Elevating Instruction:

The Power of Feedback and Lessons from Project-Based Learning

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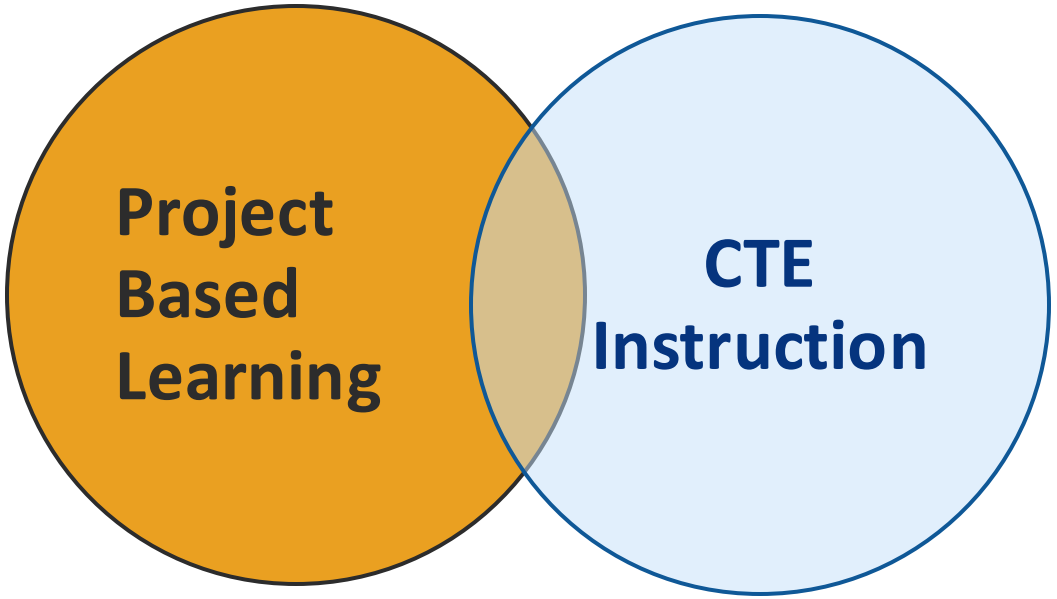
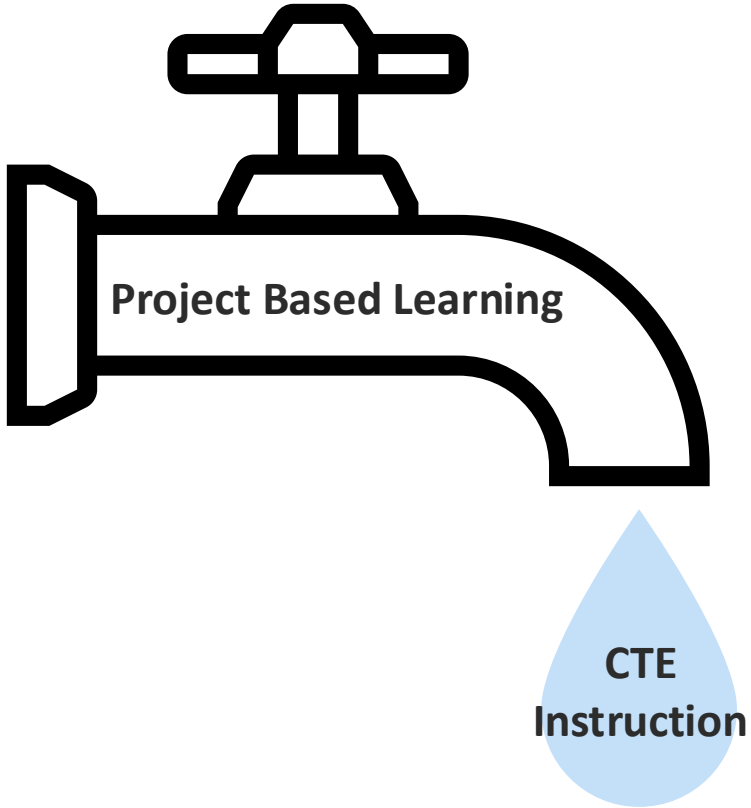
Re-Imagining the Relationship

TRADITIONAL THINKING



RE-IMAGINED APPROACH



What is Project Based Learning?

DESSERT "DOING A PROJECT"	MAIN COURSE PROJECT BASED LEARNING
An add-on to the traditional instruction; at the end (or alongside) of the unit	Instruction integrated into the project (The project is the unit!)
Follows direction of the teacher	Driven by student inquiry
Focused on product	Focused on product and process
Often unrelated to standards and skills	Aligned to academic standards and success skills
Can be completed alone and/or at home	Involves collaboration with students and in-class guidance from teacher
Remains within the school world	Has a real-world context and application
End result of project displayed in the classroom	Results of project shared beyond the classroom with a public audience

DESSERT
"DOING A PROJECT"

A "dessert" project offers a fun or creative challenge for the student, so it seems like a special treat. But what's missing?

MAIN COURSE
PROJECT BASED LEARNING

With PBL, the project is the "main course." It provides the framework for student learning in the unit.

