**Mark Francek's**

**November Earth Science Websites of the Week**

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**Geology and Geography**

1. 10 Things You Didn't Know About Earthquakes
2. A Wall in Washington, D.C. To Study The Performance Of Stone Subjected To Weathering
3. Latest Earthquakes Worldwide**:** Great for Student Tracking on World Map
4. New Solution to Carbon Pollution? Basalt to the Rescue
5. Michigan Farmer Stumbles on a Mammoth Skeleton

**Weather**

1. The World’s Astronomer Give a Stirring Message to Climate Conference Delegates
2. The Climate Change Pledges (2015) Are in. Will They Fix Anything?
3. NOAA Climate.gov
4. Guy Tries Eating in 125mph Winds!

**Water**

1. Hydrogeology Cartoon
2. Permeable Pavement in Action - Never Has a Truck Dumping Water On A Parking Lot Been More Interesting

**Space**

1. The Best Space Photos
2. Aurora Alive Education Program for Science behind Auroras
3. Space Weather
4. Sun Pictures: A Full Year in a Single Frame from Around the World
5. Recoating a Giant VLT Telescope Mirror

**General**

1. Army Educational Outreach Program- eCybermission
2. PBS Learning Media
3. Monitoring Birds in Flight Video
4. Mitosis: The Amazing Cell Process that Uses Division to Multiply Cartoon for K-12 audience

**Environment**

1. Mercury Pollution Overview and Hazards
2. Worrisome: Recession of Arctic Ice- Thickness and Extent: 1984-2016

**Teaching**

1. Why Schools Need to Teach Kids Creative Thinking Over Test Taking

**Demo**

1. Independent Work

**Computers**

1. Kahoot

**Humor**

1. You know you’re From Michigan When…

**Geology and Geography**

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| **Site Name** | 10 Things You Didn't Know About Earthquakes  |
| **Site URL** | <https://www.youtube.com/watch?v=ftZVk0CUWxA>  |
| **Site Author** | [The World Is Bigger Than Me](https://www.youtube.com/channel/UCavlv5uqxS53Qqqfd0CH3Cg) |
| **Description** | “Iain Stewart looks at some of the world's most dramatic earthquakes and reveals the stories and science behind them. In seconds, these powerful forces of nature which cannot be predicted or prevented can shake a town to destruction and shift the landscape forever. We discover why quakes can last 60 times longer on the moon than on earth; how one particular earthquake fault line can produce hallucinations; and how 1960s Cold War spying gave scientists a crucial clue to understanding them.” |

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| **Site Name** | Latest Earthquakes Worldwide: Great for Student Tracking on World Map |
| **Site URL** | <http://stonewall.nist.gov/>  |
| **Site Author** | Jamie Raz and Paul E. Stutzman  |
| **Description** | “The stone test wall was constructed to study the performance of stone subjected to weathering. It contains 2352 individual samples of stone, of which 2032 are domestic stone from 47 states, and 320 are stones from 16 foreign countries. Over 30 distinct types of stones are represented, some of which are not commonly used for building purposes. There are many varieties of the common types used in building, such as marble, limestone, sandstone, and granite.” |

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| **Site Name** | Latest Earthquakes Worldwide: Great for Student Tracking on World Map |
| **Site URL** | <http://ds.iris.edu/seismon/eventlist/index.phtml>  |
| **Site Author** | Seismic Monitor's Data |
| **Description** | This site has a list of all of the latest earthquakes and their date, time, magnitude, depth, location and other information.  |

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| **Site Name** | New Solution to Carbon Pollution? Basalt to the Rescue |
| **Site URL** | <http://science.sciencemag.org/content/352/6291/1262.full>  |
| **Site Author** | Eli Kintisch |
| **Description** | “Researchers working in Iceland say they have discovered a new way to trap the greenhouse gas carbon dioxide (CO2) deep underground: by changing it into rock. Results published this week in Science show that injecting CO2 into volcanic rocks known as basalt triggers a reaction that rapidly forms new carbonate minerals—potentially locking up the gas forever. Most other tests of carbon capture and storage (CCS) have taken place in sandstone formations. But sandstone is too chemically inert to foster CO2-trapping reactions, and scientists worry that gas injected into it could leak back into the atmosphere. Scientists say the new results could help solve some of the technical problems that have kept CCS projects from being commercially successful. But they say the main obstacle—high cost—is one that only changes in policy can overcome.” |

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| **Site Name** | Michigan Farmer Stumbles on a Mammoth Skeleton  |
| **Site URL** | <http://www.smithsonianmag.com/smart-news/michigan-farmer-stumbles-mammoth-skeleton-180956833/?no-ist>  |
| **Site Author** | Marissa Fessenden  |
| **Description** | “When Michigan soybean farmer James Bristle tried to install a drainage pipe in a low spot in one of his fields, his backhoe struck something hard. He thought it might be an old fence post, but it was part of a mammoth pelvis.” |

