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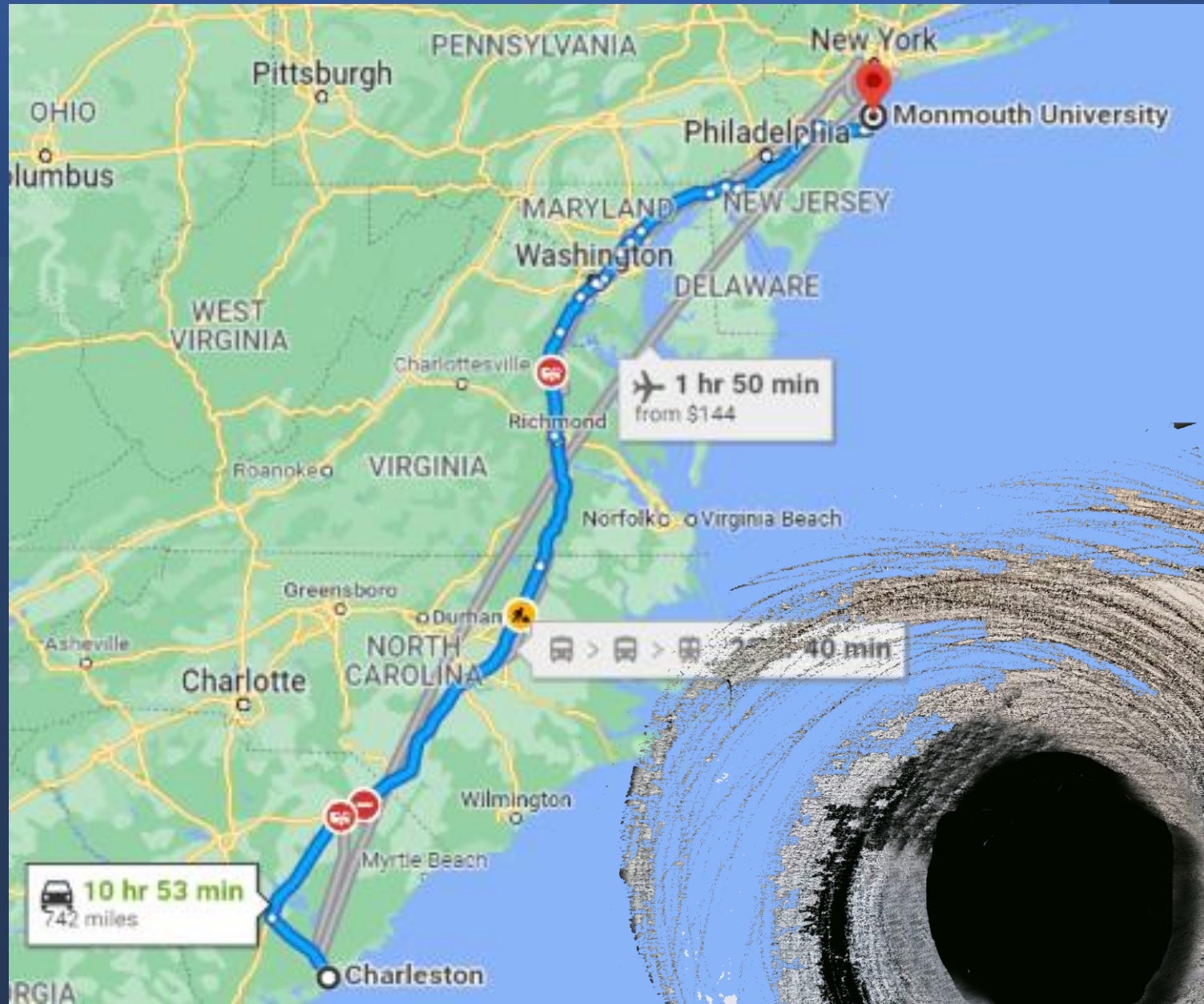
A graphic featuring a large, swirling hurricane eye in shades of grey and black. In the center of the eye, several hands are stacked on top of each other, symbolizing teamwork and resilience.

KIDS TEACHING FLOOD RESILIENCE
GET HURRICANE SMART!



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Fall 2020

Mid Pandemic

Being in a Situation: The Art & Science of Resilience

Merrie Koester, Ph.D.
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Now what?

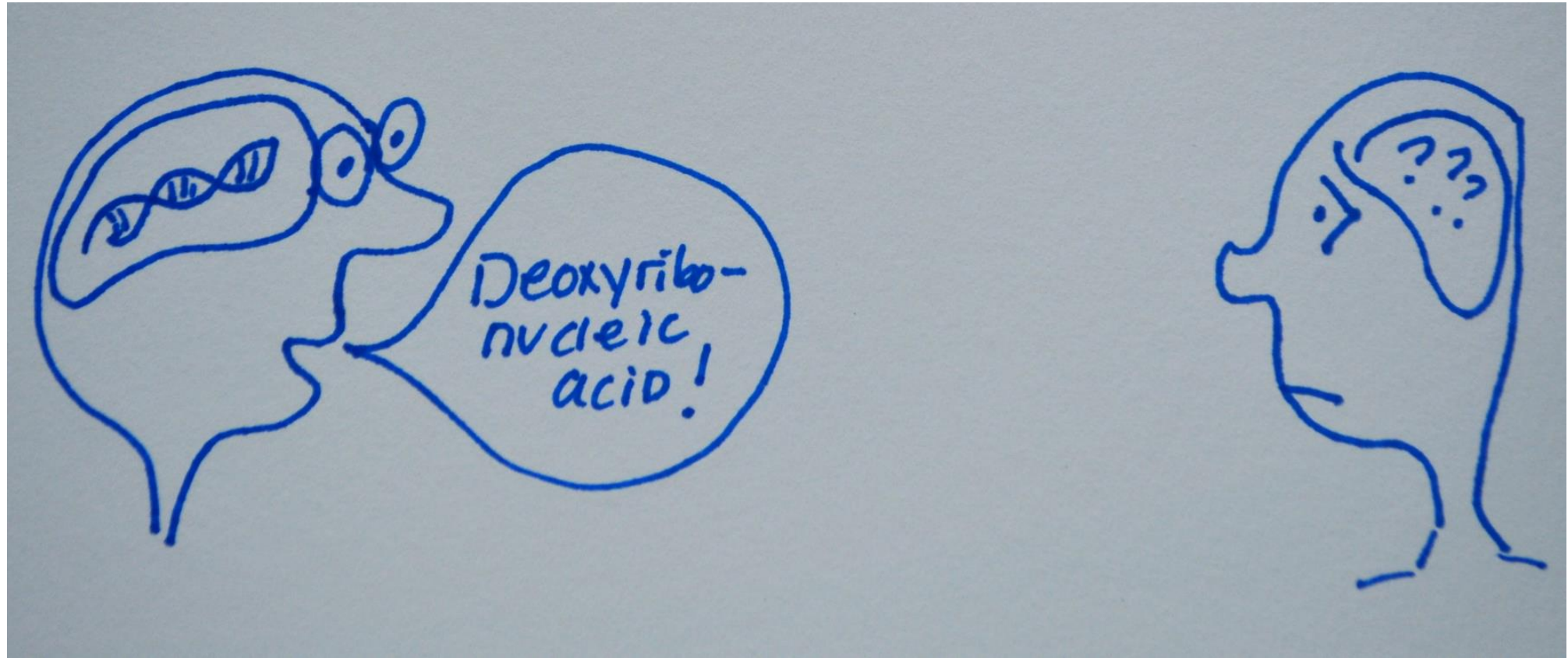
Human beings ARE
because they are in a
SITUATION.