To Learn More About the PBL Components:

Web Article: 7 Essential Elements of Project-Based Learning - Literacy in Focus

Web Article: Essential Project Design Elements PBLWorks

Video: PBL by Design from John Spencer

Article: Key Elements of PBL Education World

Driving Question:

How can we use best practices of PBL to re-imagine feedback and its implementation to maximize student growth?

Session Overview

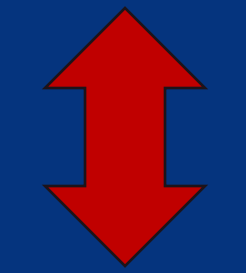
Re-thinking Feedback Types & Systems in the Classroom

- Strategy: Need-to-Knows
- Strategy: Tuning Protocol
- Strategy: Dry Run Presentations
- Bonus Strategy: Plus / Delta Chart

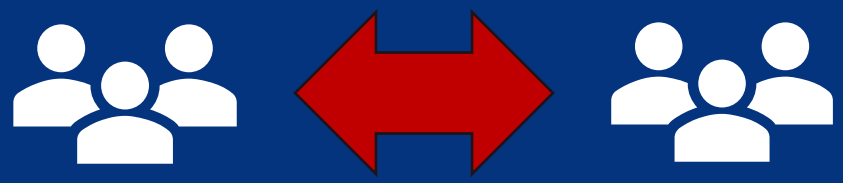
Types of Feedback

Teacher to Student

Student to Teacher



Student to Student

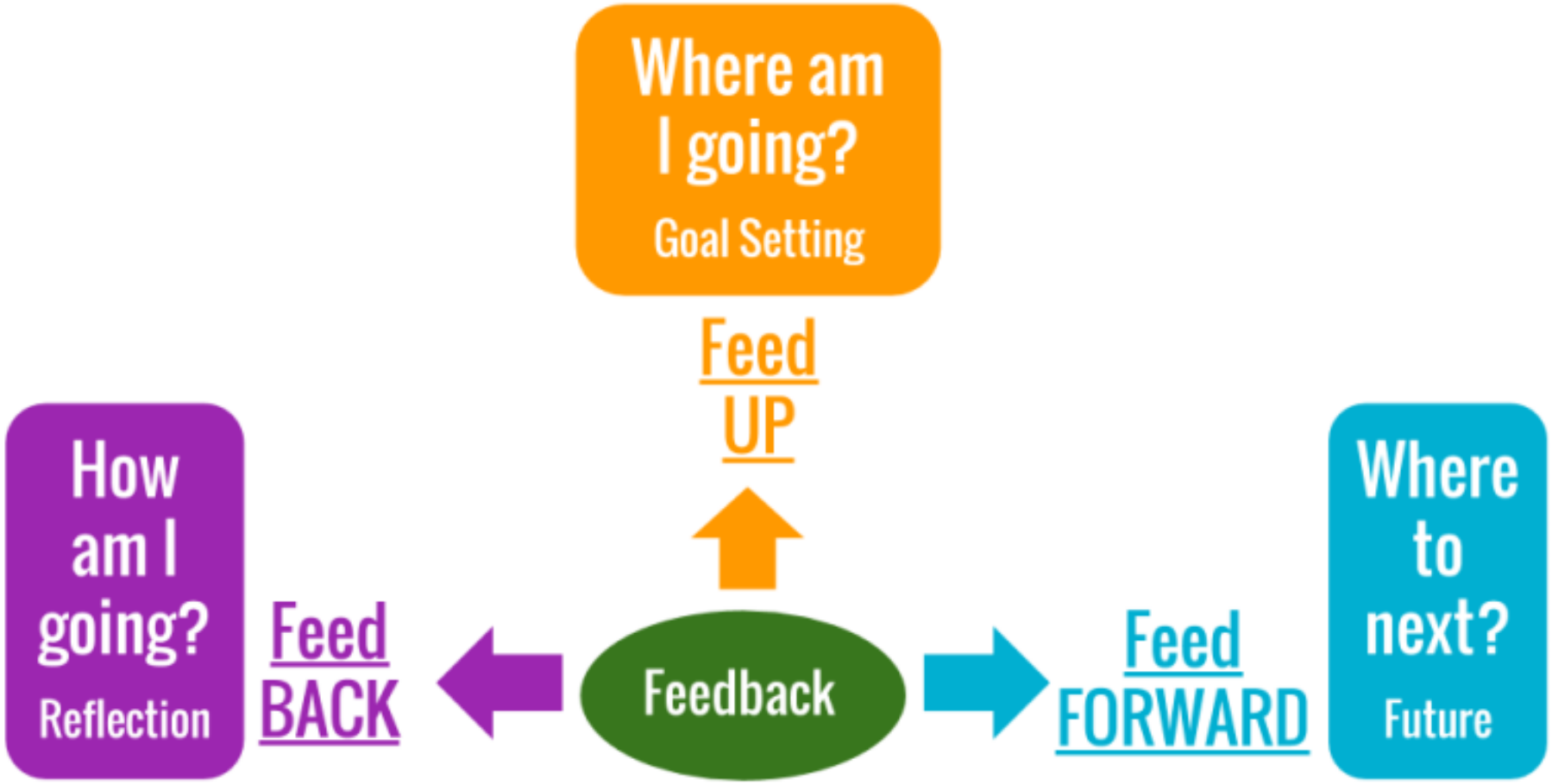


Peer Feedback

Student to Self

Self Reflection

FeedUP + FeedBACK + FeedFORWARD



Use the QR Code to read more about Effective Classroom Feedback Systems

Initiating Student-Driven Learning

Defining Success

Share the Rubric Upfront

Project-Based Learning Assignment: Invasive Fish in Tidewater Maryland Rubric

Criteria	Exceeds Expectations	Meets Expectations	Approaching Expectations	Needs Improvement
Research Quality (RKSC 12.1): Clarity and thoroughness of research on invasive fish.		Thoroughly identifies and explains the historical introduction, current locations, and commercial/recreational sources of all three species.	Identifies most aspects but lacks depth in one or two areas.	Limited research with minimal identification and explanation.
Culinary Application (RKSC 12.3): Culinary characteristics and recipe development.		Provides detailed culinary characteristics, suitable seasonings, and at least one original recipe for each fish type with clear preparation steps.	Offers basic culinary characteristics and recipes, missing some details or originality.	Lacks clear culinary characteristics and original recipes for fish types.
