the stars challenge

Explore the Universe

Winter 2014

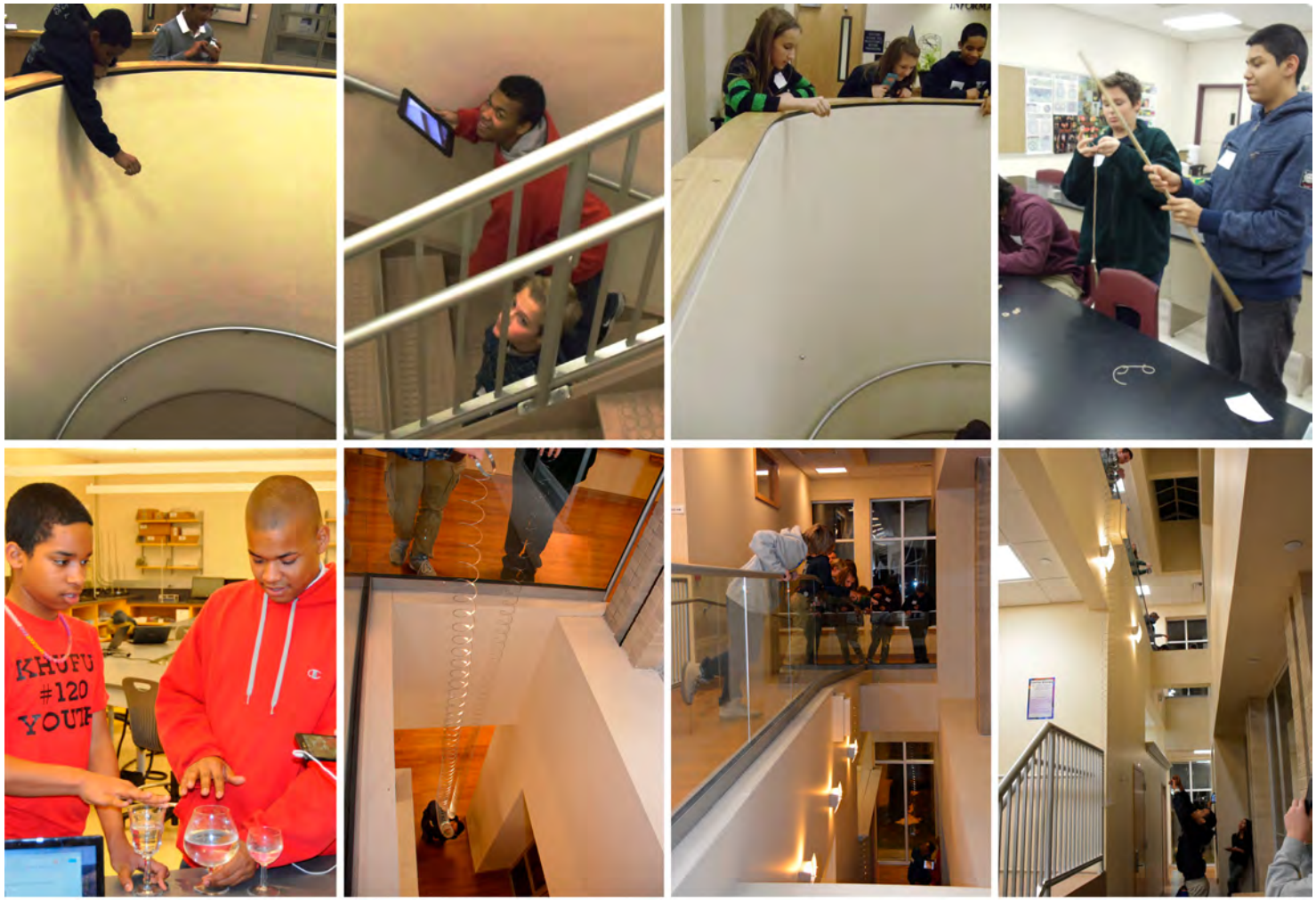
The universe is vast beyond our comprehension. Where do we fit in? How have events far away in space and time driven the evolution of life and permitted our existence? Is the Earth the only planet with life? Or is life common on worlds orbiting other stars? How can we use science and technology to begin to answer such profound questions?

