

The slide features a central title surrounded by decorative elements. In the top-left and bottom-right corners, there are clusters of stylized leaves in shades of brown, tan, and teal, some with small red berries. In the top-right and bottom-left corners, there are teal wavy shapes with teal leaves and berries. A single brown leaf is positioned to the left of the title.

# Outdoor Learning in APS

# What is Outdoor Learning?

**2....is learning in, about, and for the outdoors.**

Council on Outdoor Learning

**3...[is] educating for healthy relationships through sustainable outdoor experiences. It is different to outdoor recreation.**

Outdoor Education Australia

**1. Outdoor learning, or outdoor education, refers to a broad, interdisciplinary set of activities that include discovery, experimentation, learning about and connecting to the outdoors and natural world, and engaging in environmental and recreational activities in an outdoor setting.**

Environmental Ed. New Mexico  
NMPED 2020 re-entry plan

**4....learning in an outdoor context based on experiences and interactions with physical and cultural phenomena.**

Brant Miller, University of Idaho

**5....active learning in the outdoors.**

English Outdoor Council

**6. Outdoor education is the use of a school site's outdoor spaces or nearby open areas for the purpose of learning and emotional well-being.**

APS Outdoor Education Team



# Outdoor Learning Team



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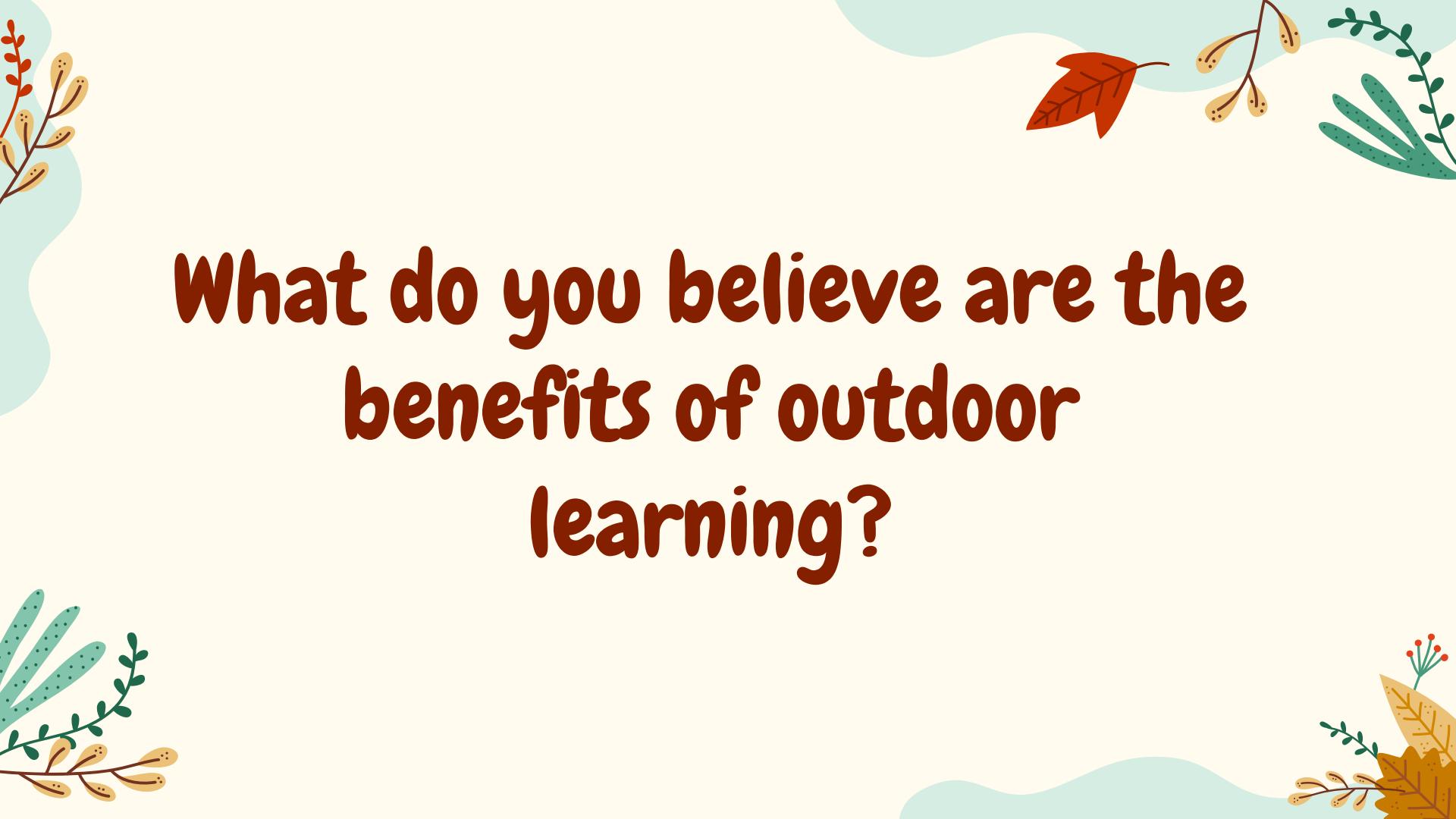
charles.ciernia@aps.edu





