

# OZOBOT CHALLENGE IN CHRONOLOGICAL THINKING

PREPARED FOR OZOBOT BY  
MARK DZULA ED.D. & ARDINA GRECO ED.D. (ABD)

## **Summary**

Take the Ozobot on a journey through time and teach it historical events that occurred within a particular region!

Groups of students will explore plotting timelines, first in a linear context and then in a regional context. The final activity will challenge groups to plot historical events on a gridded geographical map. Then using the map as a reference they will draw a track that will allow Ozobot to visit each historical event in chronological order. Plotting historical events onto a geographical map helps students to connect moments in history to a context and individual events to larger movements and themes that occurred within that region.

## **Duration**

One or multiple class meetings

## **Age**

3rd grade

## **Ozobot Skill Level**

Intermediate

## **How & when to use this lesson**

This lesson helps students to understand timelines as dynamic graphic organizers and is best used with students who have already been introduced to the following tasks and concepts:

- Maps and how to find a particular location on a gridded geographical map
- Basic knowledge of timelines
- Knowledge of historical events that occurred in a particular region
- Ozobot calibration (see calibration page at the end of the document)
- Basic Ozobot robot coding: How to traverse drawn lines or "tracks" and how to color code for direction using Ozocodes (see "Tips" sheet)

Students begin to see that the world is dynamic and changing, that things that impact our lives happen every day, and that significant events often happen around the world simultaneously. This lesson can be used in many different historical contexts. Below are some suggestions for appropriate applications:

- State History
- Local City History
- Westward Expansion
- American Revolution
- Civil War
- Underground Railroad
- The Great Migration
- Lewis and Clark
- The Silk Road
- Natural Disasters
- Technological and Communication Advances

**Example:** *State History, California Missions, 5 Missions, and their founding dates*

- San Diego de Alcalá, July 16, 1769 by Father Junipero Serra
- San Carlos Borromeo de Carmelo, June 3, 1770 by Father Junipero Serra
- San Antonio de Padua, July 14, 1771 by Father Junipero Serra
- San Gabriel Arcángel, September 8, 1771 by Father Pedro Cambon and Father Angel Somera
- San Luis Obispo de Tolosa, September 1, 1772 by Father Junipero Serra

We encourage educators to use this lesson as a resource and to adapt it for successful use in their classrooms. We also recognize that educators have different time constraints. This lesson is not meant for one class meeting. Its presentation could span multiple class meetings.

### **Standards**

NATIONAL CURRICULUM STANDARDS, CA. (SOCIAL STUDIES)

Students place key events and people of the historical era they are studying in a spatial context

### **Common core connections**

CCSS.ELA-LITERACY.RI.3.7

Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

### **Objectives**

- Students place key events and/or people of the historical era they are studying in a chronological sequence and within a spatial context (map)
- Students will be able to draw a path into a spatial context (map) to allow an Ozobot to travel in chronological order between illustrations of key events and/or people of the historical era they are studying

### **Vocabulary**

Chronological order: a sequence of events based on the time that they occurred

Timeline: a linear representation of events arranged in chronological order

### **Materials**

- Pencils, 1 per student
- Colored pencils, 1 pack per group
- Glue sticks, 1 per group
- 8"x10" Drawing Paper, 1 per group
- 18"x24" Drawing Paper, 1 per group
- 18"x24" Vellum Drafting Paper, 1 per group
- Printout of Ozobot calibration page (see calibration page at the end of the document), 1 per group
- Bold markers [Crayola or Sharpie – Black], 1 per group
- Ozobot robots, 1 per group

### **Motivation**

Let's play a timeline plotting game. The class will be divided into groups of 4-5 students and together teams will be challenged to match and order dates with historical events from our current social studies unit. First, your team will match the dates and events; then, you will place the matched items chronologically onto a linear timeline.

*Select 4-5 dates and 4-5 events that are important to understanding the unit or lesson. Create a list of the dates and events presented in random order on a worksheet for distribution. You may choose to give the groups of students the same dates and events or you could give them different dates and events.*

## Transition

Let's share our results.

*If you chose to give the groups different dates and events use some time to compile the results together as a class. Either way it would be helpful to assemble a presentation size timeline for the class to consider together.*

What is the benefit of plotting out events on a timeline? What do you notice about the events plotted on our timeline?

## Discussion

How is a map different from a timeline? What information do we get from maps? How might maps help us to better understand events plotted on a timeline?

*As students share their responses use this opportunity to introduce vocabulary and new concepts when it relates to what the students are sharing. Students may discuss times that they have used maps and timelines themselves; teachers may prompt them to relate their events in "chronological order." A map and a timeline may be shown together. Students may be asked to compare them visually.*

## Activity

Can we represent our timeline on a map? How might that look?

