Learning Menus Used as Anchor Activities

Learning Menus
Empowering students through CHOICE while ensuring adherence to important LEARNING GOALS

What are Learning Menus?
- Learning menus outline a variety of instructional options targeted toward important learning goals.
- Students are able to select the choices which most appeal to them.
- The teacher directs the menu process, but the student is given control over his/her choice of options, order of completion, etc.

Kinds of Menus (to name a few):
- **MENU:** *Main Dishes, Side Dishes, and Desserts*
- **AGENDA:** *Imperatives, Negotiables, and Options*
- **THINK TAC TOE or TIC TAC TOE:** Complete a row, column or diagonal line of activities.
  All three options can be differentiated according to interest, learning profile, or readiness

Anchor Activities
" In this class we are never finished. Learning is a process that never ends." -Carol Ann Tomlinson

What are anchor activities?
• specified ongoing activities on which students work independently
• ongoing assignments that students can work on throughout a unit

Why use anchor activities?
- they offer choice to students to help them review or extend learning targets
- provide a strategy for teachers to deal with "ragged time" when students complete work at different times
- they allow the teacher to work with individual students or groups
- they provide ongoing activities that relate to the content of the unit

When are anchor activities used?
- to begin the class
- when students complete an assignment
- when students are stuck and waiting for help
- when a specified time is given to work on anchor activities
- could even be used for homework

Management and Monitoring of Anchor Activities (Things to consider)

Expectations: When do you expect students to work on this?
Due date: How much time do you want it to take? Will there be checkpoint due dates along the way?
Points and/or rubric: What is the activity worth as a grade? Do you want to grade them or just give credit?
Accountability: What's collected? Where does finished work go? What is checked by the teacher? the students?

Additional Implementation Suggestions:
- Go over the entire anchor activity with the class.
- If you are grading these, go over the scoring guide with everyone and make sure they all understand the expectations.
- Give each student a copy of the anchor activity (choice board; menu) and scoring guide to keep in their binders so they have easy access to this when they need it.
- Point out where materials will be kept.
- Be clear on expectations.
- Let students know if any of the activities can be done as homework or if they are all meant to be done in class.

Examples of Learning Menus Used as Anchor Activities (on the following pages):

1. **Science** - Targets for DNA unit; Tic Tac Toe Board for DNA unit; Scoring Guide for Tic Tac Toe Board for DNA unit.
2. **Mathematics** - Targets used for a Pythagorean Theorem Choice Menu; Pythagorean Theorem Choice Menu
3. **ELA** - Tic-Tac-Toc Board only for English 9B – To Kill a Mockingbird
4. **Social Studies** - Targets for Age of Industrialization and Urbanization Unit; Tic Tac Toe Board of Age of Industrialization and Urbanization; Scoring Guide for Age of Industrialization and Urbanization Tic Tac Toe Board.

Student Target Checklist

We will revisit this checklist three times throughout the unit. When you have evidence to suggest that you have mastered the target, please place a check in the appropriate box.

___   ___   ___   I can explain that DNA is found in all living things, however, each organism has their own unique makeup of DNA.