Paulo Freire

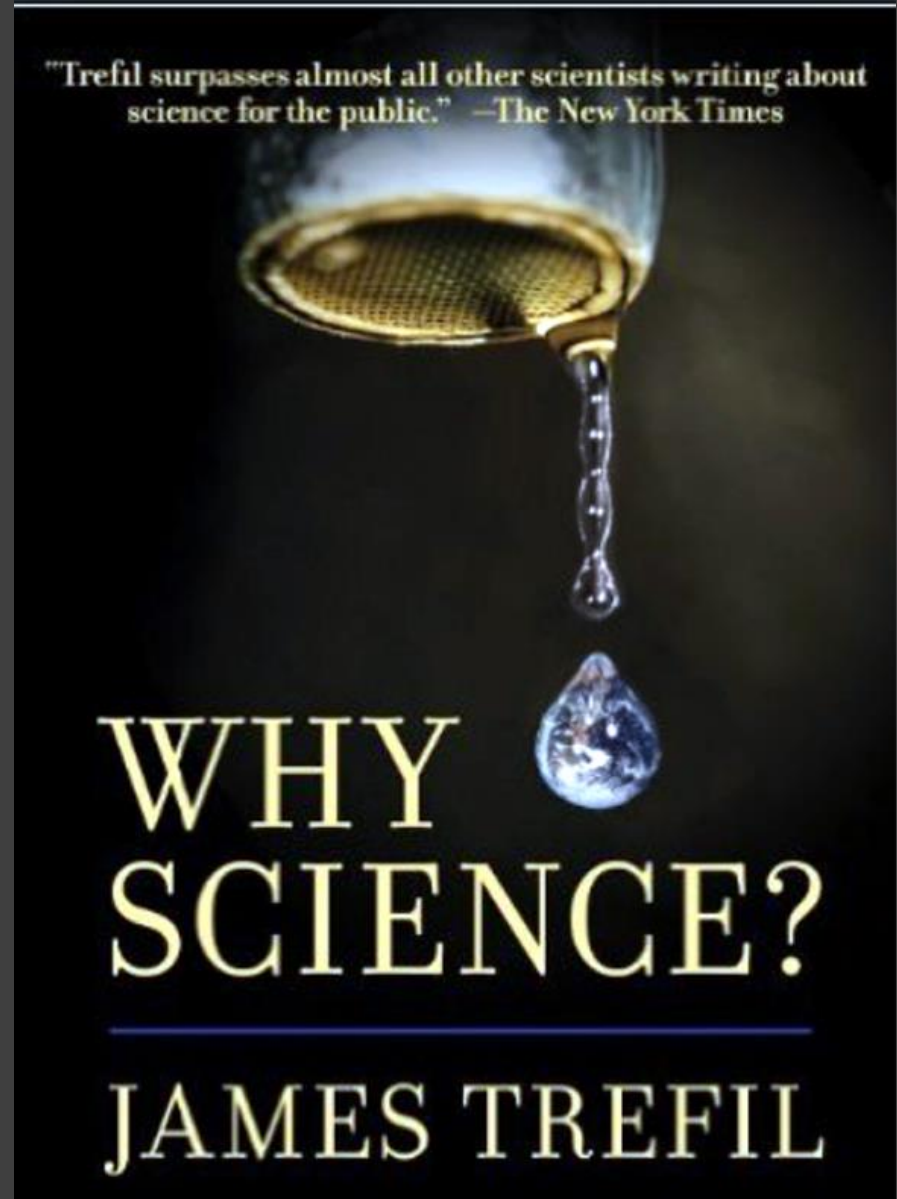
What counts as a *CAPITAL S* SITUATION?

What counts as a *lower case s* situation?

What is happening here?



THE GREAT
TURN OFF
to Science





Learning science is something students do, not something that is done to them.

National Academies of Sciences, Engineering, and Medicine. 1996. National Science Education Standards. Washington, DC: The National Academies Press. <https://doi.org/10.17226/4962>.

**A SCIENCE-ILLITERATE
CITIZENRY IS A
CAPITAL S SITUATION!**

Science Literacy

- Scientific literacy means that a person can ask, find, or determine answers to questions derived from **curiosity** about everyday experiences.

- **CAPACITY(mk)**

- It means that a person has the ~~ability~~ to **describe, explain, and predict** natural phenomena.

