

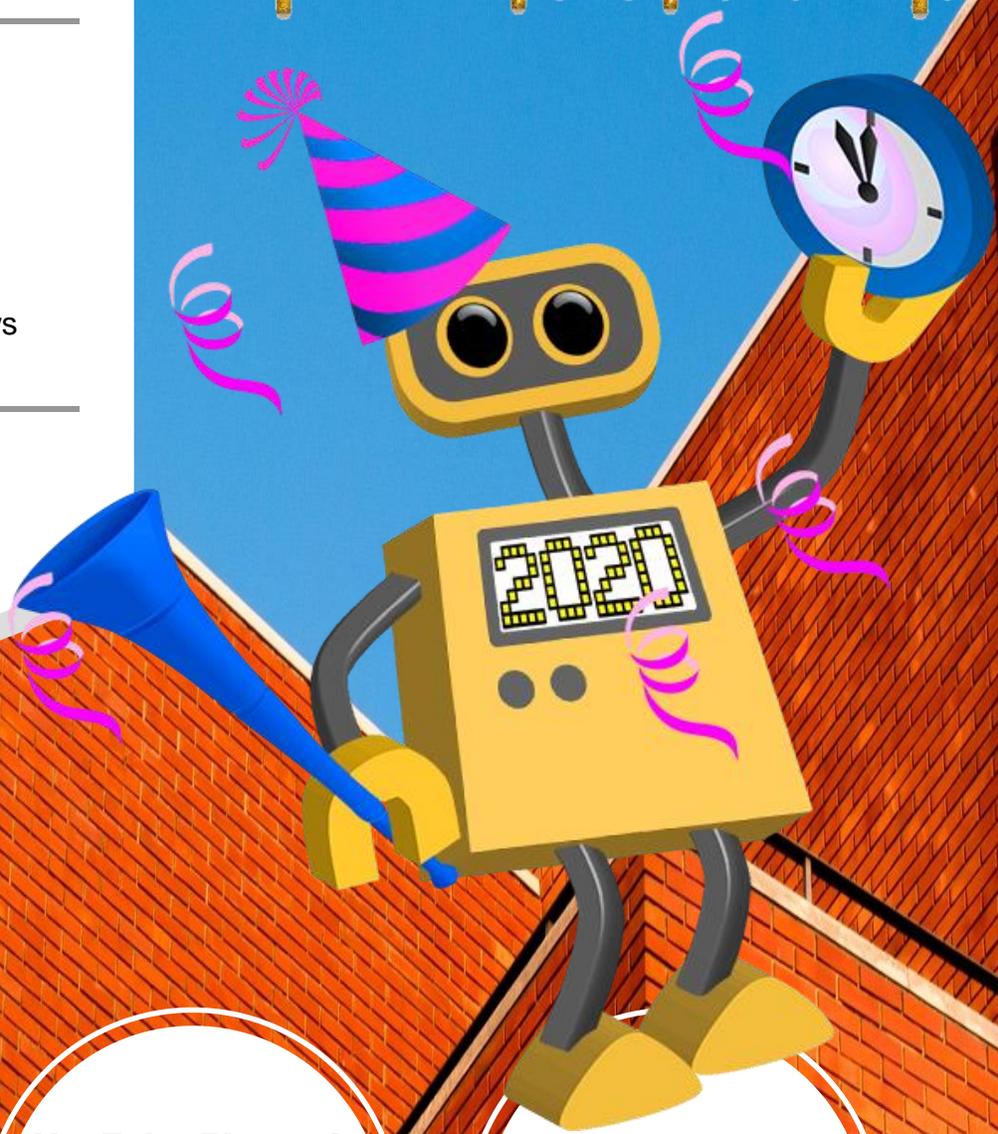


# Science Monthly

District NGSS and Science News

THE END OF A DECADE

DECEMBER 2019



**Website of the Month:**  
ESRI GeoInquiries

**YouTube Channel Of the Month:**  
The King of Random

**SJUSD STEAM Explosion 2020!**

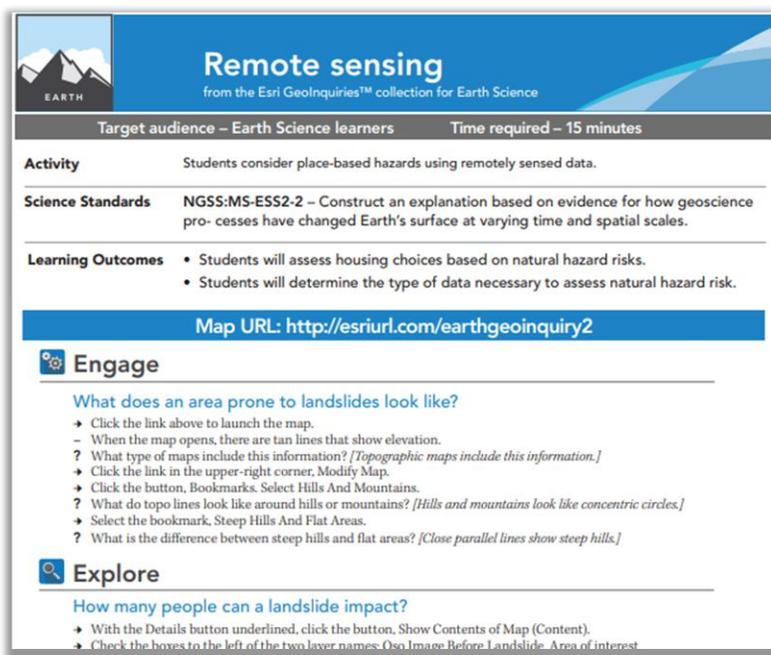
## Website of the Month: esri Geolnquiries

### <https://www.esri.com/en-us/industries/education/schools/geoinquiries-collections>

This month's review comes from our very own 7<sup>th</sup> grade science teacher at the San Jacinto Leadership Academy, Herman Hilkey. He utilizes the lessons from **esri Geolnquiries** once a week to get his students analyzing raw data from various global maps. Not just for science, there are lessons for all subjects that incorporate high quality data that is free and readily available for your classroom.

Here is what Mr. Hilkey had to say about his experience utilizing this resource-

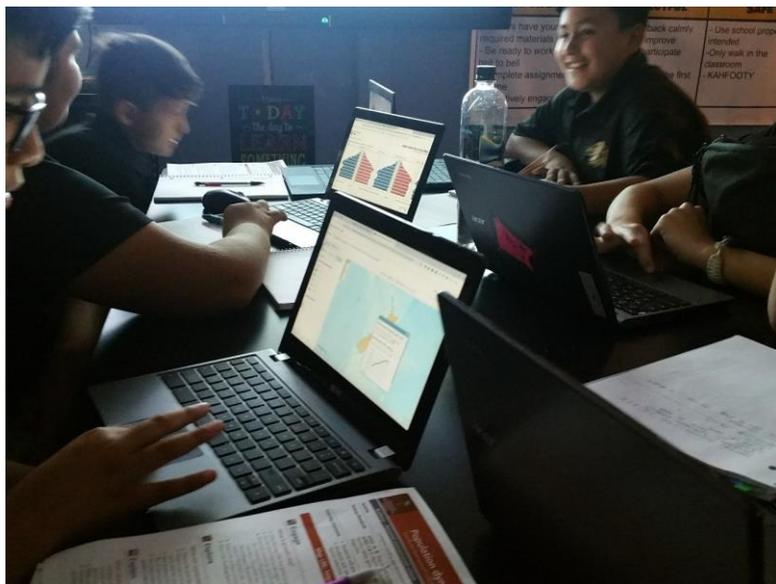
"Geolnquires" is an online set of 145 lessons using G.I.S. mapping (geographic information systems). It is part of esri in Redlands, California who is one of, if not the leader in, GIS users especially in city, county, state and military governmental use. San Jacinto Leadership Academy has been using esri's "Geolnquires" software since the first week in September. Forty-five of the lessons are about science and science related data spread over real time GIS maps at esri. Most times, but not always, a teacher can find one of the 145 lessons that complement the current NGSS standard. Geolnquires truly offers the **"Cross Cutting"** component of the desired 3-D NGSS model.