___   ___   ___   I can explain the structure of a nucleotide.

___   ___   ___   I can describe the structure and role of DNA.

___   ___   ___   I can explain the base pairing rules.

___   ___   ___   I can explain the process by which DNA is copied to mRNA during transcription.

___   ___   ___   I can identify the similarities and differences between DNA and RNA.

___   ___   ___   I can identify the differences between mRNA, rRNA, and tRNA.

___   ___   ___   I can explain the role of mRNA, rRNA, and tRNA.

___   ___   ___   I can explain the role of a codon.

___   ___   ___   I can translate a series of codon into a series of amino acids.

___   ___   ___   I can explain the process by which mRNA is translated into protein during transcription.

___   ___   ___   I can compare and contrast the similarities and differences between replication and protein synthesis.

___   ___   ___   I can compare and contrast the differences between transcription and translation.

___   ___   ___   I can demonstrate how DNA is used to make proteins during protein synthesis.

___   ___   ___   I can explain how changes in DNA result in changes in proteins.

___   ___   ___   I can explain how changes in DNA can be both beneficial and detrimental.

___   ___   ___   I can explain how genes from one organism may expressed in a different organism.

___   ___   ___   I can explain the process of genetic modification.

___   ___   ___   I can identify the pros and cons of genetic modification.

DNA Tic-Tac-Toe Board

1. Build Your Own DNA Origami Molecule After building the molecule, write a short written response that describes the structure of DNA and explain how the base pairing rules contribute to DNA's unique shape. Origami material can be found in the back bin.	**2. Concept Map** Using the key terms from our unit, develop a concept map that illustrates their relationship. Remember, your complex maps should use linking words to show the relationship between each of the concepts. Your concept map must include each of the key terms from your Quizlet. You are free to use any additional terms or concepts.	**3. Create a Protein Synthesis Movie** Create either a stop-gap motion film, Touchcast or Voicethread that explains and illustrates the process of protein synthesis. You must accurately demonstrate how DNA is transcribed into mRNA and how mRNA is translated into proteins.
4. Replication Song or Graphic Illustration. Create a song that accurately explains the process of replication. Your song must: -Use each term associated with replication. -Each term must be used correctly. -have a rhythm -be recorded or performed. **or** Graphic Illustration must accurately depict and explain process of replication. -Illustrate concept of replication. -Create fictional characters using key DNA replication vocabulary. -Convey steps of replication through character dialogue.	**5. Persuasive Poster Collage** DNA manipulation is controversial. Develop a collage that visually represents your viewpoints as to whether DNA should be modified. Your collage must: -Clearly communicate your viewpoint. -Include pictures that support your viewpoint. -Include pictures that accurately convey your viewpoint. -Pictures must fill a piece of construction paper.	**6. News Broadcast** Research advancements and discoveries about DNA (discoveries, treatments, advancements, etc...) and develop a news broadcast explaining the discovery. You can use your phone or computer. You can choose from a variety of platforms including Touchcast and Voicethread. Your Broadcast must include: -A description of where you found the information. -A description about who made the discovery. -A description of how the discovery is beneficial.
7. Develop a Cure Research a variety of diseases that are DNA related. After selecting a disorder, create a brief presentation that explains how you plan to cure the disease by DNA manipulation. Explain how your treatment will serve as potential cure. -Specify which genes are affected, what your treatment will do to the gene, and what affect your treatment will have on the patient. -If you have extra time, research the internet what treatment options currently exist.	**8. Create a Protein Synthesis Comic Strip** Create a comic strip that includes a fictional representation for each of the components involved in protein synthesis (DNA, mRNA, rRNA, tRNA, amino acids). Your comic strip must illustrate the process of how DNA is translated and transcribed into proteins. Try to include dialogue between your fictional characters, such as: how they think about each other, their feelings toward their role in protein synthesis. Note: Powtoon option.	**9. New Species** It is believed that humans are constantly evolving, however this process is very slow. Your job is to quickly modify a human through gene modification. You must identify and select two human genes of your choice and explain how you would modify their sequences to improve the human condition. Provide a short written response that explains the purpose of your modification. Next, identify the two human genes that you chose to replace, along with the names and origin(s) of the replacement genes. If possible, provide a sketch of the new human.

Name _____ I chose activities # _____ # _____ # _____ Due _____

DNA Tic-Tac-Toe Scoring Guide

1. Build Your Own DNA Origami Molecule	2. Concept Map	3. Create a Protein Synthesis Movie
___Origami DNA model was assembled following the correct base pairing rules. (4 points) ___Origami DNA model is in the shape of a double helix. (2points) ___Essay explains how the nucleotides contribute to the structure of DNA (4 points) **TOTAL: ____/10**	___ Each term is used from Quizlet (2points) ___ Most terms are used correctly (4 points) ___ Most linking words correctly link terms together (4points) **TOTAL: ___/10**	___ 5 Movie correctly shows process of translation. (5 points) ___ Movie correctly shows process of transcription. (5 points) **TOTAL: ___/10**
4. Replication Song ___ All replication terms are correctly used. (2 points) Song correctly explains process of replication: __ Correctly explains base pairing rules. (4 points) __Correctly explains steps to replication. (4 points) **TOTAL: ___/10** **OR Create a Replication Graphic Illustration** __All replication terms are correctly used. (2 points) __ Correctly explains base pairing rules. (4 points) __Correctly explains steps to replication. (4 points) **TOTAL: ___/10**	**5. Persuasive Poster Collage** ___ Pictures accurately convey viewpoint (8 points) ___ Most pictures closely relate to topic (2 points) **TOTAL: ___/10**	**6. News Broadcast** ___ Broadcast explains how the discovery relates to DNA (3 points) ___ Broadcast explains how the discovery is beneficial. (5 points) **TOTAL: ___/10**
7. Develop a Cure ___ Specifies which genes are affected by the treatment. (3points) ____ Explains how the treatment will change the affected gene. (3points) ___ Explains how the treatment positively effects the health of the patient (4 points) **TOTAL: ___/10**	**8. Protein Synthesis Cartoon** ___ Cartoon correctly illustrates the process of translation. (5 points) ___ Cartoon correctly illustrates the process of transcription. (5 points) **TOTAL: ___/10**	**9. New Species** ___ Correctly and accurately identifies two human genes to be modified. (4 points) ___ Correctly and accurately identifies origin and names of replacement genes. (4 points) ___ Correctly explains the purpose and benefit of the modification. (2 points) **TOTAL: ___/10**

Final Score _____/ 30

*Credit to Nicholas Bihler – Kentwood Public Schools

The Pythagorean Theorem: (Choice Menu)

Note: Class was mostly made up of ESL students.

