



A Breath of Fresh Air

**A Refreshing Initiative for Outdoor Learning
in the Science Curriculum**

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Outdoor Learning

is a very important topic to me. As an earth science teacher, I think it makes sense to teach about the Earth, with the Earth. As a previous fellow of WIPRO Science Education Fellowship, I executed a year long project on outdoor learning. Seeing it with my own eyes, I can confidently say that there are many benefits to outdoor learning.

Unfortunately, there is a lack of outdoor learning in school science curriculums due to time constraints and lack of teacher confidence. Part of my action project included creating in-district professional development programs to increase the presence of outdoor learning on school campuses.

Outdoor learning pairs well with the Next Generation Science Standards as they both suggest student driven and inquiry learning. Through outdoor learning, students learn to become critical thinkers, confident risk takers, and lifelong learners.

Teaching a “Plugged In” Society

45% of eighth grade students said they are only outside when waiting for the bus and during physical education.

Juxtaposing this prior statistic, 100% of students expressed that they enjoy and look forward to going outside for educational purposes.





As society adopts more of a technological mindset, environmental issues are not decreasing. Teachers need to create an environment where students gain respect and empathy for the outdoors.

→ Research shows that outdoor learning increases attendance rates, engagement and test scores. At the same time, it decreases behavior issues, anxiety and ADHD symptoms.¹

→ There is a lack of outdoor learning in formal education due to time constraints and teacher efficacy.²

→ Outdoor learning is a necessary component to creating lifelong learners.

1- Louv, Richard. *Last Child in the Woods: Saving Our Children from Nature-deficit Disorder*. 2005.

2- Carrier, Sarah J. "The Effects of Outdoor Science Lessons with Elementary School Students on Preservice Teachers' Self-efficacy." 2009

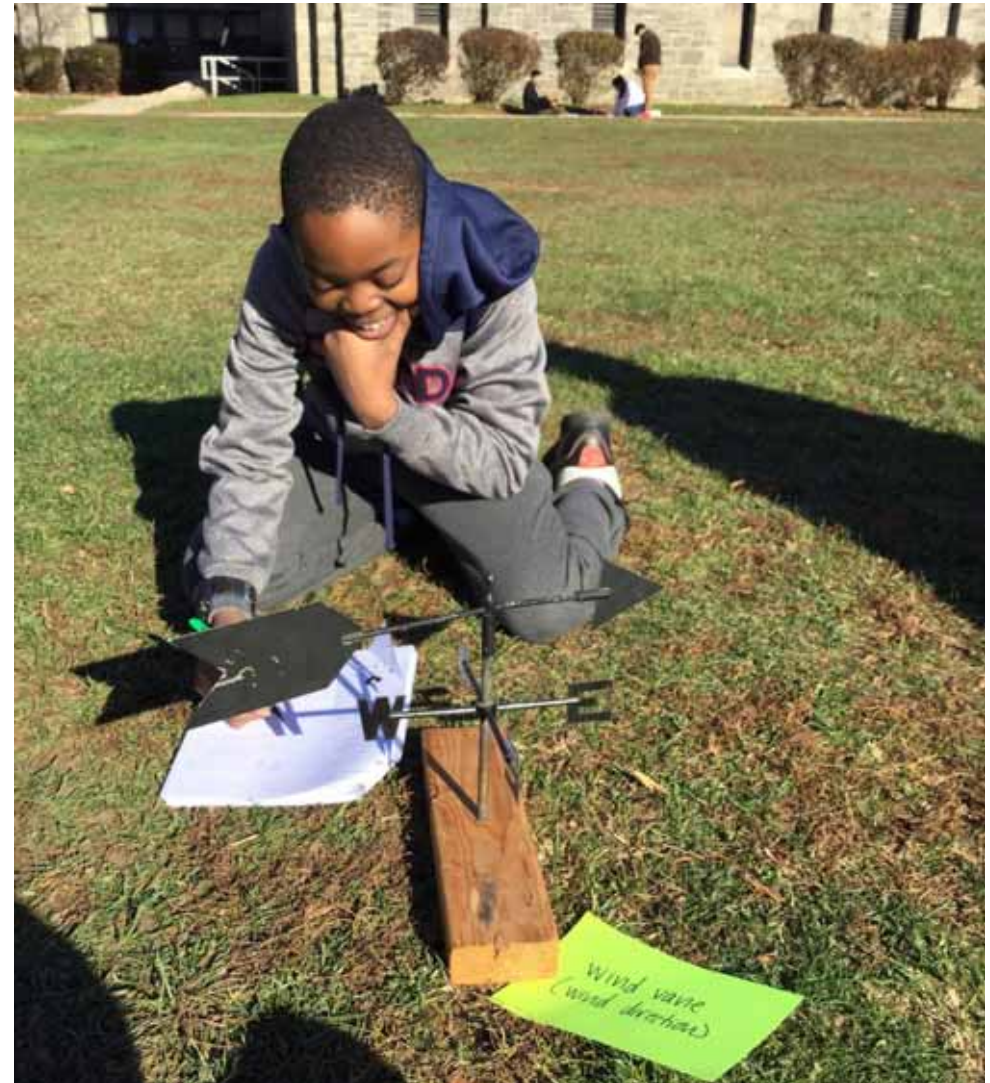
True or False:

