



The Cognitive Triad:

Backwards Planning, Formative Assessment, and Differentiation

Learning Objectives

- To understand how the cognitive triad along with the formative assessment → differentiation cycle can be used to maximize student learning potential.
- To understand how different modes of differentiation can be used to bridge the varying knowledge and competency gaps of each student.
- To leave with numerous practical differentiation techniques that can be applied to the classroom on day 1.

Success Criteria

- I feel confident in my ability to create formative assessments that can illuminate sources of struggle my students have.
- I feel confident that I can apply multiple differentiation techniques in my classroom to fit multiple student needs.
- I feel confident that I have a toolkit of go-to differentiation ideas that can be applied when needed.

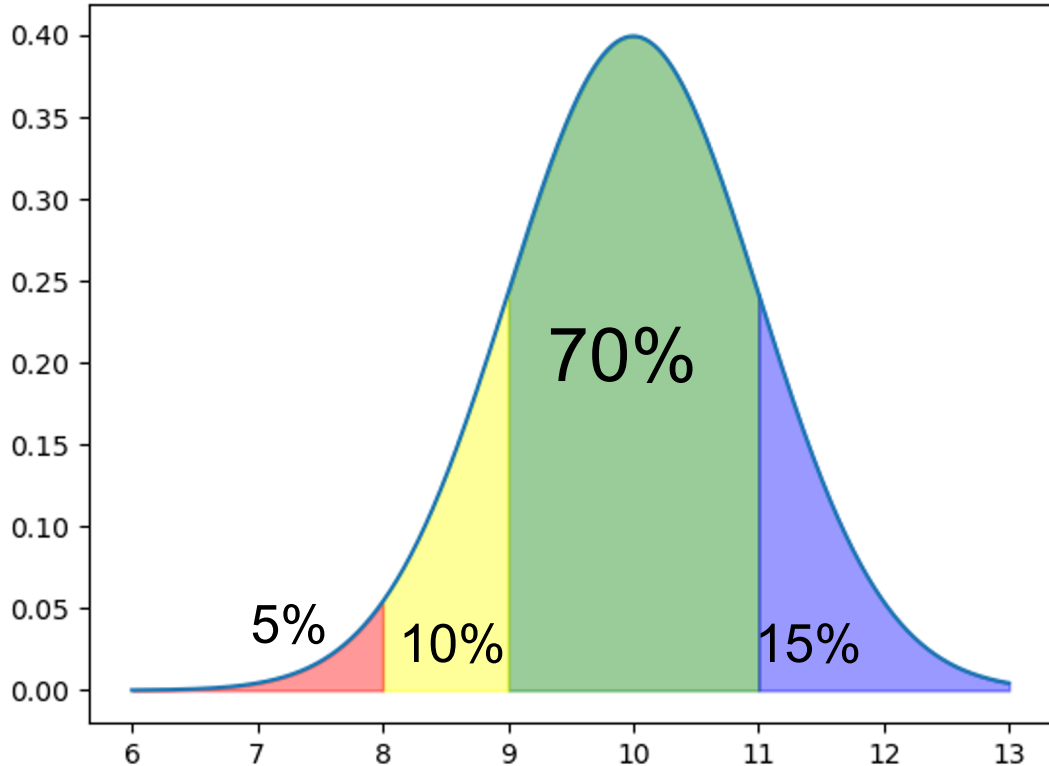
Agenda

Thing	Time
Introduction	8:30-8:45
MTSS & Cognitive Triad	8:45-9:15
Formative Assessment	9:15-10:15
Break	10:15-10:30
Differentiation Theory	10:30-11:30
Lunch	11:30-12:30
Differentiation Theory Continued	12:30-1:30
Break	1:30-1:45
MTSS Post-Covid & Scaffolding	1:45-2:45