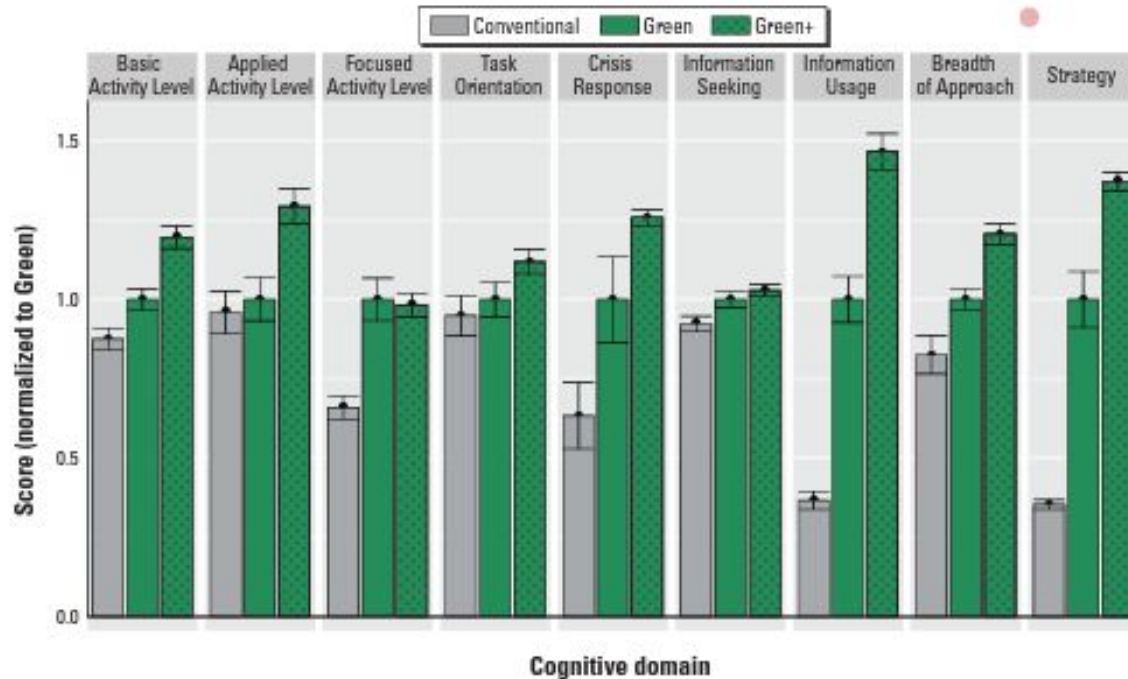
## Vision

APS is a place in which school campuses extend beyond the four walls of the building, where the outdoors is valued and utilized as an educational resource, and where the community and the natural environment are integral components of children's education.



**What do you believe are the  
benefits of outdoor  
learning?**

# The Effect of Outdoor Air on the Measures of the Cognitive Domain



**Figure 1.** Average cognitive function scores and standard error bars by domain for the Conventional, Green, and two Green+ conditions, normalized to the Green condition by dividing all scores by the average score during the Green condition.