**Teaching the curriculum
through the outdoors
increases test scores.**

True

Students who routinely participated in outdoor learning, scored higher on the NYS Earth Science Regents compared to the students from the year prior who experienced very little outdoor learning.

In 2014-15, 66% of students who took the Earth Science Regents (n=50) achieved mastery by scoring an 85% or higher on the exam compared to 2015-16, 75% of students who took the Earth Science Regents (n=52) achieved mastery. Additionally, out of those respective class sizes, two students failed the regents in 2014-15 and there were no failures for the 2015-16 students.





Outdoor learning creates a safe environment for risk taking, student created procedures, data collection, class observations and discussion.

→Helping the struggling learner...

“We are inside all day and it's nice to learn in a different environment. Also, earth science is not an easy subject for me so being able to see examples of what we are doing in class in the real world is a great way to connect to what we discuss in class”
-8th grade student

→become the lifelong learner

“There is always something new outside which can be explained with science” -8th grade student



Meet Renzo.

A bright and hardworking student who is painstakingly shy.

He loves science, but is uncomfortable collaborating in the classroom with other students.

Meet Angelica.

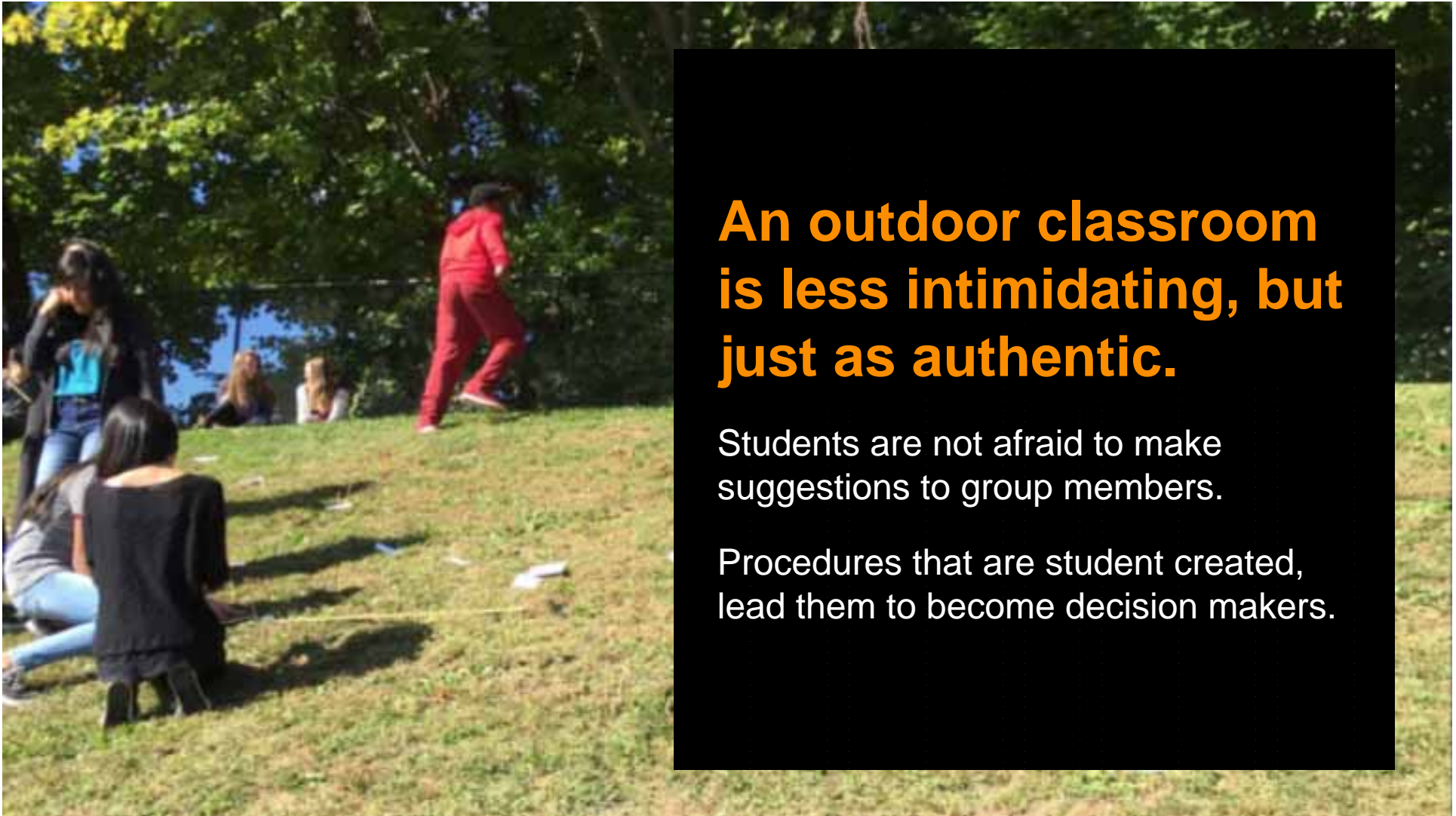
A success driven student who is afraid to take risks.