**Weather**

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| **Site Name** | The World’s Astronauts Give a Stirring Message to Climate Conference Delegates  |
| **Site URL** | <http://digg.com/video/astronauts-climate-change-conference-paris>  |
| **Site Author** | Digg Inc.  |
| **Description** | “A group of astronauts got together to explain to UN Climate Conference delegates how their experiences have shaped their views on climate change, creating an interesting and stirring video.” |

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| **Site Name** | The Climate Change Pledges (2015) Are in. Will They Fix Anything? |
| **Site URL** | <http://www.nytimes.com/interactive/2015/11/23/world/carbon-pledges.html?_r=0>  |
| **Site Author** | Hannah Fairfield and Josh Williams  |
| **Description** | “Nearly 200 countries [met in Paris](http://www.nytimes.com/news-event/un-climate-change-conference) in early December to work on the global agreement addressing climate change. By 2025, the United States has pledged to reduce greenhouse gas emissions 26 percent from 2005 levels.” |

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| **Site Name** | NOAA Climate.gov |
| **Site URL** | <https://www.climate.gov/>  |
| **Site Author** | NOAA Climate.go |
| **Description** | “NOAA Climate.gov provides science and information for a climate-smart nation.  Americans’ health, security, and economic well-being are closely linked to climate and weather.  People want and need information to help them make decisions on how to manage climate-related risks and opportunities they face.” |

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| **Site Name** | Guy Tries Eating in 125mph Winds! |
| **Site URL** | <https://www.youtube.com/watch?v=z3nUCeKLXoY>  |
| **Site Author** | Trent Mayer |
| **Description** | “This video is quite hilarious of this guy on Mt. Washington in New Hampshire. The winds are at least 100 and the gusts are probably a lot more. Mt. Washington has the record for highest winds on earth!” |

**Water**

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| **Site Name** | Hydrogeology Cartoon |
| **Site URL** | <http://imgs.xkcd.com/comics/jack_and_jill.png>  |
| **Site Author** | N/A |
| **Description** | Read this cute hydrogeology cartoon.  |

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| **Site Name** | Permeable Pavement in Action - Never Has a Truck Dumping Water on a Parking Lot Been More Interesting |
| **Site URL** |  <https://youtu.be/32iSeAYnbI8> |
| **Site Author** |  Civil Engineering YouTube channel |
| **Description** |  This video shows permeable pavement in action.  Never has as truck dumping water on a parking lot been more interesting.  Students really love this video and it's usually a springboard into class discussions about permeability and the effect of human activity on infiltration, runoff and flooding. |

**Space**

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| **Site Name** | The Best Space Photos  |
| **Site URL** | <http://gizmodo.com/the-years-best-astronomy-photos-will-take-you-to-anothe-1784444661?utm_campaign=socialflow_gizmodo_twitter&utm_source=gizmodo_twitter&utm_medium=socialflow> |
| **Site Author** | Dan Fallon |
| **Description** | “As we tediously while away our days down here on Earth, satellites are zooming through space, snapping incredible pictures of Earth, the solar system and outer space. Here are the highlights from November.” |

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| **Site Name** | Aurora Alive Education Program for Science behind Auroras  |
| **Site URL** | <http://www.auroraalive.com/index.html>  |
| **Site Author** | Geophysical Institute, University of Alaska Fairbanks  |
| **Description** | “The Aurora Alive science education program teaches the science behind the Northern Lights, with hands-on classroom lessons and an exciting multimedia DVD that features hundreds of interactive activities, photos and movies of the aurora. The program is perfect for both classroom and homeschool use.” |

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| **Site Name** | Space Weather |
| **Site URL** | <http://www.spaceweather.com/>  |
| **Site Author** | Space Weather |
| **Description** | Check out this site to learn more about “news and information about the Sun-Earth environment [from solar storms to sunspots to near earth asteroids].” |

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| **Site Name** | Sun Pictures: A Full Year in a Single Frame from Around the World |
| **Site URL** | <http://news.nationalgeographic.com/news/2010/12/photogalleries/101228-sun-end-year-analemmas-solstice-eclipse-pictures/>  |
| **Site Author** | Victoria Jaggard |
| **Description** | “Analemma photographs are made by taking a picture of the sun from the same place at the same time of day once or twice a week, generating 30 to 50 frames. This picture, made in Veszprem, [Hungary](http://travel.nationalgeographic.com/travel/countries/hungary-guide/), combines 36 photos of the sun taken at 10 a.m. local time between January and December.” |

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| **Site Name** | Recoating a Giant VLT Telescope Mirror  |
| **Site URL** | <https://www.eso.org/public/videos/esocast15/> |
| **Site Author** | European Southern Observatory (ESO) |
| **Description** | This is a video about part of the technology behind the science."Every night, all year round, the ESO Very Large Telescope, or VLT, opens its four giant eyes to scrutinize the beautiful southern skies. Each eye is a huge mirror, 8.2 meters in diameter that gathers the light of the night sky, and reflects it into optical systems that form ultra-sharp images of the Universe. But keeping the VLT´s eyes clear requires each mirror to be cleaned and recoated occasionally, a delicate and complex procedure."More about the VLT: <http://www.eso.org/public/teles-instr/vlt/> |