MTSS: The Theory

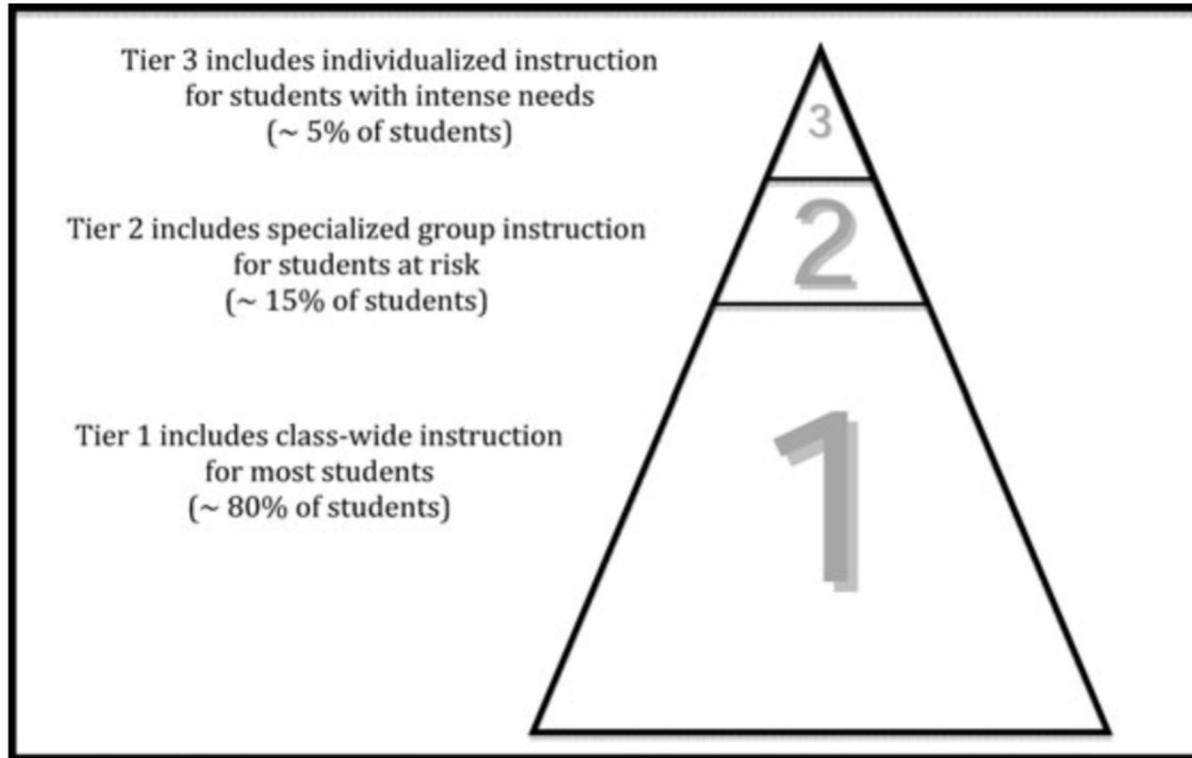
Here is what we expect in a 10th grade class



The distribution of student skills

- Most students at or around grade level.
- A small percentage above grade level.
- A small percentage below grade level.
- An even smaller percentage very below grade level.

