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RAINFORTH GRAU ARCHITECTS

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LANDSCAPE ARCHITECT
PRINCIPAL, AHBE/MIG
LEARNING OBJECTIVES:

1. Participants will learn strategies to utilize nature in culturally relevant and responsive teaching pedagogues.
2. Using two Outdoor Education Center programs as case study examples, participants will identify inclusive education strategies to encourage positive attitudes toward science and to foster communication and collaboration skills.
3. Participants will explore various methods to employ, and educate users on how to care for native and drought resistant plants in their landscape designs.
4. Participants will examine techniques of incorporating sustainability into school site design and the importance of instilling students with the value of water conservation.

THE GREAT OUTDOORS
ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES
and in the suburbs...
preserve ecosystems
reduce heat island effect
improve air quality
stormwater management
resilience
biophilia
nature deficit disorder
healthy development
OFFICE OF OUTDOOR &
ENVIRONMENTAL
EDUCATION
THE GREAT OUTDOORS
ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES
Reconnecting Children to Nature.
What is our mission/vision?

PURPOSE

• How are we perceived?
• What’s our 30 second elevator pitch?
• Are we saying the same thing?
• Do we offer what people need?
• How do we measure success?
• Are we managing expectations?
China Pushes Electric Vehicles and Makes Producing Fossil Fuel Vehicles Tougher
General Motors Will Launch 20 All-Electric Cars by 2023
IN THE FOOTSTEPS OF ZIKA:
The Next Critter-Borne Viruses

There are currently over 50 countries with confirmed cases of the Zika virus. While health authorities are focused on containing the spread of this latest mosquito-borne disease, epidemiologists are on the lookout for new viruses that may be carried and spread by insects. Find out what could be the next Zika in the making.
MAYARO

CARRIER: Aedes mosquitoes

SYMPTOMS: Fever, chills, rashes, vomiting, diarrhea and joint pains

TREATMENT: None

FACTS:

• Similar to chikungunya virus, was first isolated in Trinidad in 1954.

• May already have adapted, like chikungunya, to be transmitted by urban mosquitoes such as Aedes aegypti or Aedes albopictus.

• Recent cases reported in large Brazilian cities.

• As of September 2016, was detected in Haiti in what could be new strains adapting to urban cycle.
RIFT VALLEY FEVER

CARRIER: *Culex tritaeniorhynchus* and *Aedes vexans* as well as possibly over 30 other mosquito species, 19 of which are native to North America

SYMPTOMS: Fever and chills that can lead to hemorrhagic diseases accompanied by abnormal bleeding or brain inflammation

TREATMENT: None (but there is current advanced work on a vaccine)

FACTS:
- Half of all Rift Valley hemorrhagic cases are fatal.
- Discovered in Kenya in early 20th century and was limited to Africa.
- In 2000, cases were reported in the Arabian Peninsula.
- Wild and domestic animals can serve as reservoirs of the virus.
CRIMEAN-CONGO HEMORRHAGIC FEVER

CARRIER: Ticks (mostly of the *Hyalomma genus*)

SYMPTOMS: Fever, rashes, bleeding from almost anywhere in the body

TREATMENT: Commonly the antiviral drug ribavirin but is said to be not very effective

FACTS:

- Up to 40 percent fatality rate.
- Identified in 1944 and spread from Africa to China.
- Arrived in Turkey in 2002 and by 2015 has infected 10,000 people there.
- Reached India in 2011, Germany in 2015, Spain in 2016, and in the UK by hitchhiking on migratory birds.
USUTU

CARRIER:  *Culex* common house mosquito (which transmits this Avian virus)

SYMPTOMS:  Headaches, fever, neurological disorders (similar to West Nile virus)

TREATMENT:  None

FACTS:

- Possibly connected to climate change; after warm summers in Europe, Usutu outbreaks and massive die-offs were reported among 4 species of birds.

- In 2013, 3 serious human cases were documented in Croatia.

- 6% of Italians around Modena have recently and unknowingly been infected with the virus.

- For most cases, Usutu infections in humans end without symptoms.
A week in the life of P-22, the big cat who shares Griffith Park with millions of people

Story by THOMAS CURRYN
Graphics by JOE FINCH
FEB 9, 2023 10:04 A.M.

The lion slinks through the chaparral, a blur of movement in the night. Head held lower than his shoulders, he scours the brush in a ravine just south of Travel Town in Griffith Park.

Hind paws land where the forepaws lift. No twig snaps, no crinkling leaf. He's silent, an ambush predator, always hunting, always looking for opportunity.

Inside a small gray box on his neck, a microprocessor switches on to calculate and time stamp his location — 21:00, Dec. 2, 2016 — one of 56 readings made in the course of a week. The coordinates reveal the lion's rambling course through this island of wilderness in the midst of the city.

As famous as he is, the mountain lion known as P-22 is a mystery, his day-to-day life hidden by his instincts for evasion.

The National Wildlife Federation has called the species a "nearlly perfect predator," and among the survival skills, fine-tuned over 40 million years of evolution, is a talent for invisibility.

