

KNE Newsletter - Learning to write, Exploring space & New Horizons meets Pluto

Kids Need Enrichment

Putting the amazing, fun, and powerful world of STEM in the hands of kids

"Somewhere, something incredible is waiting to be known."

- Carl Sagan







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Weird But True

45%
of Americans
don't know
that the sun is
a star

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Learning to write

To the chagrin of our family, good writing requires more than just coming up with a brilliant idea and putting it on paper or (more often these days) in a Word document. Good writing truly is an art form and a science. How do we help our children become good writers? Like everything else, it requires practice, but how and what should we practice? These are some of the questions our family asked as we started this newsletter.

Although neither my husband nor I are trained writers, we understand that communicating ideas and information via the written word is an invaluable life skill. Good writing is critical in most professions including the world of STEM. Scientists and engineers still share their findings and discoveries with the scientific community and the rest of the world through written reports and articles.

The newsletter has been our daughters' first real experience with reviewing and editing their writing. Our 9 year old's only prior experience at school was to neatly rewrite her "sloppy copy" and make sure she put a period at the end of every sentence. Even our 12 year old has not spent any significant time improving her essays and stories. She has received feedback on her writing from her teachers, but is never given the opportunity to edit and improve her work for additional feedback.

We knew that we needed something to help us and our daughters become better writers and improve our work through the editing process. We discovered the gem, [Writing Tools](#):

[50 Essential Strategies for Every Writer](#) by Roy Peter Clark which provides ways to improve writing technique with thought provoking ideas and easy-to-do actions. We already see the improvement even though we're still working on the beginning Nuts and Bolts sections.

For example, the chapters, Activate your verbs and Be passive-aggressive, advocate writing active verbs rather than passive ones. You only use a passive verb if you have a specific reason. (If you don't know the difference between active and passive verbs, you should definitely read the book.) I intentionally used the passive voice in a sentence above. Did you notice it?

Even if you're not going to write for the KNE Newsletter and can't persuade your children to either, make time to practice writing. It could be anything - a letter, a journal, a creative story, or a report about a topic of interest. Then test out some of the strategies in Writing Tools and write to us about your experience!

Book Excerpt: Writing Tools

If you've never thought about how important the structure of writing is (we certainly hadn't), here's one of our favorite examples from the book about the power of sentence length, quoting Gary Provost:

This sentence has five words. Here are five more words. Five-word sentences are fine. But several together become monotonous. Listen to what is happening. The writing is getting boring. The sound of it drones. It's like a stuck record. The ear demands some variety. Now listen. I vary the sentence length, and I create music. Music. The writing sings. It has a pleasant rhythm, a lilt, a harmony. I use short sentences. And I use sentences of medium length. And sometimes, when I am certain the reader is rested, I will engage him with a sentence of considerable length, a sentence that burns with energy and builds with all the impetus of a crescendo, the roll of the drums, the crash of the cymbals - sounds that say listen to this, it is important.

So write with a combination of short, medium, and long sentences. Create a sound that pleases the reader's ear. Don't just write words. Write music.

We're looking for Writers!

Do you or your children have a STEM experience you want to share with others? Consider writing an article for the KNE Newsletter. To get started, just email stem@kidsneedenrichment.com.

Quick STEM: Space Favorites

[SciShow Space: New Horizons Flyby](#)
[AMNH Shelf Life: How to Time Travel to a Star](#)
[Astronomically Correct "Twinkle, Twinkle"](#)
[Neil deGrasse Tyson Mean Tweets: Pluto Edition](#)
[Scale of the Universe \(website\)](#)

Why explore space?

by Erika (age 12, [@KNEstemGirls](#))

Space can be deadly and it costs billions of dollars for equipment and technology - \$18 billion for NASA's budget in 2015 alone! So why do we do it? Curiosity? The need to learn? Fascination? I think there are many reasons why.

Since the beginning of time, people would look up at the sky and wonder 'What are those bright things?' But we have now learned that they are not just lights, but are huge balls of gas light years away. Stars are natural wonders that most people think of as beautiful and majestic. If you've never had the chance, go look through a telescope so you can see celestial objects up close. When I do, it leaves me feeling that space is really special and we need to find a way to preserve our darkened skies.

With new technology we can find out many things about the universe - like how it was formed and that it might be infinite. We know that in about 6 billion years our galaxy, the Milky Way, is going to crash into the Andromeda galaxy and combine with it which some astronomers refer to as "Milkomeda". We have learned about the Big Bang and how stars are started, but we can learn even more.

We also might find other intelligent beings. Some people believe in Martians, but if they exist, we haven't found them yet. But maybe there are other intelligent beings somewhere across the galaxy. We just don't know yet, but with recent discoveries of other Earth-like planets that orbit some of the twinkles of light, we are closer than ever.

Most importantly, we should explore space for protection. Occasionally, a meteor will hit Earth and cause lots of damage as seen in the Tunguska event in 1908. Thankfully, it happened in a remote area, but over 80 million trees were knocked over in an area the size of a metropolitan city. Next time we might not be so lucky. If we explore space we might be able to tell when a meteor is coming, where it will hit, and be able to evacuate the area. We might be able to stop it if we get some better and stronger technology!

Outer space makes up everything outside planet Earth and we are microscopic compared to the universe. We need to keep learning about space for the future - at minimum, so we can evacuate when the sun expands and consumes the Earth in a few billions years!

New Horizons meets Pluto

by Alexa (age 9, [@KNEstemGirls](#))

For 20 years, NASA has been planning and waiting

for the exciting Pluto Flyby. Launching into space on January 19, 2006 - before I was born - New Horizons took 9 years to travel 7.8 billion kilometers to get to Pluto. To put that in perspective, that is 13.3 times as far as the gas giant Jupiter, which is only 588 million kilometers away.

In July 2015 New Horizons made the closest approach to Pluto ever! NASA hopes to learn a lot about it. So far, we've discovered that Pluto has ice mountains about 3 km high, flowing ice made of nitrogen, a diameter of 2,370 km (about the size of the USA), and even has a cute "heart" on its "butt". Interestingly, Charon (1 of Pluto's moons) probably formed the same way as our moon (something struck Pluto smashing pieces off of Pluto which formed Charon).



Pluto's "Heart". Source [NASA](#)

Pluto has also generated lots of questions. For example, half of the atmosphere on Pluto has disappeared in the past 2 years, which scientists believe may be because it is moving away from the sun. Charon's surface is also smoother than we expected. It should have lots of craters because it is in the Kuiper belt, so what is making the surface so smooth? Also, Charon has a dark pole/spot (nicknamed Mordor) consisting of some unknown material.

The NASA scientists will be busy with the New Horizons data for some time. Due to the slow speed of transmitting data through space, it will take almost 16 months to just get all of the data back to earth. I can't wait to learn more about what they find out!

How can we improve?

Let us know at stem@kidsneedenrichment.com.

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