Adults were given standardized tests of the Cognitive Domain on three consecutive days. Order was randomized.

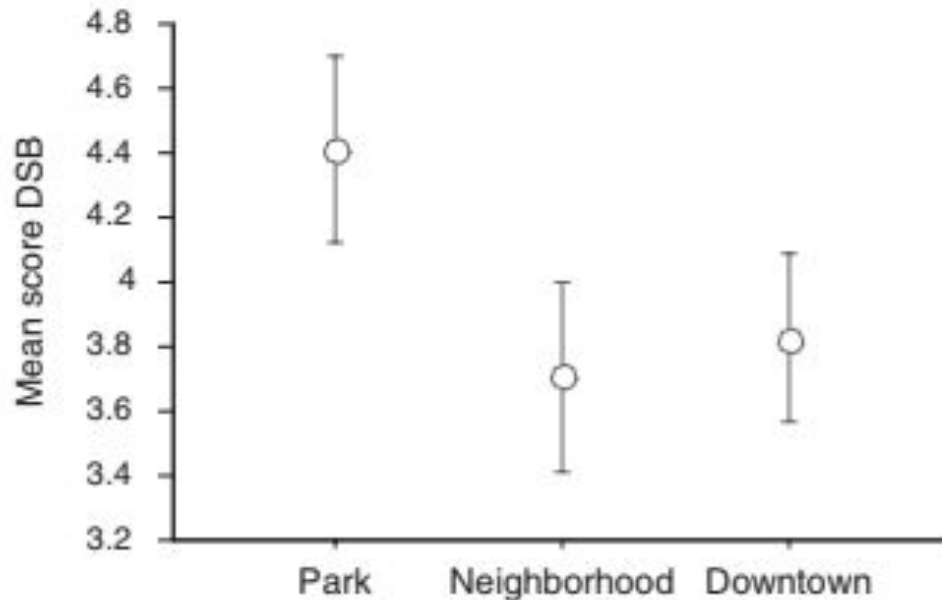
Conventional = recirculated air according to local building code (carbon dioxide at 1500ppm)  
Green = ventilation with outside air to drop carbon dioxide to 550ppm

Green+ = Ventilation at double the rate with outside air (Carbon dioxide at 450ppm)

All blindness, controls and testing methods clearly discussed in the paper. (Allen et. al 2016)

# The Effect of Green (i.e. Living Plants) on Recovery from Mental Fatigue

**Figure 1**  
**Mean Postwalk Scores on Digit Span Backwards for Park, Neighborhood, and Downtown Conditions**



Randomized, blind study of 16 kids with ADD or ADHD. Students were given a battery of puzzles to induce mental fatigue. Then taken on a 20 min walk outside in one of 3 conditions (a park = trees and grass), the local neighborhood and downtown (both characterized by asphalt and concrete). Walks controlled for pace, intensity, and required behaviors. Students were then given a Digit Span backwards test to assess ability to concentrate. Tests were repeated over 3 days in random order.

[Taylor and Kuo 2008](#)

