

Differentiating Instruction in the High School Classroom



Presented by: Mr. Lew Stonaker
For Plumstead Township High School
Day 1 -November 29, 2016

Before We D.I.
We Need to ...

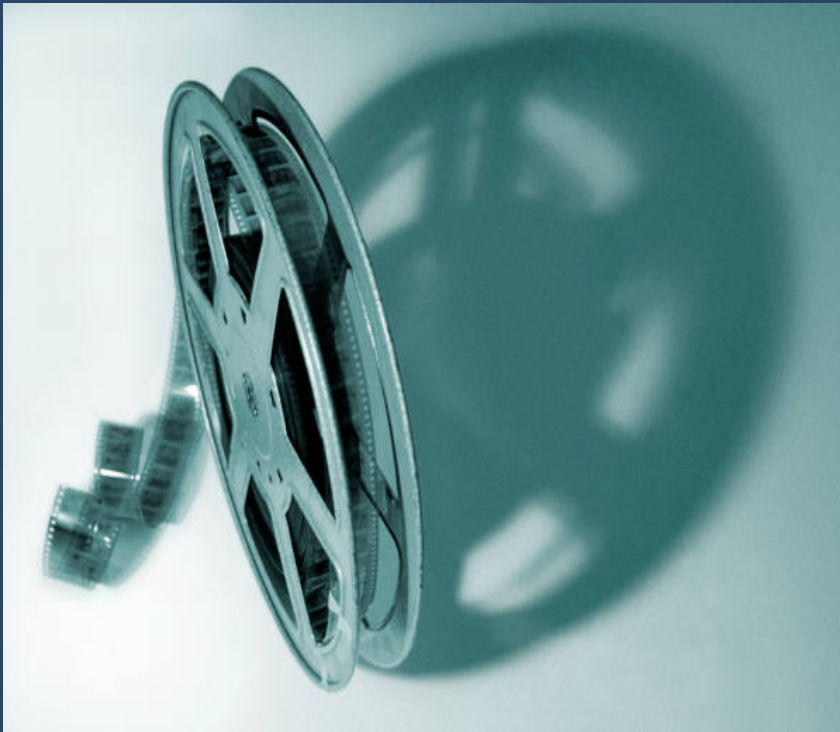
K.U.D.

Knows

Understands

and Dos

What Was The Movie About?



Complete the Movie
Activity Handout.

BE READY TO SHARE!

KUDs and
Your Lessons



Differentiated
Instruction



Assessments



Know

These are **the facts, vocabulary, dates, places, names, and examples** you want students to give you.

The know is massively forgettable.

“Teaching facts in isolation is like trying to pump water uphill.” Carol Tomlinson

Avoiding Assessment Potholes...or Examples of Student Driving

Where was the American Declaration of Independence signed?

At the bottom.



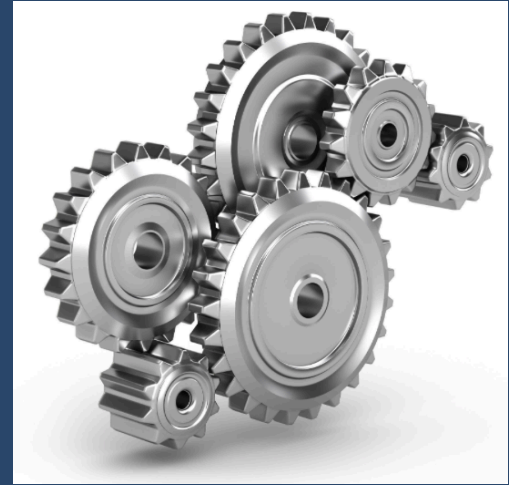
Avoiding Assessment Potholes, or Examples of Student Driving...

What is a vibration?

There are good vibrations and bad vibrations. Good vibrations were discovered in the 1960s

Understand

Major Concepts and Subconcepts



These are the written **statements of truth**, the core to the meaning(s) of the lesson(s) or unit. These are what **connect the parts of a subject** to the student's life and to other subjects.

It is through the understanding component of instruction that we teach our students to truly grasp the “**point**” of the lesson or the experience.

Understandings are purposeful. They focus on the **key ideas** that require students to understand information and **make connections** while evaluating the relationships that exist within the understandings.

Able to DO

Skills



These are the basic skills of any discipline. They include the thinking skills such as analyzing, evaluating, and synthesizing. These are the skills of planning, the skills of being an independent learner, the skills of setting and following criteria, the skills of using the tools of knowledge such as adding, dividing, understanding multiple perspectives, following a timeline, calculating latitude, or following the scientific method.

The skill portion encourages the students to “think” like the professionals who use the knowledge and skill daily as a matter of how they do business. This is what it means to “be like” a doctor, a scientist, a writer or an artist.

A KUD Example – Social Studies

KNOW– Facts, names, dates, places, information

- *The original inhabitants of the Americas migrated from Asia into North America over the Bering land bridge.*

UNDERSTAND - Essential truths that give meaning to the topic; Ideas that transfer across situations; can be phrased, “Students should understand THAT...”

- *Migration enables organisms to meet basic needs.*

DO - Skills (basic skills, skills of the discipline, skills of independence, social skills, skills of production); usually verb phrases.

- *Trace and explain the migratory path of the original Americans*
- *Work collaboratively in a group to complete an assigned task.*

A KUD Example –Language Arts

K (KNOW)

- The plot and characters of *Catcher in the Rye*
- Various stylistic techniques that J.D. Salinger employed

U (UNDERSTAND)

- Novelists often provide insights about human experience and inner life through fictional means
- Writers use a variety of stylistic techniques to engage their readers
- Holden Caulfield reflects common adolescent experience but makes deep-seated personal problems about growing up and relating to theirs

D (DO)

- Apply interpretive reading strategies
- Develop a well-reasoned thesis
- Apply the writing process to produce a draft and a revision of persuasive writing as it relates to the novel

A KUD Example – Mathematics

K (KNOW)

- Absolute value of a number is the distance of a value from zero on the number line.
- Real numbers are all values that are found on a number line.
- The sum of two positive integers is positive.
- The sum of two negative integers is negative.

U (UNDERSTAND)

- Real numbers are **communication** tools that **express** important ideas.
- Addition and subtraction of real numbers are directly **related** to one another.
- Multiplication and division of real numbers are directly **related** to one another.