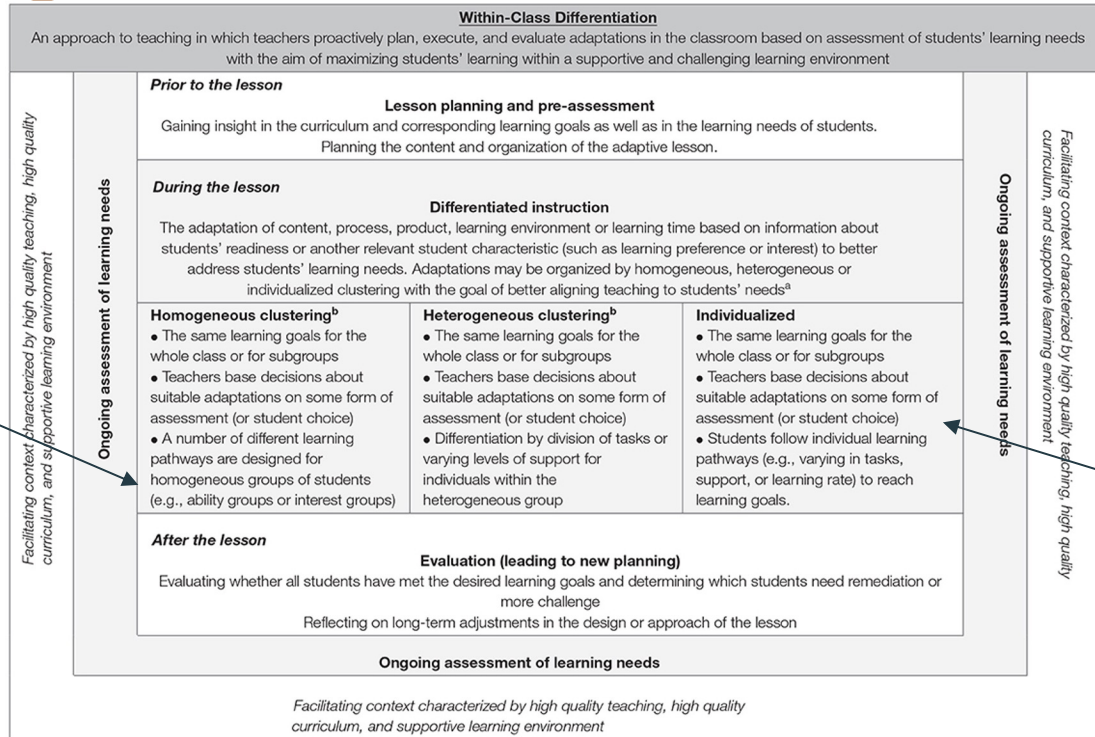
MTSS and Response to Intervention



1. All students receive Tier 1 instruction.
2. Struggling students are identified for Tier 2 support. Support might take the form of pull-out tutoring sessions or a dedicated support class.
3. Students who continue to struggle are referred to Tier 3, which often is the pathway to special education.

(Mellard, et al., 2010)

Tier 1



Effect Size = 0.16
 (Steenbergen-Hu et al., 2016; Kulik, 1992; Lou, et al., 1996)

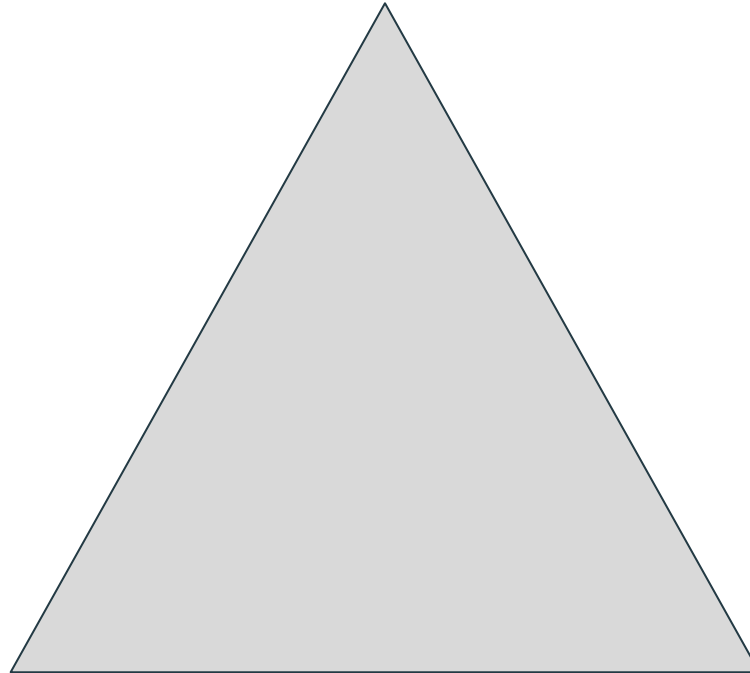
Effect Size = 0.23
 (Hattie, 2009)

^aTypically teacher-directed, but ICT applications may also be used to inform or direct the differentiated instruction. ^bOnly settings in which content, process, product, environment, or learning time are purposefully adapted to the learning needs of students within or across groups are included in our model. Merely working together without any planned adaptations does not fit our definition of differentiated instruction.

