

Google Earth Education Classroom Activity: Hazard Map with Google Earth

Teachers:

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at Hiroo Gakuen Senior High School

Subjects:

Science and Our Daily Life

Audience:

10th grade

Lesson style:

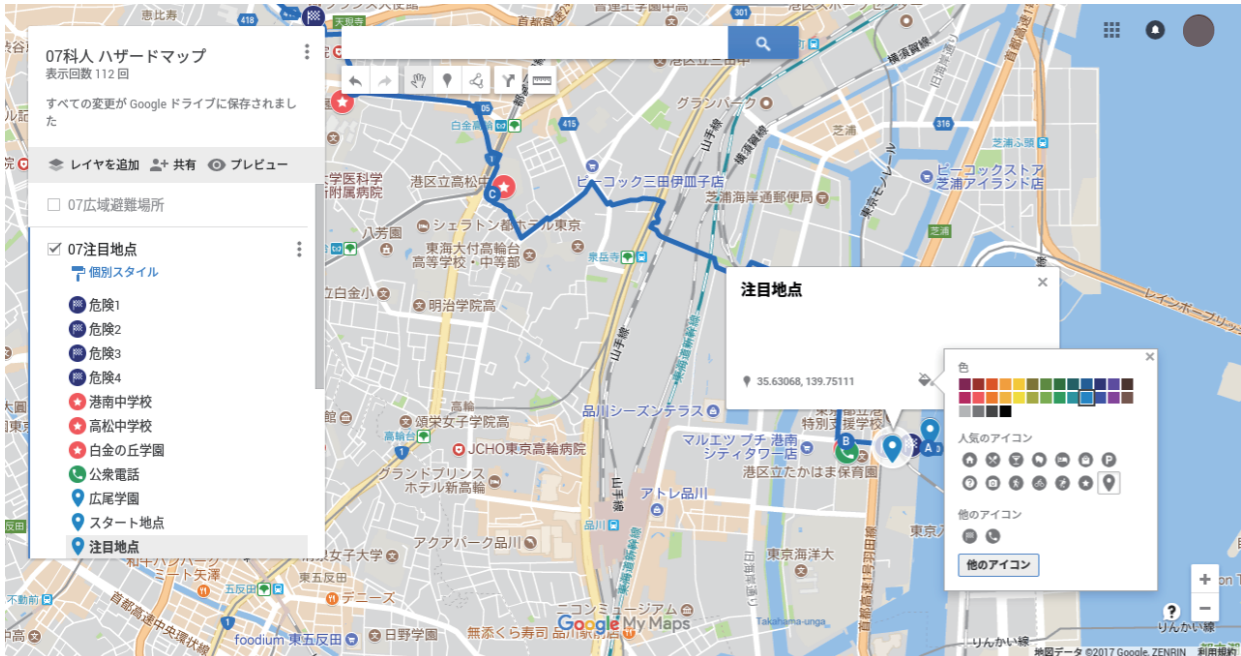
2 lessons (each takes 50 mins to complete),
100 mins in total (including breaks)
Students will be divided into groups of four per table

Lesson structure:

Introduction (20 mins): The teacher explains the learning objectives, and shows Google's Geo Tools, using My Maps.

1. Each student per group rolls the dice on the map of Minato City printed in the A3 paper size.
2. Show the lesson's learning objectives.
 - a. Create a hazard map based on the assumption that a large-scale disaster would occur on the location of the dice. Plan a route to take shelter in Hiroo Gakuen after reaching an evacuation spot and a public telephone booth.
3. Each group checks the locations of their dices, and prioritizes their danger levels.
4. Make the most dangerous spot where the group is situated.
5. Share the following information via Google Classroom:
 - a. The URL of Minato City Government
 - b. A csv file of the city's official information of its designated emergency evacuation sites (Note: Edit the file by removing its first row, if necessary)
 - c. Google Slide describing Google's Geo Tools
 - d. My Maps with view access given to the participating students

6. Using teacher's PC and a projector, the teacher launches My Maps, and mentions that the students are able to:
- Add locations.
 - Add optional icons to designated locations. → This feature will be used when the students make a hazard prediction.



