LAKEWOOD CATHOLIC ACADEMY

INTERNATIONAL BACCALAUREATE NEWSLETTER

IB Focus:

Principled Thinker

LCA's teachers and students continued their commitment to explore the Profile of an International Baccalaureate learner throughout the school year. The focus for February and March has been Principled and Thinker.

The IB Pledge

Every morning after we have begun our day together with a communal prayer, the LCA community recites the IB Pledge, a promise we make to live every day according to the principles of an IB learner. A new attribute is added to the pledge every month, reflecting the characteristics that have been our focus since the beginning of the school year. To date, the faculty and students pledge to: « With God's help and for his glory, I promise to be a risk taker, to be open-minded, to be a communicator, to be balanced, to be caring, to be principled, and to be a thinker. »

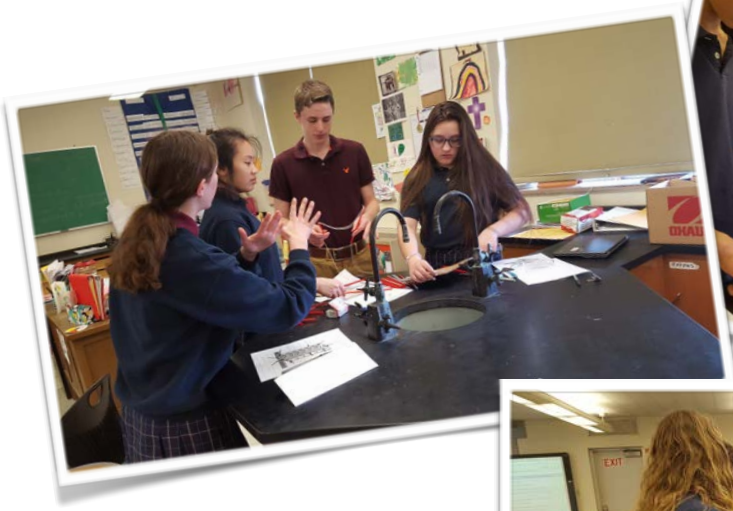
Students in Mrs. Nagy's class, not only recite the pledge, but also use gestures to make the pledge come alive. Take a peek!

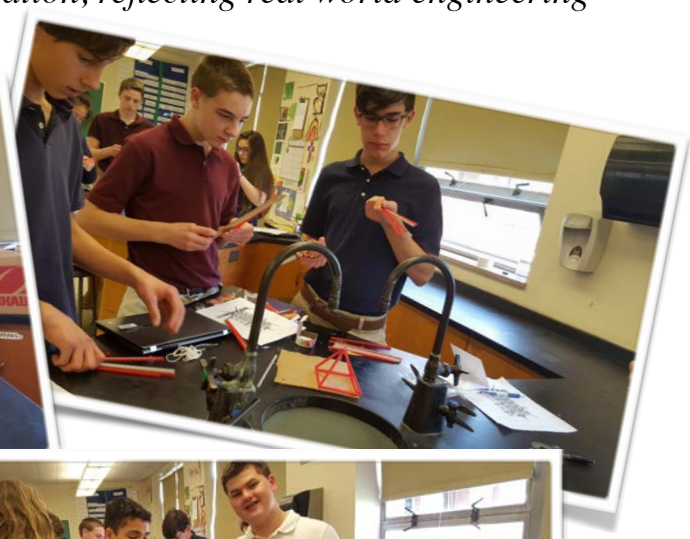
https://youtu.be/G2Pq54V9IM8

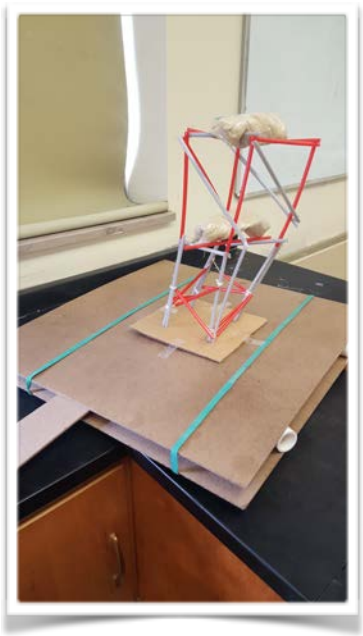
Junior High Science Students Tackle Real World Problems

Earthquake Resistant Structures

For their final investigation as part of their Earth Sciences unit, eighth graders worked in teams of three to four to produce earthquake resistant structures using common materials. After learning about some of the approaches architects use to reinforce buildings, students exercised their skills as thinkers to design and build two-story designs to withstand moderate and intense shocks. The structures were built on a homemade shake table with varying degrees of weight added to each floor. Materials and time were limited in this simulation, reflecting real world engineering constraints.







The winning earthquake structure! Molly Griffin, Lauren Brady, and Katie Mathaios used cross-bracing and other reinforcements to develop a structure that withstood a mid-intensity quake that held 250 grams for 10 seconds. It was leaning but it did not topple!