The Cognitive Triad

(Davis & Austin, 2020)

Backwards Planning

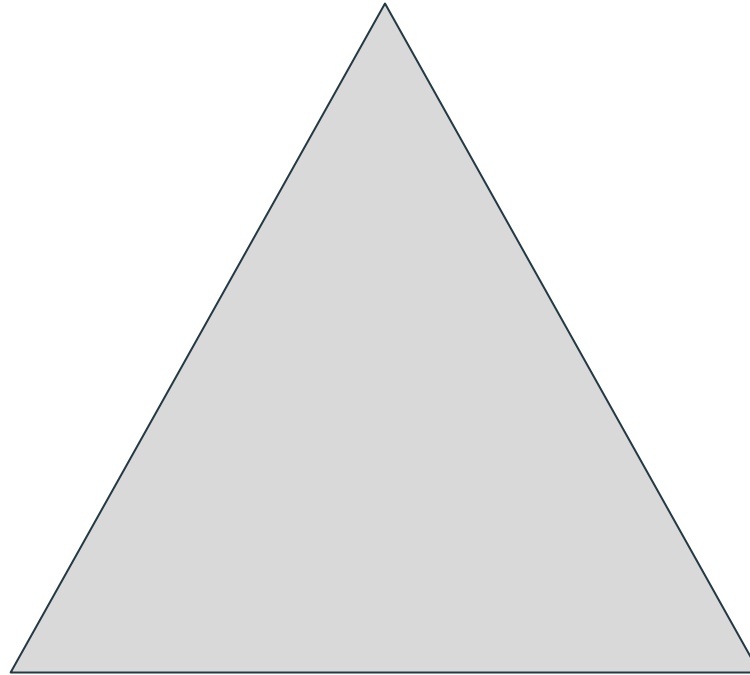


Differentiation

Formative
Assessment

What are our learning objectives for this...

Day?
Topic?
Unit?
Etc.



What is the best way to get them from where they are to where they need to be?

Where are the students now...
Academically
Emotionally

Identifying and communicating learning objectives

What are the LOs today?

What are the LOs this topic?

What are the LOs this unit?

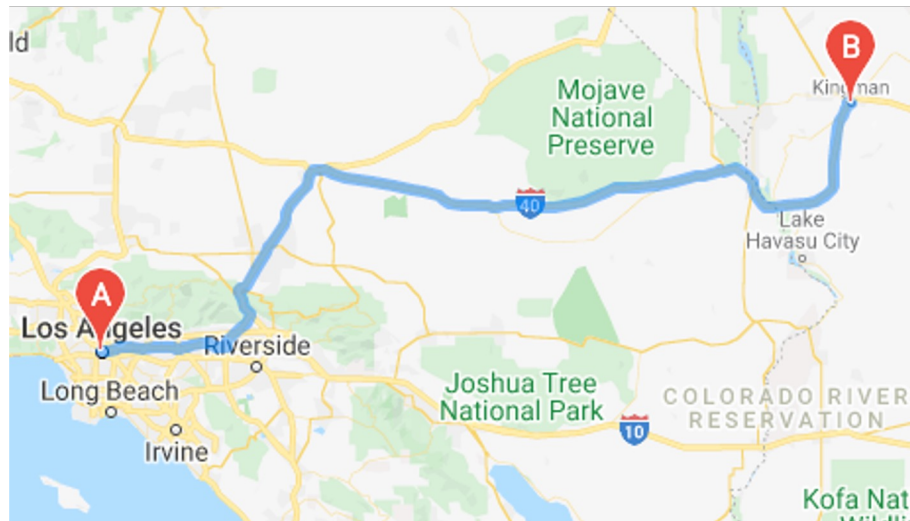


How does this lesson increase the context of the unit?

What is the best path for the lesson to follow?

You have your goals, now how do you get there?

Differentiation can help students who take a different route to the goal.

