Newsletter

Racing Extinction

On Wednesday, December 2nd, Discovery Channel will present Racing Extinction to a global audience. From Academy Award-winning director, Louie Psihoyos, this groundbreaking documentary examines biodiversity loss, its effect on humanity, and the solutions that inspire hope for a more sustainable future. Discovery Education is proud to bring meaningful educational support around this documentary to engage middle and high school students in the important topic of biodiversity.

Leading up to the groundbreaking event, take your students on an inspirational journey live from the Smithsonian's National Zoo to explore the science behind anthropogenic mass extinction and meet those dedicating their lives to saving species and transforming communities along the way. The Racing Extinction #StartWith1Thing virtual field trip will take place on November 18 at 1pm ET. Click here to learn more.

From whale sharks to golden lion tamarins to scarlet macaws, your classroom will get an insider's view of cutting-edge conservation efforts and in the process, realize their potential to make a difference.

Before the Virtual Field Trip, introduce your students to the importance of biodiversity with interactive lesson plans and classroom activities. Interactive lessons are aligned to national standards and feature video clips from the acclaimed documentary.

White-Nose Syndrome (WNS)

USGS National Wildlife Health Center

White-nose syndrome (WNS) is an emergent disease of hibernating bats that has spread from the northeastern to the central United States at an alarming rate. Since the winter of 2007-2008, millions of insect-eating bats in 25 states and five Canadian provinces have died from this devastating disease. (see map below) The disease is named for the white fungus, *Pseudogymnoascus destructans*, that infects skin of the muzzle, ears, and wings of hibernating bats. In April 2014, WNS was confirmed in Michigan and Wisconsin.

The USGS National Wildlife Health Center (NWHC), along with the U.S. Fish and Wildlife Service and other partners continue to play a primary role in WNS research. Studies conducted at NWHC led to the discovery, characterization, and naming of the causative agent (the cold-loving fungus P. destructans), and to the development of standardized criteria for diagnosing the disease. Additionally, scientists at the NWHC have pioneered laboratory techniques for studying impacts of the fungus on hibernating bats.

To determine if bats are affected by white-nose syndrome, scientists look for a characteristic microscopic pattern of skin erosion caused by *P. destructans*. Field signs of WNS can include visible white fungal growth on the bat's muzzle and/or wing tissue, but this is not a reliable indicator. Infected bats also often display abnormal behaviors in their hibernation sites (hibernacula), such as movement toward the mouth of caves and daytime flights during winter. These abnormal behaviors may contribute to the untimely consumption of stored fat reserves causing emaciation, a characteristic documented in a portion of the bats that die from WNS.

Current estimates of bat population declines in the northeastern US since the emergence of WNS are approximately 80%. This sudden and widespread mortality associated with WNS is unprecedented in hibernating bats, among which disease outbreaks have not been previously documented. It is unlikely that species of bats affected by WNS will recover quickly because most are long-lived and have only a single pup per year. Consequently, even in the absence of disease, bat populations do not fluctuate widely in numbers over time.

The true ecological consequences of large-scale population reductions currently under way among hibernating bats are not yet known. However, farmers might feel the impact. In temperate regions, bats are primary consumers of insects, and a recent economic analysis indicated that insect suppression services (ecosystem services) provided by bats to U.S. agriculture is valued between 4 to 50 billion dollars per year.

Despite efforts to contain it, WNS continues to spread. Within the last two years, the disease has been confirmed in several central states, including Alabama, Indiana, Kentucky, Tennessee, and Missouri. High mortality of bats has not yet been reported at these locations, and it remains to be seen if WNS will devel**op** and manifest in warmer parts of the US or other temperate regions of the world with severity similar to that in the northeastern US. See the link below for WNS occurrences in North America.

WNS Occurrence by County (Map)

# Plickers: Classroom Clickers without the Clicking

If you have taught for a while, you have probably at least seen a classroom set of clickers somewhere on your travels. These student response systems were all the rage for a while. They looked like TV remote controls and were designed as a way that students could respond to a quiz or oral question by pressing a button to indicate the answer that they chose. Each clicker was unique to that student so that the teacher could see who answered what and when.