Human Impact on the Global Water System

During the third quarter, seventh graders studied the global water system. One project asked students to research the impact of plastic pollution and its relationship to surface currents. Their «call to action » was to write a Get the Word Out Newsletter to explain how plastic waste has accumulated to form the Great Pacific Garbage Patch, a giant floating landfill in the central North Pacific.

Students explored the causes of this ecological disaster, its implications, and what we can do to help. This unit helped to nurture their development as principled learners and service-minded stewards of all God's precious creation.

The Floating Landfill

By: Georgia Popovic

What is the Great Pacific Garbage Patch?

The Great Pacific Garbage Patch, also known as the GPGP, is pretty much a floating landfill. It contains over 250 billion pieces of plastic and in ten years the amount of garbage is supposed to double. The Garbage Patch is composed of tiny plastic bits that linger unseen beneath the surface, ranging in size from a few square inches to barely visible specks. The garbage patch was formed by a system of ocean currents(Great Pacific Garbage). In large ocean basins between continents, currents tend to move in a circular pattern, known as a gyre(The Ultimate Great).

How Would You Clean Up The GPGP?

Because the Great Pacific Garbage Patch is so far from any country's coastline, no nation will take responsibility or provide the funding to clean it up. Many microplastics are the same size as small sea animals, so nets designed to scoop up trash would catch these creatures as well(Great Pacific Garbage). I would try to make some sort of device that can signal like a really loud sound that will scare away the organisms. then I would come in with gigantic net to scoop up the debris. This process will take a very long time, but little by little we will be saving our planet Earth.

Why Are There Ocean Gyres?

An ocean gyre is a very large gyrating mass of water located in the Atlantic, Pacific, and Indian Oceans(How stuff Works)The water spins around a central axis at a very slow speed similar to a whirlpool. The water in the middle of these oceans do not circulate as much as water closer to the shore. The spinning of the earth and wind sustain these gyres.

Some of the floating debris on the Pacific Ocean

The main ocean gyres of the world.

Works Cited

"Ocean Gyres - FAQ - What Are They? - Ocean Facts, News & FAQ." *Ocean Facts News FAQ RSS*. N.p., 27 July 2014. Web. 23 Mar. 2016.

"Great Pacific Garbage Patch." *National Geographic Education*. N.p., 19 Sept. 2014. Web. 23 Mar. 2016.

HowStuffWorks. HowStuffWorks.com, n.d. Web. 23 Mar. 2016.

Floating Filth

By:Catherine Hilow

March 21st, 2016

What is the Great Pacific garbage patch?

The Earth's largest landfill is not on land, surprisingly it is on water. This landfill covers hundreds of miles of the North Pacific Ocean. The Great Pacific Garbage Patch is also known as a trash vortex. This pacific trash vortex is a gyre that is very dangerous towards the wildlife living there and here some reasons why.

Why would fish confuse plastics for food?

Sadly, this landfill is killing marine life. Turtles confuse the plastic bags that end up in this vortex as jellyfish. From thinking this the turtles choke on the bags and die. There is not just a danger for the marine life that eat the debris. The other effect is that the animals that eat the marine life that are infested with debris get sick too. This is a very big problem and we need to take action. Before we do that we have to learn more about the Great Pacific Garbage Patch.

How was the GPGP discovered?

Scientists believe the Great Pacific Garbage Patch was formed when North Pacific currents pushed all of the garbage into this ginormous gyre.The Great Pacific Garbage Patch was said to be predicted in the year of 1988. In 1999 they finally found it and people were disgusted and thought the man who found it was lying, but he wasn't.

Why this is important?

This is important to all of us because this does not just affect animals it affects humans too, so watch where you put your trash.

Citations

McLendon, Russel. "What Is the Great Pacific Ocean Garbage Patch?" *MNN*. N.p., n.d. Web. 23 Mar. 2016.