D (DO)

- Graph and compare real numbers using a number line.
- Find the absolute value of a number.
- Find the opposite value of a number.

A KUD Example –Art

K (KNOW)

- Characteristics of self-portrait as a genre
- Appropriate use of art materials
- Principles of design
- Definition of artistic expression

U (UNDERSTAND)

- Each artist has a personal style
- Personal style reflects the individual's culture, time, and personal experiences
- Use of materials and styles are related

D (DO)

- Analyze an artist's personal style and use of materials
- Create a portfolio of an artist's personal style and use of materials

A KUD Example –Science

K (KNOW)

- Vocabulary: hypothesis, conclusion, procedure, scientific inquiry, data analysis, observation, testable
- Know the steps of the scientific method (state the problem, gather information, form a hypothesis, conduct the experiment, record and analyze data, state a conclusion, repeat the work)

U (UNDERSTAND)

- The scientific method is a sequential process used to solve problems.

D (DO)

- Sequence the steps of the scientific method by using simulated experiments.
- Classify and categorize actions of scientists according to the steps of the scientific method.
- Evaluate and analyze whether the steps of the scientific method were used appropriately in a given scenario. (Informational writing)



Self-check/Peer talk:

- **Can you define Know, Understand and Do?**
- **Can you give examples of each? From your own discipline or curriculum?**

Putting It All Together : An Assessment of your Understanding

Now it is your turn to show what you know about assessment and differentiated instruction; your depth of understanding of each as well as how they work together. Your ability to use the new tools in your teaching toolbox will now be put to the test.

Working alone or with a partner, complete the KUD Section of the template provided. When finished, share your work with a colleague from your department.



USING ASSESSMENT TO DRIVE YOUR DIFFERENTIATED INSTRUCTION



"Assessment always has more to do with helping students grow than with cataloging their mistakes"

Tomlinson, 1999

Assessment Triangle: Purposes

Formative:
Assessment for
learning

Diagnostic (Pre):
Assessment to
establish individual
and group goals



Summative:
Assessment of
learning

Forms of Assessment: A Visual Overview

Forms of Assessments	When To Use Them	Purpose	Examples	Graded/Teacher Feedback
Pre- assessment (Diagnostic)	At least 1 week before you begin a unit	To determine readiness for learning new material or students' interests/learning style	KWL Chart; journal prompt; interest questionnaire	Never graded; sometimes teacher gives feedback
Assessment for Learning/ Formative Assessment	Ongoing throughout the unit after new learning is introduced	To determine if students are understanding material; to adjust instructional plan based on feedback	Exit ticket; teacher observations and questions; writing prompts; student discussions and performances	Sometimes graded; always teacher gives feedback
Summative Assessment	When you want to check for mastery: Can occur at various points in unit	To determine if students can master all new material	Multiple choice and short answer test; student performance; essay; project	Always graded; always teacher gives feedback

Diagnostic Assessment

- Pre-writing
- Pretests
- KWL charts
- Discussion
- Interview
- Interest inventory
- Surveys
- Anticipation guides
- Teacher observation/checklists



... generally undertaken before the start of a unit, topic or lesson

All About Me

1. These things interest me:

-
-
-

2. When I have free time I like to _____

3. When I'm in school, I would rather work
by myself _____ with a partner _____ in a group _____

4. I learn best when _____

5. I can't learn when _____

6. One thing I would like to suggest for this year is

7. My favorite subject in school is _____

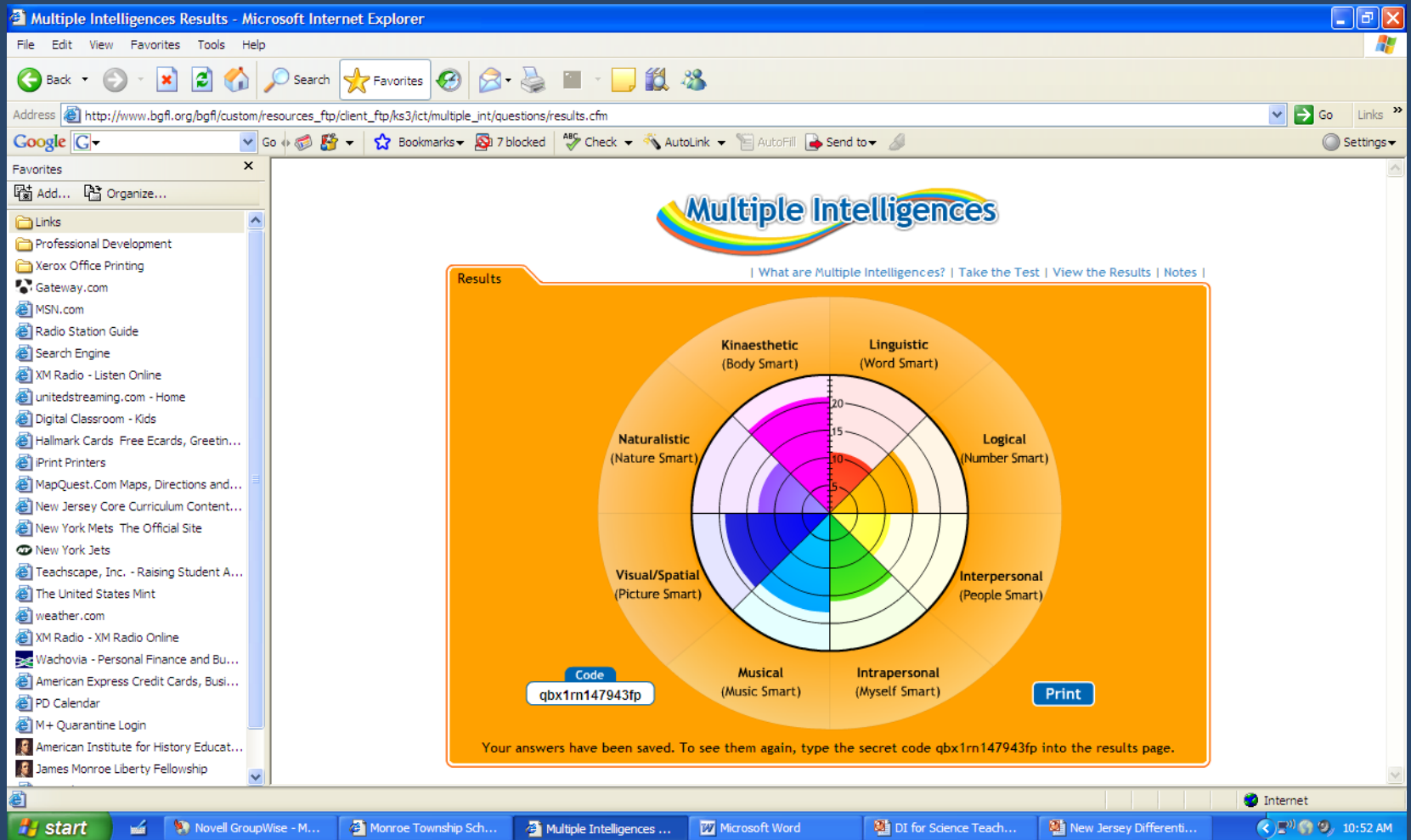
8. Words that best describe me are _____