- **SOURCE** National Academies of Sciences, Engineering, and Medicine. 1996. National Science Education Standards. Washington, DC: The National Academies Press. <https://doi.org/10.17226/4962>

EDUCATIONAL VULNERABILITY



**What you DON'T KNOW can
cause you, your friends, & family
HARM!**



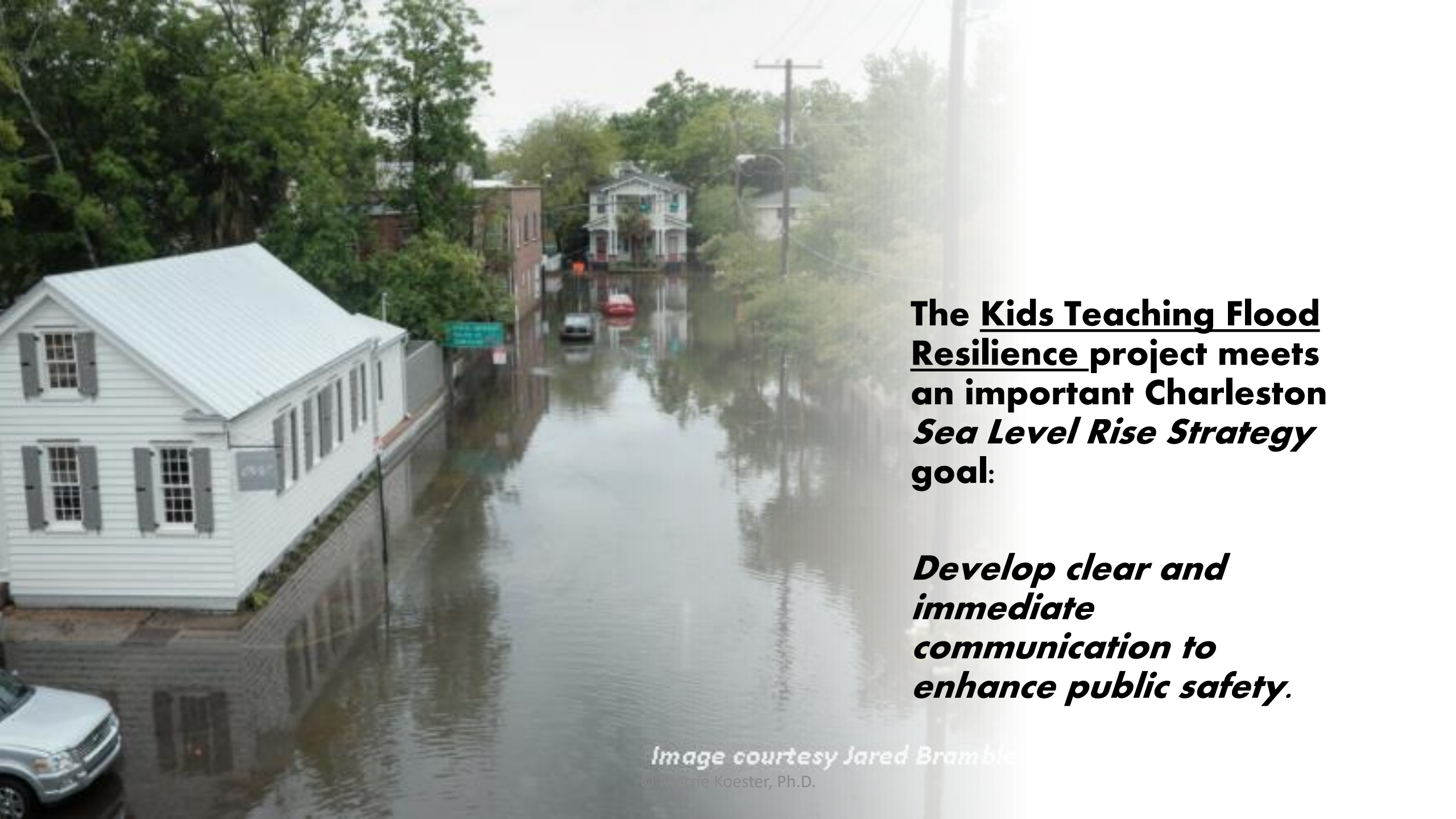


Sea Level Rise
STRATEGY



Kids Teaching Flood Resilience

IMAGINE



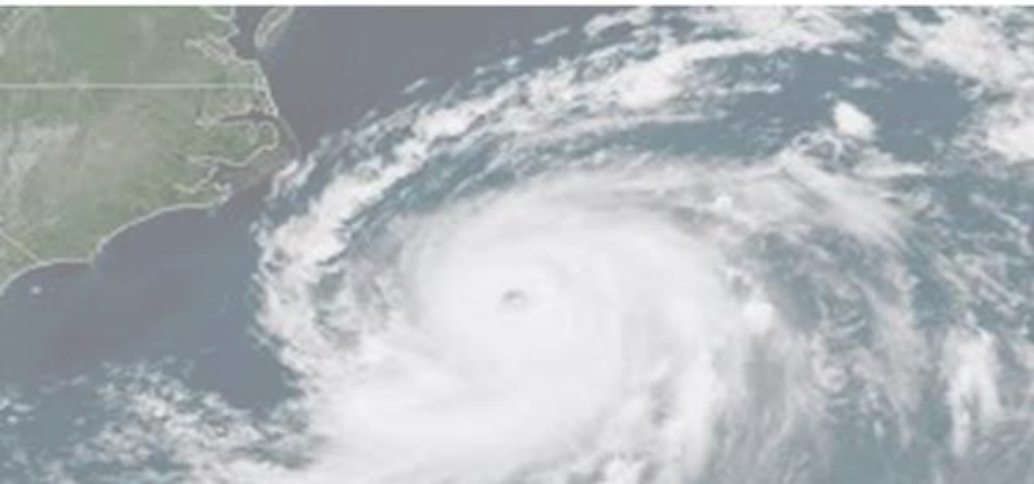
The Kids Teaching Flood Resilience project meets an important Charleston *Sea Level Rise Strategy* goal:

Develop clear and immediate communication to enhance public safety.

Image courtesy Jared Bramble
© Marrie Koester, Ph.D.

Traditional approaches to public education directed at hazard risk mitigation are largely ineffective.

GET READY!!!





RESEARCH CLAIM

When personal and community
PROBLEMS
arise out of
SITUATIONAL VULNERABILITIES,
they are often preceded by
a set/series of
KNOWABLE systemic conditions
or events (happenings)
THAT CAN BE EFFECTIVELY
COMMUNICATED BY YOUTH!

KIDS TEACHING FLOOD RESILIENCE

GET HURRICANE SMART!





