

# In what ways does the use of Algebra show the impacts of World War 2?

## History and Math

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Student Version:

<https://docs.google.com/presentation/d/1XBT0ahDfH7m09YZfOB9wtAg6v98wje9XwxIfwD6xnc/edit?usp=sharing>

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## Introduction & Overview of Experience

For the next 5 days, students will be working on this digital interactive PowerPoint. Where they will answer the compelling question “In what ways does the use of algebra show the impact of World War II”. Each day will be broken down into the key parts of World War II, where students will do a variety of algebra activities and collaborate with a variety of historical sources, to assist them through this project. By the end of this project, students will be able to create a visual presentation of what they learned.

## History & Math Standards

### History:

- HS.H4.4 Examines how a diverse society can be a force for unity and/or disunity
- HS.H4.3 Examines how access to information and technology has been used to influence society.
- HS.H2.3 Evaluate the short- and long-term impacts of conflicts and their resolutions
- HS.H1.7 Analyzes how technological innovation and trade have affected economic development and transformed societies.

### Math

- Summarize, represent, and interpret data on a single count or measurement variable. (S-ID) A1.S-ID.A Summarize, represent, and interpret data on a single count or measurement variable. Represent real-value data with plots for the purpose of comparing two or more data sets.
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- Linear, Quadratic, and Exponential Models (F-LE) A1.F-LE.A Construct and compare linear, quadratic, and exponential models and solve problems. A1.F-LE.A.1
    - Distinguish between situations that can be modeled with linear functions and with exponential functions.
    - a. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.
    - b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
    - c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
  - Linear, Quadratic, and Exponential Models (F-LE) A1.F-LE.A Construct and compare linear, quadratic, and exponential models and solve problems. A1.F-LE.A.2
    - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or input/output pairs.
  - Linear, Quadratic, and Exponential Models (F-LE) A1.F-LE.B Interpret expressions for functions in terms of the situation they model. A1.F-LE.B.5
    - Interpret the parameters in a linear or exponential function with integer exponents utilizing real-world context.
  - Quantities (N-Q): A1.N-Q.A Reason quantitatively and use units to solve problems. A1.N-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling. Include problem-solving opportunities utilizing real-world context.

## Learning Outcomes

What Students will be able to after each day

### Day 1

**History:** Students will be able to explain the background of World War II by watching a short documentary.

**Math:** Students will be able to understand the process of creating a screencast and navigating through the digital presentation at the end of the day.

### Day 2

**History:** Students will be able to identify the number of casualties during the war by reading an article.

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**Math:** Students will be able to create a graph that represents the number of casualties in World War II and explain what it represents by the end of the day.

**Day 3**

**History:** Students will be able to explain the number of battlefields covered by the U.S. Army using articles about the different battles that occurred.

**Math:** Students will be able to use the linear function to solve 7 out of 10 problems to calculate time or distance by the end of the day.

**Day 4**

**History:** Students will be able to classify the effects of the drop of the atomic bomb by watching an animated video and reading an article.

**Math:** Students will be able to create a visual representation of the impact of the atomic bomb after its explosion using a radius and explain what it represents by the end of the day.

**Day 5**

**History:** Students will be able to list the information they learned this entire week in a brainstorm chart.

**Math:** Students will be able to create a screencast of what they learned in the past 5 days and properly explain what they learned each day.

**Videos, articles, pictures, and instructions**

<https://wke.lt/w/s/IK4PfU>



**Day One: Compelling Question: In what ways does the use of Algebra show the impacts of World War II?**

**Essential Question: How do you think you will implement Algebra in learning about World War II?**

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## **Learning outcome:**

Students will be able to learn how to record a screencast video by watching tutorials to follow along. Students will then be able to explain the countries involved during World War II and identify them whenever they look at a video after they have watched the background video.

## **Directions**

**Hook:** When students access the digital PowerPoint, they will see the characters get sucked into a portal that will take them to a movie theater. This movie theater is the theme of their digital PowerPoint and the slides will be labeled with the steps in which they are supposed to follow.