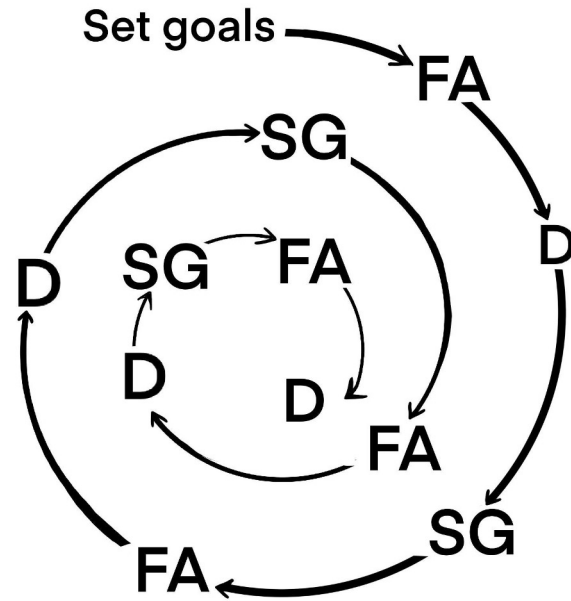


Where are students on their journey?

Formative assessment can tell you how far down their differentiated path your students are.



The Spiraled Triad Model



Your Turn

- Think of a challenging lesson that you teach during the 1st quarter.
- What are some ways that you plan to differentiate this lesson?
- What kinds of formative assessment would you use?

Notes:

Takeaways

- All of our plans will need to eventually be modified.
- Formative assessment helps us determine when to modify.
- Differentiation is the modality by which we change our plans.



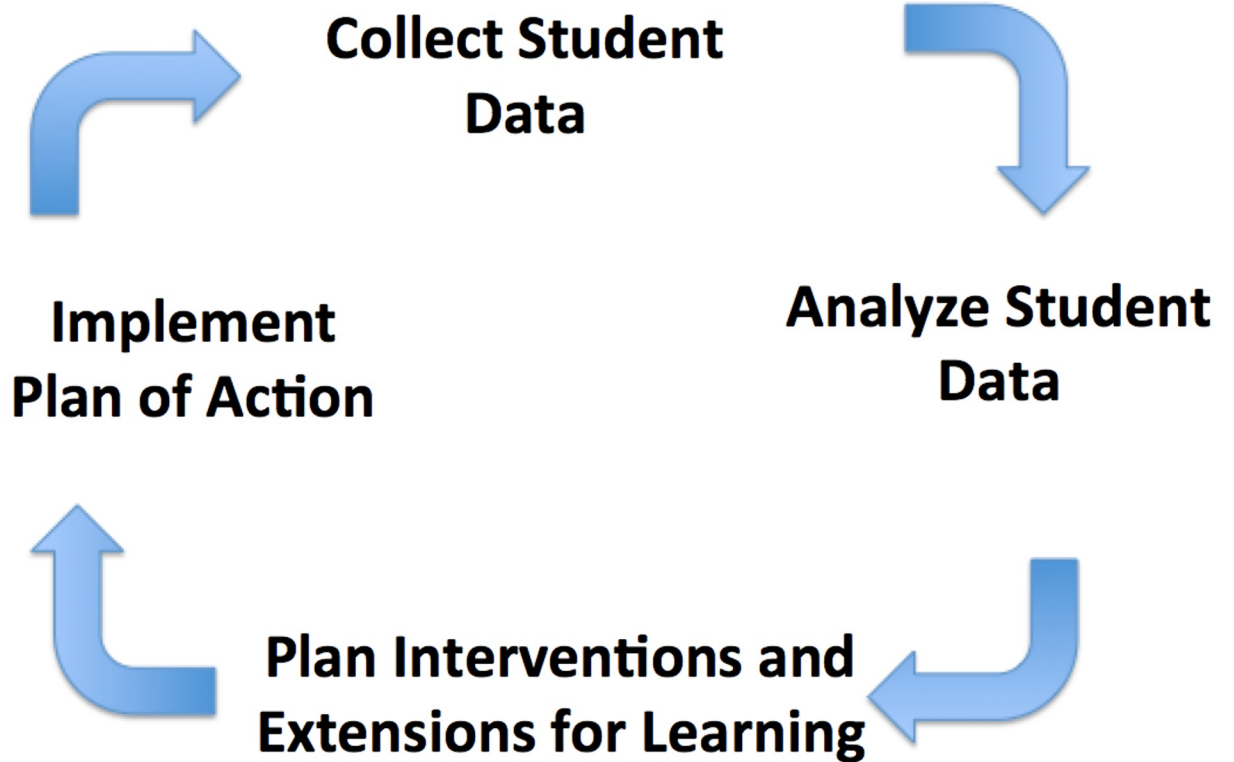
Differentiating and Formative Assessment


Formative Assessment

- Why
- When
- What

The “WHY” of Formative Assessment


- **Why**
- **When**
- **What**





Group discussion time!

