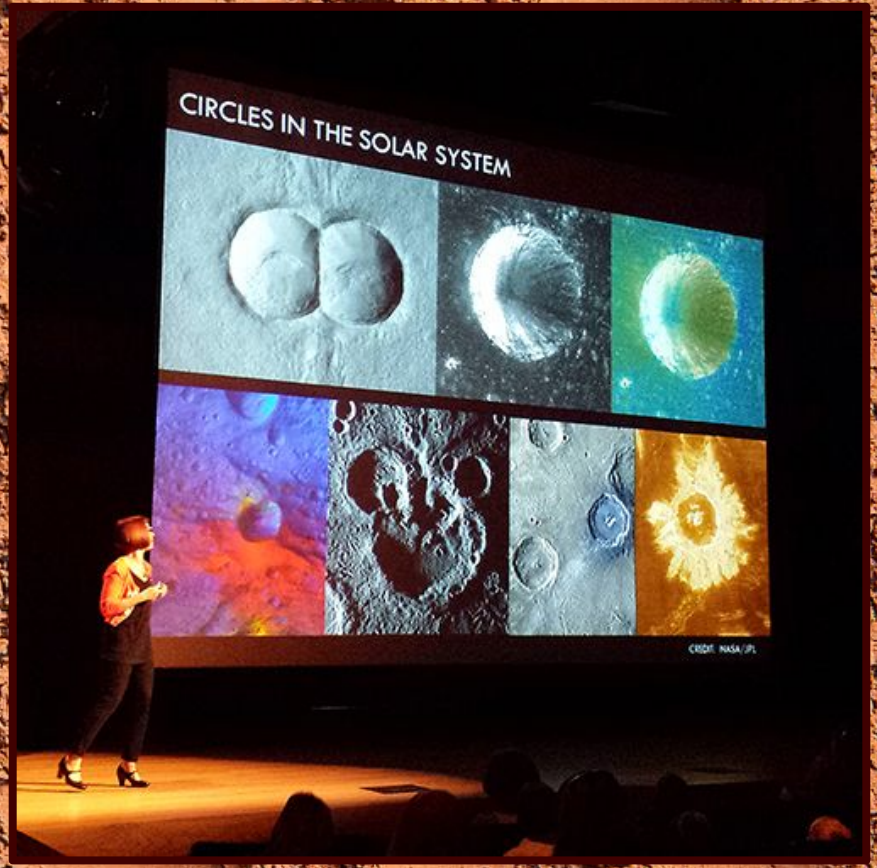
Making a Transdisciplinary Curriculum Action Based and Hands-On

By Lily Rutledge-Ellison

Inspiration and materials from Monica Aiello's presentation:

Art and the Cosmic Connection



Why are we here today?

In a transdisciplinary curriculum, traditional subjects are absorbed through **projects** or learning centers that teachers plan with **input from children**.

The **learning experiences** should give teachers the opportunity to extend ideas, respond to questions, engage students in conversation, and challenge their thinking.

Why are we here today?

Rose Stein International Elementary, is a **newly accredited** IB World school.

Following the initial authorization, all schools must undergo

regular re-evaluations to ensure ongoing quality and **adherence to IB** ethos.