The screenshot shows a lesson page for "Remote sensing" from the Esri Geolnquiries™ collection for Earth Science. The page includes the following information:

- Target audience:** Earth Science learners
- Time required:** 15 minutes
- Activity:** Students consider place-based hazards using remotely sensed data.
- Science Standards:** NGSS-MS-ESS2-2 – Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
- Learning Outcomes:**
  - Students will assess housing choices based on natural hazard risks.
  - Students will determine the type of data necessary to assess natural hazard risk.
- Map URL:** <http://esriurl.com/earthgeoinquiry2>
- Engage:**
  - What does an area prone to landslides look like?
    - Click the link above to launch the map.
    - When the map opens, there are tan lines that show elevation.
    - What type of maps include this information? [Topographic maps include this information.]
    - Click the link in the upper-right corner. Modify Map.
    - Click the button, Bookmarks. Select Hills And Mountains.
    - What do topo lines look like around hills or mountains? [Hills and mountains look like concentric circles.]
    - Select the bookmark, Steep Hills And Flat Areas.
    - What is the difference between steep hills and flat areas? [Close parallel lines show steep hills.]
- Explore:**
  - How many people can a landslide impact?
    - With the Details button underlined, click the button, Show Contents of Map (Content).
    - Check the boxes to the left of the two layer names: Oso Image Before Landslide, Area of interest