Sustainability Analysis (RKSC 12.2): Understanding of local ingredients and sustainability.		Clearly defines and applies concepts of energy efficiency and food miles, effectively comparing local and distant ingredients.	Shows some understanding but lacks detailed comparisons or applications.	Minimal understanding of sustainability concepts with little to no comparisons.
Presentation Skills: Engagement and clarity in presentation of findings.		Engages the audience effectively, uses visual aids that enhance understanding, and presents information clearly.	Engages the audience but has some issues with clarity or use of visual aids.	Limited engagement with the audience; presentation lacks clarity and visual support.
Creativity and Originality: Creativity in recipe development and presentation style.		Demonstrates high creativity and originality in recipes and presentation style, making it engaging and unique.	Shows some creativity in recipes and presentation but lacks uniqueness.	Little to no creativity in recipes or presentations, making it less engaging.

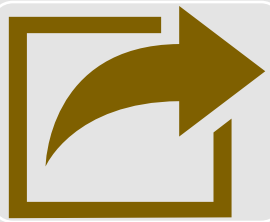
Note: Be sure to cite your sources accurately and provide a bibliography for your project.

Need-to-Know Protocol

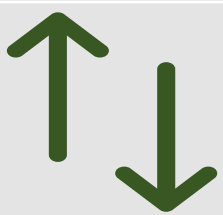
Introduce the Assignment, Activity, or Assessment Rubric

Analyze & Highlight

Highlighting to Need-to-Knows



Students Share Need-to-Knows



Organizing & Displaying the Need to Knows

OPTIONAL

Create an FAQ list for skills & logistics

Use Content Need-to-Knows

STAGE 1 - *Identify*

STAGE 2 - *Organize*

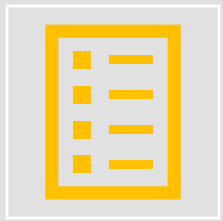
STAGE 1
IDENTIFY

Introduce the Assignment, Activity, or Assessment Rubric

Analyze & Highlight

One color = what they already know-can do

One color = questions or concerns

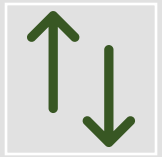


Highlighting to Need-to-Knows & Noting Knows (Prior Knowledge)

