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Master's Degree in Curriculum and Instruction
from Michigan State University (Science
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It's Summer!!



So why are you here?



My why...

The Making of Mass Extinctions

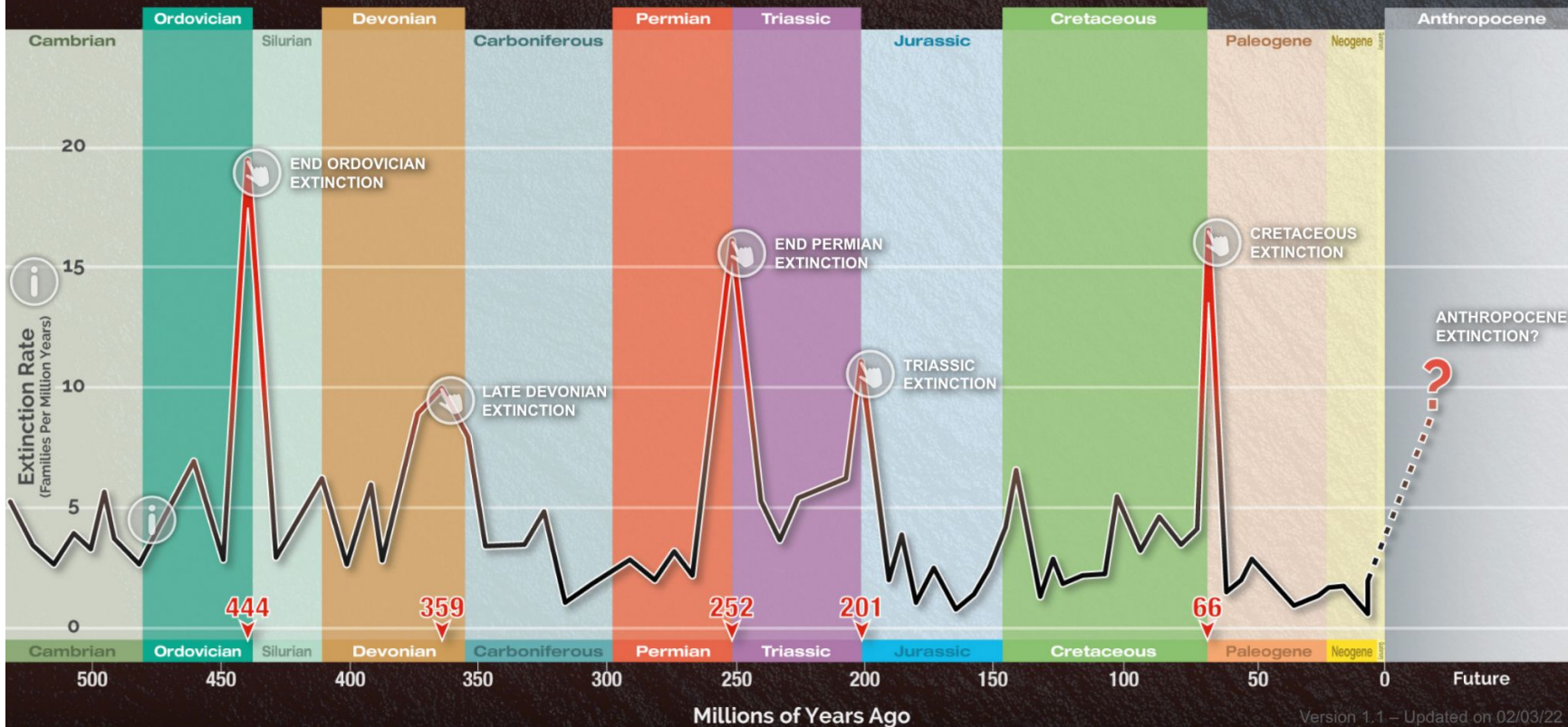
Howard Hughes Medical Institute

The Big Five Mass Extinctions

Extinction is a normal part of the evolutionary process and most species that have ever existed are not living today. The normal loss of species through time is generally balanced by the rise of new species. Mass extinctions, however, disrupt this balance—representing times when many more species go extinct than are replaced by new ones. Scientists have found evidence of five mass extinction events during Earth's history. What caused these "Big Five" extinction events? And are we about to enter a sixth mass extinction?

