

ESCAPE

Exploring Science Collaboration at Pinole-family Elementaries



West Contra
Costa Unified
SCHOOL DISTRICT

On-call Personalized support



Tell us what you need, and we'll help you find it!

- **Field trips, assemblies or in-class programs**
- **Websites** for you or your students
- **Materials** to support your lesson

Call – 510-527-5212

Email – CRS@CRScience.org

Online- click “need help” to make online request

and we'll promptly put together a customized response with all the information you need, **so you can focus on bringing science experiences to life in your classroom!**

Bay Area Scientists in Schools



Math

Science

M4. Models with mathematics

S2: Develop & use models

S5: Use mathematics & computational thinking

S1: Ask questions and define problems

S3: Plan & carry out investigations

S4: Analyze & interpret data

S6: Construct explanations & design solutions

E2: Build a strong base of knowledge through content rich texts

E5: Read, write, and speak grounded in evidence

M3 & E4: Construct viable arguments and critique reasoning of others

S7: Engage in argument from evidence

S8: Obtain, evaluate, & communicate information

E3: Obtain, synthesize, and report findings clearly and effectively in response to task and purpose

E6: Use technology & digital media strategically & capably

M5: Use appropriate tools strategically

E1: Demonstrate independence in reading complex texts, and writing and speaking about them

E7: Come to understand other perspectives and cultures through reading, listening, and collaborations

ELA

M1: Make sense of problems and persevere in solving them

M2: Reason abstractly & quantitatively

M6: Attend to precision

M7: Look for & make use of structure

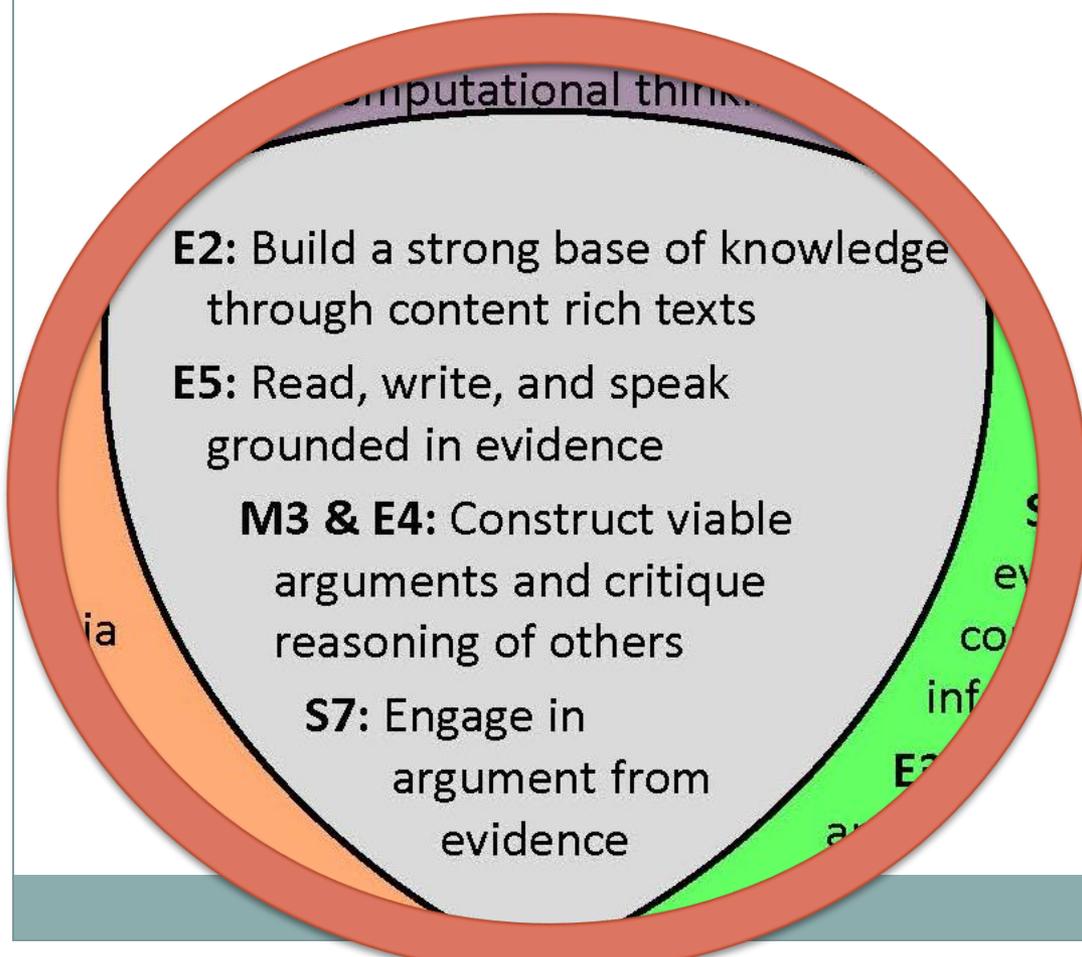
M8: Look for & make use of regularity in repeated reasoning

Commonalities Among the Practices in Science, Mathematics and English Language Arts