Fast forward a few years and today you can experience the future of classroom clickers with a free tool called Plickers. Now, if you are imagining a high-tech handset with an HD touchscreen, WiFi and a built-in camera, you would be wrong.   Plickers uses paper.   Yes, you heard that right, paper! Your students do not need electronic devices to take part in your assessment.   The plicker cards are downloaded and printed out by the teacher, can be laminated and used indefinitely.
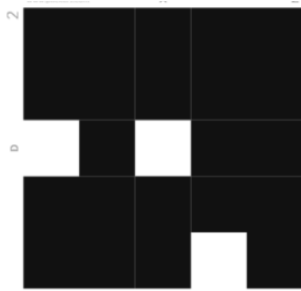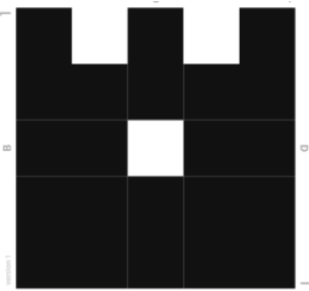
How It Works
Each student is given a card with a unique visual code. The code has 4 sides, each lettered A, B, C, and D. The student holds the card so that the letter they choose to answer the question with is at the top of their card. The teacher uses the iOS or Android app on their smartphone to slowly scan the room. The app recognizes the cards, records who the teacher assigned them to, and captures the answer that the student chose. The app will only record each student's answer once, so you need not worry about a second scan skewing your data.

Does Not Require a Great Deal of Technology

It's a genius idea. You don't need to be 1:1, you don't need an expensive set of classroom clickers, and you don't need to share devices among your students. All you need is some paper, and an app. The results appear live and in real time on the teacher's device, or they can be projected on a large screen for the whole class to see via the Plicker's website.
If you laminate the cards, you may have some issues recognizing the code due to the glare from indoor lighting. Furthermore, some student cards may not all be visible at once because they are hidden behind another student's arm or head or something else, but if you project the results on a large screen, students can see if their answer has been recorded and lower their card to make room for the others.
This hi-tech, low-tech approach is a unique and interesting way to poll your class quickly and efficiently.

You can go to: Plickers.com for more information and to download the app.

SketchUp: Google's Answer to 3D Drawing

Jim Moulton, Technology Integration and Project-Based Learning Consultant

Sure, everybody Googles, and Google Earth is de rigueur. But my question is, "Have you seen SketchUp?" This tool for three-dimensional modeling is fun, engaging, and, in the end, powerful.

What I am enjoying the most about introducing SketchUp to kids and teachers I work with is the level of spontaneous creativity it engenders. Lots of kids, and more than a few adults, start doing cool things that require perseverance and complex thinking, and they are doing these things without being asked to. Need some help getting started? Free tutorials are available online, and the learning around this tool happens quite quickly.
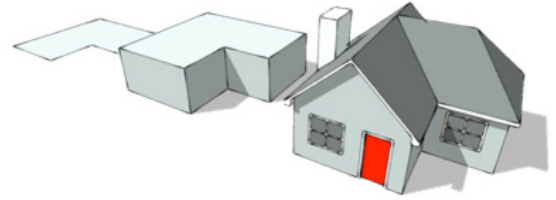
Here are some ideas for classroom uses of SketchUp:

- Create a series of geometric solids and explain your understanding of these shapes
- How could the packaging of milk be changed to make it more appealing to children ages 10-15?
- Create an atomic model of the sugar molecule
- Design three separate and distinct deck plans that would make the open space between the wings of our school useful to a variety of groups

Like any good technology integration, make sure your use of SketchUp is not about the technology. You teach mathematics, English, science, world language, social studies, art, music, or some other curriculum area, so blend the use of this tool into your work -- set its quality and power to work for you and your students.

The kids will find the cool stuff and the open challenges in the weekly 3D Challenge, and they will discover that they can place their models into Google Earth.

Teachers should head to the Education Section, where they will find lots of ideas, a forum for discussion, and examples of student work from around the world.

Oh, and did I mention that professional architects use this tool? How about inviting professionals to school to either help you get started or, better yet, see the great things you and the kids are doing!

*SketchUp Make software is free and no license is required, but Indiana has obtained a grant for SketchUp Pro, making it free for all Indiana educators and students in grades K-12. Please contact the IDOE Learning Resource Specialist, Meri Carnahan, at carnahan@doe.in.gov for questions regarding SketchUp licensing.