**General**

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| **Site Name** | Army Educational Outreach Program- eCybermission |
| **Site URL** | <http://ecybermission.com/>  |
| **Site Author** | eCybermission  |
| **Description** | “eCybermission is a web-based Science, Technology, Engineering and Mathematics competition for 6th, 7th, 8th and 9th grade teams. Your team will propose a solution to a real problem in your community and compete for State, Regional and National Awards.” |

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| **Site Name** | PBS Learning Media  |
| **Site URL** | <http://www.pbslearningmedia.org/>  |
| **Site Author** | PBS & WGBH Educational Foundation |
| **Description** | “Get involved with PBS LearningMedia! Connect, collaborate, and learn with other educators looking to revolutionize their classrooms with digital media and technology.” |

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| **Site Name** | Monitoring Birds in Flight Video |
| **Site URL** | <https://www.youtube.com/watch?v=cUOOMxk-LnM>  |
| **Site Author** | Song Bird SOS Film |
| **Description** | This video is about the studying the Messenger bird in flight and the challenges that come with it. In this clip they take a Messenger bird and put it in an enclosed wind tunnel to capture slow motion shots of it in flight. By doing this they can closer study the bird and its flight habits.  |

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| **Site Name** | Mitosis: The Amazing Cell Process that Uses Division to Multiply Cartoon for K-12 audience |
| **Site URL** | <https://www.youtube.com/user/AmoebaSisters>  |
| **Site Author** | Amoeba Sisters |
| **Description** | “The Amoeba Sisters walk you through the reason for mitosis with mnemonics for prophase, metaphase, anaphase, and telophase.” |

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| **Site Name** | How Much Candy Would Kill You? |
| **Site URL** | <https://www.youtube.com/watch?v=RNOycTzN-fg> |
| **Site Author** | ACS |
| **Description** | Before you stuff your face with candy until you max out this Halloween, we want you to ask yourself how much is too much. Well folks, in keeping with the dark, spooky atmosphere of late October, we're taking a look at how many pieces of fun sized candy can kill you - if all eaten in one sitting. Oh and for you candy corn lovers out there, we're crunches those numbers too.  |

**Environment**

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| **Site Name** | Mercury Pollution Overview and Hazards  |
| **Site URL** | <http://history.cpet.ufl.edu/EIS/mercury/Mercury.htm>  |
| **Site Author** | Charles D. Lawrence  |
| **Description** | This website gives detailed information about mercury, how it is exposed, what harms it does to the environment and how it affects humans.  |

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| **Site Name** | Worrisome: Recession of Arctic Ice- Thickness and Extent: 1984-2016  |
| **Site URL** | <http://earthobservatory.nasa.gov/IOTD/view.php?id=89038&src=eorss-iotd> |
| **Site Author** | NASA |
| **Description** | Every year, we [report on the melting](http://earthobservatory.nasa.gov/IOTD/view.php?id=88757) and growth of Arctic sea ice, the vast sheath of frozen seawater floating on the Arctic Ocean and its neighboring seas. Much attention is focused on the area and extent of sea ice because it has been shrinking steadily. But there is another problem: As the ice extent has shrunk, the oldest and thickest ice has either thinned or melted away, leaving [the sea ice cap](http://earthobservatory.nasa.gov/Features/SeaIce/) more vulnerable to the warming ocean and atmosphere. |

**Teaching**

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| **Site Name** | Why Schools Need to Teach Kids Creative Thinking Over Test Taking  |
| **Site URL** | <http://www.wimp.com/why-schools-need-to-teach-kids-creative-thinking-over-test-taking/>  |
| **Site Author** | John-Michael Bond |
| **Description** | “In just three minutes, Krauss lays down a foundation for why students need to be taught more than just the basics of memorizing facts. They need to know how to identify problems and learn how to solve them, even when those problems can't be easily put into a test question.” |

**Demo**

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| **Site Title**  | Independent Work |
| **Suggested By** | Becca Parker |
| **Description** | “Following the NSTA conference I am certainly feeling excited about LOTS of possible science topics. I put up poster paper and asked students to list anything they would be interested in learning more about. Has anyone left the door open to free choice for a week? Where you give the student the freedom to research on their own and present a 2 minute summary of their findings? Their responses differed tremendously - which made me want to do it all.” |

**Computers**

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| **Site Name** | Kahoot |
| **Site URL** | <https://getkahoot.com/>  |
| **Site Author** | Kahoot |
| **Description** | “Kahoot! is a free game-based learning platform that makes it fun to learn – any subject, in any language, on any device, for all ages!” |

**Humor**

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| **Site Name** | You Know You’re From Michigan When… |
| **Site URL** | <http://www.gcfl.net/archive.php?funny=7198>  |
| **Site Author** | The Good Clean Funnies List  |
| **Description** | 1. “You've never met any celebrities.2. "Vacation" means going to Cedar Point.3. At least 1 member of your family disowns you the week of the Michigan/Michigan State game.4. Half the change in your pocket is Canadian.5. You drive 86 mph on the highway and pass on the right.6. Your idea of a traffic jam is 40 cars waiting to pass an orange barrel.7. You know how to play (and pronounce) Euchre.8. It's easy to get VERNORS ginger ale and SANDERS hot fudge sauce, and FAYGO pop.9. You know how to pronounce "Mackinac".10. You've had to switch on the "heat" and the "A/C" in the same day.11. You bake with SODA and drink a POP.12. Your little league game was snowed out.” |