Imagine an
EDUCATIVE
RESILIENCE
GENERATING
SYSTEM

Driving questions:

What do *YOU* and *YOUR* organization want/need to see happen?

How can being part of this collective work help amplify the goals *YOU* value, too?

There is a synergistic space of altruistic sharing.



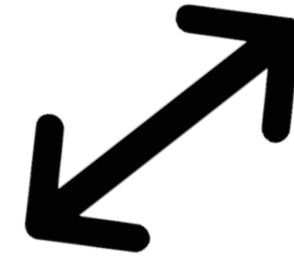


ENERGY IS THE CAPACITY TO DO **WORK!**

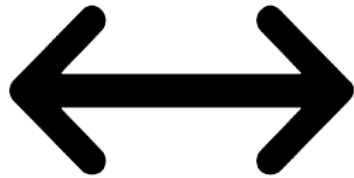
RESEARCH METHODS

KNOWLEDGE

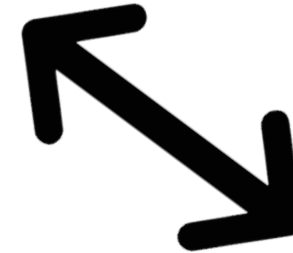
RESEARCH



FOCUS



CASE STUDY

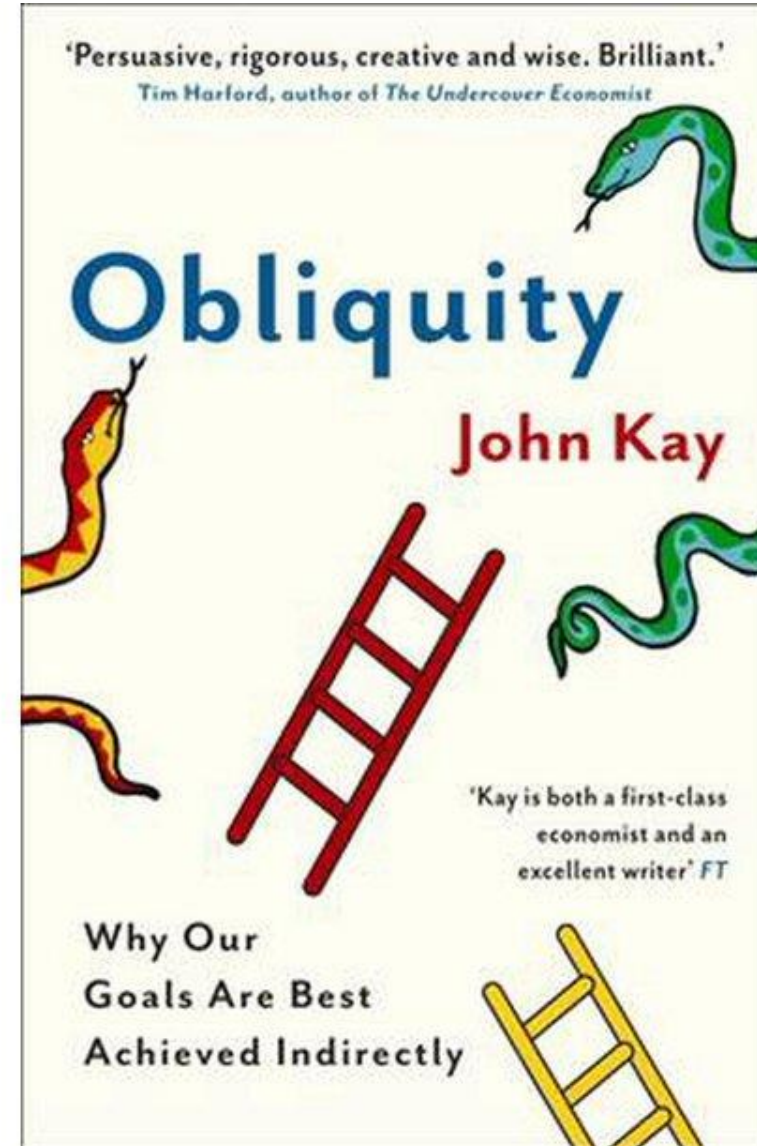


SUBJECT

DATA

Pearls of Wisdom

- Iteration and experience lead us to the best principles of analysis.
- In obliquity, we learn about the **STRUCTURE** of a problem **AS** we solve it.
- **While it seems sensible to plan everything before you start, mostly you can't!**
- Oblique approaches rely on a toolkit of models and narratives, rather than any simple or single account.