Based on work by Tina Chuek ell.stanford.edu

Key to all three: Active learning opportunities for critical thinking. Providing support and

opportunities to engage in argument from evidence



E2: Build a strong base of knowledge through content rich texts

E5: Read, write, and speak grounded in evidence

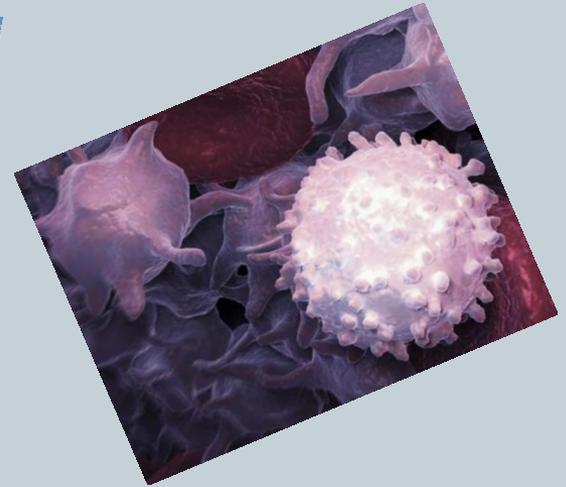
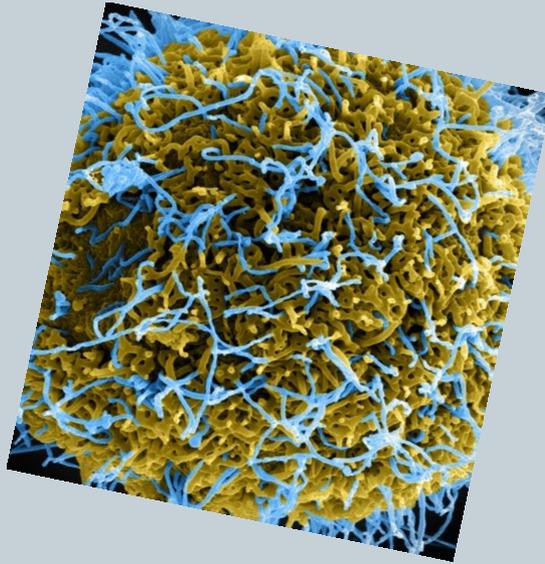
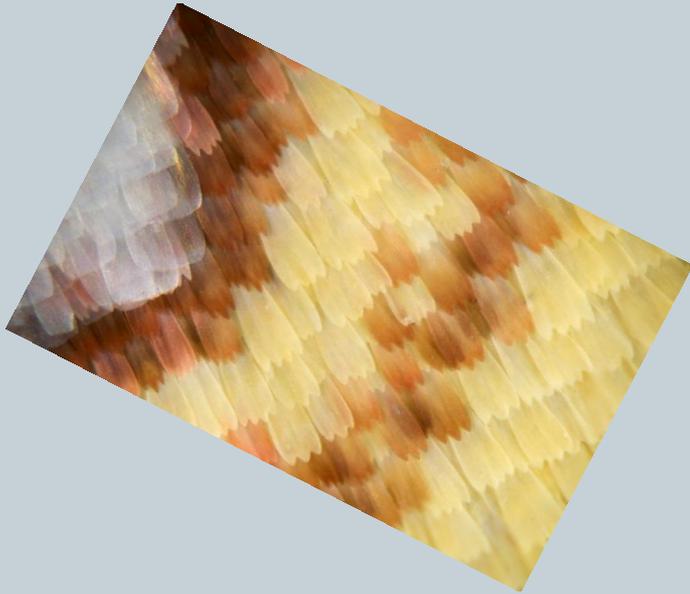
M3 & E4: Construct viable arguments and critique reasoning of others

S7: Engage in argument from evidence

Claims & Evidence



- Examine the bottom image on the card at your table.
- Take a few moments to note three observations



Discuss your observations



- **With a partner, discuss the picture.**
- First, discuss what you **observe**. (Colors, shapes, textures, patterns, etc.)

"I observe _____. " "I notice _____."

- Then, **make connections**.

Use the sentence frame "(observation) makes me...."

...think about _____ *or* ...reminds me of _____

ormakes me wonder _____.

Make a Claim, With Evidence



- Now, expand to a small group (4-6) **with the same picture.**
- One person begins by making a **claim**, supporting that **with evidence**. Continue around the group, agreeing or disagreeing and citing evidence to support your claim. (Can start general, such as 'living vs nonliving' and narrow as you go.)
- "I think _____ because _____."
- Can your group reach agreement about what this is?

Reflections on activity:

- Strategies for facilitating student close observation & connections
- Focus Questions & Strategies for engaging students in discussion with claims & evidence
- Teacher moves to keep the conversation going; classroom norms to support
- Tools such as sentence frames, prompts, norms

Tip: build a library of images relate to their science "topics" and to incorporate "observe and discuss" or "observe and write" activities into classroom routines (stations, warm ups, etc.)

Clarifying Expectations & Terms

- Building norms and social emotional skills needed for constructive argument
- Vocabulary for “scientific comments” and terms like “evidence” “claim” “argue”
- Discussions as school staff around meanings of these terms across disciplines

How do you use these terms in English Language, math, science

- Argue / Argument
- Claim
- Evidence