9. Here are three special things about my family

-
-
-

10. Anything else you should know to teach me well:

Multiple Intelligence Identified



http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks3/ict/multiple_int/index.htm



Formative Assessment

According to Rick DuFour...

Formative assessment is to the physical as summative assessment is to the autopsy!



According to Robert Stake ...

“When the cook tastes the soup, that is formative; when the guests (or the restaurant critic) tastes the soup, that is summative.”



DISCUSS

Formative Assessment: Examples

Quick

- ☐ Quick writes
- ☐ Choral responses
- ☐ White boards
- ☐ Homework check
- ☐ Exit tickets
- ☐ Study guides
- ☐ Notebook check
- ☐ Signaling
- ☐ Conferring
- ☐ Quiz
- ☐ Post-its
- ☐ Summarizing
- ☐ Graphic or picture representation

Extended

- Project
 - Performance
 - Powerpoint presentation
 - Portfolio
 - Practice test
 - Lab Report
 - Rehearsal
 - Essay
 - Speech
- Should include teacher feedback and student-reflection

Formative Assessment

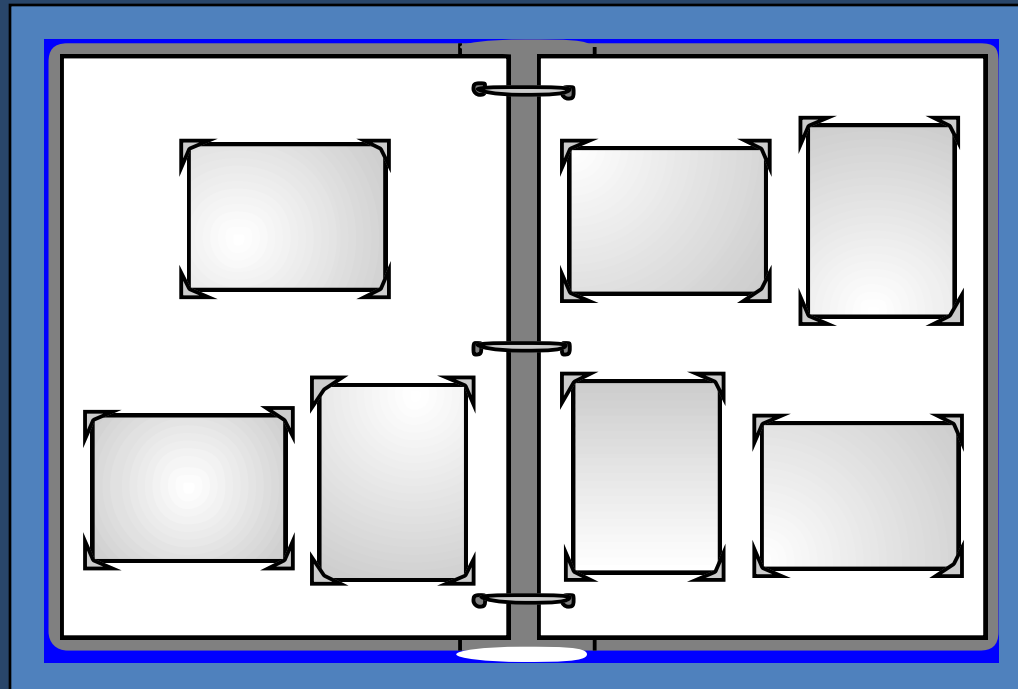
❑ **Temperature Gauges:** immediate, in the moment responses during the lesson
(signaling, choral response, white boards)

❑ **Breakpoints:** given briefly at stopping points in the lesson
(one sentence summary, quiz, exit cards)