STAGE 2
ORGANIZE

Students Share Need-to-Knows / Knows

- QR Code to Microsoft Form
- List on Board
- Post-It Notes



Organizing & Displaying the Need to Knows

- Separate Logistics, Skills, & Content

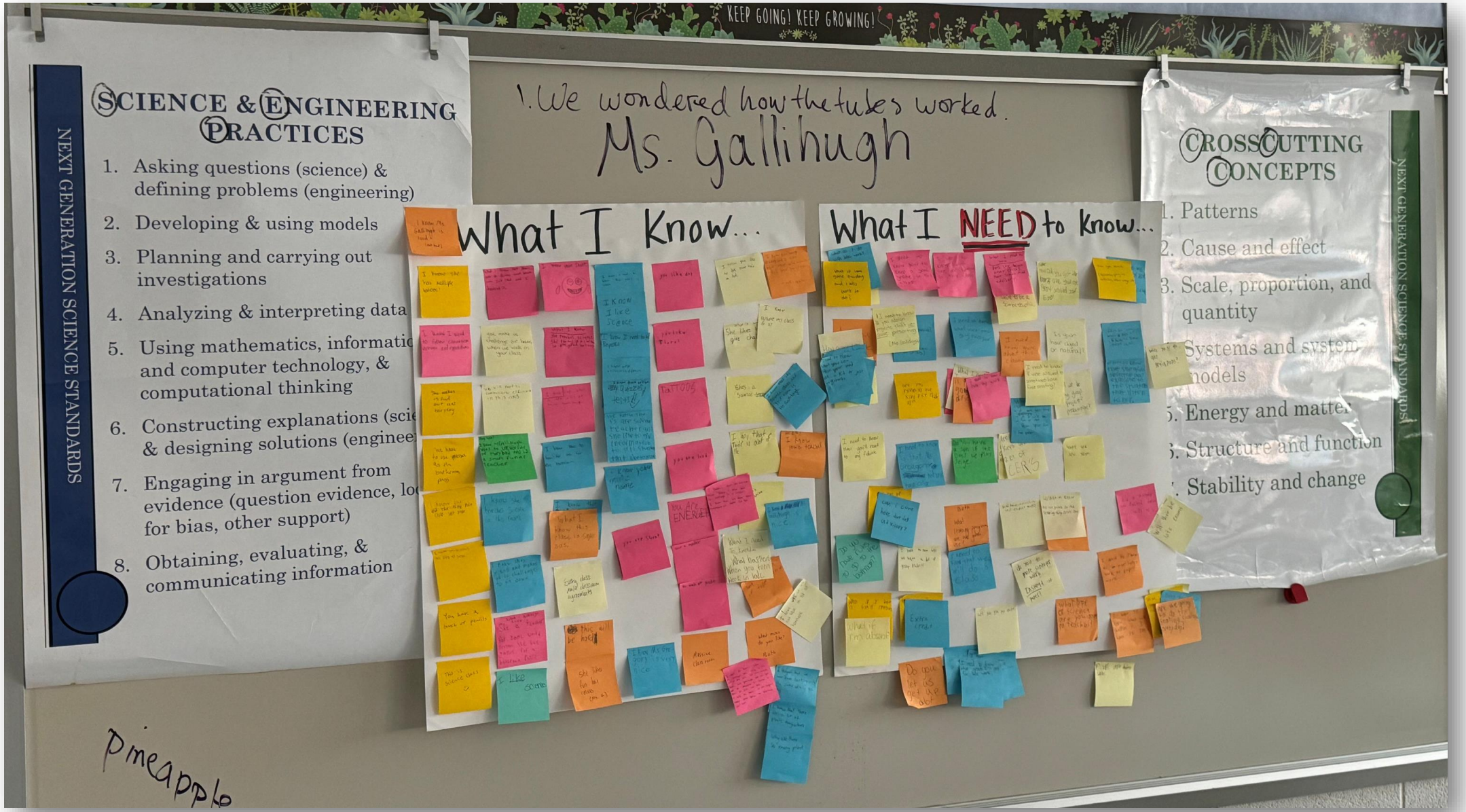
Create an FAQ List for Skills & Logistics

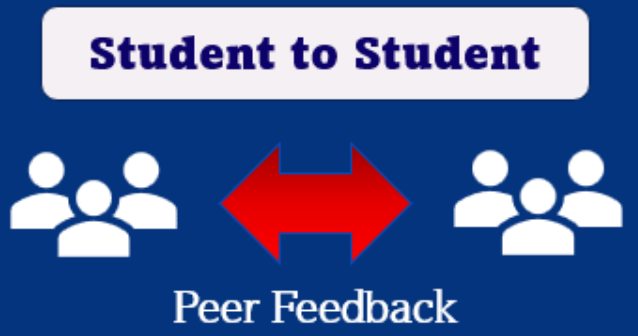
OPTIONAL

- Display and respond on Schoology
- Display on bulletin board
- Designate Student Experts

Use Content Need-to-Knows

- Inform Lesson Design
- Tailor Re-teaching
- Adjust Assessments


KEEP GOING! KEEP GROWING!
NEXT GENERATION SCIENCE STANDARDS
SCIENCE & ENGINEERING PRACTICES
1. Asking questions (science) & defining problems (engineering)
2. Developing & using models
3. Planning and carrying out investigations
4. Analyzing & interpreting data
5. Using mathematics, informatic and computer technology, & computational thinking
6. Constructing explanations (scie & designing solutions (enginee
7. Engaging in argument from evidence (question evidence, lo for bias, other support)
8. Obtaining, evaluating, & communicating information
1. We wondered how the tubes worked.
Ms. Gallihugh
What I Know...
What I NEED to know...
CROSSCUTTING CONCEPTS
1. Patterns
2. Cause and effect
3. Scale, proportion, and quantity
Systems and system models
5. Energy and matter
6. Structure and function
7. Stability and change
NEXT GENERATION SCIENCE STANDARDS
Pineapple



Facilitating Peer Feedback & Feedforward

Tuning Protocol

CALVERT COUNTY PUBLIC SCHOOLS

Tuning Protocol Steps

Present

- 1 student explains work
- Others listen

2 mins

Clarify

- Audience asks clarifying Q's
- Presenter responds briefly

1 min

I Like..

- Audience shares positive comments based on feedback norms
- Presenter listens & notes

2 mins

I Wonder…

- Audience shares suggestions using conditional language
- Presenter listens & notes

2 mins

Reflect & Respond

- Presenter responds to any I Likes or Wonders and shares Next Steps
- Audience listens

1 min

Peer Feedback: Tuning Protocol

Class: _____

Student Reviewer: _____ Date: _____

FEEDBACK

Can you Clarify... _____

_____

I Like... _____

_____

_____

_____

I Wonder if... _____

_____

_____

I know a helpful resource: _____

_____

OTHER USES:
Self-Reflection
and
Teacher to Student
Formative Feedback

[Link to Tuning Protocol Feedback Sheet Template]

One way to use the Feedback Sheet

Let's get crafty and fashion a fancy pair of shoes using items found around the classroom.

These shoes must:

- snugly fit your buddy's foot
- survive a strut around the room

Once the walk is over, they should gracefully come off without a hitch.