***WE MAKE OUR CHOICES FROM A
LIMITED RANGE OF OPTIONS.***

***THE NOTION OF A “BEST” SOLUTION
MAY ITSELF BE MISCONCEIVED.***

JOHN KAY, OBLIQUITY: WHY OUR GOALS ARE BEST ACHIEVED INDIRECTLY

TEACHING METHODS

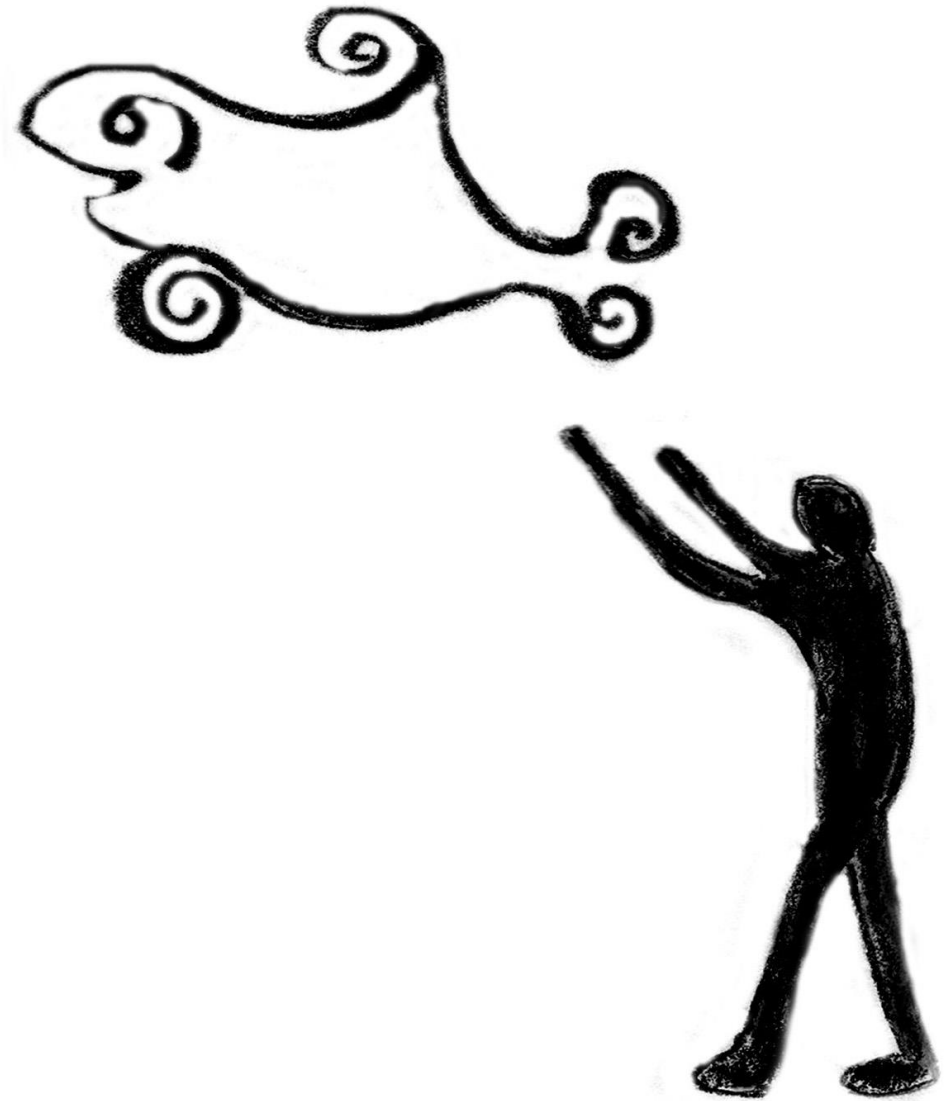
Place-based



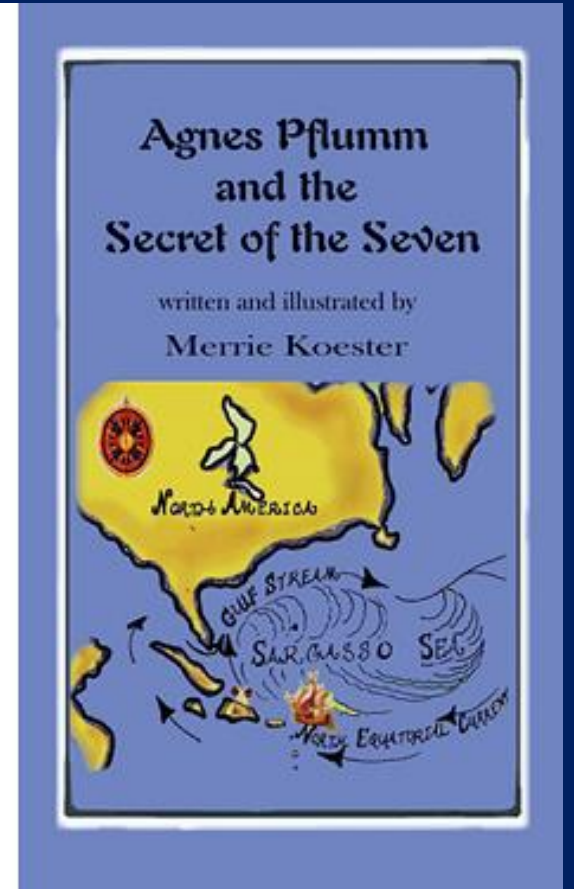
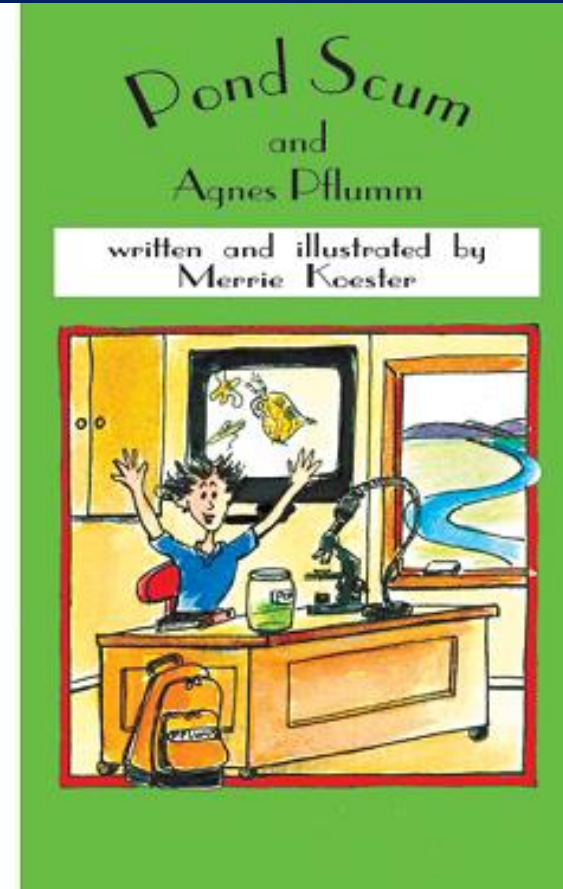
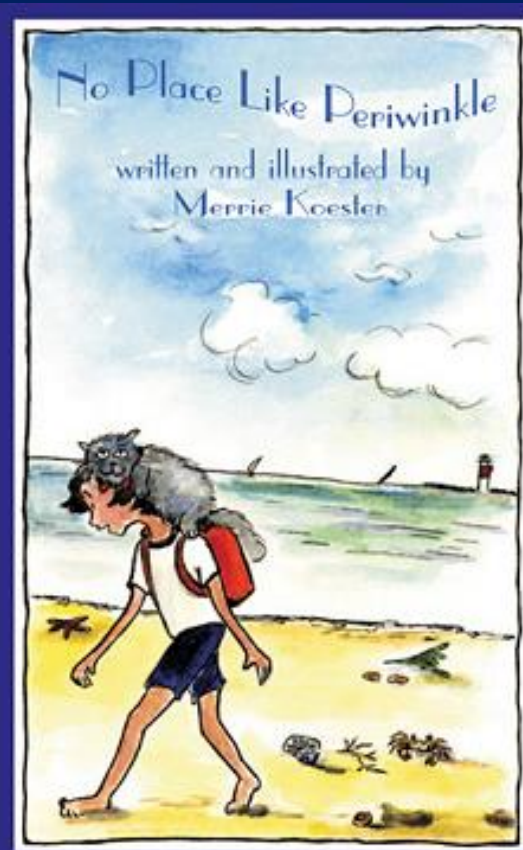
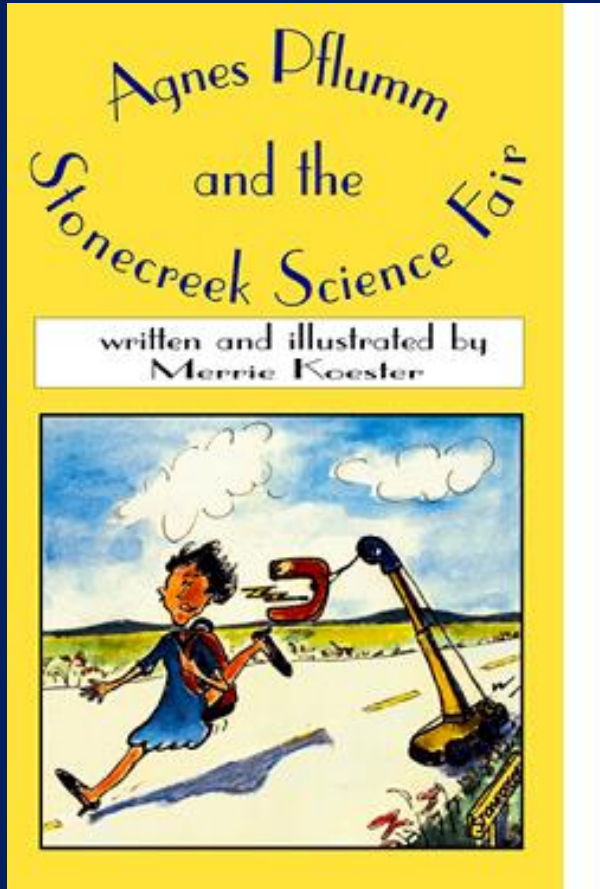
as a Framework
for Empowering
EDUCATIVE RESILIENCE
through Citizen Science

