

Could have this playing at 8:45... [Kid President](#)

6-7 groups of 4?

On Tables:

Post-its, pens, highlighters, sign for table theme

*Write your name on the board to start. At slide 3, when they are introducing, write role and school on the board, too.

As you come in...

The tables have themes...

| | |
|-----------------------------|---|
| Heart (not the band) | This table includes the Jack, Queen, King, and Ace of Hearts. |
| The Tens | This table includes the 10 of hearts, 10 of clubs, 10 of spades, and 10 of diamonds. |
| Math Clubs | This table includes the Jack, Queen, King, and Ace of Clubs. |
| Odds Are | This table includes odd number cards of all suits. |
| In Spades | This table includes the Jack, Queen, King, and Ace of Spades. |
| Even So | This table includes even number cards of all suits. |

Materials:

Deck of Cards - face cards and Aces of hearts, clubs, and spades; all four 10s, 3-5-7-9 of all suits, 2-4-6-8 of all suits (extra is face cards and Ace of diamonds)
Signs on tables to indicate groups

8:50am

Introductions

1. Name, Grade Level, School



Take turns telling the group **your name**, the **grade level** you teach, and the **name of the school** where you teach.

2. Favorite Local Breakfast Spot



What is your favorite place for **breakfast in Santa Fe**? Do you prefer **savory or sweet**?



Take a moment to introduce yourselves to each other, even if you happen to be teamed up with someone you already know.

Please share your name, grade level, and school in the first round.

Then, in the second round, which could go in a different order, share your favorite place for breakfast in Santa Fe.

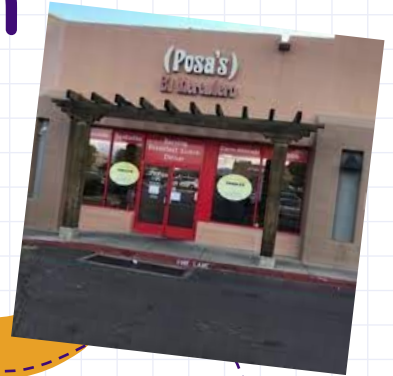
5-7 minutes

Actions:

As people get settled and are chatting, by 8:55, start handing out Warm Up problem.

Jenifer Hooten

Academy for Technology and the Classics
Math Coach/Specialist, Math Chair



I'm Jenifer Hooten, Math Instructional Coach and Specialist and the Math Dept Chair at ATC.

Our favorite go-to for a breakfast treat is Posa's - breakfast burrito with chorizo and bacon, beans, christmas, and deep fried. :)

Warm Up

- First, work through the given problem.
- Then, go back and jot down some notes about your thinking. How did you solve it? What steps did you take?
- When all at your table are finished, discuss your solution strategies. What did you do first? What made you decide to make that your first step?

Minutes and Days

Tags: AMC

Alignments to Content Standards: 5.MD.A.1 5.NBT.B.6

Student View

Task

What time was it 2011 minutes after the beginning of January 1, 2011?

(animation!) This is a quick warm up math task to get our brains moving.

First, work through the problem as you normally would.

(pause for 3-5 minutes, checking in after 1-2 minutes)

Now, look over your work and jot down some notes about your thinking. How did you go about answering the question? Did you use mental math? What steps did you take?

(pause for 1-2 minutes while participants write)

And now, take turns to share responses to the questions: What did you do first? What made you decide to make that your first step? This is a general discussion, and there are no right or wrong answers. Everyone goes about solving math tasks in their own way.

(allow 3-5 minutes for discussion)

Great discussion! In an effort to maintain transparency about what I'm doing, my goal here was to not only engage you in some math thinking, giving you the opportunity to experience this session as a student experiences a lesson, but to also help make your thinking visible so other students can deepen their understanding and extend their own solution toolbox.

10-15 minutes (9:10)

Agenda

01

Introductions and
Warm Up

02

What is PBL?

Introductory video and
Discussion

03

Understanding by
Design

Seven tenets and three stages
of backward design

04

Essential Design
Elements

PBL Works - what is essential
for effective PBL?