Get back together with your group and collaborate to plot the events from our timeline onto a map. To create your group's map you will need to delegate group members to complete the following tasks:

- Illustrate a map of the region on 18"x24" paper including major geographical details
  - the map should be vivid in color so it can be seen through 18"x24" vellum drafting paper
- Draw symbols to represent the different events to be included on the map's timeline, these will be pasted into the vellum drafting paper that will be placed on top of your group's map
- Look up where the different events took place, place the vellum drafting paper on top of your map, and then glue the symbols where they took place in the region

*Students should be provided a variety of tools to complete this task, including, pencils, colored pencils, drawing paper, and glue sticks.*

Now design a track to take the Ozobot on a journey through time! The track should lead Ozobot to each historical event that occurred within the region we are studying and it's design should get Ozobot to navigate between events in chronological order.

As you create your track, consider:

- What kinds of lines might you need to use to get Ozobot to navigate between events in chronological order?
- How will you avoid tracks from crossing each other?

Remember:

- Make sure to calibrate your Ozobot before trying out your track. Consult the Calibration Sheet to make sure Ozobot is ready to go.
- Make sure your lines are thick enough. See the "cheat sheet" for tips and ideas.
- Finally, make sure there is no glue residue near where your Ozobot will travel, glue on Ozobot wheels is not a good thing!

*Students should be provided bold black markers to draw the track.*

Now calibrate your Ozobot so that you can test the track, use the Ozobot calibration document as a reference.

Watch Ozobot closely as it travels the timeline. Do you notice anything about the order of events or the geography of where the events took place?

### **Reflection**

Compare our timeline to our maps. How do our maps help us to better understand the events plotted on our timeline?

### **Sharing**

We would love to see your student's creations! Please share your photos and videos with us for a chance to win cool prizes and be featured on our website. Contact us at [ozoedu@ozobot.com](mailto:ozoedu@ozobot.com).

## Extension

Students may be challenged to develop digital representations of the chronological data explored during this lesson. These maps might be created in an illustration program and printed in a large format.

Educators can also use map-based timelines to challenge students to investigate personal family history, for example students might:

- Plot on a map-based timeline when and where family members were born
- Plot on a map-based timeline significant events that have occurred in your family

## Ideas for adaptation

To adapt this lesson for students with special needs educators could:

- Provide the groups' pre-drawn maps, event symbols, and grids
- Pre-plot the events on the maps; students only have to insert event dates and create the track to get Ozobot to navigate between events in chronological order

## Resources

### Books

*An Illustrated Timeline of Inventions and Inventors* (Visual Timelines in History), Aug 1, 2011, by Kremena T. Spengler and Rick Morgan

*An Illustrated Timeline of U.S. States* (Visual Timelines in History), Aug 1, 2011, by Patricia Wooster and Rick Morga

*Journeys in Time: A New Atlas of American History*, Mar 26, 2001, by Susan Buckley and Elspeth Leacock

*Usborne Timelines of World History*, Jul 2003, by Jane Chisholm

### Websites

<http://timeline.knightlab.com/>

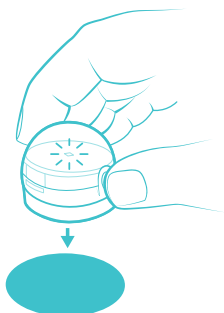
<https://www.behance.net/gallery/5584109/One-Day-Map>

[http://billsportsmaps.com/wp-content/uploads/2008/01/nfl\\_timeline1920-33\\_2.gif](http://billsportsmaps.com/wp-content/uploads/2008/01/nfl_timeline1920-33_2.gif)

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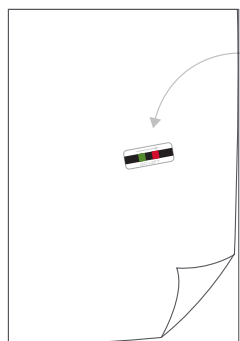


## Paper Calibration

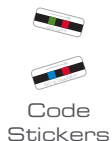
Before you begin, you need to calibrate your Ozobot! You should calibrate often, especially if Ozobot starts acting odd. When in doubt, calibrate!



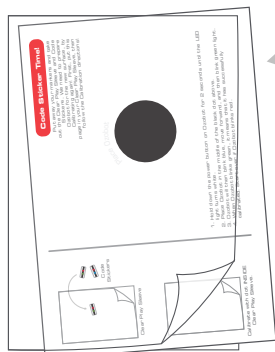
1. Hold down the power button on Ozobot for 2 seconds until the LED light turns white.
2. Place Ozobot in the middle of the black dot above.
3. Ozobot will then blink blue, move forward, and then blink green.
4. When Ozobot blinks green, it means that it has successfully calibrated. Start over if Ozobot blinks red.



Clear Play Sleeve



Code Stickers



Calibrate with page **INSIDE** Clear Play Sleeve.

## Code Sticker Calibration

Place this sheet inside the Clear Play Sleeve and Re-Calibrate before playing with the Code Stickers. We always need to prepare Ozobot when we change play surfaces. First, put this page in your Clear Play Sleeve, then follow the Calibration directions!



1. Place this calibration sheet inside the Clear Play Sleeve.
2. Hold down the power button on Ozobot for 2 seconds until the LED light turns white.
3. Place Ozobot in the middle of the black dot above. Ozobot will calibrate through the clear play sleeve.
4. Ozobot will then blink blue, move forward, and then blink green.
5. When Ozobot blinks green, it means that it has successfully calibrated. Start over if Ozobot blinks red.