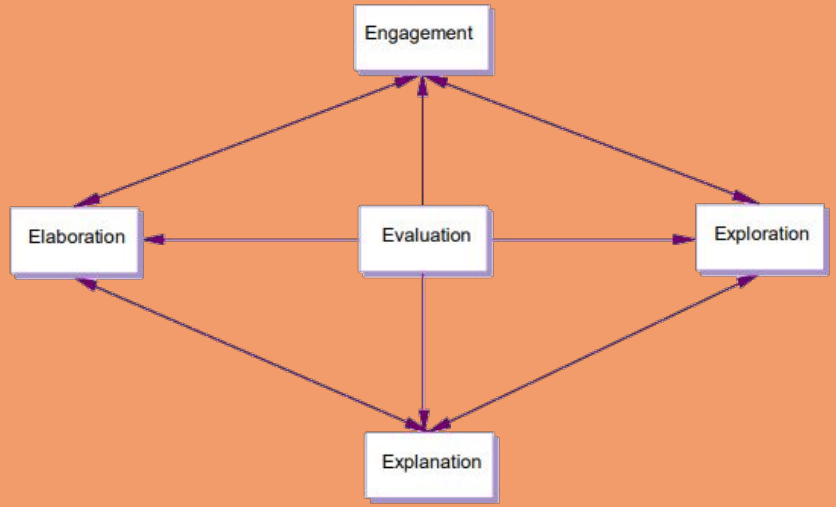
A large part of that ethos is **Transdisciplinary teaching and learning**.

Session 1

What is a “5E” lesson?

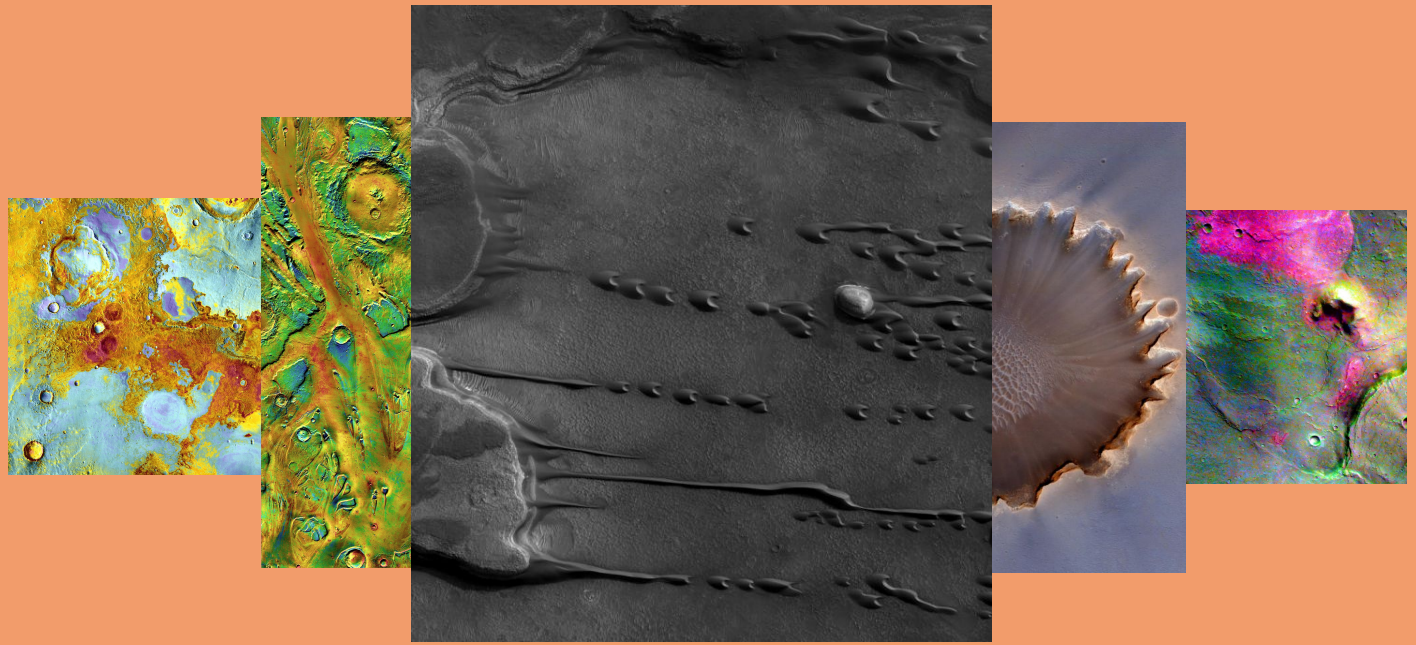
The 5E Model is based on the constructivist theory to learning, which suggests that people construct knowledge and meaning from **experiences**.