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**12 November 2016** Earth Science Sites of the Week

**Geology and Geography**

1.      The Beauty of U.S.G.S. Topographical Maps

2.      Building a Mountain to Make it Rain

**Weather**

1.      The Amateur Cloud Society That (Sort of) Rattled the Scientific Community

2.      The Essential Principles of Climate Literacy

3.      Viral Video Captures Violent Hail Storm in Oklahoma City

4.      Video of 55 Gallon Steel Drum Can Crush

**Water**

1.      The Great Molasses Flood of 1919 Video

**Space**

1.      Match Geomorphology on other Planets with NASA Photos

2.      Super Moon is Coming: November 14, and December 14

3.      Path of the Total Solar Eclipse

4.      Why Naval Academy Students are Learning to Sail by the Stars for the First Time in a Decade

**General**

1.      Dole- Harvesting Bananas Video

2.      Tree Identification - Using a Simple Dichotomous Key for Conifers

**Environment**

1.      The Ozone Hole WAS Super Scary, So what is happening to it?

**Teaching**

1.      Building a Model while Blindfolded Icebreaker

**Demo**

1.      Snow Demo

**Inspiration**

1.      On Body Image Ted Talk: Why Thinking You’re Ugly is Bad For You

**Geology and Geography**

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| **Site Name** | The Beauty of U.S.G.S. Topographical Maps |
| **Site URL** | <http://mobile.nytimes.com/2016/05/15/magazine/letter-of-recommendation-usgs-topographical-maps.html>  |
| **Site Author** | Tom Vanderbilt |
| **Description** | “At the close of the Second World War, the United States government embarked on an enormous artistic enterprise. It is estimated to have cost nearly $3 billion and, at its height, employed more than 2,000 people. I am talking about the topographic mapping program of the United States Geological Survey.” |

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| **Site Name** | Building a Mountain to Make it Rain  |
| **Site URL** | <https://www.washingtonpost.com/news/worldviews/wp/2016/05/02/the-uae-may-build-a-mountain-to-make-it-rain/>  |
| **Site Author** | Adam Taylor  |
| **Description** | “The United Arab Emirates is certainly no stranger to ambitious mega-projects. Just take a look at the towering Burj Khalifa, the tallest building in the world, or the Palm Jumeirah, the artificial archipelago in the shape of a palm tree that juts out into the sea near Dubai. Even by the UAE’s standards, however, building a mountain would stand out as an ambitious plan. And perhaps what’s so remarkable about this plan is that despite its audacity, it would serve a sadly utilitarian purpose: to bring rain.” |

**Weather**

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| **Site Name** | The Amateur Cloud Society That (Sort of) Rattled the Scientific Community |
| **Site URL** | <http://www.nytimes.com/2016/05/08/magazine/the-amateur-cloud-society-that-sort-of-rattled-the-scientific-community.html>  |
| **Site Author** | Jon Mooallem |
| **Description** | “An improbable tale of how a British maverick harnessed crowdsourcedmeteorological discoveries to reveal the poetic wonders of the sky.” |

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| **Site Name** | The Essential Principles of Climate Literacy  |
| **Site URL** | <https://www.climate.gov/teaching/essential-principles-climate-literacy/essential-principles-climate-literacy>  |
| **Site Author** | NOAA Climate.gov |
| **Description** | “[Climate Literacy: The Essential Principles of Climate Science](http://www.globalchange.gov/browse/educators) presents information that is deemed important for individuals and communities to know and understand about Earth’s climate, impacts of climate change, and approaches to adaptation or mitigation.  Principles in the guide can serve as discussion starters or launching points for scientific inquiry. The guide aims to promote greaterclimate science literacyby providing this educational framework of principles and concepts. The guide can also serve educators who teach climate science as a way to meet content standards in their science curricula.” |

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| **Site Name** | Video Captures Violent Hail Storm in Oklahoma City |
| **Site URL** | <http://www.littlethings.com/hail-storm/?utm_source=LTcom&utm_medium=Facebook&utm_campaign=shock>  |
| **Site Author** | Barbara Diamond   |
| **Description** | “May 2010, YouTube user “beatlesfanxxl” uploaded a jaw-dropping moment that went viral with nearly seven million views. It was late spring in Oklahoma City, and he and his family were watching a nasty storm pass through. You can only imagine their shock and horror when suddenly the dark, gloomy skies opened up — and the family watched in sheer awe as golf ball-sized hail came pouring from the sky and plummeting into their backyard pool.” |

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| **Site Name** | Video of 55 Gallon Steel Drum Can Crush  |
| **Site URL** | <https://www.youtube.com/watch?v=JsoE4F2Pb20>  |
| **Site Author** | Thechemman  |
| **Description** | Watch this video of a class testing their chemistry skills by putting steam into a big can, then into a small pool to watch it collapse. It takes a while.  |