05

Planning a Project
with PBL

You'll have time to start
planning a project using the
PBL resources.

06

Wrap-up and
Exit Ticket

Talk through the agenda and ask if there are any questions.

1-2 minutes (9:12)

02

What is PBL?

Project Based Learning

The illustration depicts a young child with dark skin and curly hair, wearing a yellow long-sleeved shirt and light blue pants, sitting cross-legged and reading a pink book. The background is a light blue grid with various educational icons: a paintbrush, a ruler, a magnifying glass, a paper airplane, a triangle ruler, and a red apple. There are also yellow circles, pink stars, and dashed lines scattered throughout the scene.

Transition slide

Projects vs Project Based Learning



To deepen our understanding of project based learning, we'll watch a short video on the difference between 'projects' and Project Based Learning.

[watch video]

Any comments on the video? Have you heard that before? Have you tried project based learning strategies in your classroom? What did that look like?

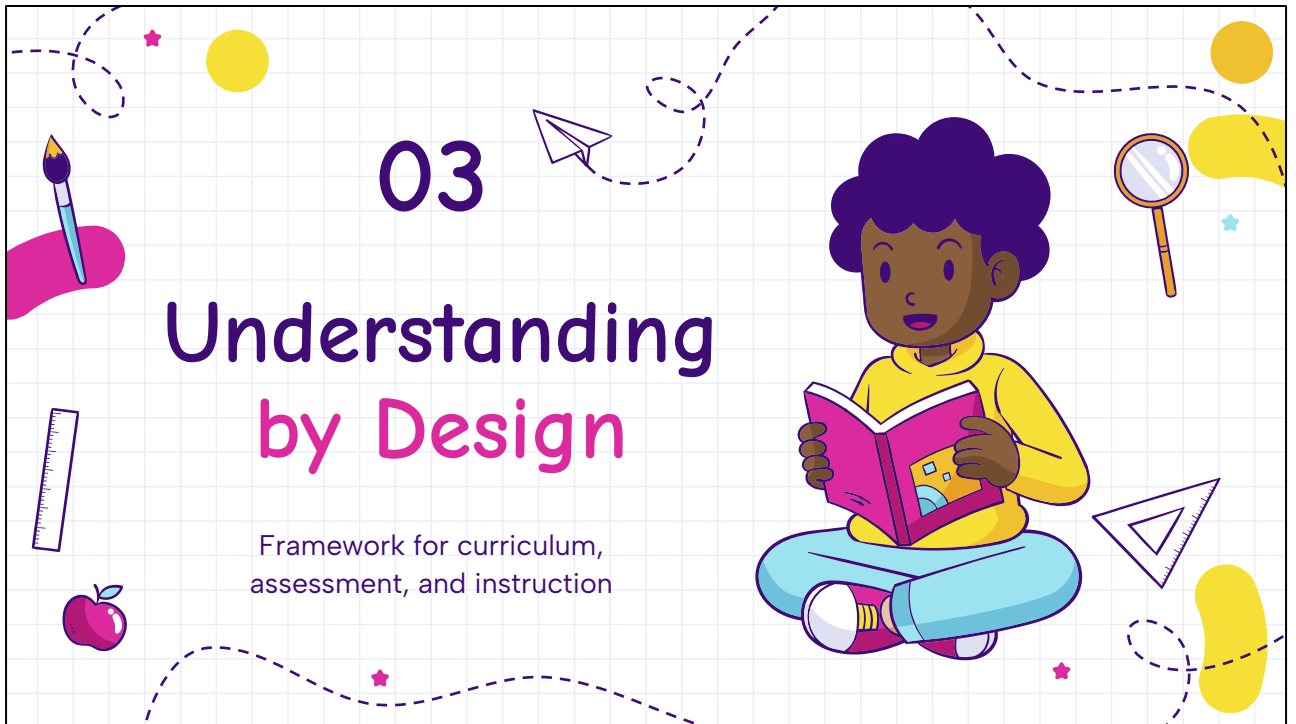
[brief discussion depending on volunteered comments]

I would not say I'm an expert on PBL yet and am still learning as I try new things. I've used PBL in AP Statistics and Data Science, which really lend themselves to project based learning, especially when working with and analyzing data. Mostly, I've tweaked project based learning units. Last year, my school focused on project based learning, and we had some training with a facilitator.