By understanding and **reflecting on activities**, students are able to reconcile new knowledge with previous ideas.



Engaging phenomena:

High Quality photographs of the surface of Mars



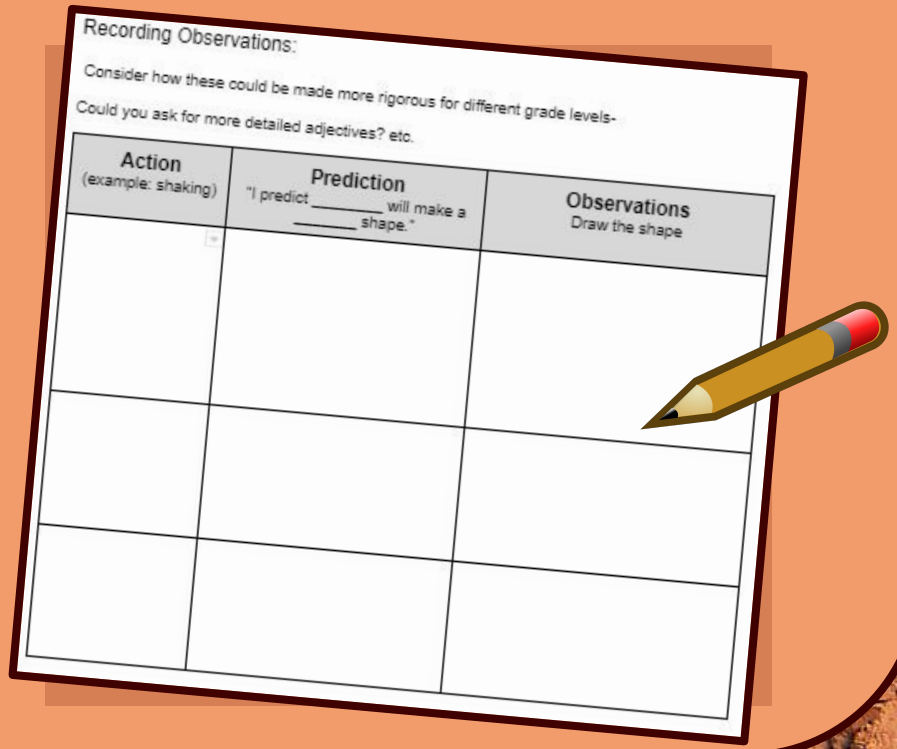
https://www.jpl.nasa.gov/edu/teach/activity/art-the-cosmic-connection/

Explore:

Participants will take part in a mini-lab before exploring leveled texts

Mini-Lab materials:

flour, cocoa, water, rocks, basin

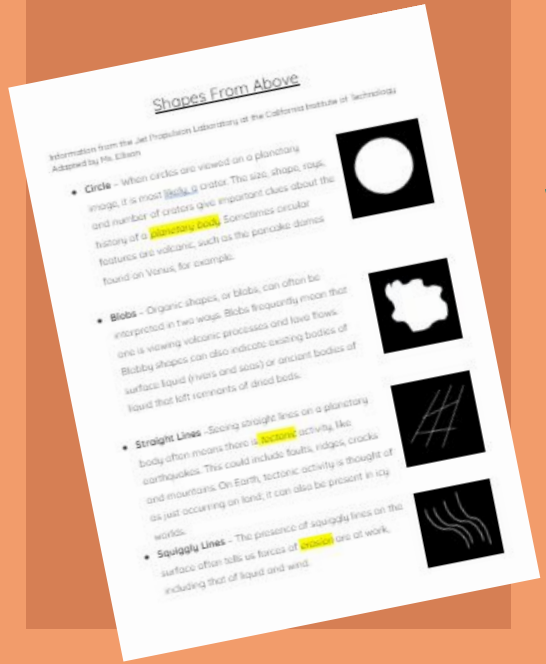


Explore:

Leveled texts for differentiation

Printed Cards

Short Edited Text

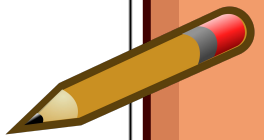


Independent research in books or online

Explain:

Current understanding

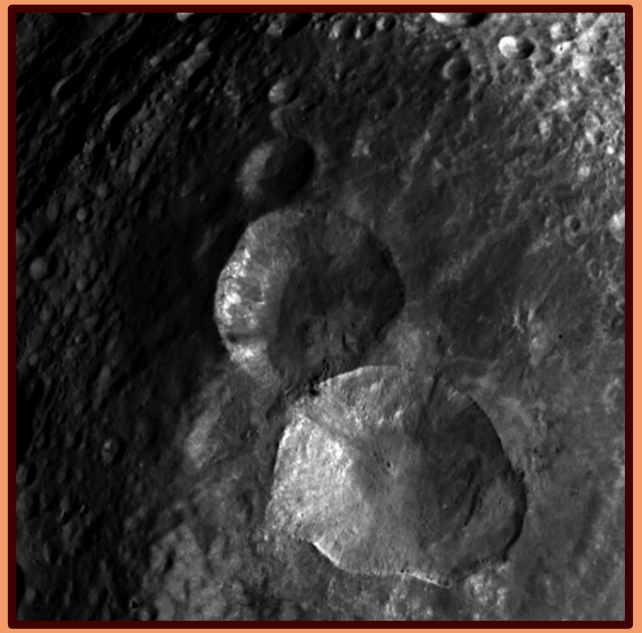
Prompt for explanation	Participant's thinking
Why are there so many different shapes on the surface of Mars?	



b. This prompt could require many levels of rigor. A sentence frame could be provided to help them get started, or you could make it more difficult by requiring citations from the text.

Elaborate:

opportunities to apply new understanding

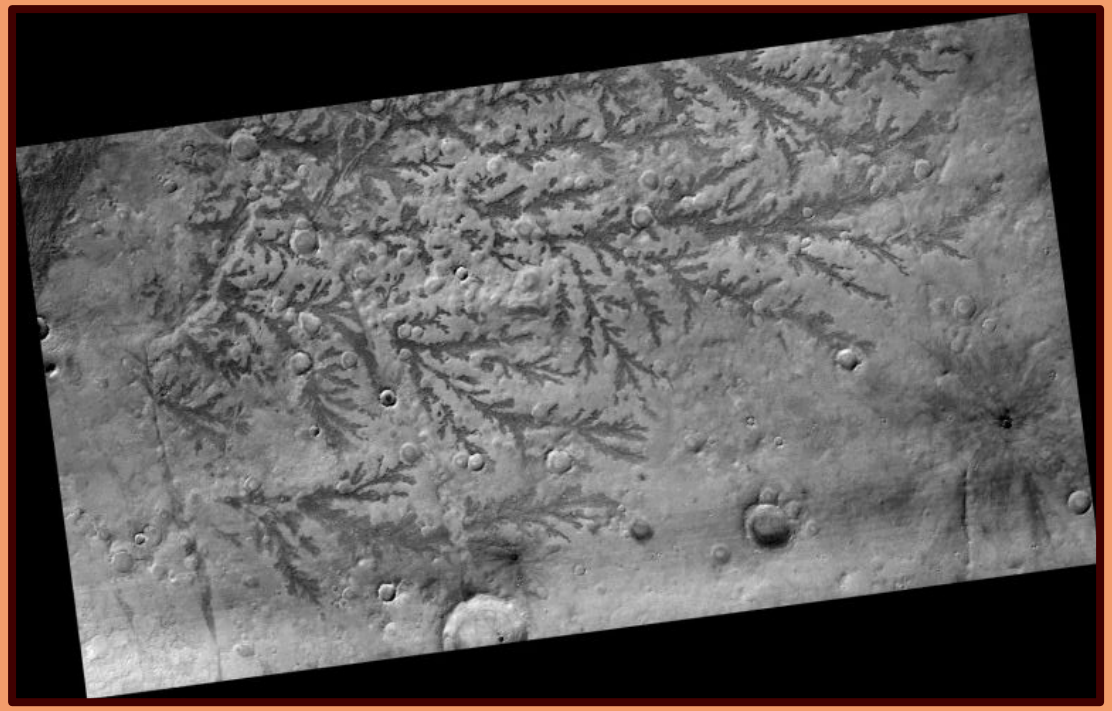


Compare and Contrast

Elaborate:

opportunities to apply new understanding

Which crater is the youngest?

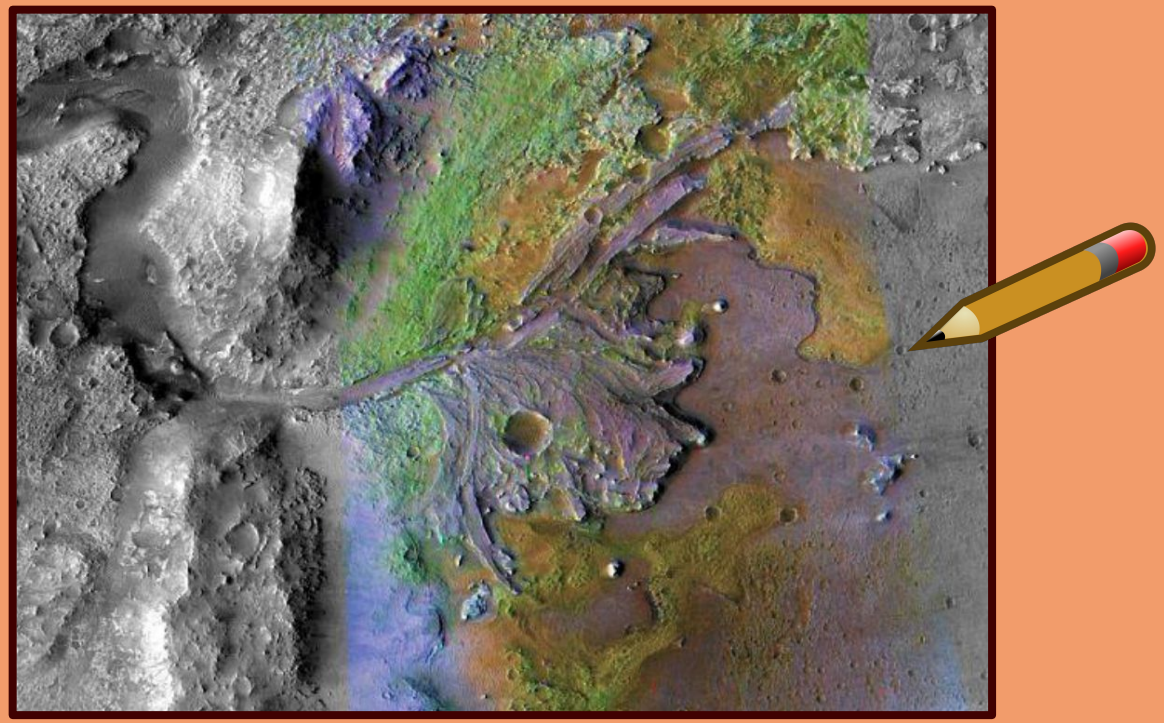


Which is the oldest?