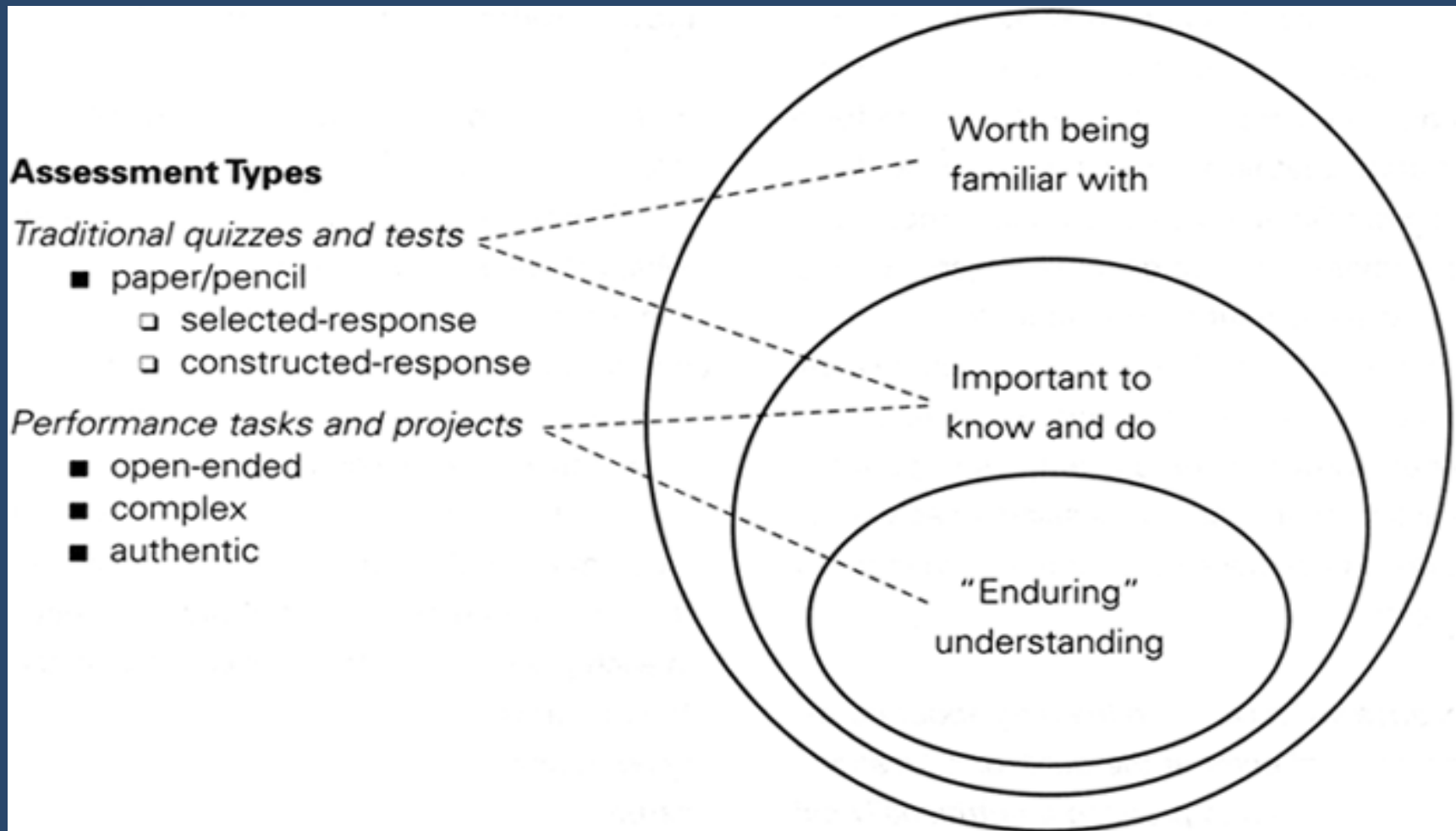
❑ **Student Directed Assessments:** self-evaluative reflection
(checklists, journals, peer review)

Think Photo Album rather than Snapshot

Sound assessment requires multiple sources and types of evidence collected over time!