# Exposure to Green spaces and Single-year Superior Working Memory Development

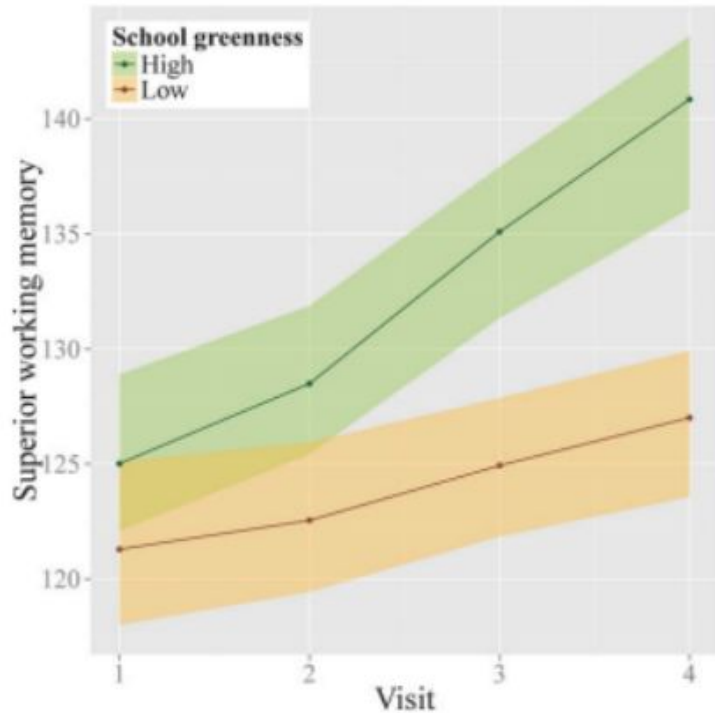


Fig. 1. Twelve-month progress (with 95% confidence bands) in superior working memory for participants with the first (low greenness) and third (high greenness) tertiles of greenness within the school boundaries.

Superior Working Memory is the ability to hold information in memory while it is being updated.

2500+ elementary students from 36 schools, controlled for Statistical Peers, Schools selected for most green and least green spaces by satellite imagery X axis is time for one year (4 x 3 months visits for BOY, MOY1, MOY2, EOY)

[Ardoin 2018](#)



# Outdoor Learning “Tree”

## Substitution

No substantial change to the content, just the location where it is delivered.

## Augmentation

Content remains unchanged, but the outdoors is used to enhance the lesson.

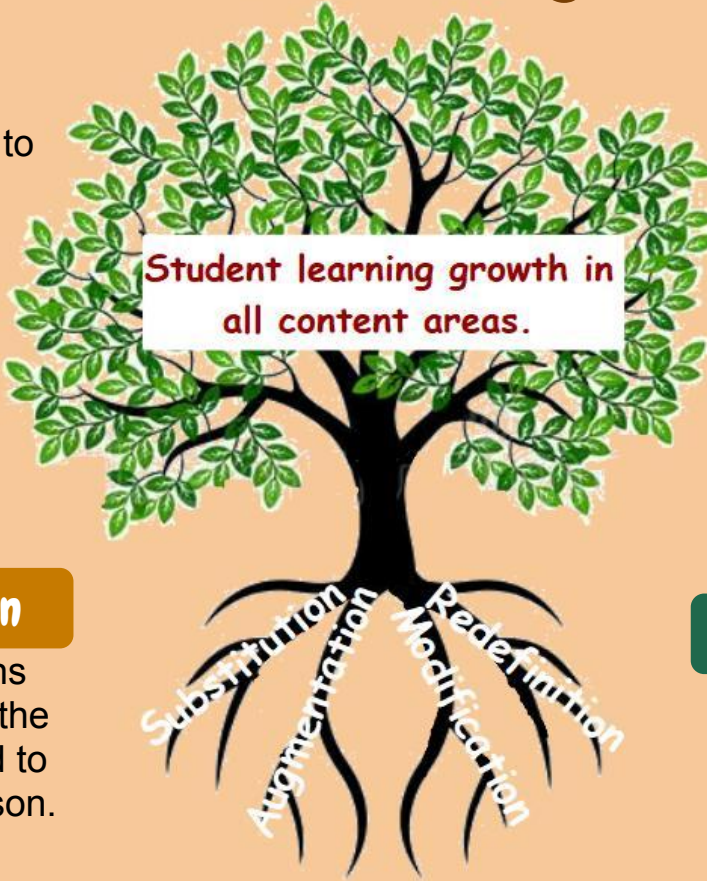
Student learning growth in all content areas.

## Redefinition

The creation of new tasks or lessons in which integration of the outdoors is essential and the best pedagogical choice.



## Modification

A lesson and its tasks are redesigned to include the outdoors.





Enhancement

Transformation



## Small Group Think – How will you use this in your curriculum?

1. Talk with your group/partner about what you will commit to try with regards to outdoor learning.
  2. What branch of the tree will this activity align?
  3. What will you take back to your schools to begin/continue the conversation around outdoor learning?
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# Outdoor learning is...

- K-12
- cross curricular
- pedagogical practice
- Everywhere