**Water**

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| **Site Name** | The Great Molasses Flood of 1919 Video |
| **Site URL** | <https://www.youtube.com/watch?v=okIkxYgfSzY>  |
| **Site Author** | Boston History |
| **Description** | “This course explores the history of Boston from the 1600’s to the present day. Learn about the native people who lived on the land we now know as Boston before the Puritans arrived. Discover how the European settlers created a robust system of self-government and a democracy so strong that Boston became the birthplace of the Revolutionary War. Trace the city’s role in the American anti-slavery movement and the Civil War. The course will help you understand why Boston remains revolutionary to this day, redefining education, the arts and medicine, through its world-class museums, orchestras, hospitals and schools.” |

**Space**

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| **Site Name** | Match Geomorphology on other Planets with NASA Photos |
| **Site URL** | <http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Blue_Marble_Matches.html#.V3UjyaKDu5I>  |
| **Site Author** | NASA |
| **Description** | “This 5-E lesson connects the shape of Earth's surface (and the names of the features that correspond to those shapes and textures) to the processes that form them. It also introduces students to how scientists use Earth to gain a better understanding of other planetary bodies in the solar system.” |

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| **Site Name** |  Super Moon is Coming: November 14, and December 14 |
| **Site URL** |  <https://science.nasa.gov/news-articles/2016-ends-with-three-supermoons> |
| **Site Author** | NASA |
| **Description** | This full moon will truly be a huge super Moon - the largest and brightest since 1948 and best till 2032!! Having a full moon at perigee will light up the cold evenings |

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| **Site Name** | Path of the Total Solar Eclipse  |
| **Site URL** | <http://www.exploratorium.edu/eclipse?utm_source=General+Enews&utm_campaign=5ae9bbbcd4TSE_2016_Solar_Eclipse_LIVE&utm_medium=email&utm_term=0_99281b83eb-5ae9bbbcd4-189801289>  |
| **Site Author** | Exploratorium  |
| **Description** | “Located in San Francisco, California, the Exploratorium is a public learning laboratory exploring the world through science, art, and human perception. Our mission is to create inquire-based experiences that transform learning worldwide. Our vision is a world where people think for themselves and can confidently ask questions, question answers, and understand the world around them. We value lifelong learning and teaching, curiosity and inquire our community, iteration and evidence, integrity and authenticity, sustainability, and inclusion and respect.” |

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| **Site Name** | Why Naval Academy Students are learning to sail by the Stars for the First Time in a Decade |
| **Site URL** | <https://www.washingtonpost.com/news/the-switch/wp/2016/02/17/why-naval-academy-students-are-learning-to-sail-by-the-stars-for-the-first-time-in-a-decade/>  |
| **Site Author** | Andrea Peterson |
| **Description** | “Peter Hogan was surprised at how heavy the sextant felt in his hand when he squinted through its eyeglass this week, the first time he had ever held one. For centuries, sailors used sextants to plot their location on the trackless sea, lining up stars in the sky to find their own place on Earth.” |

**General**

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| **Site Name** | DOLE- Harvesting Bananas Video |
| **Site URL** | <https://www.youtube.com/watch?v=_l7sak6Vlq8>  |
| **Site Author** | Dole Tube |
| **Description** | This video shows the step-by-step process every Dole banana goes through before it gets shipped out. |

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| **Site Name** | Tree Identification - Using a Simple Dichotomous Key for Conifers |
| **Site URL** | <http://www.exploringnature.org/db/view/1257>  |
| **Site Author** | Sheri Amsel |
| **Description** | This site gives a detailed description about conifer trees and all of the knowledge to identify them.  |

 **Environment**

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| **Site Name** | The Ozone Hole WAS Super Scary, So What is Happening To It? |
| **Site URL** | <http://www.smithsonianmag.com/science-nature/ozone-hole-was-super-scary-what-happened-it-180957775/?no-ist>  |
| **Site Author** | [Erin Blakemore](http://www.smithsonianmag.com/author/erin-blakemore/)  |
| **Description** | “It was the void that changed public perception of the environment forever—a growing spot so scary, it mobilized a generation of scientists and brought the world together to battle a threat to our atmosphere. But 30 years after its discovery, the ozone hole just doesn’t have the horror-story connotations it once did. How did the conversation change—and how bad is the ozone hole today?” |

**Teaching**

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| **Site Title**  | Building a Model while Blindfolded Icebreaker |
| **Description** | “This one is quick, fun, and a nice lesson about communication.  Students work in pairs, each pair has a few simple items, like a book, ruler, pencil and a plastic cup.  Students sit facing each other with the materials between them and then one puts on a blindfold.  The teacher then quietly builds something using the same materials, and the pairs of students are supposed to create an identical construction.  The catch is that the student who can see what they are supposed to build cannot speak.  The partner with the blindfold needs to realize that they can ask questions, and give instructions.  As soon as one group starts using a non-verbal code such as, tap once for yes and twice for no, the rest of the class quickly catches on, they have to figure out what questions to ask and how to be specific enough.  I love it because everyone's initial reaction is to think that it's impossible, but they end up realizing it wasn't too hard after all.  I did it with older students, but I think/hope it will work as well with 7th graders.” |