So it sounds like we've got some who may have dabbled, maybe have designed their own unit around project based learning, and maybe there are some who are interested in trying it out for the first time. One thing to keep in mind is that learning is on a continuum, and the design rubric we're going to look at describes three levels of implementation of PBL.

5-8 minutes (9:20)

To start off our learning, I'd like to talk briefly about Understanding by Design. Project Based Learning, at least the approach adopted by the Buck Institute, uses the UbD framework as a foundation for teaching and learning.



Transition slide

Has anyone ever used a jigsaw strategy with your students? (wait for responses)

Actions:

Hand out [copies of UbD tenets and stages of planning](#).

Jigsaw UbD Excerpt



A. Read 1 side

Half of the table reads one side and half of the table reads the other side.



B. Pair Share

Discuss your takeaways with the group member who read the same side as you, and write a conclusion.



Expert Exchange

Each pair then shares their conclusion with the rest of the group.



Whole Group Share

Groups will share out their conclusions about each side.

We're going to split up the reading and collaborate to understand and process the information in the excerpt from the white paper on UbD. Two people at your table should read side 1 and two people should read side 2. Then you'll share your takeaways with the person who read the same side as you.

(pause 2-3 minutes for reading)

Now turn to your reading partner and share your takeaways.

(3-5 minutes for discussion)

And then once both pairs have had a chance to write a conclusion, they each become the experts on their side of the paper and share the conclusion and any other important points with the rest of the group.

(3-5 minutes for discussion)

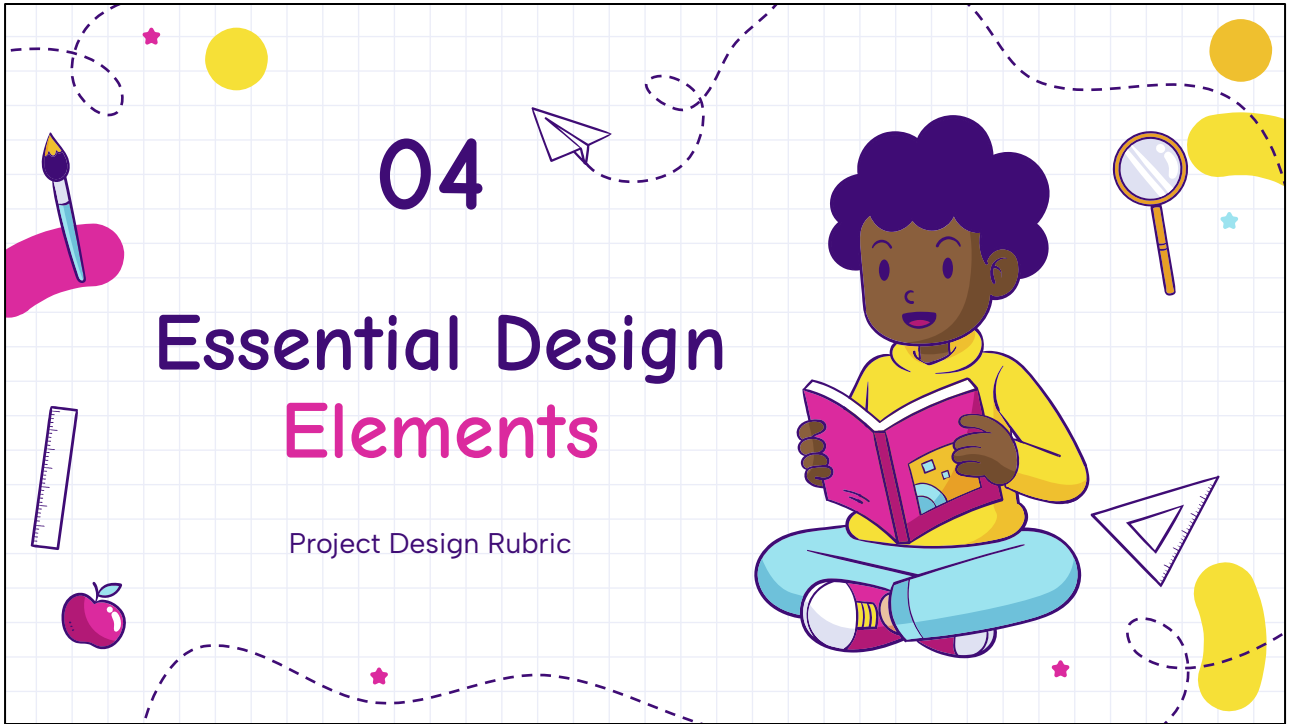
Now we'll go around the room to hear what groups feel is important to take away.