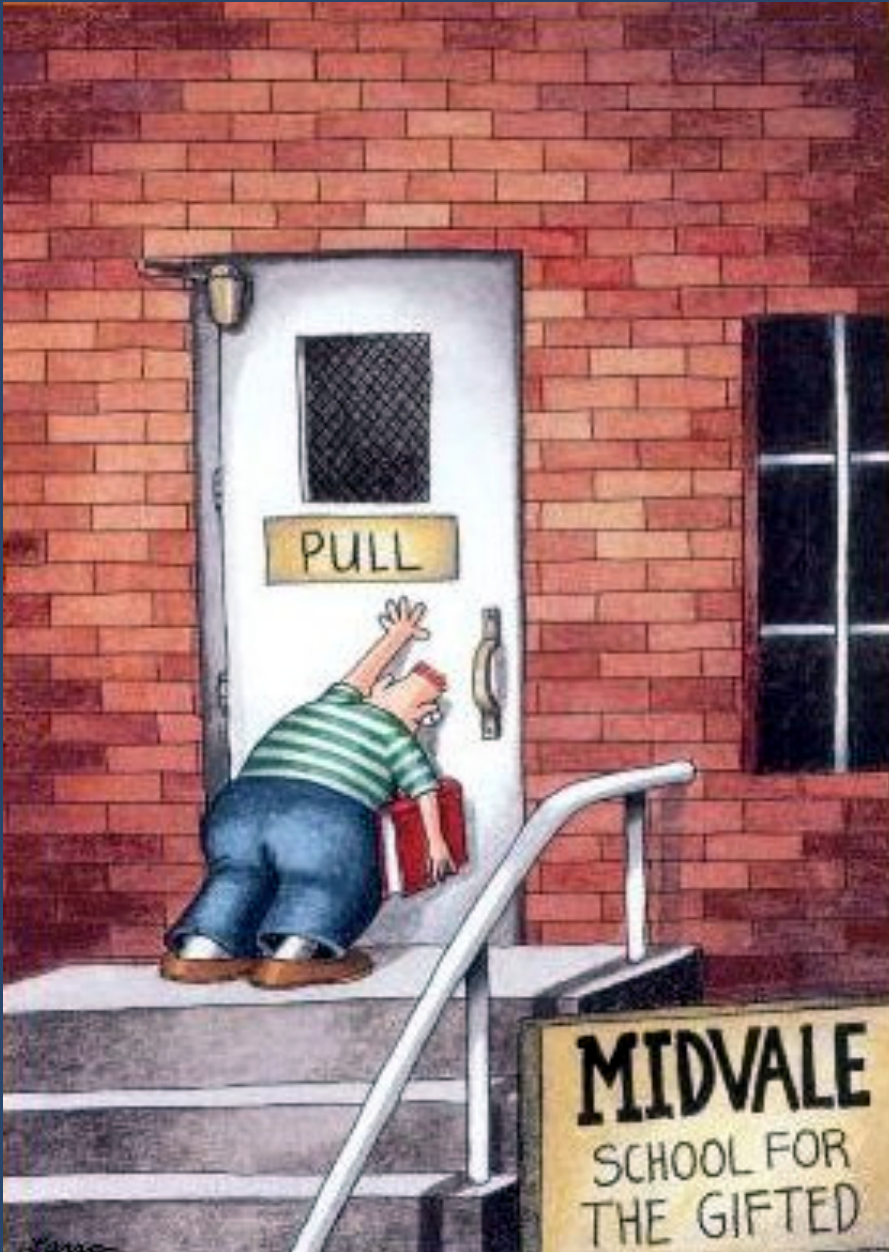


Gather Evidence from a Range of Assessments



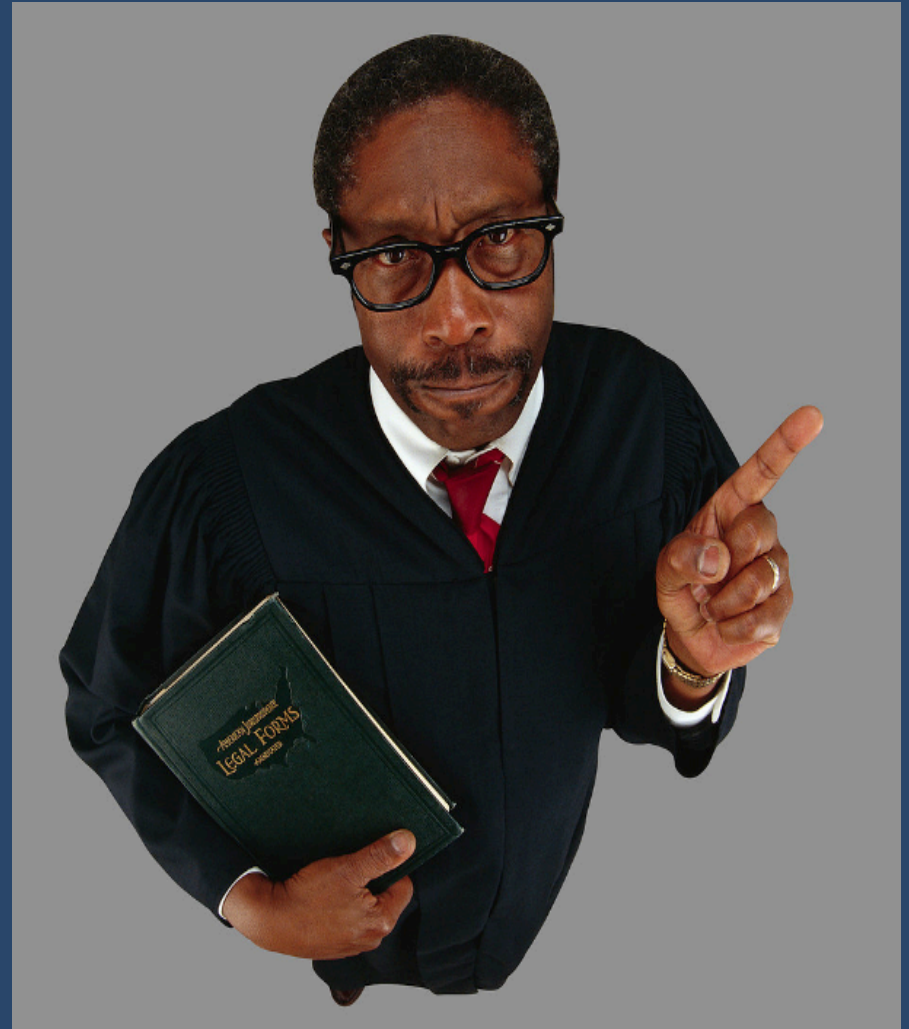
What Are Authentic Assessments, and Why Are They Important?

- Your ideas: Discuss this question with a partner for 60 seconds.



Students should be considered innocent of understanding until proven guilty by a preponderance of evidence.

- Jay McTighe





Self-check/Peer talk:

- **Can you define diagnostic, formative, summative assessments?**
- **Can you give examples of each? From your own discipline or curriculum?**

Putting It All Together : An Assessment of your Understanding

Now it is your turn to show what you know about assessment and differentiated instruction; your depth of understanding of each as well as how they work together. Your ability to use the new tools in your teaching toolbox will now be put to the test.

Working alone or with a partner, complete the Assessment Section of the template provided. When finished, share your work with a colleague from your department.

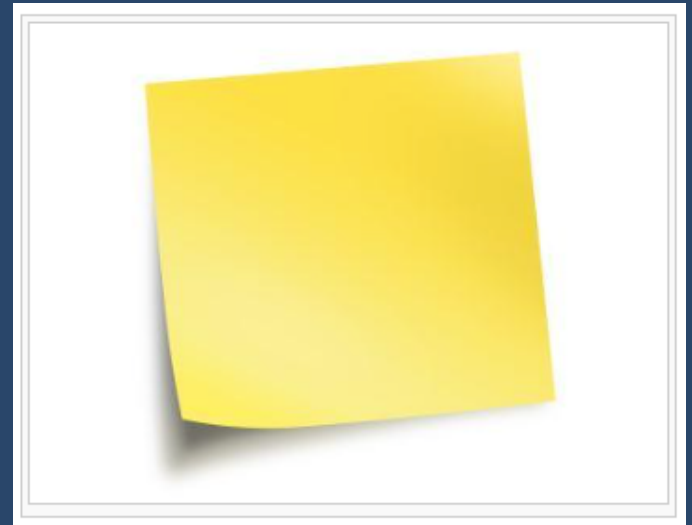


Now WE Are Ready to Differentiate!



What Do You Remember?

- o What do you remember from our previous workshop or information from other sources on the topic of low prep differentiation. Write and share your thoughts or ideas about the ways to differentiate *(They do not have to be absolutely correct. We will review the ways)*



<i>Low Preparation Differentiation</i>	<i>High Preparation Differentiation</i>
<i>Choice of Books</i>	<i>Tiered Activities</i>
<i>Homework Options</i>	<i>Tiered Products</i>
<i>Use of Reading Buddies</i>	<i>Independent Study</i>
<i>Various Journal Prompts</i>	<i>Multiple Texts</i>
<i>Varied Pacing with anchor options</i>	<i>Multiple Testing Options</i>
<i>Student/Teacher Goal Setting</i>	<i>Alternative Assessments</i>
<i>Work Alone or Together</i>	<i>4-MAT</i>
<i>Flexible Seating</i>	<i>Course Compacting</i>
<i>Varied Computer Programs</i>	<i>RAFTs</i>
<i>Design-A-Day</i>	<i>Varying Organizers</i>
<i>Varied Supplemental Materials</i>	<i>Learning Contracts</i>
<i>Options for Varied Modes of Expression</i>	<i>Tiered Centers</i>
<i>Varied Scaffolding</i>	<i>Interest Centers</i>
<i>Computer Mentors</i>	<i>Stations</i>
<i>Think-Pair-Share by Readiness, Interest, Learning Profiles</i>	<i>Group Investigations</i>
<i>Open-ended Activities</i>	<i>Choice Boards</i>
<i>Explorations by Interest</i>	<i>Think-Tac-Toe</i>
<i>Options for Competition</i>	<i>Simulations</i>
<i>Flexible-Learning Groups by Readiness, Interest, Learning Profile</i>	<i>Students Are Assessed in Multiple Ways</i>

EXIT or **ENTRANCE** Cards

used to gather information on student
readiness levels, interests, and/or learning
profiles



EXIT or ENTRANCE Cards

3

Identify three “ah-ha’s” from today’s lesson about plate tectonics

2

Pose two new questions you have about plate movement

1

Name one thing you will remember forever

Exit/Entrance Cards

“During our mini-lesson, we talked about how an author makes decisions about his/her characters’ behaviors, based upon the plot that he/she is trying to forward. During independent reading today, I asked you to concentrate on the connection between character (s) and plot. For your exit card, write 3-5 sentences describing what you saw the author do with the characters behaviors to forward the plot.”