Directions: On the Choice Menu, you have three sections: Main Dish, Side Dish, and Dessert. Complete both of the main dishes, one side dishes of your choice, and you have the option of completing a dessert or two. Please write down your "answers" on a sheet of paper.

This choice menu was created using the following targets:

Know

- I can define Pythagorean Theorem, right triangle, right angle, legs a & b, hypotenuse, square root, proof, and Pythagorean Theorem Converse.

Do

- I can solve mathematical problems using the Pythagorean Theorem to find the missing side lengths in right triangles in two-dimensions.

- I can solve mathematical problems using the Pythagorean Theorem to find the missing side lengths in right triangles in three-dimensions.

The Pythagorean Theorem Choice Menu

Main Dish (complete all):

- ☐ Create and write down a <u>real-world two-dimensional</u> problem to solve by using the Pythagorean Theorem. Make sure to create an answer key and show your work on how to solve it. Then have a friend solve it.

- ☐ Create and write down a <u>real-world three-dimensional</u> problem to solve by using the Pythagorean Theorem. Make sure to create an answer key and show your work on how to solve it. Then have a friend solve it.

Side Dish (choose one):

- ☐ Create a rap or song about the Pythagorean Theorem. Please try to correctly incorporate and define as many of the eight vocabulary words as possible (Pythagorean Theorem, Pythagorean Theorem Converse, proof, right angle, right triangle, square root, hypotenuse, and legs).

- ☐ Create a game to remember and practice the definitions of the eight vocabulary words (Pythagorean Theorem, Pythagorean Theorem Converse, proof, right angle, right triangle, square root, hypotenuse, and legs). Write instructions so other classmates can play it.

Dessert (optional and can only be completed after the other two courses have been completed):

- ☐ Use the puzzlemaker.com website to create a crossword puzzle for the eight vocabulary words (Pythagorean Theorem, Pythagorean Theorem Converse, proof, right angle, right triangle, square root, hypotenuse, and legs). Then you or a friend can solve it.

- ☐ Use the computer to create a brochure using Publisher *or* create a PowerPoint presentation. You should explain the steps on how to solve for a missing side of a right triangle by using the Pythagorean Theorem.

*Credit to Kayla Koert – Grand Rapids Public Schools and Hopkins Public Schools

To Kill a Mockingbird TIC-TAC-TOE: English 9B

Directions: You must complete this Tic-Tac-Toe Assignment by choosing three in any row or diagonal to complete; however, you MUST have a *linguistic* in your choice. Choose the projects that best suit you and those in which you can excel. The rubric for your linguistic will be different than the rubric for the other options.

In *To Kill a Mockingbird*, Scout learns lessons about society and growing up. What people and/or events in your life have made you grow up or have influenced who you are today? **Choose one person or event and choose three ways this person or event impacted you.** *(Linguistic)*	**Create a character map/web** of one of the main characters in *TKAM*. Be sure to include character traits and events. *(Spatial-logical/mathematical)*	**Design a poster** advertising *TKAM*. Include interesting details from the book that would make others want to read it. *(Visual-spatial)*
Draw a picture and write a paragraph describing the outdoor settings of Maycomb, Alabama. How did the setting affect the story? *(Naturalist)*	**Create song lyrics and music** to tell about *TKAM*. Perform for your class or record your song on cd. *(Musical-rhythmic)*	Consider the many different ideas regarding equality and civil rights that were brought up in *To Kill a Mockingbird*. **Explain three ways in which this novel either confirmed or changed your attitudes about equality and civil rights today.** *(Linguistic)*
With another person **role play** a scene from *TKAM* featuring Atticus and Tom Robinson. Act out what a meeting between the two (prior to the trial) would look like. *(Bodily-kinesthetic)*	Throughout the novel, Atticus tries to instill within his children a solid set of values. He does this through talking and actions. **Explain the three most important values or beliefs you live by. For each be sure to elaborate on why they are important and how they impact your life.** *(Linguistic)*	Using a digital camera, take pictures that illustrate five of the themes that can be found within *TKAM*. **Do a slide show** on the computer incorporating the pictures and an explanation for their relevance to the theme. *(Interpersonal/spatial)*

*Credit: Found online – teacher from Monashores

The Age of Industrialization and Urbanization Tic-Tac-Toe Board

After reading through the chart, select THREE activities (vertically, horizontally or diagonally) to complete for this assignment. Be sure to reference the scoring guides so that you know what the expectations are for each assignment on the choice board. These three assignments will be due at the end of the unit and will be scored as a summative assessment that will measure your learning and understanding of the content in this unit. You will have some time in class to complete the assignments, but some of the work should be completed at home (homework).