(1-2 minutes?)

[If not mentioned: #3 - formative assessment strategies; #7 - using formative assessment data to inform instruction (don't assume what was taught was learned)]

12-15 minutes (9:35)

https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/UbD_WhitePaper0312.pdf



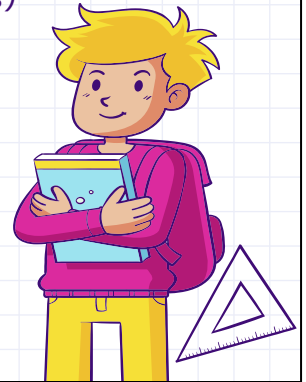
Transition slide

Now we're going to look at what the Buck Institute feels are the essential elements of a true 'PBL project' or unit.

Project Design Rubric

The rubric includes examples and definitions to clarify each dimension. The seven **Essential Elements** are:

- Student Learning Goals (i.e., standards or objectives)*
- Challenging Problem or Question*
- Sustained Inquiry
- Authenticity
- Student Voice and Choice
- Reflection
- Critique and Revision
- Public Product (could be for the class)



(animation!) PBL Works uses this rubric to evaluate projects for each of these criteria. The first two are marked because we'll look more closely at those shortly. Becoming a master PBL teacher takes time. You could basically think of your project based teaching as its own long term project, each of us has goals for what the projects will look like - the challenging question is how to guide student learning to achieve the desired results - the sustained inquiry is how to deepen the learning for students - being authentic in lesson planning - voice and choice around how to plan and design projects - reflection on lessons to inform instruction - revising them for future use or informing the next week's lessons - and the lessons are the public product.

I'll give you a few minutes to look over the rubric more closely. As you're reading, think to yourself about where you are in each dimension and what aspects you feel are important to prioritize in your planning. Feel free to highlight, make notes, annotate in ways helpful to you.

Invite discussion - would anyone like to share? Questions? Comments?

Actions:

Hand out copies of [rubric](#) as they read through the elements.

5-7 minutes (9:42)

For today, we can focus on:

Aligning to Standards



In the Design rubric, this is the first row. This means we want to use the standards to establish the learning goals.

Creating a Driving Question



There are many ways to do this. One approach I have taken is to build from an otherwise straightforward real-world task.



Not necessarily because these are the first two on the Design rubric, which was convenient, but because I think these are places to start the planning process. Aligning to the Standards is likely something you are already doing, meaning that you are looking at your standards or have a deep enough knowledge of them as you are planning to identify which ones students will tackle next. This is the same idea. You can start with the standard you need them to 'master' and look through resources for ideas, or come up with your own, to generate a driving question.

I brought some resources and examples with me. (talk through using IM tasks; talk about Geometry project with kites, combining quadrilaterals with dilations and scale factor)

[4th grade Garden](#); [4th grade Buttons](#)

[5th grade Park and Field](#)

[6th grade Laundry Detergent](#)

[7th grade Water Well Rig](#)

[8th grade Shipping Oats](#) (alternate 8th grade - Stats/Prob)

Actions:

Hand out SFPS standards and [Illustrative Mathematics tasks](#).