(because you are better than the theory)

1. Decide on a group notetaker and sharer-outer
 2. Write down (or think about): Why do **you** use formative assessment?
 3. Discuss your reasons with your group.
 4. Are there any commonalities? Can your group come up with a group reason as to "WHY"?
 5. Prepare to share out.
- 

Notes:

Our "WHYs"


THE WHY OF FORMATIVE ASSESSMENT

1. Where students are and where they are going
2. Which students need differentiation, which do not
3. Have the students learned what you wanted them to learn
4. Are students ready for the day's lesson?
5. Informs how we run the class during the 55 minutes

The “WHEN” of Formative Assessment


- Why
- **When**
- What

Theory would say that this is teacher and lesson-plan dependent. What do **you** say?



Group discussion time!

(because we should not keep our ideas secret... unless there's an NDA)

1. Decide on a new group notetaker and new sharer-outer
 2. Write down (or think about) When do **you** use formative assessment?
 3. Discuss your reasons with your group.
 4. Are there any commonalities? Can your group come up with a group reason as to "WHEN"?
 5. Prepare to share out.
- 

Notes:

Our "WHENS"

THE WHEN OF FA

1. Depends on formal/informal
 - ↑
Planned out
 - ↑
Constantly
2. Assessment does not stop!
Beginning to assess where students are
Then it's a constant process after that
At the end to determine how well the lesson worked, and to guide your teaching strategy

The “WHAT” of Formative Assessment


- Why
- When
- **What**

Not every type of formative assessment works for all students and situations. The type of assessment must match up with what is being taught, who is doing the teaching, and who is doing the learning.



Group discussion time!

(because... umm, just because, that's why!)

1. Decide on a new group notetaker and new sharer-outer
 2. Write down (or think about): What do **you** use formative assessment?
 3. Discuss your reasons with your group.
 4. Are there any commonalities? Can your group come up with a list of WHAT works?
 5. Prepare to share out.
- 

Notes:

Our "WHATs"

THE WHATS OF FA (Your toolkit)


1. Scavenger Hunt
Walk and Listen
Exit Tickets
Games
Discussions
Where / Why
are they
confused
Looking at and analyzing models
Fit to 5 (How well do you understand)
Kahoot / Surveys / Tech
Desmos

Stamps and Stickers
Slowly increasing complexity
Practice Quizzes
Peer to Peer interaction
and grading



Break Time!

We'll know how entertaining we were by how many of you come back :)





Let's Focus on
Differentiation




Lego Activity



Differentiation Theory



Your Turn

1. Choose a person who likes to write (for notes) and a person who likes yelling answers (sharer).
 2. On your own: write down (or just think about): How would you define **Differentiation**?
 3. Share your definition with the table.
 4. As a table group: Try and arrive at a table-wide definition for differentiation.
 5. Yes, we're going to share out :)
- 

Notes:

Defining Differentiation



Why do we
differentiate?
What's the point?

5 Guiding Principles of Differentiation

1. Students receive work aimed at the main content of the lesson.
2. Students are scholastically tested while being provided suitable backing.
3. Class time includes opportunity for flexible grouping.
4. Assessments and differentiation are ongoing and dynamic.
5. Curriculum is coherent, engaging, and thoughtful.

(Tomlinson, 2003)

What can be differentiated?

Content

Process

Product

Differentiating Content

Content: The actual concepts, ideas, connections, etc. that are being taught or communicated during the time in question.