The Sixth Mass Extinction?

A large number of current ecological threats have moved extinction rates above normal levels and potentially put numerous species on the path to extinction.



Common Teacher Excuses

1.

It doesn't hit
enough
standards.

4.

What if I don't get
buy-in from the
kids?

2.

I don't have
the time to
teach it.

5.

How will I keep all
kids busy during
action project
work time?

3.

I don't know
enough about
it.

6.

I'm not sure if it's
worth the possible
cost and extra
effort.

1.

It doesn't hit enough standards.



ESS1: Earth's Place in the Universe	ESS1.A: The Universe and Its Stars	ESS1.B: Earth and the Solar System	ESS1.C: The History of Planet Earth		
ESS2: Earth's Systems	ESS2.A: Earth Materials and Systems	ESS2.B: Plate Tectonics and Large-Scale System Interactions	ESS2.C: The Roles of Water in Earth's Surface Processes	ESS2.D: Weather and Climate	ESS2.E: Biogeology
ESS3: Earth and Human Activity	ESS3.A: Natural Resources	ESS3.B: Natural Hazards	ESS3.C: Human Impacts on Earth Systems	ESS3.D: Global Climate Change	



Disciplinary Core Ideas



Science and Engineering Practices	Developing and Using Models	Constructing Explanations and Designing Solutions	Engaging in Argument from Evidence	Obtaining, Evaluating, and Communicating Information	Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena
Crosscutting Concepts	Patterns	Energy and Matter	Stability and Change	Scale, Proportion, and Quantity	Scientific Knowledge Assumes an Order and Consistency in Natural Systems

2.

I don't have time to teach it.

Example- Renewable Resources Learning Lab

HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.



3.

I don't know enough about it.



The Science

Teacher Slide Presentation

Teacher Tools and Links- Articles, Videos, Etc.

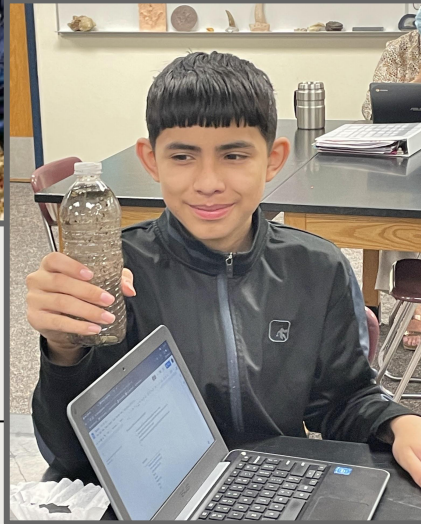
Contact Information



4.

What if I don't get buy-in?

My Students



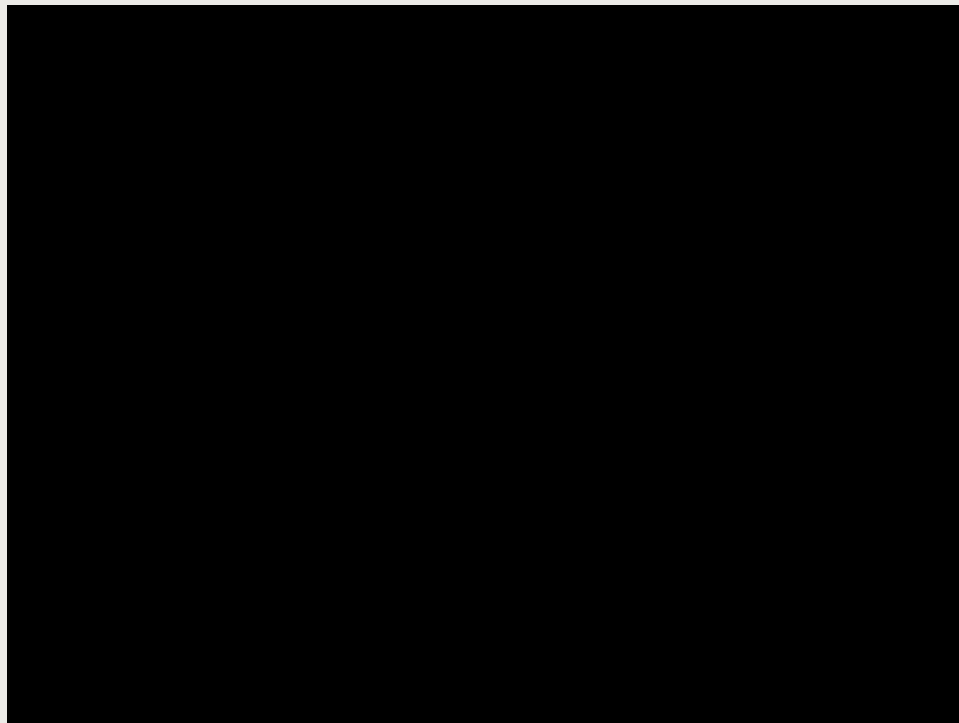
4.