We made Star Wheels and learned to identify some of the 10,000 stars visible on a clear night. We'll never get lost again, now that we know how to use the Big Dipper and Cassiopeia to find North. Some of us mastered the skills required to operate a telescope, and all of us were rewarded with views of the Moon and Jupiter that took our breath away.

Waves and light were investigated. An understanding of both is required to further our understanding of the Cosmos. We saw how cosmic collisions, when objects from space hit the Earth with devastating consequences, influenced our past and will impact our future. Finally, we used bunsen burners to simulate the most dangerous part of spaceflight, the re-entry into the Earth's atmosphere.

Look at the stars whenever you can. Exhale with wonder. Feel the shiver run down your spine as the grandeur sinks in. Smile. Curiosity about our place in the universe is part of what makes us human.

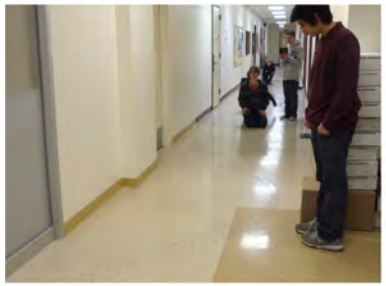
It's been a pleasure working with you.
E. Marc Coe



Gravity was investigated using the "levitating" slinky.

Even after a long day at school, we were enthusiastic and couldn't wait to get started.




The Space-time fabric helped us to see how mass distorts space, one of the central tenets of Einstein's theories.

We explored the properties of light using lenses, and manipulated focal lengths to give ourselves super-vision.

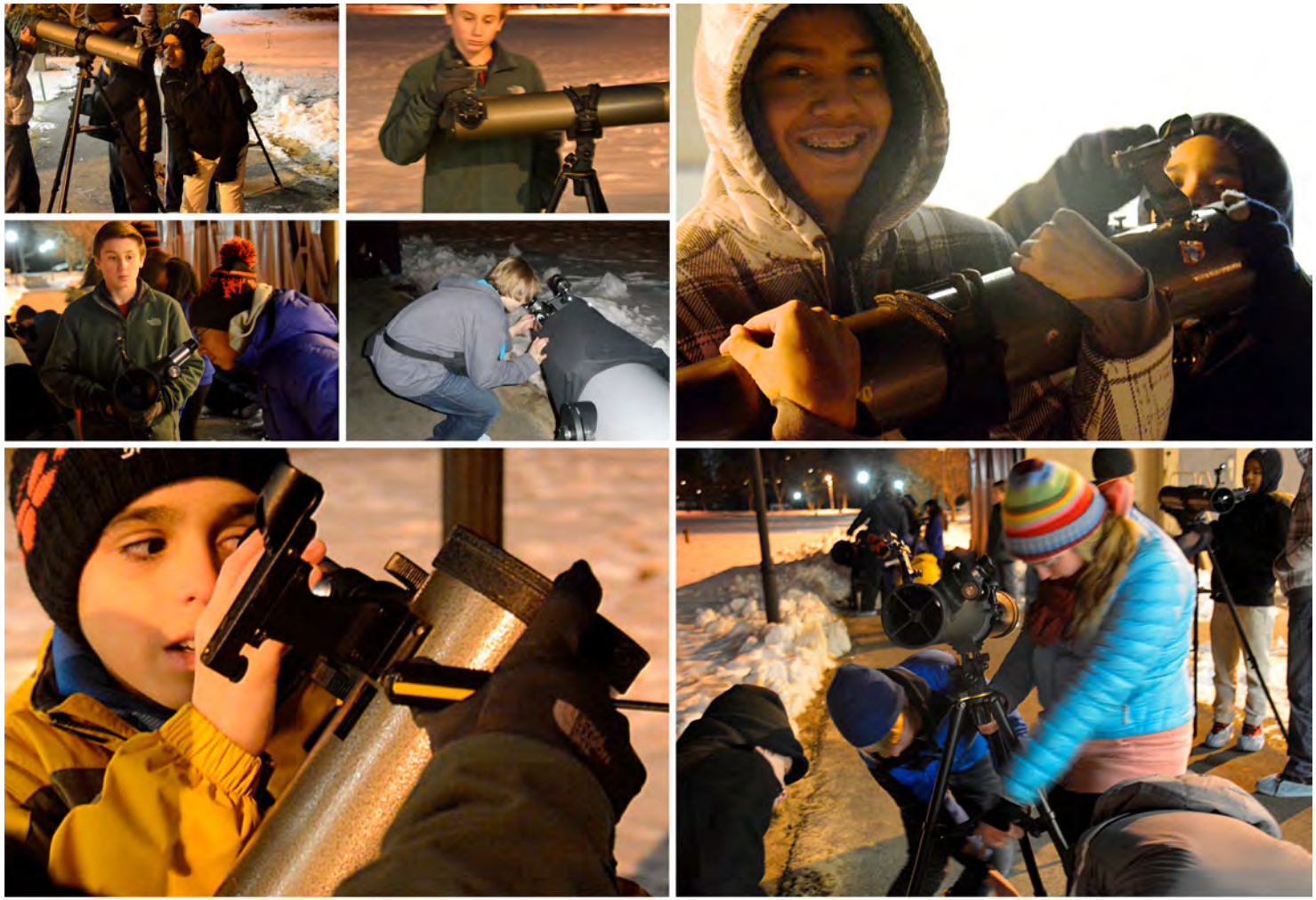
Our telescopes worked surprisingly well. All we needed were pirate costumes...

