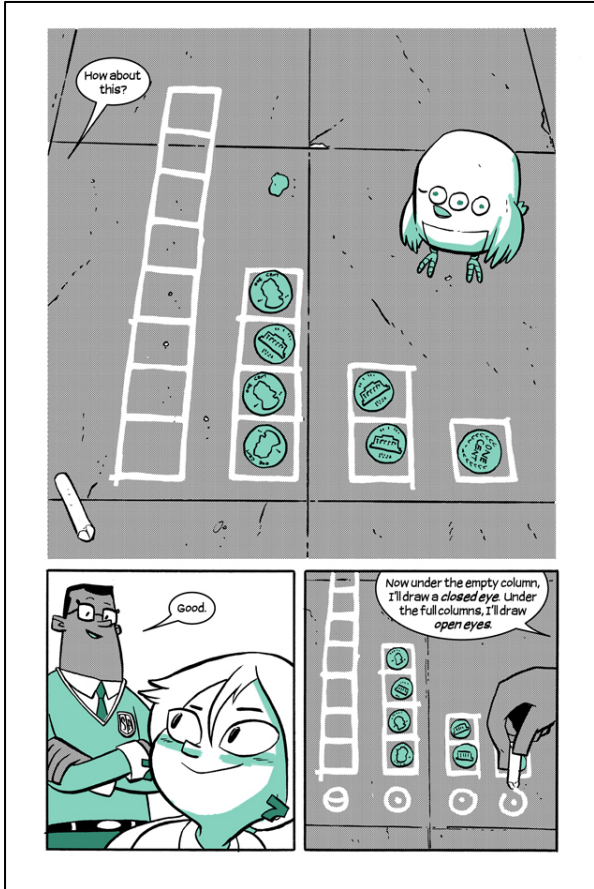
HOWTOONS



Nick Dragotta (comic artist), Dr. Saul Griffith (inventor), Ingrid Dragotta (toy designer), & Joost Bonsen (MIT Media Lab)

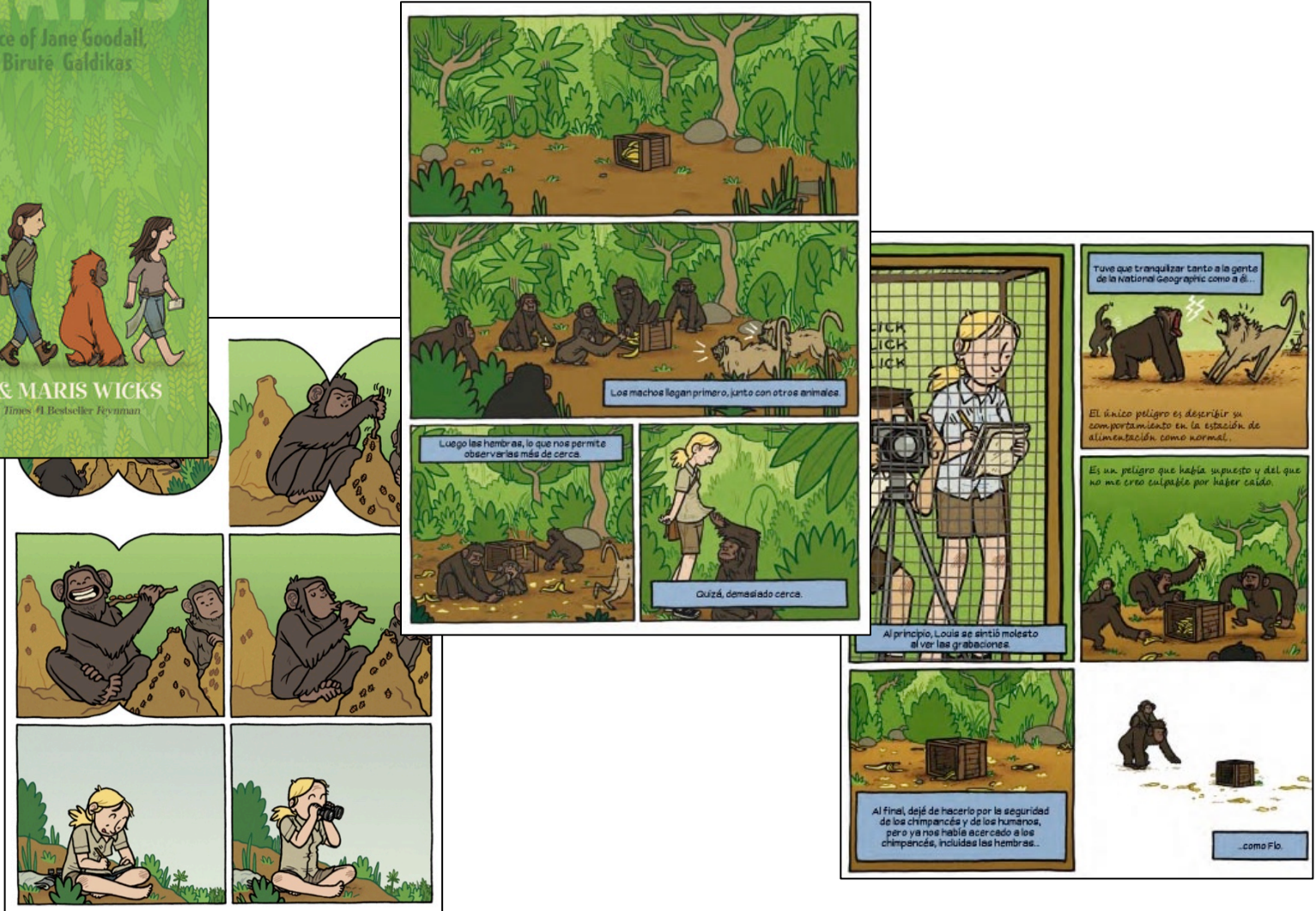
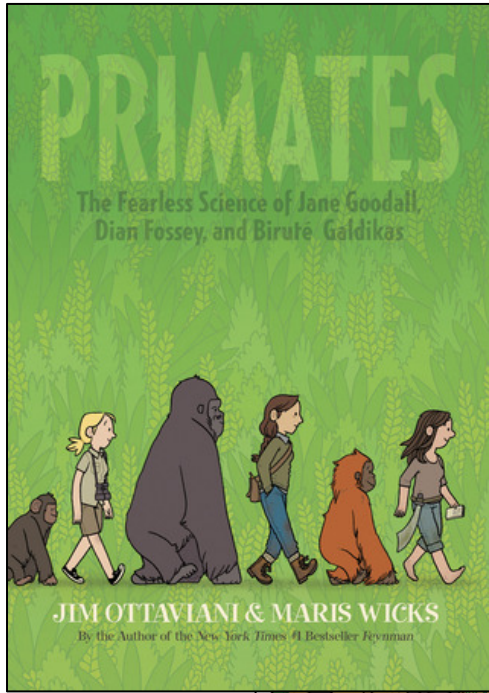
SECRET CODERS