Antoniadi Crater Branched Features on the Floor of Mars

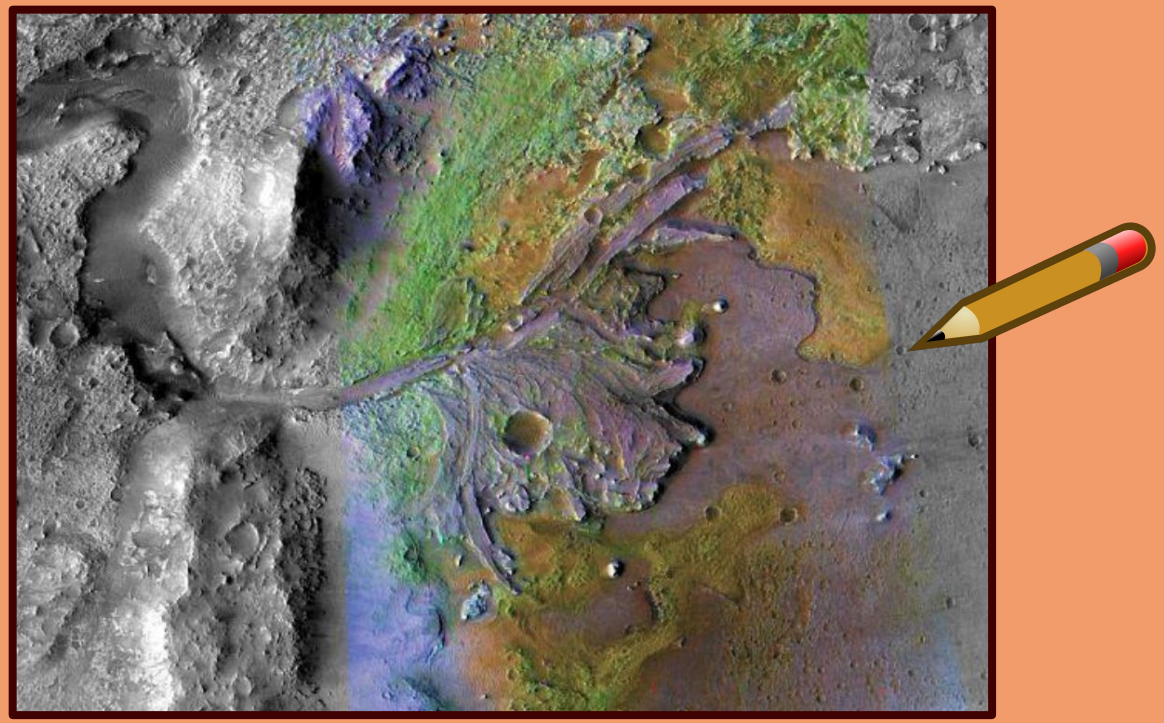
Evaluation:

assessment of understanding



Evaluation:

assessment of understanding



Session 2

Why are we here today?

This session is for **reflection**.

Together, we will metacognitively analyze the transdisciplinary nature of the lesson(s).

1) How did I incorporate ELA, Math, and Social Studies?

2) How could I have incorporated more of those disciplines?

3) How are IB Approaches to learning being implemented?
    a) Thinking skills, research skills, communication skills, social skills, self-management skills

What is next?

[Resource Sharing]