Read more online: http://www.edutopia.org/have-you-seen-sketchup

Professional Development Opportunities

$1000 Scholarships for Educator Academy in the Amazon Rainforest + Machu Picchu

The July 1-11, 2016 Educator Academy in the Amazon Rainforest of Peru is a cross-curricular professional development workshop for K-12 formal and informal educators to learn and use:

- 21st Century Instruction: 5E Lesson Design ~ Inquiry-Based Exploration ~ STEM
- Inquiry Protocols & Resources: Project Learning Tree ~ Cornell Lab of Ornithology ~ & More!
- Global and Cultural Perspectives: Service Learning ~ Sustainability ~ Global Education

Join Al Stenstrup, Project Learning Tree; Lilly Briggs, Cornell Lab of Ornithology; Dr. David Pearson, Wildlife Travellers' Guide to Peru; along with scientists Dr. Steve Madigosky, Widener University; and Randy Morgan, Curator/Entomologist, Cincinnati Zoo as you:

- Participate in citizen science projects and inquiry based field studies on a 1/4-mile Rainforest Canopy Walkway in one of the most biologically diverse environments on the planet.
- Spend a day in an Amazon village as you explore the complexities of sustainability and the role of education in creating a sustainable future for Amazon children.
- Work with fellow educators to explore strategies for using the Amazon as a vehicle for incorporating STEM education, inquiry-based learning, and sustainability science education into your classroom.

PLT Certification, BirdSleuth resources and 50 Arizona State University PD Hours included. Academic Credit and Machu Picchu Extension optional. $1000 scholarship deadline February 1, 2016.

Program cost is $1375 + air for scholarship recipients. Space is limited! Register early to secure your spot!

Get the details and download a syllabus and scholarship application at:

http://www.amazonworkshops.com/educator-academy.html

Contact christa@amazonworkshops.com or 1-800-431-2624 for more information.

Upcoming Events

45th Annual HASTI Conference
Racing Toward Science Literacy In Indiana

February 3-5, 2016
INDIANA CONVENTION CENTER

http://www.hasti.org/upcoming-conference-information

Member Discounts
Remember, you can become a member of HASTI and register at the discounted member rate. Member dues are $30 for teachers and industry professionals, $15 for college students and retirees. All HASTI Memberships expire January 31 of each calendar year. You must be a current member at the time of the HASTI conference to receive the member rate. To renew your membership or to sign up as a new member, please please select the "New Members" or "Renew" tab.

Bring Your Administrator Along for FREE
Returning in 2016, if 4 people from one school attend HASTI, your Superintendent or Principal will receive a complimentary registration! Please contact the HASTI registrar at tammiec@cmcglobal.com, 877-427-8499 to take advantage of this special offer.

If you have any questions or concerns regarding registration, please contact the HASTI Registrar at 877-427-8499 or via email at tammiec@cmcglobal.com.

What PRISM Can Do For You!

- Easily find the perfect teaching and learning resources from our library of over 4,000.

- Save a list of your favorite resources for quick retrieval.

- Create and share lesson plans that teach your subjects utilizing your favorite resources.

- Develop online classrooms with interactive assignments, lessons, quizzes and more!

- Store your classroom materials online so that they are available to you from any computer.

- Reach your students more effectively by using web media for the digital age.

- Earn PGP points by completing PRISM led online Moodle course – either Beginning Moodle or Intermediate Moodle courses are available to you at no cost several times throughout the year.

- Select from free learning resources that emphasize visualization, rich context, staged-problem solving, and electronically enabled collaboration / communication.

- Augment your own dynamic presence in the classroom with teaching tools that mirror the skills needed for success in higher education and the 21st Century workplace.

*Through our strong support from the **Lilly Endowment** and others, we are constantly growing and improving. Check our site regularly to see what new resources you can use in your classroom.*

www.rose-prism.org

www.rose-prism.org

PRISM is a free website that provides collections of online resources for Indiana educators in the fields of science, technology, engineering, and mathematics (STEM). The primary collection of digital teaching materials is indexed according to the Indiana Academic Standards for 6th, 7th, and 8th grade and secondary education courses.