**Demo**

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| **Site Title**  | Snow Demo   |
| **Description** | “Go collect some snow, but when you do, be careful not to pack it into your measuring cup. Packing more snow tightly into a smaller volume will artificially increase its density. Be sure to record the volume of snow you collected. Here’s a trick for figuring out the mass of your snow sample without a scale: let it melt at room temperature. Your snow sample will have the same mass when it melts into water, allowing you to take advantage of a special property of water. At room temperature, a milliliter (1 ml) of water has a mass of [about one gram](http://water.usgs.gov/edu/density.html) (1 g). That means that if your melted snow sample has a volume of 32 milliliters, its mass will be about 32 grams. And 150 ml of water = 150 g.  And 1000 ml of water = 1000 g. You get the idea. Now you are ready to calculate the density of your snow sample. Divide the mass of your sample (from your melted snow mass) by the original volume of snow you collected. Use a calculator if you need to. Try more snow! Snow density can vary widely depending on whether it is fresh, if it has melted at all, how cold it was when it fell, etc.” |

**Inspiration**

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| **Site Name** | On Body Image Ted Talk: Why Thinking You’re Ugly is Bad For You  |
| **Site URL** | <https://www.ted.com/talks/meaghan_ramsey_why_thinking_you_re_ugly_is_bad_for_you?language=en>  |
| **Site Author** | Meaghan Ramsey |
| **Description** | “About 10,000 people a month Google the phrase, “Am I ugly?” Meaghan Ramsey of the Dove Self-Esteem Project has a feeling that many of them are young girls. In a deeply unsettling talk, she walks us through the surprising impacts of low body and image confidence—from lower grade point averages to greater risk-taking with drugs and alcohol. And then shares the key things all of us can do to disrupt this reality.” |

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**19 November 2016** Earth Science Sites of the Week

**Geology and Geography**

1.      Earthshots: Satellite Images of Environmental Change

2.      Plate Tectonic Activities

3.      A Day in the Life of an Ammonite

4.      Induced Earthquakes Raise Chances of Damaging Shaking in 2016

5.      How to Draw Isolines Video

6.      Interpreting Our World:  100 Discoveries that Revolutionized Geography

7.      Inclusion in the Geosciences for Individuals with Disabilities

**Weather**

1.      Climate Studies

2.      Climate Change- Fitting the Pieces Together

3.      How to Make it Rain

4.      Fans Liken Storm That Ends Astros-Braves Game Early to the Apocalypse

**Space**

1.      Kinesthetic Astronomy

2.      Cosmology: The Origin, Evolution and Ultimate Fate of the Universe

3.      Star Wars in the Classroom

**General**

1.      The Camera That Sees Around Corners in Nearly Real Time

2.      Ten Interesting Facts about Earth

3.      Next Generation Science Standards

4.      Beyond Bar and Line Graphs: Time for a New Data Presentation Paradigm

**Environment**

1.      Climate change in the Fertile Crescent and implications of the recent Syrian drought

**Teaching**

1.      At Success Academy Center Schools, High Success and Polarizing Tactics

**Demo**

1.      Cloud in a Bottle

**Computers**

1.      Nearpod

**Geology and Geography**

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| **Site Name** | Earthshots: Satellite Images of Environmental Change |
| **Site URL** | <http://earthshots.usgs.gov/earthshots/>  |
| **Site Author** | U.S. Department of the Interior U.S. Geological Survey  |
| **Description** | “The surface of the Earth is always changing. Some changes like earthquakes, volcanoes, floods, and landslides happen quickly and other changes, such as most erosional processes, happen slowly over time.  It’s often hard to see these changes from ground level. A much broader view is needed, and multiple views that provide a record of change over time are especially helpful. Earth shots shows you how satellite data are used to track these changes.” |

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| **Site Name** | Plate Tectonic Activities  |
| **Site URL** | <http://joidesresolution.org/node/3302>  |
| **Site Author** | International Ocean Discovery Program  |
| **Description** | “The first three activities below are variations on the theme of ages of the [basement rock](http://joidesresolution.org/glossary/9#term407) spreading outward from the mid-Atlantic Ridge as determined by Deep Sea Drilling Project scientists with samples of microfossils taken by RV Glomar Challenger in 1968.  These activities may also be used with our poster, [Microfossils - The Ocean's Storytellers](http://joidesresolution.org/node/3285).” |

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| **Site Name** | A Day in the Life of an Ammonite  |
| **Site URL** | <http://blogs.plos.org/paleocomm/2016/01/13/a-day-in-the-life-of-an-ammonite/> |
| **Site Author** | Patrick Zell |
| **Description** | “Paleontologists that study ammonites are like all paleontologists: they are working with a limited dataset based on what was preserved in the fossil record, and are restricted to interpreting what they have as best they can. But a new study published today in PLOS ONE provides a clearer picture of ammonites, particularly regarding their growth, their sexual behaviors, and their environment.” |