2-3 minutes (9:45) But keep on this slide for a bit... or until someone asks about sustained inquiry or other resources

Designing Project Based Learning



(if time allows)

This is a video by the authors of Project Based Teaching, talking about designing and planning Project Based Learning.



Now you have time to start on the planning process for a PBL unit of your own.

Remaining minutes until 10:05am.



06

Wrap Up & Exit Ticket

I hope this has been beneficial!

Transition slide

Thank you so much for joining MathAmigos today, and I hope you enjoy the rest of your sessions.

To wrap up

Understanding by Design



Foundational tenets for teaching and learning

Project Design Rubric



Essential elements for designing or evaluating a project based learning unit

Projects vs Project Based Learning



Working with content learned vs learning through the project

Learning goals and a Driving question



Aligning the objective to state standards and creating a driving question to guide student work

To wrap up our session...




This is our exit ticket, and the next slide will have Slido, which will show responses to the exit ticket.


slido



What is something you are excited about incorporating into your instructional toolbox?

① Click **Present with Slido** or install our [Chrome extension](#) to activate this poll while presenting.

 This is Slido interaction slide, please don't delete it.

 Click on 'Present with Slido' and the poll will launch automatically when you get to this slide.

Thanks!

Do you have any questions?

youremail@freepik.com | +34 654 321 432

yourwebsite.com

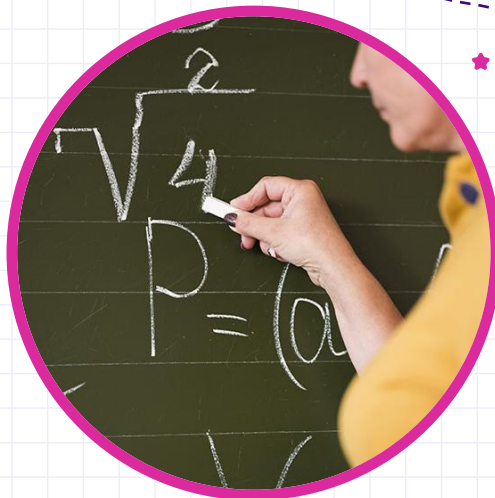


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Other Resources

There are several organizations and institutions that have developed guidelines for project based learning, including AVID, Edutopia, and higher learning institutions like Boston University.



Shifting to a more project based learning approach will take time, and you may have to train your students to engage with the questions and be comfortable with open-ended problems that have multiple solutions that can always be revised and improved, the idea that nothing is ever really finished, especially our learning.

Just sharing - these links will be included in the slides, which will be shared after today's workshop. I can also email links to people if they would like.

[PBL Teaching Practices Rubric](#)

[AVID - Engage Students Through PBL](#)

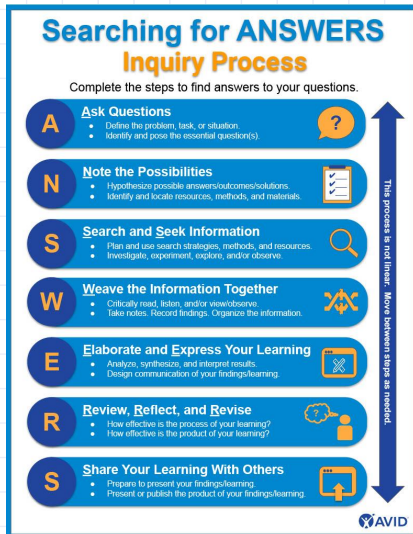
[High Quality PBL](#)

[Edutopia - Project Based Learning](#) (collection of articles and guides)

[Boston University](#)

[Detailed information on PBL teaching practices](#)

Supporting Sustained Inquiry



For example, AVID has suggestions for supporting the sustained inquiry dimension in the Design rubric, which really keeps the project going and the work engaging. If you're past the driving question part of planning, you may be ready to think about the inquiry piece.

*stop talking and allow them to work by 9:50 or before