### **Activity:**

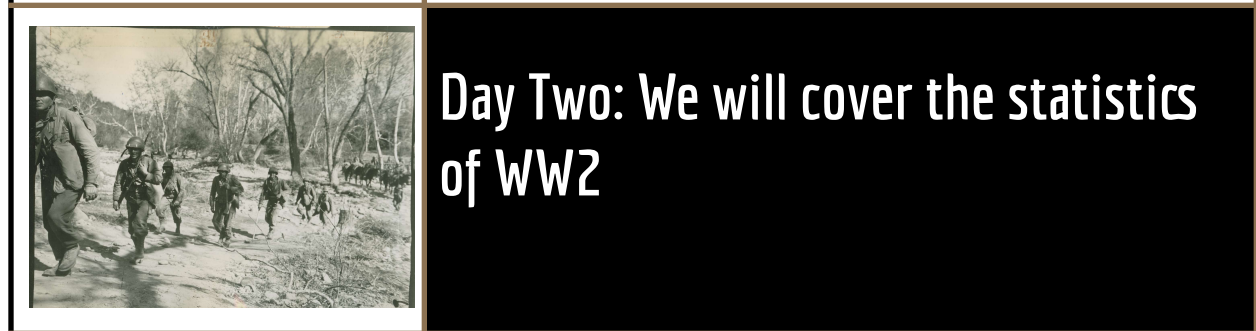
- The students will go through the hook slides then through the introduction of the narrator of the digital PowerPoint
- The narrator will lead the student to take a google form for their prior knowledge of the topic for this digital PowerPoint
- There will be arrows and “next” for students to click on to access “Da Rules” and continue to the next slide
- “Da Rules” are simply the rules of the PowerPoint and of each day of the slides they are on
- Next, the student will download screencastify to their computer and watch tutorials on how to use it
- There will be a padlet link for the student to use to post their screencast video that answers the three questions in one of the slides
- The last task will be to watch a background video of World War II and do an exit ticket before they complete day one

### **Closing:**

The students must have completed the prior knowledge google form for the teacher to look at. Next, the student must have their screencast video posted in the padlet link that answers the three questions. Then they must also have completed

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the exit ticket after they have watched the background video. These are the three main activities for day one that the student must complete. The students must now have some knowledge of what World War II was about and learn a tool that they can use to record what they learned at the very end. They can always go back to the “da rues” link in case they need any help.



## Directions

**Hook:** Upon arriving on day two of the PowerPoint. They will be greeted by the narrator and he will be giving them the layout of what their day will look like. Reminder, the narrator is the man in the suit who will appear throughout the presentation for the week. On this day students will have already been inside the theater in a theater room to watch a film.

### Activity:

- On Day 2, students will be learning about the statistics during World War II of the casualties. The narrator will welcome students into day two and then offer them the “Da Rules” link for students to read over for more directions and offer them any help they may need for the day.

#### • Before Activity:

- Students will be given an entrance ticket of them answering questions to a video they will watch. This video is short and explicit in the information students will be learning today.
- They must read the directions on the video slide then continue to the next slide where they will access more information and the google form link.
- This will begin to activate their thoughts in discussing the statistics of World War II.

#### • During Activity:

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- After the entrance ticket, students will begin to read an article about the statistics and in what areas these statistics come from such as wounded, killed, and gender.
  - Once they read the article, they will go to the next slide where they will be given two videos that will describe how to graph statics. (google sheets or canva)
  - They will pick any statistics from the article they were given and graph them on either google sheets or canva.
  - Once they graph the stats they will screenshot it and post it on a google doc and then answer these questions
    - What stood out to you while you were making the graph?
    - What caught your eye while you were creating your graph?
    - What did you notice from your graph?

- **Closing:**

- After answering the questions they will share their google doc with their teacher's email which is "..."
- After they share their google with the teacher they will be done for the day.



## Lesson Three: Keep on Rolling for Distance

### Directions

- **Hook:**

- The students begin Day 3 in a theater room ready for the film to start. The narrator appears on stage giving them directions for the day. Students will be asked to look at "Da Rules" before they begin the lesson and activity for the day. Today, students will learn about the amount of distance covered in different battlefields during World War II.