Example: During a U.S. History Cold War unit, connections are being explored between current U.S. bi-lateral relationships and U.S. foreign policies during the Cold War.

Differentiating Content



- Allow students to choose which bi-lateral relationship(s) to investigate.
- Provide a list of choices for students to choose from.

Iranian coup 1953 (Operation Ajax)

How might you differentiate this content?

Write down (or think about) at least 1 way that you might differentiate the content of a lesson that you teach.

Notes:

Differentiating Content Example

List of ideas for content differentiation

Differentiating Process

Process: The actual modalities by which learners take in and process the information important to the lesson.

Differentiating Process



Vary the number of U.S. foreign policy interventions that students must investigate.

- Advanced students explore 3 and discuss the differences
- Intermediate students explore 2, then compare/contrast
- Remedial students explore 1 and look at how that nation responded.

Bay of Pigs Invasion

How might you differentiate this process?

Write down (or think about) at least 1 way that you might differentiate the process of a lesson that you teach.

Notes:

Differentiating Process Example

Process differentiation ideas

Differentiating Product

Product: The deliverable that students produce that will show their mastery of the material being taught that day/week/unit/etc.

Differentiating Product



Allow choice in the type of summative assessment given. Those with lower reading levels might choose to make a podcast of their findings rather than writing an essay.

Argentine Coup d'état

How might you differentiate this product?

Write down (or think about) at least 1 way that you might differentiate the product of a lesson that you teach.

Notes:

Differentiating Product Example

Product differentiation ideas



LUNCH!

Eating food is even better than hearing myself talk!



Student Support Post-Covid

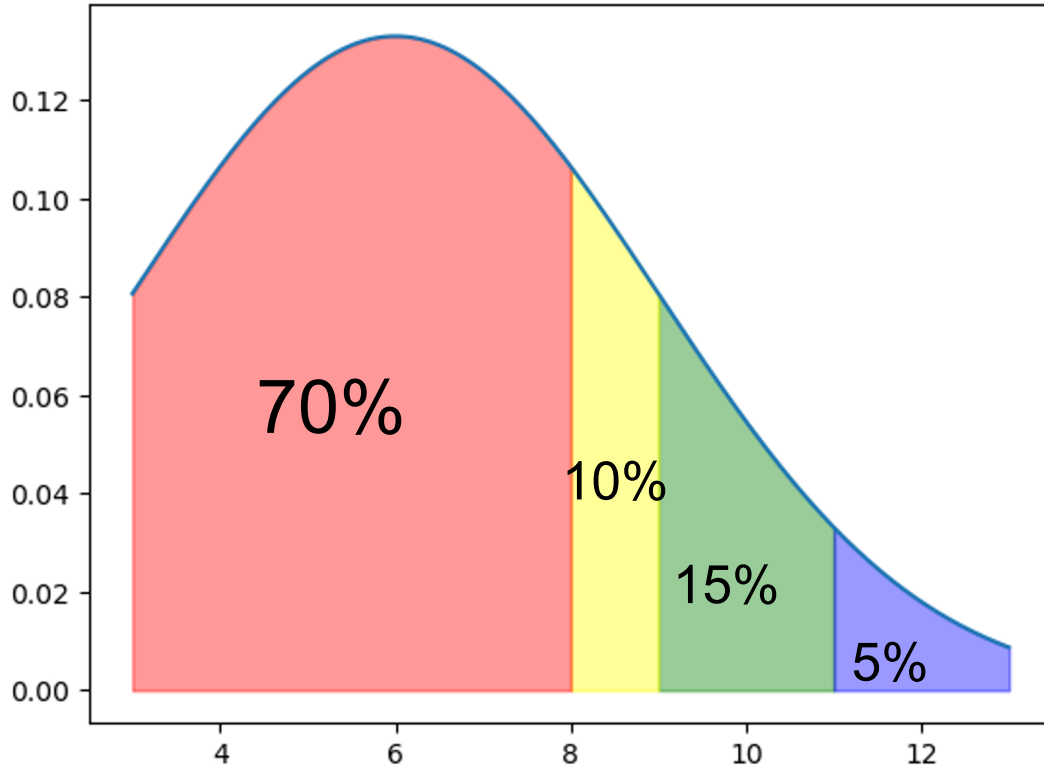
The new realities of MTSS and the differentiation →
formative assessment cycle

Something to ponder...