Flexible Grouping

An effectively differentiated classroom is characterized by the practice of flexible grouping. This means that students work in a variety of arrangements.

Students may work:

- in small groups with students of similar readiness, interest, or learning profile
- in small groups with students of different readiness, interest, or learning profile,
- with a partner of similar readiness, interest, or learning profile
- with a partner of different readiness, interest, or learning profile
- individually
- as a whole class

Grouping assignments may be selected by the teacher, by the student, or randomly. In this way, students have the opportunity to work with a variety of students on a frequent basis.

There's a range of flexible groupings:

- Whole class or half class
- Teams
- Small groups led by students
- Partners and triads
- Individual study
- One-on-one mentoring with an adult
- Temporary pull-out groups to teach specific mini-lessons
- Anchor activities to which students return after working in small groups
- Learning centers or learning stations through which students rotate in small groups or individually.

Flexible Grouping:

Questions to Consider

- Is this the only way to organize students for learning?
- Where in the lesson could I create opportunities for students to work in small groups?
- Would this part of the lesson be more effective as an independent activity?
- Why do I have the whole class involved in the same activity at this point in the lesson?
- Will I be able to meet the needs of all students with this grouping?
- I've been using a lot of *[insert type of grouping here – whole class, small group, or independent work]* lately. Which type of grouping should I add to the mix?

The Importance of ANCHORS

- In a high functioning DI environment, students will be moving at a different pace through various tasks.
- How will you assure a continuous flow of learning?
- ANCHOR ACTIVITIES!!!



Low Preparation Differentiated Instruction Strategy: Anchor Activities



What are anchor activities?

- Anchor activities are for when students (or you) are between projects or units
- Anchor activities are useful when a student or group finish early
- Anchor activities are great transitions between activities and events in the curriculum
- Anchor activities allow the teacher to work with different students or groups while the rest are purposefully occupied

Anchor Activities

What Do I Do If I Finish Early?

- Read – comics, letters, books, encyclopedia, poetry, etc.
- Write – a letter, poetry in your Writer's Notebook, a story, a comic, etc.
- Practice your cursive or calligraphy
- Keyboarding
- Help someone else
- Create math story problems or puzzles
- Work on independent study of your choice
- Play a math or language game
- Find out how to say your spelling words in another language
- Solve a challenge puzzle with write it up
- Practice anything!
- Get a jump on homework
- Use your imagination and creativity to challenge yourself!



Bloom's Question Ladder

- Basic idea:
 - Increase the complexity of questions for a topic to provide varied levels of challenges for students.
- How to use it:
 - Post the ladder on the board/smartboard/handout/ etc. Tell them to climb the ladder and try each problem.
 - Can be for independent practice, portion of independent practice, anchor activity, partner activity, trio activity, etc.

Bloom's Question Ladder

- Recall: Tell, label, name, remember
- Comprehension: Explain, describe, compare, give another example of this
- Application: Solve, write, show, demonstrate
- Analysis: Simplify, deconstruct, infer, relates to, break down, draw a conclusion
- Synthesis: Use what you know to create something new (e.g. prob and stats students would create a game in which all students have the same chance of winning) (e.g. ELA: use the principles of argumentation and persuasion on a topic not discussed in class.)
- Evaluation: Critique

Bloom's Question Ladder

- **Why it works:**
 - **Allows students to interact with content at different levels of difficulty. They work to the limits of their content knowledge.**

Think / Write Pair Share

- Basic idea:
 - Get students to think, tell/teach and/or write, and be held accountable by teacher through a quick share with the class.



So...

- **THINK – PAIR – SHARE**
- **All students involved**
- **Reflect individually first**
- **Share thoughts with someone else**
- **Individual accountability through the sharing aloud process**
- **Quick**

Think / Write Pair Share

- **Characteristics**
- **Ways to get all students engaged in questions and class work**
- **Quick**
- **Can be used on the fly for a lot of teacher questions**

Think / Write Pair Share

- **Why it works:**
- **More students learn more when they are given think time (wait time) and discuss/teach/tell/write about content.**
- **Adds some interactive engagement to the usual rapid fire teacher questioning sessions.**

Think / Write Pair Share

- How it works:
- Teacher asks a question to the class
- Tells class to tell themselves (and/or write) and be ready to tell a partner
- Directs students to quick share with a partner and be ready to share
- Does a Whip Around to 4-7 students

Think / Write Pair Share

- Take it to the next level:
 - Be specific about what students should think, pair and share about and make it higher level connected to THEM....
 - Now What Questions



Now What Prompts

1. This reminds me of.....
2. This part/topic/problem /idea reminds me of....
3. This book reminds me of...(another text/idea/my life...) because....
4. This is like...
5. If that happened to me I would....
6. I can relate to...(part of text) because one time....
7. Something similar happened to me when....
8. How is this different from?

Now What Prompts

- 9. Because I learned this, now I can...
- 10. I can use this when....
- 11. I agree with/understand what I just read because in my own life...
- 12. I don't agree with what I just read because in my own life...
- 13. This is the opposite of....
- 14. How does this relate to my life?
- 15. How would my life be different without...
- 16. Knowing this can help people because.....

Now What Prompts w/ TPS

- Post your Top 5 prompts in your room. Then, when you tell your students to TPS or TWPS you can assign them numbers or let them choose.
- “Write Pair Share about #3.”



-CHOICE-

The Great Motivator!

- Requires students to be aware of their own readiness, interests, and learning profiles.
- Students have choices provided by the teacher. (**YOU** are still in charge of crafting challenging opportunities for all students – **NO taking the easy way out!**)
- Use choice across the curriculum: writing topics, content writing prompts, self-selected reading, contract menus, math problems, spelling words, product and assessment options, seating, group arrangement, ETC . .
- Use choice in content, process, and product

GUARANTEES BUY-IN AND ENTHUSIASM FOR LEARNING!