*The ARTS put us
in touch with whatever
it is that is beyond us.*

Ian McGilchrist



Teaching Middle Grade Science through Story



<https://www.agnespflumm.com/>

CSE

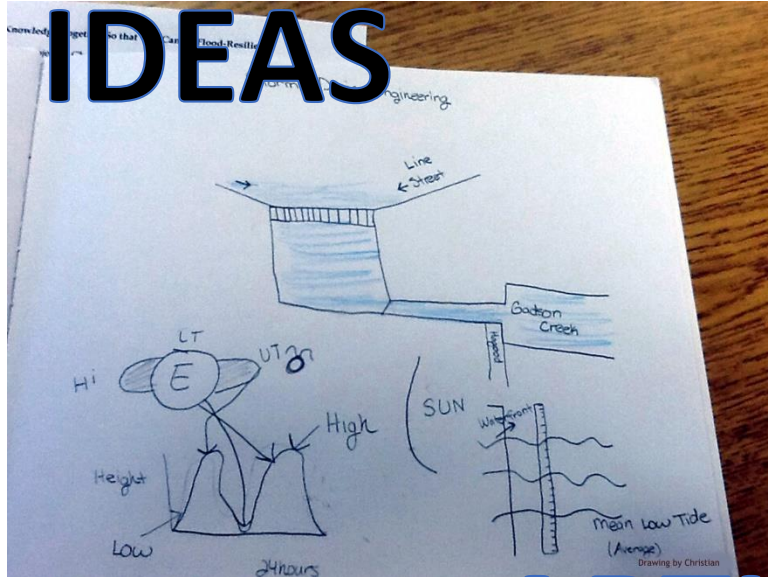
Center for Science Education

**Project
Draw for Science****MAKING SCIENCE VISIBLE
FOR ALL STUDENTS.**

Our conceptual model of STE[A]M includes:

- The belief that the arts connect, communicate, and break down barriers, opening windows to the world.
- STE[A]M as the **Art** of thinking and making ideas, performances, and other Artifacts, using tools (**Technology**), **Science** knowledge, **Mathematical** reasoning, and design practices (**Engineering**) in a coordinated manner so that each STE[A]M component complements the others.

STEAM as a **MAKING** Process.



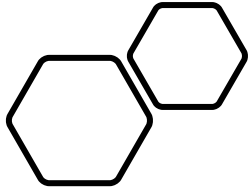
Place-based Learning

A form of project-based learning (PBL) that positions and empowers students as resources of knowledge about an authentic problem of place. (Sobel, 2004;Smith,2007)



Project Based Learning has

- 1) a challenging problem or question;
- 2) sustained inquiry;
- 3) authenticity of purpose;
- 4) student voice and choice;
- 5) reflection;
- 6) critique and revision;
- 7) rubric for evaluating the culminating product
- (Source, Buck Institute of Education)



What DO WE AIM to MAKE?

- STEM-rich
 - Culturally responsive
 - Agentic
 - Hazard risk communication
- ARTifacts!**



Criteria for effective community resilience development programs

- **A high degree of self efficacy.**
- **Community empowerment.**
- **Problem-focused coping.**
- **A sense of community and commitment to action.**

Paton and Johnston, 2001)



How hurricane-literate are you?

Where are your knowledge gaps?