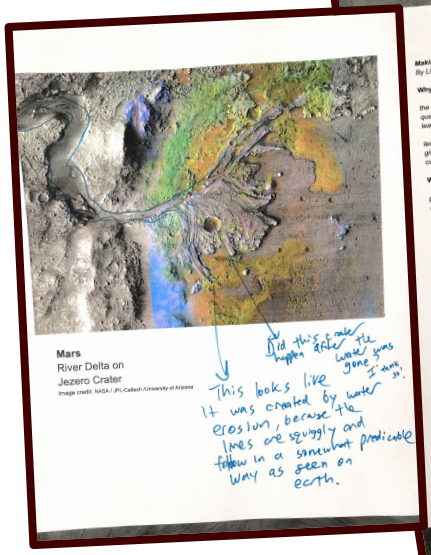
Co-planning

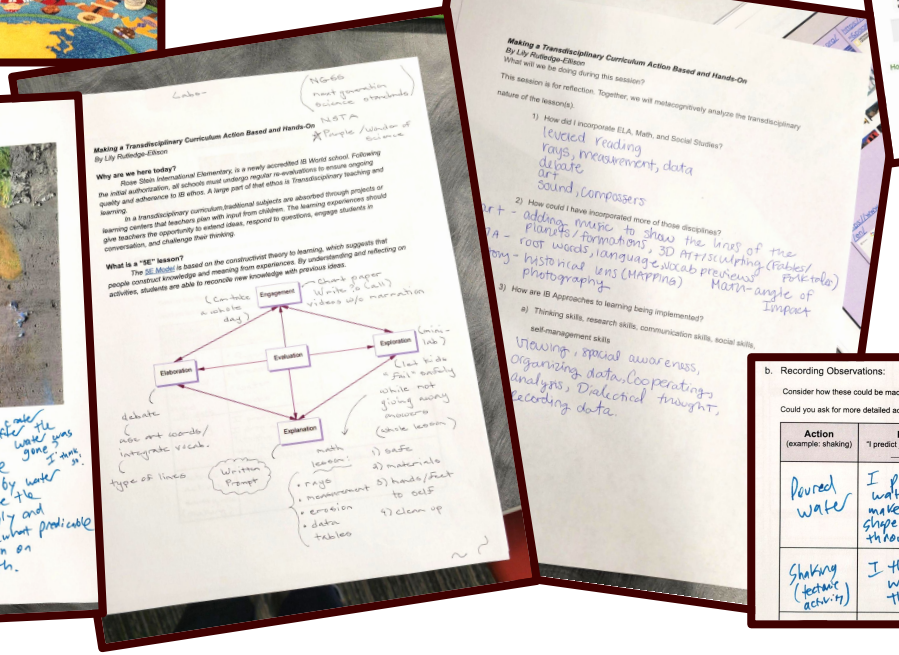
Taking Risks

Getting Messy

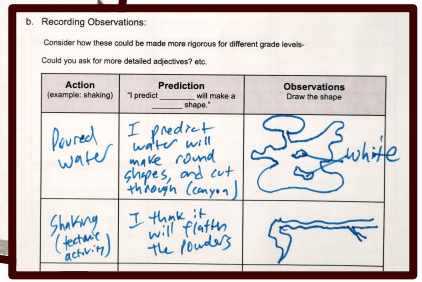
Reflection


PRE
POST
How confident do you feel making lessons transdisciplinary with science?
How confident do you feel incorporating engineering into your classroom?
How confident do you feel incorporating planetary science into your classroom?
How confident do you feel incorporating math into subjects like science and social studies?
Not at all Confident
Extremely Confident


Mars
River Delta on
Jezero Crater
Image credit: NASA / JPL-Caltech / University of Arizona
This looks like it was created by water erosion, because the lines are squiggly and follow in a somewhat predictable way as seen on earth.


Making a Transdisciplinary Curriculum Action Based and Hands-On
By Lily Rutledge-Ellison
Why are we here today?
What is a "SE" lesson?
Engagement
Exploration
Elaboration
Evaluation
Explanation

Making a Transdisciplinary Curriculum Action Based and Hands-On
By Lily Rutledge-Ellison
What will we be doing during this session?
This session is for reflection. Together, we will metacognitively analyze the transdisciplinary nature of the lesson(s).
1) How did I incorporate ELA, Math, and Social Studies?
2) How could I have incorporated more of those disciplines?
3) How are IB Approaches to learning being implemented?
a) Thinking skills, research skills, communication skills, social skills, self-management skills


b. Recording Observations:
Consider how these could be made more rigorous for different grade levels-
Could you ask for more detailed adjectives? etc.
Action
(example: shaking)
Prediction
"I predict _____ will make a _____ shape."
Observations
Draw the shape
Poured water
I predict water will make round shapes, and cut through (canyon)
Shaking (texture activity)
I think it will flatten the powders