Tuning Protocol + Gallery Walk

Use Post-It Notes

- Students Silently Post I Likes & I Wonders from Tuning Protocol

EQUITY OF VOICE

COLLABORATIVE PEER FEEDBACK

BUILDS CLASSROOM COMMUNITY

ENCOURAGES GROWTH MINDSET

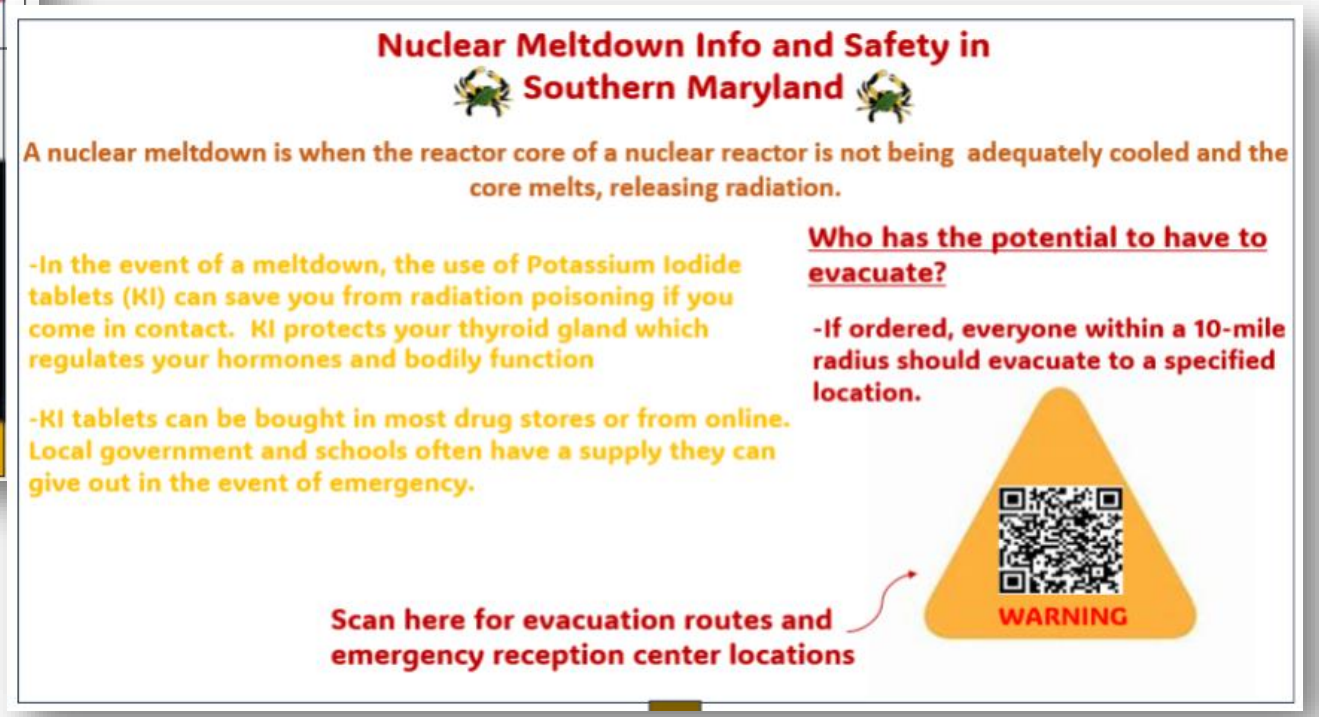
USE AS FORMATIVE ASSESSMENT DURING WORK STAGE

SUMMATIVE PEER FEEDBACK - CELEBRATION

Creating More Opportunities for Feeding Forward

Dry Run Presentations

So Many Changes Occur – after a Dry Run!



So Many Changes Occur – after a Dry Run!

EMERGENCY PLANNING

This brochure was provided to you because you live in a 10-mile radius from Calvert Cliffs Nuclear Power Plant.

What is radiation?

Radiation is energy in the form of rays or particles. This includes many things, from visible light to cell signal to radio waves. However that radiation that you are most likely think about when you hear that word, the stuff that has the potential to harm the human body, is referred to as ionizing radiation. Some atoms–the ones we refer to as 'radioactive'–are unstable. This causes them to go through the process known as 'decay' in which rays or particles are thrown off to change into a stable atom. This is the process for which 'dangerous' radiation is formed.

Everyday, you are constantly exposed to radiation. On average, you receive 300 millirems of radiation annually. For comparison, it takes more than 35 times that much to produce noticeable negative effects in the body. While radiation is dangerous, you are exposed to safe levels of ionizing radiation every time you receive an x-ray. Radiation as a concept is not something to fear, it is already an important part of your everyday life.

How does radiation affect the human body?

However, that does not mean radiation is safe. With high amounts, radiation destroys body tissue, organs, causes nausea or vomiting, skin redness, hair loss, local radiation injuries (also known as radiation burns), highly increased risk of cancer, or even death. As with most things, it is the dose that determines the danger level. While low doses of radiation are a natural part of life, it is best to keep radiation exposure as low as is reasonably achievable.

In Case of Emergency

The likelihood of nuclear meltdown is extremely low. While radioactive materials are used to produce energy, these materials are not in high enough quantity to even have the risk of anything like a nuclear bomb. Even as this is true, it is still prudent to take steps to prepare you and your family in case of such a disaster.