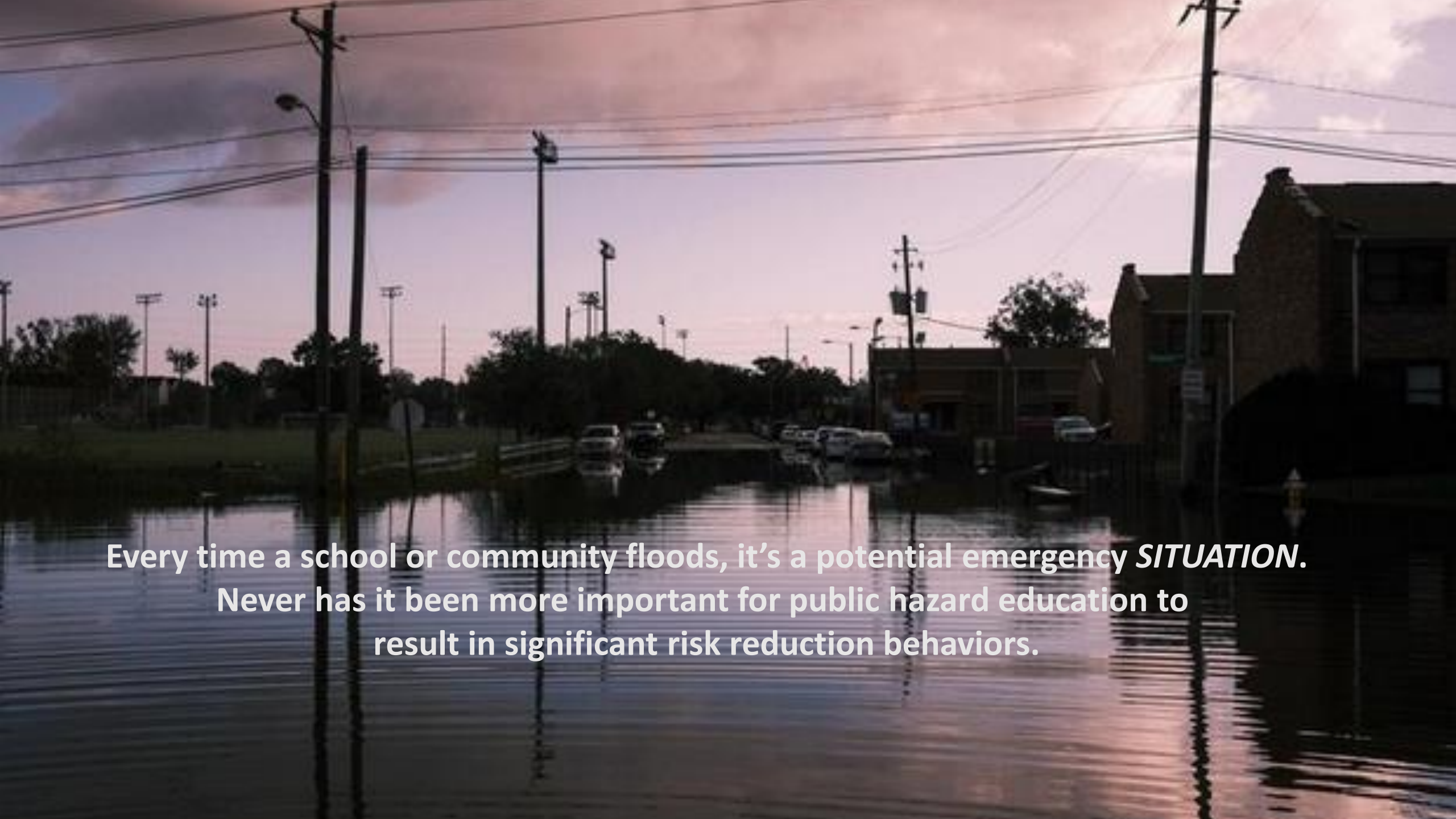


An aerial photograph of a road with a red and blue color gradient overlay. The road is dark, and the surrounding area is a mix of red and blue. The text is overlaid on the image in white, bold font.

1. What can you NOTICE?

2. What can you KNOW?

3. What can you DO with the INFO?



Every time a school or community floods, it's a potential emergency *SITUATION*.
Never has it been more important for public hazard education to
result in significant risk reduction behaviors.

WE ARE KIDS Teaching Flood Resilience!