Trivia Question:

What percentage of last year's 10th grade math students were more than 2 years below grade level at the beginning of the year?

Here is what we get in a 10th grade class



The distribution of student skills

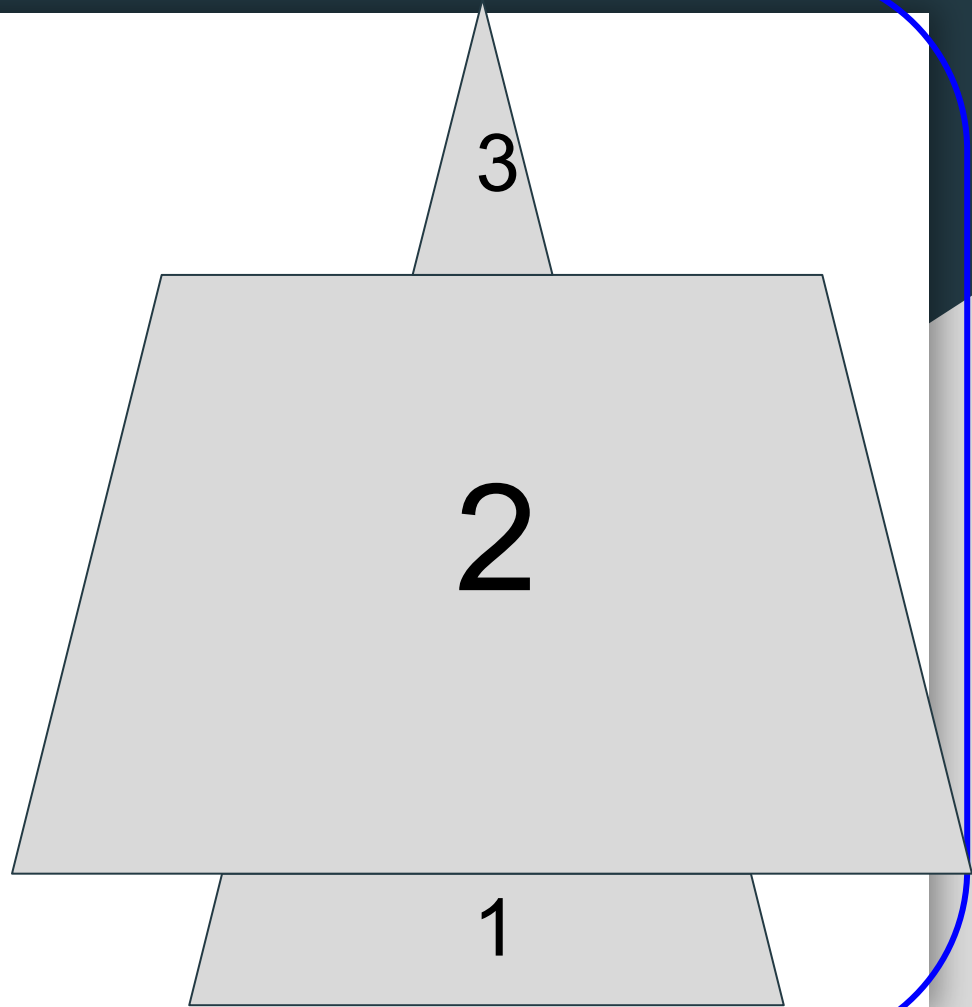
- A portion of students at grade level.
- A very small portion above grade level.
- A small portion below grade level.
- The vast majority very below grade level.

What changes have you noticed?

- Write down (or think about) 2-3 changes that you have seen in your students before the pandemic vs. after.
- If you have only taught since the pandemic began, compare what you have experienced in the classroom to what you expected to see in the classroom before you began teaching.
- Discuss these with your groups.
- We will ask for some share-out volunteers at the end.

Notes:

The New MTSS Pyramid





The Science of Scaffolding



Break Time!

My joke was too long, so I cut it.

