**World War I STEAM Unit-2 weeks**

**S**-Force and motion-Gravity’s effect on weaponry; Ecosystem-raining, wet, what would you do?; Experiment on evaporation: wet objects temperature drops faster than normal temperature—wet gloves; how to keep body heat in; wet cover vs dry cover and compare temperatures

Ammonia- testing pH; some with water in vial and some with low sudsing clear ammonia; everybody drops some in a few vials around them;

**T**-Weapons-build catapults to shoot over wall

**E**- Building catapults and actual trench—extension option: Wheels?

**A**-Reading: *War to End All Wars*; *Truce*; Videos: <https://www.youtube.com/watch?v=NWF2JBb1bvM> paired with *Christmas in the Trenches* [*http://www.eyewitnesstohistory.com/trenches.htm*](http://www.eyewitnesstohistory.com/trenches.htm)

**M**-Building of trenches-America 6 ft tall; Germany 8 ft tall; build to criteria-plan for dead bodies; storage of weapons, supplies; Cave ins; Class in the trenches

**Day 1: Introduction to WWI**

**Reading: *War to End All Wars*** p. 1-7

* Before reading, show short biographical clip on Archduke Franz Ferdinand: <http://www.biography.com/people/franz-ferdinand-9300680>
	+ Have students characterize him based on the information from the video. Emphasize the need to provide evidence for their choice.
* Then, read and mark up the text looking for important information about him and how his assassination led to the beginning of WWI.
* Reading focus: Cause and effect, conflict and solution, characterization.

**Social Studies:** [**http://facts.randomhistory.com/world-war-i-facts.html**](http://facts.randomhistory.com/world-war-i-facts.html)

* Print and cut out the facts from the website. Provide each student with a fact. They will read the fact then brainstorm and list the questions they have about WWI based on that fact. These will provide the basis for the rest of the inquiry process. Discuss questions as a class and compile an “I wonder” anchor chart. (This can be a running post on itslearning).
* Provide students with images sequencing the events of the assassination of Archduke Ferdinand. Have students record observations and questions about each image. Provide them with the information about how his assassination sparked the beginning of WWI. <http://www.eyewitnesstohistory.com/duke.htm>
	+ Focus on defining: imperialism, nationalism, and militarism
* At this point, tell students about the Allied and Central Powers. Students will be assigned to sides and these assignments will hold for the remainder of the unit.

**Writing**: Since perspective is important to the unit, an imaginative narrative could work. Have students create a “journal.” This will be an assigned writing at the end of each day’s instruction. They can record the important information they learned that day as if they were soldiers/nurses on their respective sides during the Great War. These can be modeled after the Westward Expansion Journals, or used as an informative writing. It can also simply be a portfolio of multi-genre writing.

**Day 2: Establishing Background-Short timed writing opportunity**

**Reading: Short informational articles about each side of the war.**

* Allied Powers: <http://www.ducksters.com/history/world_war_i/allied_powers.php>
	+ Great Britain
	+ France
	+ USA
* Central Powers: <http://www.ducksters.com/history/world_war_i/central_powers.php>
	+ Germany
	+ Austria
	+ Hungary
	+ Ottoman Empire
* Reading focus: reading for information: Students will be looking for key information: What countries were involved, who their leaders were, and their reasons for becoming involved. This information should be noted on print outs of the articles.

**Social Studies**

* In their respective groups based on the sides of the war they were assigned, students will research the countries that were involved in their side and their motivations for entering the war.
* Each side will then work together to write a war proposal to send to each country’s governing body. Students can either assign countries to their group members or you can. Each smaller group can do their research together. They need to focus on causes for entering the war, leaders who made the decisions, and time when their country became involved.
	+ Research from the reading portion of the lesson can be used here.
* Based on the reason their side decided to enter the war, they will write a short persuasive paragraph (consider formal format for purpose). They will need to use their research to include factual information on the real reason their countries joined the war. TSW share these in an itslearning format.

**Writing**: Students will write from their perspective about why their country joined the war and the impact it was having on their home front OR you can include the writing from Social Studies.