She will ask many questions throughout a procedure to reassure that she is doing it properly.



**Indoor lessons can
put pressure on
students thus
inhibiting them to
speak up and take
chances.**





**An outdoor classroom
is less intimidating, but
just as authentic.**

Students are not afraid to make
suggestions to group members.

Procedures that are student created,
lead them to become decision makers.



Confidence gained

Students are comfortable making procedural decisions.

When it comes to outdoor learning, different is good. There is more than one way to solve a problem.

From shy to confident

Renzo and Angelica scored a 93 and 82 on the NYS Earth Science Regents, respectively. Their ability to make connections from tangible outdoor lessons to test generated diagrams, helped them to show evidence of learning.





The benefits of outdoor learning do not translate to ample professional development opportunities.

Curriculum writers do not focus on outdoor instruction and as a result, teachers are not trained to teach outdoors.

- In 2016-17, teachers will be able to participate in a workshop series that present skill for outdoor learning and set aside opportunities for lesson reflections.
- Teachers shared interest in single workshops to learn techniques for outdoor learning of which 58% stated they would consider it and another 40% gave strong interest.

Finally, outdoor curriculum is getting recognition.

**There are over
40 states that have
considered to adopt the NGSS
as of Nov. 2017.**

The Next Generation Science Standards (NGSS) compliments outdoor learning with

**“STRONG SCIENCE
BASED
KNOWLEDGE AND
SKILLS, CRITICAL
THINKING AND
INQUIRY BASED
PROBLEM
SOLVING”**

Source: nextgenscience.org



Content

- Become familiar with curriculum and standards.

Vocabulary

- Present vocabulary to promote language acquisition.

Questioning

- Pose meaningful questions to support discourse.

Materials

- Collect tools and resources necessary to acquire skills.

Location

- Identify and locate accessible spaces on campus.

What students are saying

**I get to go
outside to see for
myself how it
works**

**I have space to
move around and
I concentrate
better**

**Its nice to learn
about your
surroundings and
environment**

Quotes from student survey

**Through outdoor learning,
students become critical
thinkers, confident risk
takers and lifelong learners**

A low-angle photograph of a large tree with green leaves against a blue sky. The tree's trunk and branches are dark and prominent, with many bright green leaves filling the upper portion of the frame. The sky is a clear, bright blue. The text is overlaid on the image, with the first part in white and the last part in orange.

**Outdoor learning needs to
take a prominent role in the
science curriculum
nation wide.**

Q&A



Thank You

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