Choice

Basic idea:



- **More students engage more when they have choices during lessons**

Choice

Introductory uses of choice:

- Choice of output – how they show you they understand
- Choice of activities to complete
- Choice of working alone or with a partner
- Any other choices you can think of...

Choice

How to use it:

- Identify a time during the lesson (independent practice, etc) in which you can give students a choice of output, activity, or whether to work alone or together.
- It can even be part of a NOW WHAT TPS/TWPS in which they choose the question!

Work Alone or With a Partner

Basic idea:

- **Students choose, or the teacher choose strategically, to partner or work solo.**



Work Alone or With a Partner

Why it works:

- Aspect of choice.
- More students engage more often when they have some say in how they work.

A Differentiated way to check HW

Homework Checkers



Background:

This is a process for checking multiple homework assignments simultaneously in a classroom so that the teacher feels free to differentiate homework as necessary to address particular student learning needs.

Steps:

1. The teacher checks to make sure each student has completed assigned homework.
2. Students who have not completed the assignment work in a designated area of the room to complete the assignment (teacher floats to provide guidance/feedback).
3. Students who completed the HW work in groups of 4 to check all 4 sets for agreement/disagreement.
4. All students mark each answer for agreement/disagreement as well as explanations of why an answer is wrong and how to make it right.
5. Students sign indicating agreement, staple set of 4 together, turn in.
6. Teacher spot checks, "grades" one per set.

Putting It All Together : An Assessment of your Understanding

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Working alone or with a partner, complete the Low Prep DI Section of the template provided. When finished, share your work with a colleague from your department.



High Prep DI Strategy #1 :Menus, Choice Boards and Learning Contracts



Why Use A Learning Contract or Menu?

- It can blend skill- and content-based learning matched to student's need.
- It eliminates unnecessary skill practice.
- It allows students to work at appropriate pace.
- It helps students learn planning and decision-making skills.
- It allows teachers time to work with individuals and small groups.
- It fosters research, critical and creative thinking, application of skills and integrated learning.

What Does A Learning Contract Contain?

- Non-negotiable Items - These are things that ALL students must do.**
- Negotiable Items - Tasks chosen by the students based on their interests, abilities, and learning styles. Student choices should be approved by the teacher.**
- May contain student/parent signature.**

What Does A Menu Contain?

- **Main Dish - Consists of items that ALL students must complete.**
- **Appetizers, Side Dishes, and Desserts - These are activities that are tiered. Students may choose from a list designed by the teacher. For example, appetizers may be designed at an easier level than side dishes.**

Learning Contract #1

Name _____

My question or topic is:



To find out about my question or topic...

I will read:



I will look at and listen to:



I will write:



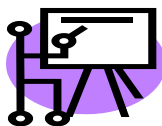
I will draw:



I will need:



Here's how I will share what I know:



I will finish by this date:



Learning Contract #2

To demonstrate what I have learned about _____, I want to

- | | |
|--|--|
| <input type="checkbox"/> Write a report | <input type="checkbox"/> Design a mural |
| <input type="checkbox"/> Put on a demonstration | <input type="checkbox"/> Write a song |
| <input type="checkbox"/> Set up an experiment | <input type="checkbox"/> Make a movie |
| <input type="checkbox"/> Develop a computer presentation | <input type="checkbox"/> Create a graphic organizer or diagram |
| <input type="checkbox"/> Build a model | <input type="checkbox"/> Other _____ |

This will be a good way to demonstrate understanding of this concept because

To do this project, I will need help with

My Action Plan is _____

The criteria/rubric which will be used to assess my final product is _____

My project will be completed by this date _____

Student signature: _____ Date ____/____/____

Teacher signature: _____ Date ____/____/____

Dinner Menu – Probability

Appetizer (Everyone Shares)

- Write a definition for probability and give an example of it happening in the real world.



Entrée (Select One)

- Draw a picture that shows what probability means.
- Write two paragraphs about what probability is.
- Create a rap that explains probability.



Side Dishes (Select at Least Two)

- Design a game that uses probability.
- Make a lottery/raffle brochure that explains chances of winning.
- Write a journal entry from the point of view of a lottery loser.
- With a partner, create and perform a skit that shows probability in action.



Dessert (Optional)

- Create a test to assess the teacher's knowledge of probability.



Dinner Menu

Main Dish (Select 1)



- Measure the length of the objects in the measurement container using any of the nonstandard units we have used in class.
- Use the large paper clips to measure the pictures of the objects on the worksheet R 17.1
- Complete the “Different Units of Measure” worksheet.

Side Dishes (Select at least 2)



- Read the book The Biggest Fish. Measure the length of the fish in the fishing net to the nearest inch. Then glue them onto a sentence strip from shortest to longest.
- Complete the “What’s My Length?” activity.
- Use a ruler to draw and label lines for the following measurements: 10 inches, 5 inches, 3 centimeters, 15 centimeters, 1 foot, 1 inch, 3 inches, and 10 centimeters.
- Organize the pictures of the objects in order from smallest to largest.
- Complete the “How Far to the Dragon’s Lair?” activity sheet

Dessert (Optional- Select 1)



- Draw a map. Label 4 locations on your map with a large dot. Using your ruler draw lines to connect these locations. Measure and label these lines on your map to the nearest inch. Write a story problem on an index card that can be solved using your map.

Read How Big is a Foot? Then pick 5 objects from the measurement container to measure using a small paper clip, an eraser, and a ruler.

Think Tac Toe



Adapted from Fulfilling the Promise of the Differentiated Classroom, Carol Ann Tomlinson, ASCD 2003

- Think-Tac-Toe plays off the familiar childhood game. It is a simple way to give students alternative ways of exploring and expressing key ideas and using key skills.
- Typically, the Think-Tac-Toe grid has nine cells in it like a Tic-Tac-Toe game. The number of rows and cells can, of course, be adjusted.

**Adapted from Fulfilling the Promise of the
Differentiated Classroom, Carol Ann Tomlinson, ASCD
2003**

- As with related strategies, it is important that no matter which choices students make, they must grapple with the key ideas and use the key skills central to the topic or area of study.
- In other words, whichever choices the student makes, he/she should be addressing the same KUDs as the others.