The learning targets for this assignment:

Students will be able to…

- Identify individuals who played a major role in expanding industry.
- Identify individuals who responded to the growth of industry through the organization of workers.
- Identify the reasons why the United States was able to turn into a major industrial power during this era.
- Identify the reasons why there was a growth in labor unions during this time period.
- Identify historical themes that are found throughout a historical era.
- Identify the cause and effect relationship of historical events.

INDUSTRIALIZATION AND URBANIZATION

TIC-TAC-TOE CHOICE BOARD

Student Name: _____ Date: _____

I chose options _____ , _____ , and _____.   DUE: _____

(1) News Story	**(2) Obituary**	**(3) Cause and Effect Chart**
You are a journalist during the Gilded Age and have been asked by your boss to write a front-page article about either the booming steel industry in Pittsburg, PA or the growth of oil. You must interview Andrew Carnegie or John D. Rockefeller, as well as a steel mill worker or oil refinery work. Other than these requirements, you are free to write what you want!	A well-known industrial baron or union leader has passed away. Choose which figure you want to write an obituary about from the list below. Be sure to cover the impact that individual had on society, as well as his/her accomplishments and failures. -A. Carnegie -J. Rockefeller -C. Vanderbilt. -E. Debs -S. Gompers -T. Powderly	Create a cause and effect chart for two of the following events. Be sure to identify and explain each of your chosen events, and then identify and explain 3 impacts. -Completion of the Transcontinental Railroad -Bessemer Process -Electricity -Big Business
(4) Primary Source Analyzer	**(5) Recruiter Advertisement**	**(6) Poem/Rap/Song**
Find a primary source that dates to the Gilded Age, specifically the growth of big business, and complete the APART handout. Be sure to answer each part of the acronym.	Henry Fisk of Carnegie Steel. Co. has hired you to create an advertisement flyer to recruit new employees for the steel mill in Homestead, PA. He fears that a strike may be coming and wants to be able to recruit new employees if the current ones stop working.	Write a poem/rap/song about the Gilded Age. It can be general about the era, or you can select a specific part of the era. Either way, it must be 5-6 stanzas in length, with each stanza have 4-5 lines of more than 8 words.
(7) One Pager	**(8) Timeline**	**(9) Schematic Drawing/Model**
Complete a one-pager documenting one of the historical themes (BAGPIPE) from US History seen in the Gilded Age. Find the one-pager instructions for more information, or see me for an example.	Create a timeline on either a poster-board or on the website www.timetoast.com. Select what you believe to be the TOP 10 events of the Gilded Age. For each, provide a description and then explain why you chose it as a top 10 event from the era.	You are an architect and your firm has just been hired to develop a new factory town outside of Chicago. A rival firm just complete George Pullman's complex, and the people who hired you want a similar design. Create either a detail schematic drawing, or a 3 dimensional model of what your factory will look like and include.

INDUSTRIALIZATION AND URBANIZATION

TIC-TAC-TOE CHOICE BOARD RUBRICS

(1) News Story	**(2) Obituary**	**(3) Cause and Effect Chart**
Relevant historical evidence is used in the newspaper article. _____/10

Includes fictitious quotes that are rooted in historical accuracy from an "interview" with Carnegie/Rockefeller and a worker from either industry _____ / 5 | Relevant historical evidence is used in the obituary. _____/5

The impact of the chosen individual on society is clear. _____/5

Accomplishments and failures of the individual are discussed. _____/5 | Each chosen event is identified and explained. _____ / 4

Each chosen event's three impacts are identified and explain. _____/6

Historical evidence and accuracy is found throughout the chart. _____ / 5 |
| **(4) Primary Source Analyzer** | **(5) Recruiter Advertisement** | **(6) Poem/Rap/Song** |
| The chosen primary source is relevant to the Gilded Age era. _____ / 5

Each task of the acronym is thoroughly completed. _____ / 10 | The recruiting poster provides historically accurate details (job description, pay, hours, etc). _____ /15 | Content used is clearly connected to the unit and the era. _____ /5

Accurate historical evidence in amply used throughout the poem/rap/song. _____ / 10 |
| **(7) One Pager** | **(8) Timeline** | **(9) Schematic Drawing/Model** |
| The chosen theme accurately reflects one of the major themes of the era _____ /3

The drawn content clearly connects to not only the chosen theme, but also the era. _____ / 6

Historical evidence is clearly visible throughout the created one-pager. _____ / 6 | Ten events from within the Gilded Age timer period have been identified. _____ / 5 points

Each of the ten events have a valid historical explanation of why it was chosen to be on the top 10 list. _____ / 10 | The student has clearly looked at what Pullman, IL looked like as a factory town and has modeled their own schematic drawing or model after that town, including not only the factory, but also schools, churches, stores, etc. _____ / 15 |

*Credit to Tad VanderBrink – East Grand Rapids Public Schools