Can you spot the mountain lion in this photo?
Forest bathing: What it is and why you should try it
What is forest bathing?
In 1982, the Japanese Ministry of Agriculture, Forestry, and Fisheries created the term *shinrin-yoku*, which translates to “forest bathing” or “absorbing the forest atmosphere.” The practice encourages people to simply spend time in nature — no actual bathing required. It’s also very low impact, which means you don’t have to go for trail runs or do an intense hike. The goal of forest bathing is to live in the present moment while immersing your senses in the sights and sounds of a natural setting.

Does it work?
There’s a reason why the largest cities in the world have parks, trees, and pockets of nature woven throughout their busy streets. One study by the *International Journal of Environmental Health Research* found that spending time in an urban park can have a positive impact on a person’s sense of well-being.¹

Aside from city parks, the more in-depth practice of forest bathing has been found to lower blood pressure, heart rates, and levels of harmful hormones — like cortisol, which your body produces when stressed.² This can help put you in a more calm and relaxed state.
Neuroscience: creating habits of mind

- Emotional connections to content = long term memory
- Processes facilitates mental clarity and creates pathways to organize information
- Climate of acceptance encourages academic and scientific risk taking/innovation
“Civilization is a race between education and catastrophe.” -- H.G. Wells

Our best efforts in student engagement (rigor, relevance, and relationships), requires a shift from...

“What am I supposed to teach?”

to

“How do my students learn?”
Attention and the Brain

• Emotions → attention → learning

• It is neurologically impossible to learn and remember information to which the brain has not paid any attention.

• States of emotional awakening (RAS): Novelty - Attention – Enthusiasm – sustained Interest

• The brain’s ability to stay attentive for extended periods of time is quite modest. Expectations of doing so are “brain-antagonistic” and yield diminishing returns.
Point Fermin OEC:  
Science at Sea and Coastal Ecosystems
Camp Skyhook at Clear Creek
Day of Discovery: USS Iowa
Provide a transformational experience that creates an emotional connection to learning and the outdoors.

Over a million parents

Serving over 800 schools in 27 cities

659,639 K-12 students

Reconnect One World

Over a million parents
THINK BIG!
Brain Considerate Strategies in action
NINETEENTH CENTURY LANDSCAPES WRAPPED AROUND TWENTY-FIRST CENTURY SCHOOLS

THE GREAT OUTDOORS
ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES
Lawn use roughly 1M gallons of water per acre.
STANDARD UNDERSTORY PLANTING
DIRECT UNDERSTORY SUBSTITUTION

Phormium
Flax

Hesperaloe
Red Yucca

Lonicera
Honeysuckle

Lantana
Spreading Lantana
WATER REQUIREMENTS

Current standards:

862,400 gal. / acre / year

Revise plant species:

388,080 gal. / acre / year

Revise plant species, revise irrigation:

269,500 gal. / acre / year

Average annual savings:

$60,000 acre / year
50% OF WATER IS WASTED DUE TO IRRIGATION INEFFECTIVENESS.

US Environmental Protection Agency (EPA)
WHAT DOES A TWENTY-FIRST CENTURY CALIFORNIA SCHOOL LANDSCAPE LOOK LIKE?
Naturalist landscape design intent

Wonderful College Prep Academy
Delano, California
Low water using plants

Claremont McKenna College – North Mall
Claremont, California

Breeze™ Dwarf Mat Rush
Lomandra longifolia 'LM300'

Bakersfield
Northridge
Redding
San Francisco
Soquel
Santa Barbara
Outdoor learning

Cal Poly Business Administration
Pomona, California

Playa Vista Elementary
Playa Vista, California
Outdoor modern amphitheater

LAUSD San Pedro High School
Olguin Campus
San Pedro, California

Wonderful College Prep Academy
Delano, California
Community nodes

Los Angeles Southwest College
Los Angeles, California

Pasadena City College Technology Arts
Pasadena, California
Synthetic turf and less lawn

Claremont McKenna College – North Mall
Claremont, California

Maywood Center for Enriched Studies
Maywood, California
Creative design with hardscape

Robert F Kennedy Community Schools
Los Angeles, California

Blair International Baccalaureate Middle School
Pasadena, California
CASE STUDY: PLAYA VISTA ELEMENTARY SCHOOL
Playa Vista Elementary

*Agapanthus africanus*
Lily of the Nile
### What We Found
- High salinity along with border-line high Boron and off the charts Sulfate readings
- Normal soil pH

### Recommendation
- Provide a list of reclaimed water tolerant plants
- Apply gypsum to scratched soil per soil analysis report. Drench to leach out salts.
Where did all of the irrigation heads go?
Playa Vista Elementary

<table>
<thead>
<tr>
<th>What We Found</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inefficient irrigation system</td>
<td>• Repair or replace pressure regulator</td>
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Playa Vista Elementary
### Playa Vista Elementary

<table>
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<th>What We Found</th>
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<tr>
<td>Rough turf</td>
<td>• Repair irrigation system</td>
</tr>
<tr>
<td></td>
<td>• Organic only campus; therefore tough to use weed and feed</td>
</tr>
<tr>
<td></td>
<td>• Define best practices for turf care</td>
</tr>
</tbody>
</table>
Future Opportunities and Solutions

• Overall District Water Policy
• M&O Buy In
• Individual School Buy In
• Training
• Belief
“ONE OF THE CONDITIONS OF HAPPINESS IS THAT THE LINK BETWEEN HUMANS AND NATURE SHALL NOT BE BROKEN.”

Leo Tolstoy
QUESTIONS