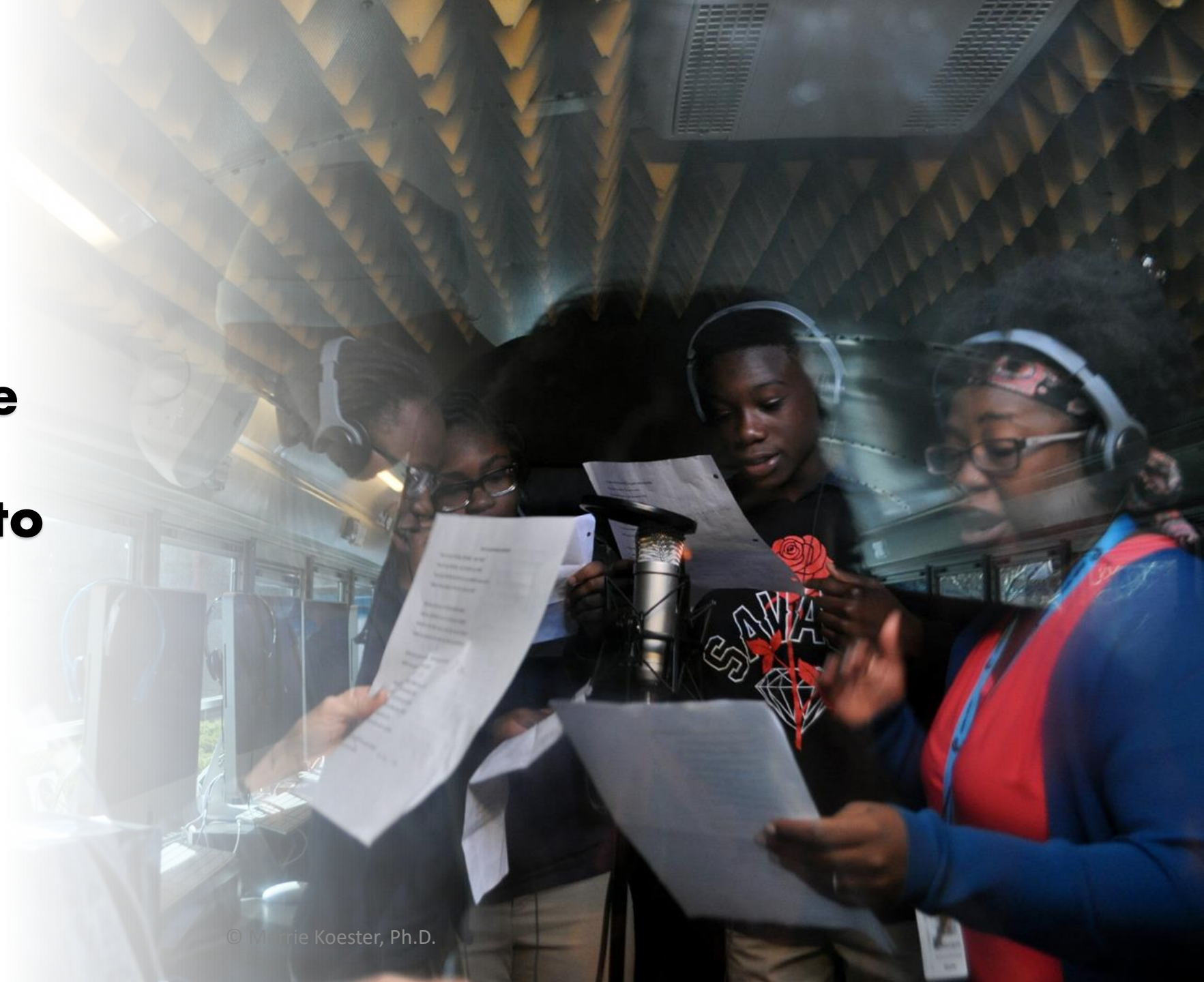
KIDS TEACHING FLOOD RESILIENCE

GET HURRICANE SMART!

**STEAM
INNOVATIONS!**



In this **MUSIC VIDEO**,
what things are
students
calling on you to
NOTICE,
KNOW, and
DO?



SITUATION HURRICANE

A Category 3 hurricane is predicted to make landfall, just south of your community at high tide during a full moon. An evacuation order has been issued, and you live in a high flood hazard zone.

**“We’ll be fine. Hurricanes are
a day off of school!”**




What **are the facts**, so we know how to act...what to do, what to watch, and where to go?

How **Hurricane Smart** Are We?

How does being environmentally literate (and Place-Wise) increase our resilience **CAPACITY?**

Why is my/our community flooding? How situationally vulnerable are we?
Can I swim?

When does a hazard become a **DISASTER?**

A hand-drawn illustration of a hurricane, depicted with thick, swirling brushstrokes in shades of blue and yellow. Two speech bubbles are overlaid on the image. The first speech bubble, located in the upper left, contains the text "NEVER SAY WHATEVER,". The second speech bubble, located in the lower right, contains the text "ESPECIALLY in a HURRICANE". The text is written in a simple, hand-drawn font.

NEVER
SAY
WHATEVER,

ESPECIALLY
in a
HURRICANE

BREAK OUT ROOM FOCUS GROUP

1. What do the film/characters teach you to NOTICE, KNOW, & DO *before* a hurricane?

2. *Critique*: How does THIS FILM “WORK” AS AN EFFECTIVE FAMILY-BASED HURRICANE HAZARD RISK COMMUNICATION TOOL?

WRN AMBASSADOR OF EXCELLENCE

THIS CERTIFICATE IS PRESENTED TO

Kids Teaching Flood Resilience
USC Center for Science Education

Kids Teaching Flood Resilience (KTFR) has been a champion of weather safety and preparedness since signing on to be a WRN Ambassador. KTFR positions youth as vital resources of knowledge and hazard resilience on behalf of their communities. They are learning what to Notice, Know, and Do in the event of an extreme weather event.

September 15, 2019

DATE



Emily McGraw

SIGNATURE

**Do you accept the
challenge to
GET HURRICANE SMART?**



Weather Ready Ambassadors @ Morningside Middle

LET'S FIND OUT HOW
HURRICANE SMART
YOU ARE WITH
[THIS KAHOOT QUIZ!](#)

Kahoot!



Get Hurricane Smart

101 plays · 526 players

Get Hurricane Smart!

 A public kahoot

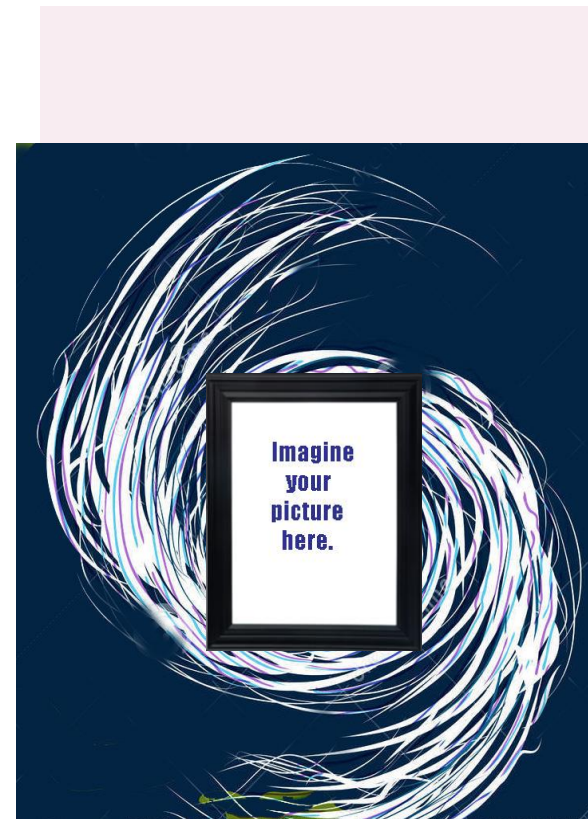
**When does a hazard
become a DISASTER?**

To be continued...

PD TRAINING

E-CURRICULUM
TABLE OF CONTENTS

- 1 Get WEATHER-Smart / Get NHC Smart
- 2 Get STORM SURGE-Smart
- 3 Get Place-Wise
- 4 Get PREP-Smart
- 5 Get Water Safe!





Please DO reach out.

Please DO use the [Kids Teaching Flood Resilience Innovations](#).

Take creative risks, give yourself grace, and know that your work truly matters!