What if I don't get buy-in?

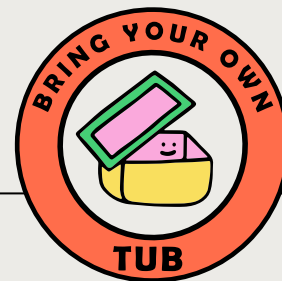


4.

What if I don't get buy-in?



- ★ Let them Choose!
 - Choosing an Action Project
 - Build Up To It
 - Give Them Examples
 - Let Them Contribute Ideas
 - Give Them Time to Contribute Ideas



5. Can I keep kids busy during action project work?

★ Vermiculture (Worm Composting)

- What Type of Worms?
- How Many Do We Need?
- Where Can We Get Them?
- Types of Bins
- Best Bin for Us
- Cost? Where Can We Get Money?
- What Type of Worms?
- How Many Do We Need?
- Where Can We Get Them?
- Types of Bins
- Best Bin for Us
- Instructions to Build Bin
- Calculate Materials



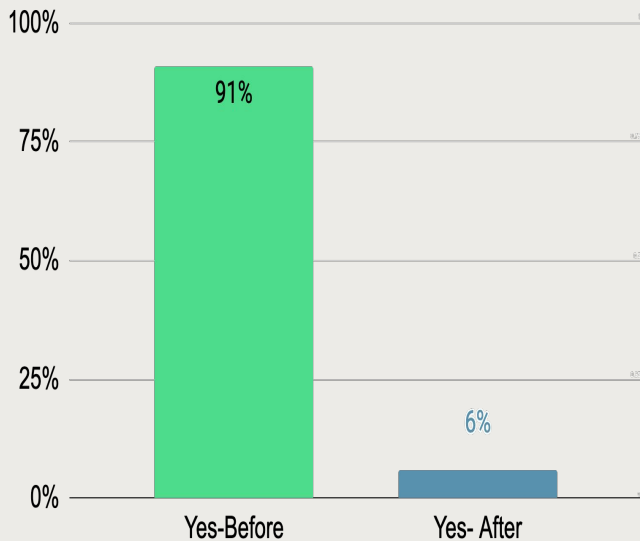
6.

Is it worth the possible cost and effort?

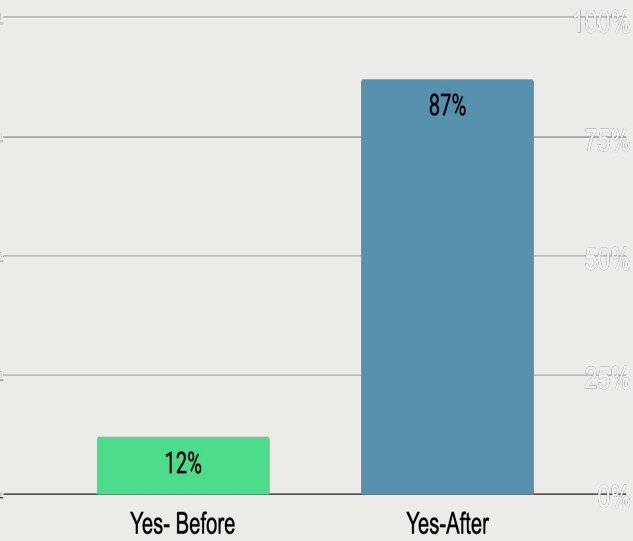


Change of Attitudes/Beliefs

I think that some places on Earth may be impacted by climate change but places like MN really aren't.



I think that I can personally do something about climate change.



I think that some groups of people (like those considered poor or those of a minority) are more impacted by climate change.