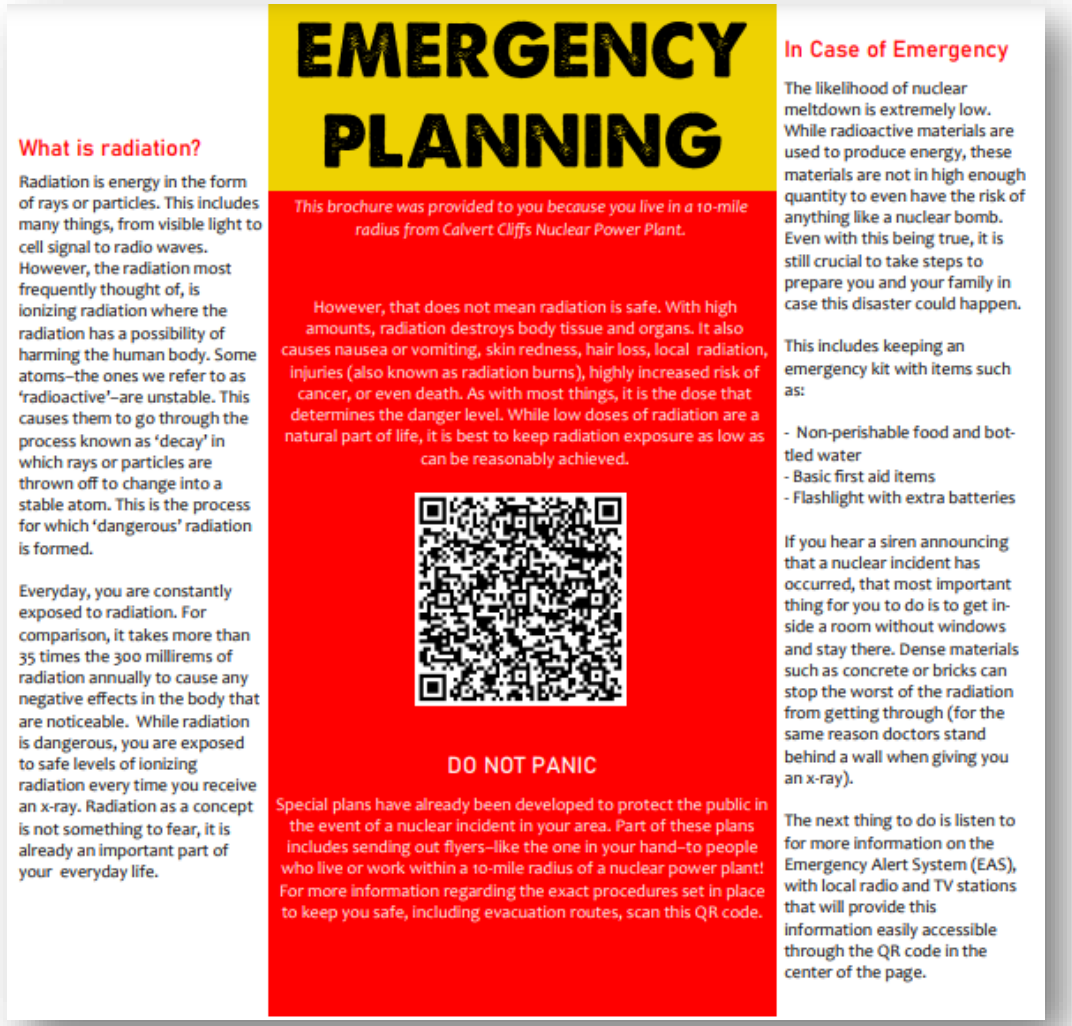
This includes keeping an emergency kit with items such as:
- Non-perishable food and bottled water
- Basic first aid items
- Flashlight with extra batteries

If you hear a siren announcing that a nuclear incident has occurred, that most important thing for you to do is to get inside a room without windows and stay there. Dense materials such as concrete or bricks can stop the worst of the radiation from getting through (for the same reason doctors stand behind a wall when giving you an x-ray).

The next thing to do is listen to for more information on the Emergency Alert System (EAS), with local radio and TV stations that will provide this information easily accessible through this QR code.

DO NOT PANIC

Special plans have already been developed to protect the public in the event of a nuclear incident in your area. Part of these plans includes sending out flyers–like the one in your hand–to people who live or work within a 10-mile radius of a nuclear power plant! For more information regarding the exact procedures set in place to keep you safe, including evacuation routes, scan this QR code.