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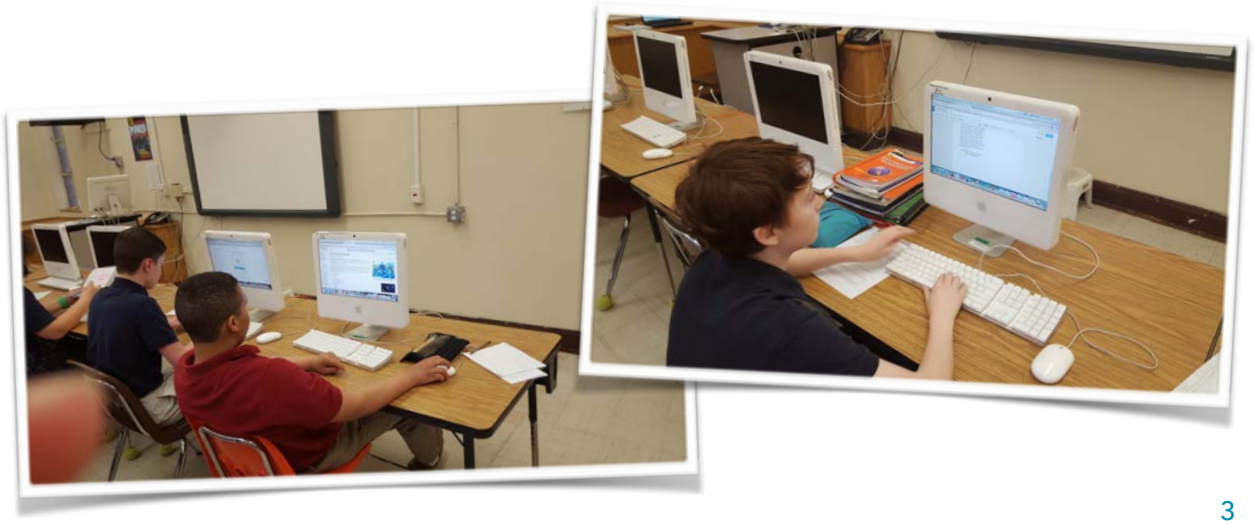
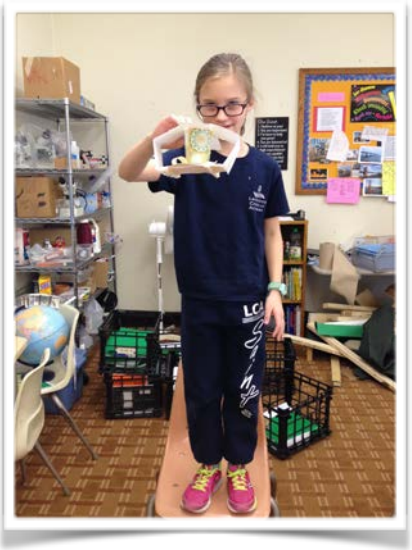


Volcanism

Eighth grade students worked together to examine how the concentration of silica in lava (as represented by flour) could impact the shape, flow rate and eruptive style of volcanoes, and then explore how this relates to volcanic classification and hazards. Each student in the group was responsible for staying on-task and focused to ensure that the lab was done effectively and correctly and that everyone could record good observations and draw strong conclusions. Because all of the eighth graders were responsible and principled the lab was a great success and everyone learned a lot about the properties of lava and their impact on volcanism.

Blast Off!

Extended Curriculum students investigated the challenges involved in landing Apollo 11 on the moon. Through reading Team Moon: <u>How 400,000 People Landed Apollo 11 on the Moon</u> by Catherine Thimmesh, and viewing footage from the 1960s, students were exposed to the teamwork that was required to overcome challenges and achieve goals. Each group also created a list of current challenges facing humanity and thought about what steps could be taken to face and overcome them. Finally, students participated in three space-related engineering design challenges: the lunar lander challenge, the moon rover challenge, and the foam rocket challenge. Each challenge required students to think through designs, modifications, and improvements in order to achieve a goal.



Weekend Warriors

Nine seventh and eighth graders competed at the Regional Power of the Pen Tournament where they honed their creative thinking and writing skills. Our 8th grade team earned the second place trophy.

Thirty fifth and sixth graders attended the John Carroll University Science Olympiad. Students worked in teams to complete a variety of scientific challenges and tests. Several students earned awards.

Thirty-six students in Grades 5 - 8 solved challenging problems in teams while participating in the Greater Cleveland Council of Teachers of Mathematics Problem Solving Tournament. Two teams earned the top award.

Technology Design

You can see the steam coming from Lab A when our 2nd through 5th graders are thinking through how to best code . . . sometimes they may solve a problem but see that it could have been done with less code, and that is where the real determination kicks in!

The 5th graders also create some thinking steam as they work through how to use timing, effect options, layers, grouping and other tools to make animations that do what they intend them to do! They used these animations in a presentation that explored their super hero strengths (IB profiles with which they strongly identified).

In 7th grade technology design class, our last entrepreneur board meeting discussion topic was on ethics in business. As our students develop and expand their virtual business, they have to make some difficult decisions based on their principles: Do they base their product brand on low cost and find the least expensive labor, possibly in another country, or do they raise cost and cut profits to support local labor? What balance do they find between health insurance and benefits for their employees, salary expenses and profits. Have they looked at the environmental impact of their business practices?

IB Profile in Second Grade

Mrs. Greggs's classroom has been transformed to allow students to find a seat where they can do their second grade best. In doing that, they are principled with sharing their space and supplies.

Throughout Lent, the second graders learned about the Stations of the Cross. They often stopped to take time to reflect about what Jesus was thinking during this journey.

The second graders have adopted a few new ideas in their classroom. They watched videos on stretching their minds and learned that they can do difficult things. They learned that it is okay to make mistakes and that mistakes can even make them stronger!