**Day 3: Why did the USA join the war?**

**Reading: Research for Information**

* TSW complete a Zunal web quest on the reasons USA entered WWI: propaganda/yellow journalism; economy and ties with Great Britain; series of Germany sinking submarines (Lusitania); interception of the Zimmerman telegraph (Germany trying to get Mexico to turn on the USA).
	+ <http://www.americaslibrary.gov/jb/jazz/jb_jazz_wwi_2.html> (America’s Library- brief/easy read)
		- Focus on note taking and fact finding
	+ <http://www.loc.gov/pictures/search/?st=grid&co=wwipos> (LOC Propaganda)
		- Tone and mood-How did propaganda persuade people to fight in WWI?
	+ <http://www.pbs.org/lostliners/lusitania.html> (Lusitania)
		- Cause and Effect
	+ <http://www.archives.gov/education/lessons/zimmermann/> (Zimmerman Telegram)
		- Cause and Effect
* **Social Studies: “The Technology of Death and Destruction” p. 51-61**
* **Activating strategy: Show** (history.com-Patton Revolutionizes Warfare) <http://www.history.com/shows/the-world-wars/videos/patton-revolutionizes-warfare?m=5189719baf036&s=All&f=1&free=false>
	+ Discuss how the technology developed in WWI would later be improved and used in future wars.
* Jigsaw: Give each “country” a new WWI technology**:**
	+ - machine gun- <https://www.youtube.com/watch?v=eG_aGWuLL24>
		- barbed wire; <https://www.youtube.com/watch?v=aapvArc0JmU>
		- armored/gun-equipped vehicle (tanks); <https://www.youtube.com/watch?v=ezBSURCMe-o>
		- poison gas/bacteriological weapons; gas masks; <https://www.youtube.com/watch?v=DTY7v1Q_vnc>
		- aircraft/Zeplins; <https://www.youtube.com/watch?v=dwrIf_5gEEM>
		- carrier pigeons; <https://www.youtube.com/watch?v=k2A3GORFCPg>
		- Supplement each group with the text “The Technology of Death and Destruction”
	+ Students will use the provided text and research provided sources to become experts about the new weaponry. They will then go back to their “sides” and report their findings. Each person will be responsible for completing notes on each innovation.

**Writing:** TSW include an entry on the invention of new weapons/war resources. They can write it from the perspective of a soldier entering the war or whatever you’d like. Could be a good chance to discuss diagrams and have students diagram one of the new weapons.

**Day 4: Trench Warfare**

**Reading: “Life and Death in the Trenches” (From *The War to End All Wars*)**

* **Reading purpose:** To find information on the purpose and design of trenches during WWI. TSW read the chapter looking for information for each. While working, students should consider the following:
	+ How did the design of trenches prove to be helpful for both sides of the war?
	+ What were problems found in trenches?
	+ What were tactics used by soldiers involved in trench warfare?
* After reading, engage students in a discussion about building their own trench for a mock war.

**Math: Trench Design:**

* Research the design of trenches including measurements for depth, volume for storage, and measurements for the shelter portion. Good resource: <http://history1900s.about.com/od/worldwari/a/Trenches-In-World-War-I.htm>
* In their respective groups (Allied and Central), students will research their side’s trench design.
	+ Using grid paper, design the trench each group plans to build. \*\*\*For time purposes and material restrictions, you may consider having the group build just one trench for the room. \*\*\*
	+ Focus on discussing the need to shrink the original design proportionally due to classroom size restrictions.
	+ Students should include area, depth, perimeter, and volume of their planned trench. These plans will be used for construction of the trench.

**Writing**: Today’s writing can be a reflection on the planning and design of the trench. They can include perceptions of what life might be like in the trench.

**Social Studies**:

* Timeline of WWI events:
	+ TSW create an illustrated timeline of key events in WWI including:
		- The sinking of the Lusitania
		- The US declares war
		- Russia drops out of the war
		- The Central Powers agree to an Armistice
	+ For each event, students will use an index card to draw a picture on one side. On the back, they will write a short summary of the events including the who, what, and when. They will then place this in order on a piece of construction paper, taping the top to create a timeline.

**Day 5: Trench Warfare**

**Math/Social Studies:**

* TSW work in their groups (or as a whole) to begin the building of their trench. During this time, they will need access to the building materials (cardboard from the boxes or we could drape butcher paper in order to have enough materials for two sides in the classroom). Have them focus on planning for which materials they will need and planning ways to minimize waste. They will need to build their trench with the following in mind:
	+ How tall will the walls need to be? (Consider using the height of their side’s trenches found in research)
	+ How wide should the trench be to accommodate the number of people they are housing?
	+ Where in the trench will they provide room for shelter/resources/personal space?
* After discussing these aspects of their building, have them begin work building the trench to scale.
* After a predetermined amount of time, have them stop work and reflect on their progress. This is a good time to address any issues they may have with the building.
* After reflection, have them develop a plan of action for tomorrow.