While covering the Ecosystems Scopedia lesson, the fires in Brazil happened and so the simple logical **"Cross Cutting"** component was a real time use of news coverage and mapping of forest fires current and historical using GIS mapping. The students immediately realized the fires were set fires. In addition, the students discovered they are set every year as part of the



Brazilian growing season by local farmers. A very good opening for science, political and social discussions by table groups.

For the subject of energy and dependency of fossil fuels, we used the GIS mapping of current Wind Farms. Using real time wind maps was an excellent time to gain exposure to real time wind and recent massive increases in wind farms in six

central states compared to our local wind farms and international wind farms. It was at this moment the students realized the maps are real time - they changed daily to report actual winds that day.

The classroom time required for GeoInquires fits nicely into 45-50 minutes. Every Wednesday all 7th grade at SJLA spends a full period on the GeoInquires from esri. The program is free and works well with existing Chromebooks. Some 7th graders look forward to esri Wednesdays and a few find it a bit boring but we have a 100% participation. The intent is twofold. First, learn the NGSS standards with a very current and interesting tool for the 3-D aspect of NGSS. Second, meet the **"Engineering Practice"** NGSS challenge by getting comfortable using, every week, a sophisticated GIS system that will serve their futures well.



## YouTube Channel of the Month: The King of Random <https://www.youtube.com/user/01032010814>

This month's recommended channel is dedicated to the process of inquiry. The hosts of The King of Random (TKOR) demonstrate the process of scientific inquiry in an informal and upbeat way that is appropriate for students. Most videos start off with a question or problem, then the hosts try a few experiments or build prototypes, then analyze how well things worked. This is not very different from what many of your students will be doing for their science and engineering fair projects.



### Turning Coal into Diamonds, using Peanut Butter



The King of Random ✓

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Often, the subject matter of the videos has to do with the team testing common life hacks shared by the internet. In many cases, these life hacks do not work or need some adjustments. By talking about and showing the process of testing these popular internet hacks, students can see the value in not taking the internet at face value. Take for instance the popular internet video where a hot coal is placed into peanut butter to form a crystal. For anyone with a

basic understanding of metamorphic rocks that form under intense pressure, you know that it is not possible to create diamonds in your kitchen. We can assume that the makers of the video were trying harder to develop “click bait” than trying to educate the public on how to make your own diamonds and TKOR demonstrates how false the original video must have been. Like the ever-popular Discovery Channel show Mythbusters, TKOR channel serves to understand how things work and encourages viewers to safely test experiments and design our own solutions.

## **STEAM Explosion 2020: 1/24 5:30 pm @MVMS**

### **Science & Engineering Fair, Art Contest, and Interactive Stations**

Right around the corner is our annual celebration of science, technology, engineering, art, and mathematics! This event will host staff, students, and community members in an evening of inquiry that is likely to inspire you to wonder about our natural world.



**Putting the A in STEAM:** On display will be science and engineering themed art submitted by your students! While only 4<sup>th</sup> grade and above can submit science projects for grading, all grade levels can compete in the art contest. By making science themed art, students can present what makes them curious and share about something that they learned in school. Each grade level has a specific topic aligned to the standards that are covered in that grade.

All art contest entries should be dropped off at the DD or sent through interoffice mail- ATTN: Jackie Gardner NGSS TOSA. For the student flier and teacher instructions, please visit the STEAM Explosion tab under the NGSS PowerSchool page.

**Presentation of Awards:** Our night will begin with a few words from our keynote speakers and real-life engineers Lauren Denson (NASA JPL) and Dawna Baldi (Baldi Bros. Construction). Awards will then be presented for our top science and engineering fair projects as well as for our STEAM art contest.

**Interactive Stations:** After the awards presentation, the floor will open with interactive stations for the whole family to participate in. Take a virtual tour of the Apollo Moon landing, design a parachute for astronauts, experiment with different chemicals to cause eruptions, take a green screen photo of yourself on another planet, and so much more!

If you need any handouts or fliers, please check the NGSS page on our **SJUSD Resource Portal** in PowerSchool.

Even though you're dangerous and most people don't like you I think you're an amazing creature

Hey thanks, mate



WHAT DO YOU GET WHEN YOU CROSS A SNOWMAN AND A VAMPIRE?



FROSTBITE

Contact and Support

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