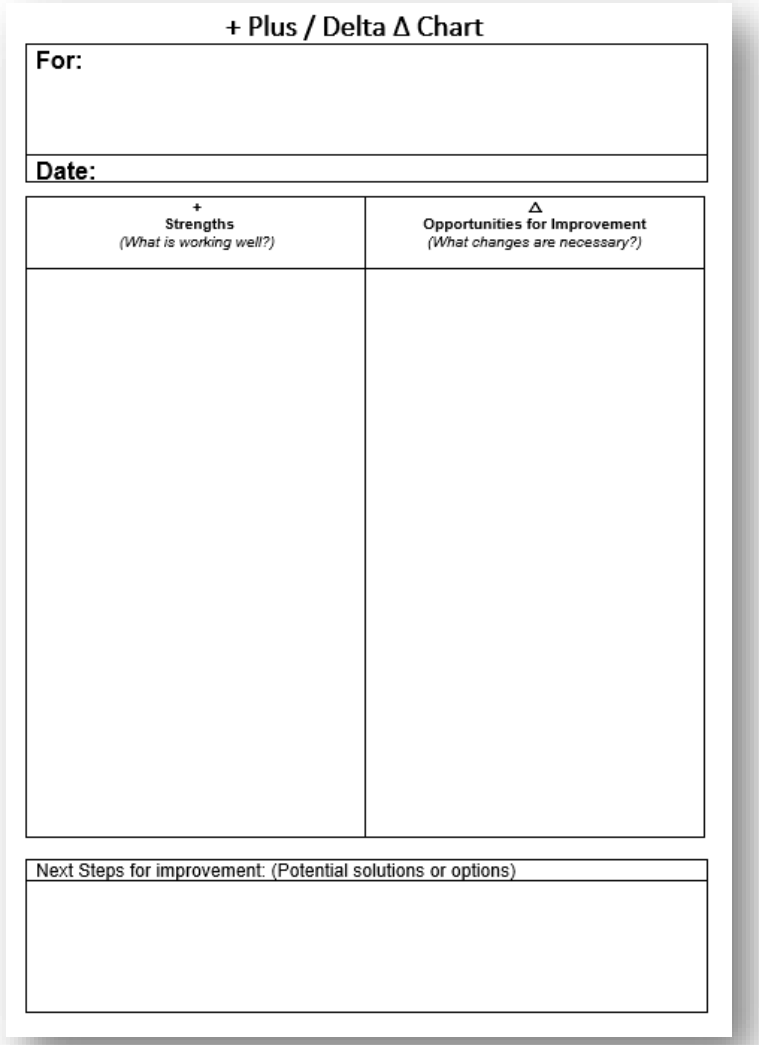
Plus / Delta Chart

Feedback & Reflection Tool

+ Plus / Delta Δ Chart

A quality tool for quickly reflecting on individual work or teamwork as an approach to promote continuous improvement and gather feedback.

+ Pluses	Δ Deltas
Positives with the project or activity so far	**Opportunities for Improvement/Changes**
✓ Identify the things that are working well ✓ Items that individuals or teams want to maintain and build upon ✓ Successes ✓ Should be specific	Δ Identify the opportunities for improvement/change so that the project or activity is more effective Δ Should be action oriented and begin with a verb Δ Should be specific Δ Should be within the realm of possibility Δ Should be reviewed and acted upon



+ Plus / Delta Δ Chart

For:

Date:

+ Strengths *(What is working well?)*	Δ Opportunities for Improvement *(What changes are necessary?)*

Next Steps for improvement: (Potential solutions or options)