BY GENE LUEN YANG & MIKE HOLMES



PRIMATES

Jim Ottaviani & Maris Wicks



★ GET TO KNOW YOUR UNIVERSE! ★

SCIENCE COMICS

3.8 BILLION YEARS AGO
Although the Earth is about 4.6 billion years old, this is when life really started to happen.
These cyanobacteria were some of the first living organisms, and they are still around...inside every plant today!

400 MILLION YEARS AGO
First corals appear! All that we have left of them today is fossils—and their modern-day ancestors.

65 MILLION YEARS AGO
Prehistoric aquatic reptiles and fish swim the seas as the dinosaurs end their era.

20,000 YEARS AGO
Earl... The seas don't next 20,000 years small amount of history.

I had spent my whole life seeing coral reefs only in books, on TV or in aquariums, and now I was seeing one for real.

One dive later...

Oh, right! Now I have to learn how to catch fish!

I was moved.

It takes a lot of teamwork to successfully catch a fish, plus you can't talk underwater!

But, as you practice, it gets easier.

Don't worry! Where you're going, there are no predators, plus you get top-notch healthcare!

We were very gentle, and every precaution was taken to lessen the stress on the fish, and to make them as comfortable as possible.

And over time, these dinosaurs evolved into birds.

Charles Darwin... *On the Origin of the Species*... proposed the theory of evolution.

Species diverge over the generations by offering living in different habitats which offers beneficial traits from earlier generations.

How far out was this leap?

We've been thinking of this all wrong.

We should look for volcanoes! Features in the earth's surface that ejects hot material!

Molten rock called MAGMA! Hot gases!

Volcanoes are one of the most powerful forces on earth!

Throwing hot lava into the air in powerful eruptions—

Loosening mud slides down mountainsides—

And sending out burning hot clouds of dust that wipe out everything in their path!

And where can we find these volcanoes that are going to save us?

Coral Reefs, by Maris Wicks

Dinosaurs, by MK Reed & Joe Flood

Volcanoes, by Jon Chad