The properties of waves were demonstrated with slinkies and wine glasses.

Talking like chipmunks gave us a firsthand demonstration of what happens when the medium a wave is propagating through changes.

Mr. Linder, a telescope enthusiastic extraordinaire, showed us his homemade telescopes and described how he made them.

The weather finally cooperated and we were treated to views of the Moon that took our breath away. Or maybe it was the pesky polar vortex?



The telescopes rewarded our patience and delicate touch with astounding views of the heavens.

We constructed Star Wheels and learned our way around the night sky.

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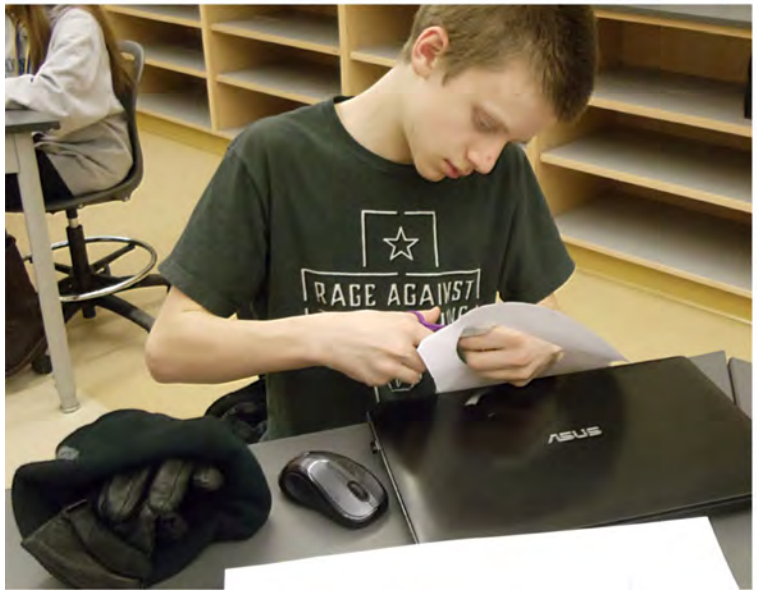
TELESCOPES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When Galileo looked through a telescope in 1609, it changed everything. We are proud to carry on his tradition.

We used Google Docs to collaborate on many activities, allowing our great minds to function as one.

We prospected other worlds for possible colonization and learned through the failed example of Biosphere 2 that keeping ecosystems functioning in sealed systems is much harder than we thought.


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