Link to Plus Delta Protocol Template

Feedback Norms

Share the Air

- Do not dominate the conversation
- Everyone has an opportunity to speak

Be Hard on Content, Soft on People

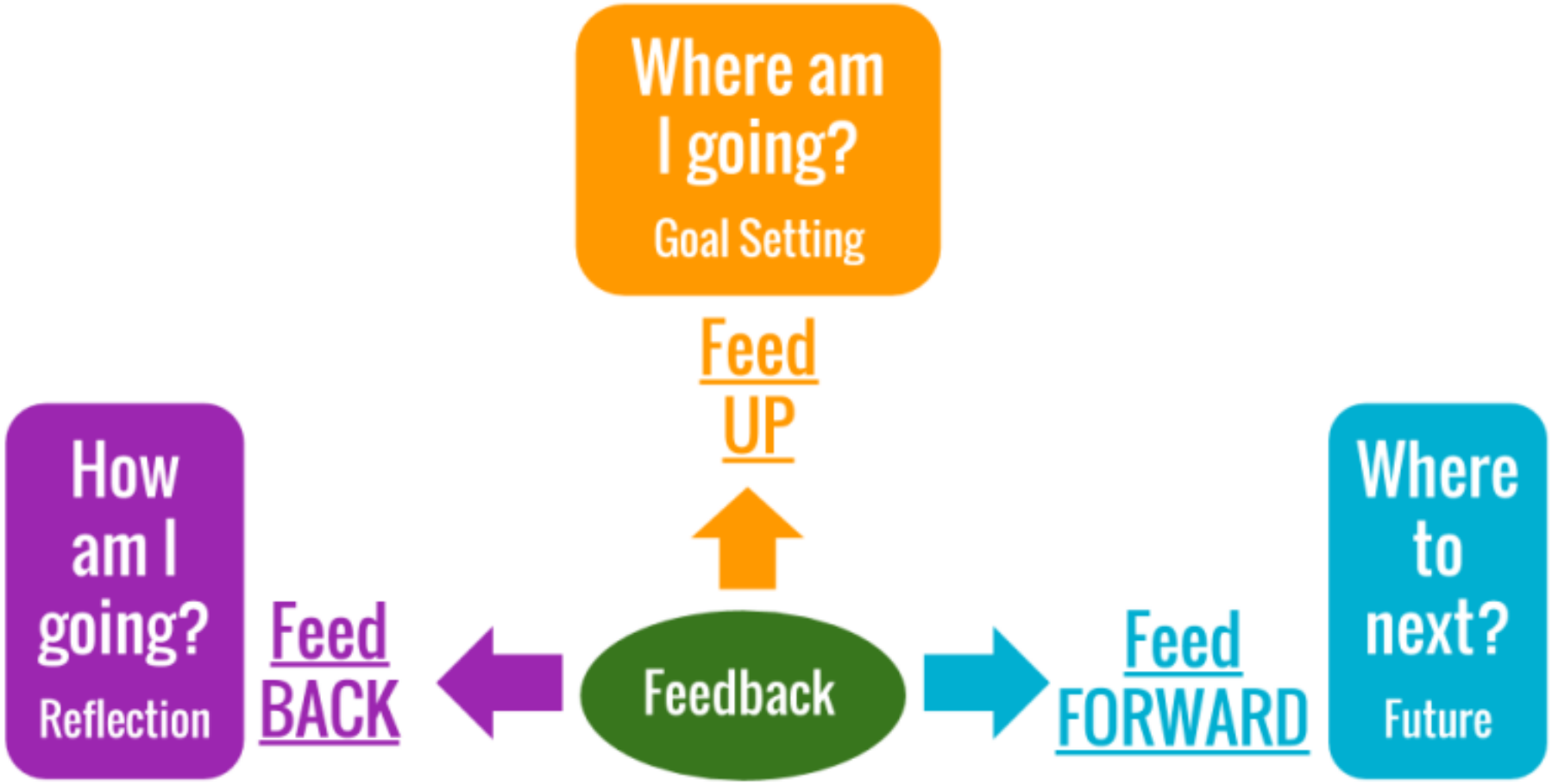
- Focus on the Project, not the person

Be Kind

Be Specific

Be Helpful

FeedUP + FeedBACK + FeedFORWARD



Use the QR Code to read more about Effective Classroom Feedback Systems

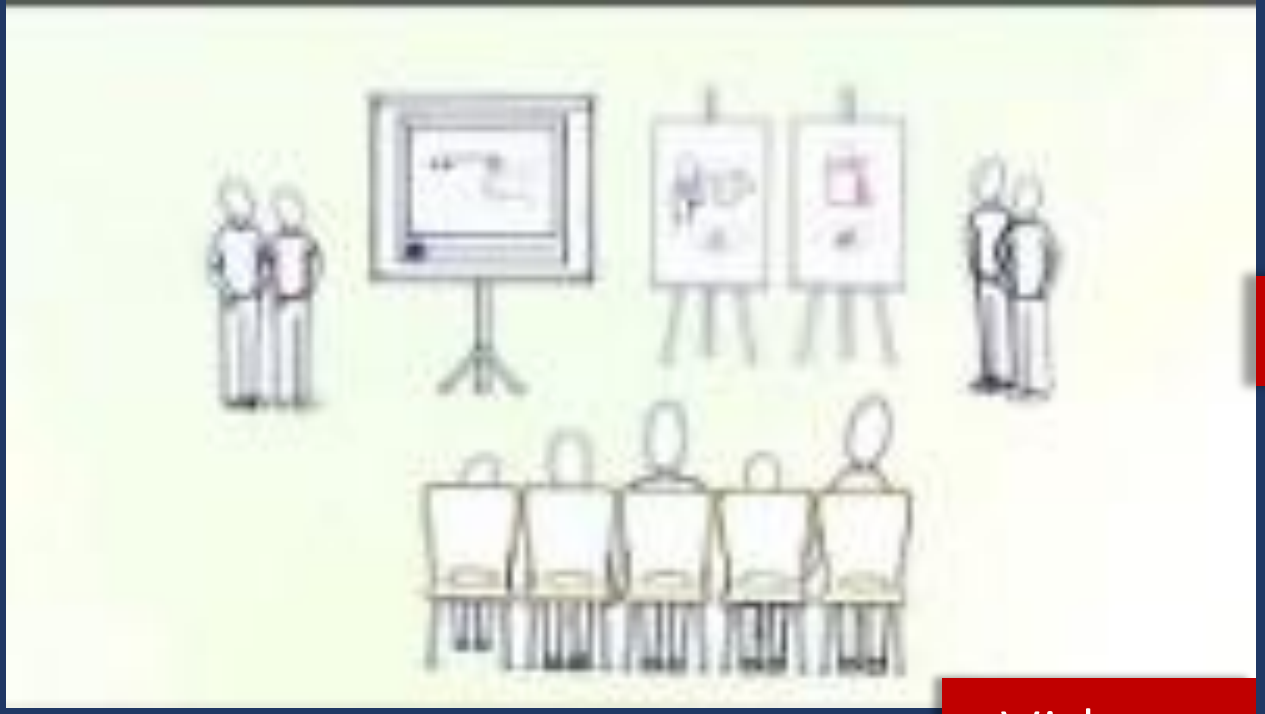
Questions? Comments?

Contact Ashley Curtin - curtina@calvertnet.k12.md.us
Contact Ronni Morrissey- morrisseyr@calvertnet.k12.md.us

Thank You for Attending!

What to Know More about PBL?

Click on Images To Learn More



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CULT OF PEDAGOGY

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