- **Before Activity:**

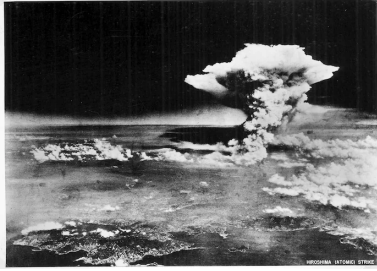
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- Students will be required to get an entrance ticket before they begin the lesson and activity for this day.
  - The entrance ticket is about reading an article about the major battles during the War which includes on land and overseas.
  - The entrance ticket will also be a free response on a google form with three-sentence requirements about the battle they would be more interested in learning about.

- **During Activity:**

- Once they finished the entrance ticket they will be given a picture of a linear function
- They will have to create a linear equation around the vehicles of WW2
- The next slide will give them a refresher on what a linear function is. They only have to watch till the 5-minute mark.
- Once they finish watching the video they will go to the next slide where they will go to an article and pick a vehicle where they are given a top speed. That top speed will be their "m" in the linear function.
- They will also get to pick what their "b" is in their linear function
- Once they have created their linear function they will create a google doc and say what vehicle they picked and what their linear function is
- They will then also answer these questions
  - What is your linear function?
  - When will your vehicle reach 50 miles?
  - When you drive for 3 hours how far will the vehicle travel?

- **Closing:**

- Once they answered the questions they will share their google doc with the teacher's email "..."
- After they shared their google doc they will be done for the day



## Lesson Four: The Bomb

### Directions

- **Hook:**

- The narrator will appear in the concession stands to buy a snack and a drink during the film. The students will then be welcomed in the following slide to day 3 and given the agenda for the day of the lesson topic and the activity they will do. Reminder, students will be required to read “Da Rules” before continuing with anything else on this day. On this day students will be learning about the atomic bomb!

- **Before Activity:**

- Students will begin the lesson by purchasing an entrance ticket from a video of the experience of the dropping of the atomic bomb on Japan’s cities.
- An entrance ticket is a google form that students must have open as they watch the video to answer the questions. It is similar to a notes guide template but instead, it's just a Q/A.
- Students must complete these before starting their next activity.

- **During Activity:**

- Once they have completed the entrance ticket they will be given an article
- They will have to create a picture where they will show “What it would look like if the Hiroshima bomb hit your city”
- The next slide will give the students a refresher of what a radius is
- They will then go to google maps and pick their location. It could either be:
  - Your School
  - Sports stadium
  - Any mall
  - Landmark places



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- The students will find their location. Zoom out and take a screenshot of it. They will need to take a screenshot because they will have to draw on the picture.
  - The next slide provides them with the radius for each circle they will have to draw. Also, I provided them with a video on how to find the distance from a given point.
  - Once the students found the radius of each circle. They will use them and draw the circles on their laptop. (it doesn't have to be fancy)
  - After they draw the 5 circles on their picture. They will post the picture on a google doc and then write a review. Answer these questions:
    - What location did you pick?
    - Do any of the circles hit a location you know?
    - Anything that caught your eye while doing this assignment?

- **Closing:**

- Once they answered the questions they will share their google doc with the teacher's email "..."
- After they shared their google doc they will be done for the day



## Directions

- **Hook:**

- Students have reached the end of the presentation - Day 5. The narrator will be standing on stage after the film has ended to show the "end credits" of the film. Students will be reminded to read "Da Rules" before beginning their final assignment which is a screencastify video.

- **Before Activity:**

- In order to create their screencastify video, students will need to open the template link to brainstorm their ideas.

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- The template is set up with empty boxes labeled Day 1- Day 4, where they write down the things they learned each day.
  - This is optional but highly recommended for them to do to look over while they record their screencastify.

- **During Activity:**

- Once they are ready to create their screencastify video they will find a quiet area
- In their video, they will answer these questions
  - What did you do on day 1?
  - What did you do on day 2?
  - What did you do on day 3?
  - What did you do on day 4?
  - What stood out to you throughout the week?
  - Anything you want us to expand on?
  - Anything you want us to cover next?

- **Closing:**

- Once they finished creating their video and rewatched it making sure it was good. They will email the video to me
- After they email me the video they will be done for the week