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| **Site Name** | New USGS Maps Identify Potential Ground-Shaking Hazards From Both Human-Induced And Natural Earthquakes |
| **Site URL** | <https://www2.usgs.gov/blogs/features/usgs_top_story/induced-earthquakes-raise-chances-of-damaging-shaking-in-2016/>  |
| **Site Author** | Jessica Fitzpatrick  |
| **Description** | “For the first time, [new USGS maps](https://pubs.er.usgs.gov/publication/ofr20161035) identify potential ground-shaking hazards from both human-induced and natural earthquakes. In the past, USGS maps only identified natural earthquake hazards. The report shows that approximately 7 million people live and work in areas of the central and eastern U.S. (CEUS) with potential for damaging shaking from induced seismicity. Within a few portions of the CEUS, the chance of damage from all types of earthquakes is similar to that of natural earthquakes in high-hazard areas of California.” |

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| **Site Name** | How to Draw Isolines Video |
| **Site URL** | <https://www.youtube.com/watch?v=iYon-S6wCBw> |
| **Site Author** | Mister Gazda |
| **Description** | An introductory primer  |

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| **Site Name** | Interpreting Our World:  100 Discoveries that Revolutionized Geography |
| **Site URL** | [https://www.amazon.com/Interpreting-Our-World-Discoveries-Revolutionized/dp/161069919X](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.amazon.com_Interpreting-2DOur-2DWorld-2DDiscoveries-2DRevolutionized_dp_161069919X&d=DgMFAg&c=n6-cguzQvX_tUIrZOS_4Og&r=-pTw-wnC1EqwFnwYqBbl0qqwQVD9VGl9eBEkGvCKdyo&m=dzBvJHgrdGi2dG_oRQ5ptbX74DwBROyigCvRkcKxL5g&s=iHbyzo0RSummzT5Xr8yU88Js8R4zmjbnt4WjCjjinAw&e=) |
| **Site Author** | Joseph Kerski  |
| **Description** | In this new book, geographer Joseph Kerski demonstrates why geography matters in the modern-day world through its examination of 100 moments throughout history that had a significant impact on the study of geography.  From Anaximander to Zheng He, from the Internet of Things to GIS, from Von Humboldt to Carl Sauer, this book enables geography to be taught and learned in exciting new ways.  |

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| **Site Name** | Inclusion in the Geosciences For Individuals With Disabilities |
| **Site URL** |  <https://www.youtube.com/watch?v=skYTZZZfyOU&feature=youtu.be> |
| **Site Author** | International Association for Geoscience Diversity  |
| **Description** | The mission of the nonprofit IAGD Foundation is to advance access and inclusion in the geosciences for individuals with disabilities through the development of innovative research and instruction.Join us on one of our recent inclusive geology field trips as we tested new approaches to mixed-ability field learning in the amazing sedimentary and volcanic landscapes of northern Arizona.Find out more about us at: <http://www.theiagd.org/foundation/> |

**Weather**

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| **Site Name** | Climate Change Quiz |
|  | <https://www.meted.ucar.edu/registration/prepQuiz.php?sequenceNumber=1&quizID=399> |
| **Site Author** | The COMET Program |
| **Description** | Can you pass the quiz? |

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| **Site Name** | How to Make it Rain |
| **Site URL** | <http://www.cnn.com/2016/03/30/middleeast/uae-making-it-rain/index.html?sr=fbcnni033116uae-making-it-rain0227AMVODtopVideo&linkId=22896425>  |
| **Site Author** | Jon Jensen |
| **Description** | “New techniques may help create rain. “Cloud-seeding” involves flying into clouds and spraying salt.” Watch this video to see how scientists are making it rain in Abu Dhabi.  |

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| **Site Name** | Fans Liken Storm That Ends Astros-Braves Game Early to the Apocalypse |
| **Site URL** | <http://bleacherreport.com/articles/2627720-fans-liken-storm-that-ends-astros-braves-game-early-to-the-apocalypse>  |
| **Site Author** | Katie Richcreek  |
| **Description** | “The [Atlanta Braves](http://bleacherreport.com/atlanta-braves) and [Houston Astros](http://bleacherreport.com/houston-astros) had to call their spring training game early on Friday when some pretty daunting storm clouds rolled in during their 1-1 tie.” |

**Space**

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| **Site Name** | Kinesthetic Astronomy  |
| **Site URL** | <http://www.spacescience.org/education/extra/kinesthetic_astronomy/KASkTimeAug04.pdf>  |
| **Site Author** | Cherilynn Morrow and Michael Zawaski  |
| **Description** | “Here we present a significant upgrade to the first in a series of innovative, experiential lessons we call Kinesthetic Astronomy. The Sky Time lesson reconnects students with the astronomical meaning of the day, year, and seasons. Like all Kinesthetic Astronomy lessons, it teaches basic Astronomical concepts through choreographed bodily movements and positions that provide educational sensory experiences.” |