**Reading**: WWI Textset

* Provide students with a series of texts on WWI. Including:
	+ Archie’s War
	+ Christmas in the Trenches
	+ The War to End All Wars
	+ A series of nonfiction texts I’ve checked out of the library.
	+ A series of images copied from the WWI resource
	+ The WWI commercial
* TSW skim through these sources and complete a reading guide that asks them to consider the sources, and show what they’ve learned. (I’ll create and pass along).

**Writing**: TSW reflect on their time in the trench. You can have them spend a portion of their day in the trench and reflect as if they were soldiers living in the trench.

**Day 6: Life in the Trench**

**Science/Social Studies**:

* TSW complete their trench. Each group will then gather in their respective trenches. Today’s focus will be on the harsh conditions for soldiers fighting in the trenches.
* Students will each be given a vial of clear liquid. Some will contain water and others will contain ammonia. Using a pipette, students will “share” a drop of their liquid with people around them. After share time, they will each test their liquid with pH paper to determine if they were “infected” by the ammonia carrier. Have them focus on how this is the way disease was spread in such close, unsanitary quarters.
* TSW write a summary of their experience on their itslearning blog post. This can be included in their journal for **Writing**.

**Math: Volume:**

* Review with students the way to find the volume of an object (length x width x height)
* Have students find the volume of an intact cardboard box. They will then find the volume of their trench. Using this information, students will work to determine how much space they had to store their gear. They need to be aware of the amount of space the soldiers took up as well as the amount of space needed for “personal space.”
* TSW record their ideas in their math journal. These will be discussed at the end of the activity.

**Day 7: Weaponry**

**Science/SS:**

* TSW participate in a design challenge. Review with them the weapons that were developed during WWI. Today, they will be challenged to create an apparatus that can launch a rocket to hit their desired target. (Loose guideline possibility: <http://pbskids.org/designsquad/parentseducators/resources/launch_it.html> )
	+ Have each side split into smaller design groups. They will sketch their ideas in their science notebook. After presenting their ideas, each group will begin building their apparatus.
	+ After a predetermined amount of time, have students test their rockets. They will know they were successful if they can launch their rocket and hit a member of the opposite team who is crouching in their own trench.

**Math: Hit the Target-Coordinate Grids**

**(**You may opt to do this before the design challenge).

* TSW learn about the way coordinate grids are used with a focus on their use in combat.
	+ Review the way plotting coordinates on a grid works.
	+ Provide each pair of students a coordinate grid and jelly beans (or some other small candy). Have them “plot their points” using the candy. They should hide their grids from their partners using folders. The object is that once the grids are set up, they guess coordinate points on their partner’s grid. If they guess correctly, their partner has to give them the candy that was stationed on that point.
	+ Continue the game for an allotted amount of time. Reflect on strategy/outcomes afterwards.

**Day 8: Effects of WWI**

**Reading: Biography**

* Use just the section under the heading “US Presidency” <http://www.biography.com/people/woodrow-wilson-9534272#us-presidency> Combine this text with p. 94 in the Social Studies Pact book.
	+ TSW read and mark up the text. Using their information, they will complete a short writing on itslearning. (Think short focused paragraph like testing). Their prompt could be: Woodrow Wilson played an important role as president during WWI. Support this statement with evidence from your research.
	+ These can be shared and discussed after the period.

**Social Studies: Effects of WWI**

* You can use this website for a good video: <http://education-portal.com/academy/lesson/end-of-wwi-the-treaty-of-versailles-the-league-of-nations.html#lesson> It requires you to register for a free trial so maybe wait until the day before you’re ready. ☺ If you don’t want to use it, you can use the information in the SS book or Pact Book.
	+ Have students read/watch to determine the effects of WWI. They will be responsible for determining how their particular country was affected. For example the students representing Germany will need to know how they were treated after the war and the treaty was signed.
	+ From the perspective of their country’s leader, students will write a short summary of life at the end of the war. These can be short writing opportunities to include on itslearning.
	+ After each person has completed their summary, the rest of the class will view their writing and take note in their notes about the effects of the war. This could also be an opportunity for a discussion forum/open letter to…(Also included in their **Writing** journals.)

**Day 9**: Review of WWI-Wrap up of writing journals.

**Day 10**: Test/Journals due