Example Tic-tac-toe board for reviewing a math unit:

Write clear directions for performing the math computation skills from this unit	Solve two of the five challenge problems	Create a math rap or rhyme that will help someone remember a concept from this unit
Create three word problems from information learned in this unit	Student Choice Activity (with teacher approval)	Define the unit's vocabulary words with sketches or drawings
Complete the review problems in the text book	Develop a game using skills learned in this unit	Identify four ways the concepts in this unit are used in the real world

THINK-TAC-TOE

Book Report

Draw a picture of the main character.	Perform a play that shows the conclusion of a story.	Write a song about one of the main events.
Write a poem about two main events in the story.	Make a poster that shows the order of events in the story.	Dress up as your favorite character and perform a speech telling who you are.
Create a Venn diagram comparing and contrasting the introduction to the closing.	Write two paragraphs about the main character.	Write two paragraphs about the setting.

A Planet “Show & Tell”

(Each student must pick one square from each horizontal row and use the two together)

Create One	Use the computer to make a drawing that shows how the rotation and revolution of the Earth works to create day and night and seasons.	Paint a picture that shows how the rotation and revolution of the Earth works to create day and night and seasons.	Construct a model that shows how the rotation and revolution of the Earth works to create day and night and seasons.	Create a book or puppet show that shows how the rotation and revolution of the Earth works.
Pick a Way to Explain	Make labels for the sun, Earth, day, night, orbit to attach to or use with your creation. Be ready to explain orally.	Write sentences* that identify and explain each part of your drawing or model and how each part works.	Write a story that explains the Earth’s rotation, revolution, day and night, and seasons.	Write a poem that explains the Earth’s rotation, revolution, day and night and seasons.

This differentiated review/synthesis task is based on Va. SOLS for science:

1.6 The student will investigate & understand the basic relationships between the Earth and sun, Including *the sun is the source of heat & light *night & day are caused by the rotation of the Earth. 1.7 The student will investigate and understand the relationship of seasonal change (light and temperature) to the activities & life processes of plants and animals.

Based on Unit by Bette Wood, Charlottesville, Virginia City Schools.

Question to Ponder.....

How will the Learning Contract, Menu or Choice Board I have designed help all of my students achieve success?



The Voices in my Head...

Potential
benefits of
Menus, etc...

Potential
drawbacks of
Menus, etc.

I need more
help or
information...



Your Turn

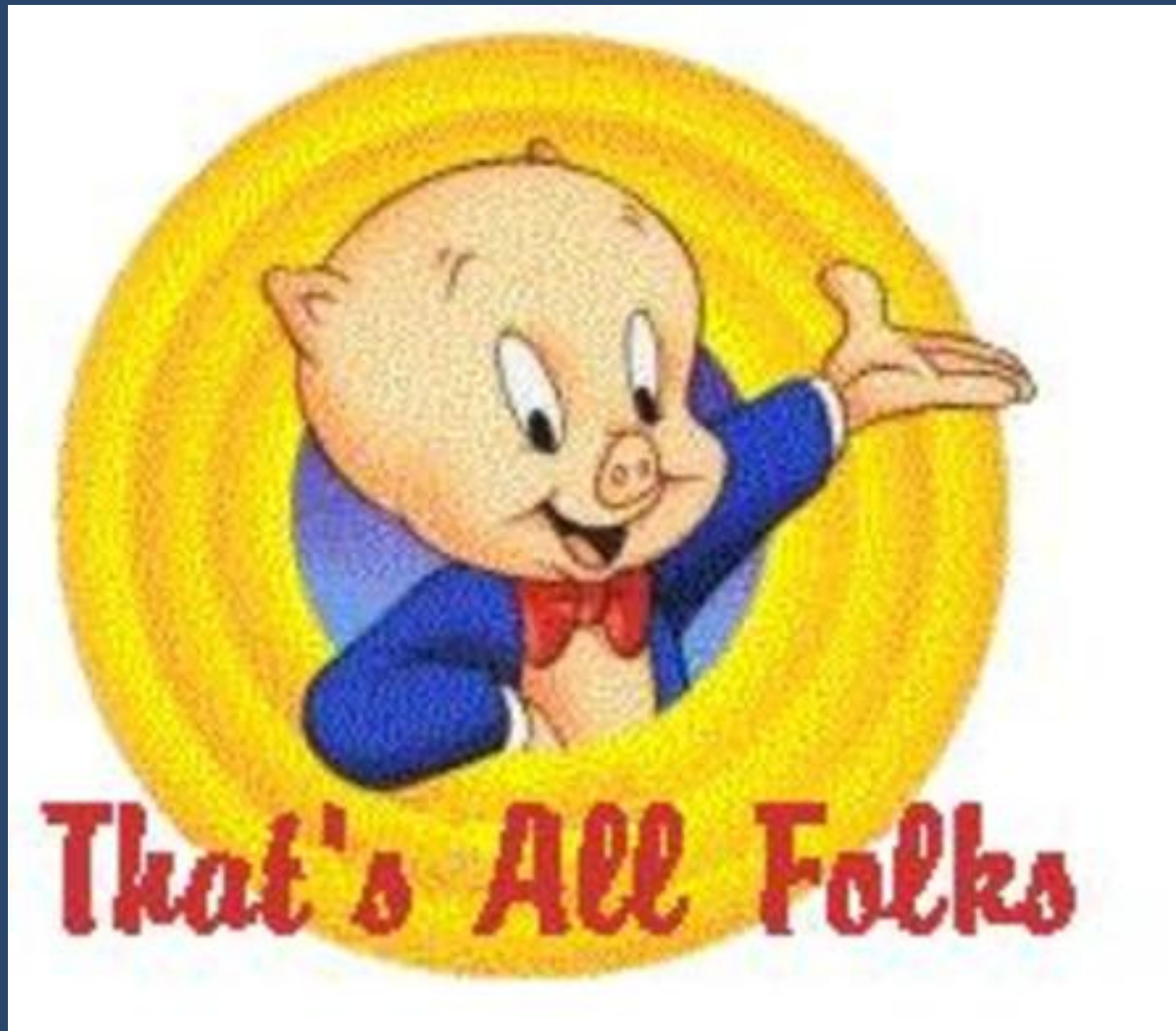
Create a Choice Board, Menu or Think, Tac, Toe assignment that could be used in your class for the upcoming unit you have chosen.



Be ready to share your ideas with your colleagues!

Comprehensive Closure





Thank you for your attention. Have a great evening!

“To give anything less than your best is to sacrifice the gift”

– Steve Prefontaine