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| **Site Name** | Cosmology: The Origin, Evolution and Ultimate Fate of the Universe  |
| **Site URL** | <https://www.astrosociety.org/education/astronomy-resource-guides/cosmology-the-origin-evolution-ultimate-fate-of-the-universe/>  |
| **Site Author** | NASA |
| **Description** | “Cosmology is an enormous field, and the number of educational resources can be a bit overwhelming. This guide includes only a sampling of non-technical materials that instructors around the U.S. have been using and are likely to have access to. Items were selected based on their level of difficulty (Astro 101 level and below), the likelihood of easy access by a college audience, and their potential usefulness for teaching and learning.” |

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| **Site Name** | Star Wars in the Classroom |
| **Site URL** | <http://www.starwarsintheclassroom.com/content/science/index.asp?sw=2>  |
| **Site Author** | Star Wars in the Classroom |
| **Description** | “Star Wars in the Classroom is a website for educators and fans alike that provides resources for transdisciplinary teaching and learning with the Star Wars saga. For nearly thirty years, our team has been integrating the Star Wars saga into history, English/Language Arts, and science classes at the middle school and high school levels. From studies in mythology, history, philosophy and the arts, to hands-on experiments in physics and engineering, we spark learning and the imagination by providing engaging and relevant experiences for students of all ages inspired by the captivating characters and stories from the Star Wars universe.” |

**General**

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| **Site Name** | The Camera That Sees Around Corners in Nearly Real Time |
| **Site URL** |  <http://www.popularmechanics.com/science/a18428/camera-sees-around-corners/> |
| **Site Author** | William Herkewitz |
| **Description** |  A new camera can track the position, movement, and shape of any solid object around blind corners. This could ultimately be used in smart automobiles to help prevent collisions. |

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| **Site Name** | Ten Interesting Facts About Earth |
| **Site URL** | <http://climatekids.nasa.gov/10-things-earth/>  |
| **Site Author** | Climate Kids |
| **Description** | This site has a slide show about ten different facts about earth and space. It is a great eye-opener and a great learning resource.  |

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| **Site Name** | Beyond Bar and Line Graphs: Time for a New Data Presentation Paradigm |
| **Site URL** | <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1002128>  |
| **Site Author** | Tracey Weissgerber, Natasa Milic, Stacey Winham and Vesna Garovic |
| **Description** | “Figures in scientific publications are critically important because they often show the data supporting key findings. We recommend training investigators in data presentation, encouraging a more complete presentation of data, and changing journal editorial policies.” |

**Environment**

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| **Site Name** | Climate change in the Fertile Crescent and implications of the recent Syrian drought |
| **Site URL** | <http://www.pnas.org/content/112/11/3241.full>  |
| **Site Authors** | Colin P. Kelley, Shahrzad Mohtadi, Mark A. cane, Richard Seager, and Yochanan Kushnir |
| **Description** | “There is evidence that the 2007−2010 drought contributed to the conflict in Syria. It was the worst drought in the instrumental record, causing widespread crop failure and a mass migration of farming families to urban centers.” |

**Teaching**

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| **Site Name** | At Success Academy Center Schools, High Success and Polarizing Tactics  |
| **Site URL** | <http://www.nytimes.com/2015/04/07/nyregion/at-success-academy-charter-schools-polarizing-methods-and-superior-results.html?smprod=nytcore-iphone&smid=nytcore-iphone-share>  |
| **Site Author** | Katie Taylor  |
| **Description** | “At most schools, if a child is flailing academically, it is treated as a private matter. But at Success Academy Harlem 4, one boy’s struggles were there for all to see: On two colored charts in the hallway, where the students’ performance on weekly spelling and math quizzes was tracked, his name was at the bottom, in a red zone denoting that he was below grade level. His teacher, Kristin Jones, 23, had held meetings with his mother, where the teacher spread out all the weekly class newsletters from the year, in which the charts were reproduced. If he studied, he could pass the spelling quizzes, Ms. Jones said — he just was not trying.” Read the article to see how the boy overcomes this battle.” |

**Demo**

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| **Site Title**  | Cloud in a Bottle  |
| **Description** | “Place a splash (~1 teaspoon) of water into the plastic bottle. Light the match and make sure it is burning well, then drop it into the bottle. Quickly screw the cap on, and squeeze the bottle with your hand five or six times (for larger bottles you may have to do it slightly more). You should see a cloud form in the bottle, and then magically disappear when you squeeze it. Pass the bottle around the audience to give everyone a chance to experience it for themselves.” |

**Computers**

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| **Site Name** | Nearpod |
| **Site URL** | <https://nearpod.com/> and <http://www.learninginspired.com/10-ways-of-using-nearpod-in-the-classroom> |
| **Site Author** | Nearpod |
| **Description** | “Nearpod is an interactive presentation and assessment tool that can be used to amazing effect in the classroom. The app’s concept is simple. A teacher can create presentations that can contain Quiz’s, Polls, Videos, Images, Drawing-Boards, Web Content and so on. The children can access a teacher’s presentation through a code. It is up to the teacher to then move the class through the presentation and let them interact with the media as they go.”  |