- Attach optional images onto designated locations. → The students will add their screen captures from Google Street View to those locations where they make a hazard prediction.



- Create a route. → The students will plan an evacuation route using this feature.
- Import a csv file into My Maps. → The teacher shows the open data of the designated emergency evacuation sites provided by Minato City, and then explains the reason for editing the csv file (which needs to have a title on the first row).
- Use colors and classify locations by how many people each site can accommodate. Refer to the imported information.

7. Each group creates and shares their own My Maps file. The teacher announces that they will present their work at the end of the lesson, using Google Earth.
8. Explain the the following layers the students need to at least create, and get them start working.
 - a. Routes
 - b. Hazard predictions
 - c. Information on public telephone booths
 - d. Designated emergency evacuation sites (already provided)

Development (60 mins):

1. The teacher walks around, observes each group, and answers their questions if any.
2. The teacher supports those students who have trouble using the tools (if necessary).
3. The teacher explains to the entire group how to export their data from My Maps when they have 15 minutes remaining.

Recap (20 mins):

1. Considering the remaining time, have some groups present what they have done, using Google Earth.
2. Before their presentations, have them download the data of their route and hazard prediction as a KMZ file, and send it to Classroom. In downloading the file, keep any dialog boxes unchecked.
3. While the students are presenting their work, collect all the information on the route and hazard prediction from each group in order to create a map. Then publish it in Classroom during the lesson.





Content shared in advance with the students by Classroom:

1. Assignment

- a. Everyone in each group rolls the dice on the map of Minato City, and determines the location with the highest danger level. Then plan an evacuation route from there, and make some lesson material using Google My Maps.

2. Four layers to be created

1. A list of designated emergency evacuation sites (the teacher will share this with their students).
2. A list of public telephone booths (each student will import this into My Maps).
3. Evacuation route: a disaster-stricken area > an evacuation spot > a public telephone booth > Hiroo Gakuen.
4. Important locations: those with high danger levels, and those evacuation spots and public telephone booths to be used. *Some pictures will be attached.

3. Deliverables

1. A My Maps file
2. KMZ files containing Layer #3 & #4 respectively
 - ※ Add the first two digits of your group number to the beginning of the file name. For example, add 03 if you belong to Group 3.
 A representative of each group submits their files, and the other members can submit their work without any attachments.

4. Presentation

- a. The students import the My Maps files they've created into Google Earth, and make an easy-to-understand presentation using 3D mode and Street View.
- b. ※ Considering the remaining time, have one or two groups present their work.

5. Attached material

- a. A map with designated emergency evacuation sites
 - i . Share this My Maps file among the students. Each student makes a copy of the file during the lesson.
- b. Minato City's website "Prepare for great disaster"
- c. Minato City's website "Open Data"

Tips from the teachers:

As a precondition for the implementation of this lesson plan, students should learn to fearlessly experiment with the tools they use for the first time. There is no point specifying which buttons to click in detail or having them navigate the tools in the same way at the same time. Just show them the purpose of each action and its expected result. Your lesson will go well if your students are willing to try new things. Use a simple document or spreadsheet to familiarize yourself with sharing files and editing at the same time with others, so that you should be able to allocate more time to focus on the subject of the lesson: My Maps.

Keep the introductory part of the lesson concise, and have your students start navigating the tools as soon as they can. It would be best if one or two students in a group of four have understood your explanation. Encourage group learning. You should give them advice only when everyone in a group has trouble navigating the tools. As you observe each group, show them how to use the tools in detail from changing icons to creating a new layer. Keep reminding your students to create each layer by following the information shared by Classroom. This helps maintain consistency in the files they deliver. Each group will spend one hour discussing their work thoroughly, so they should be able to make a good presentation at the end of the lesson, using their own words without any script.

The lesson plan created by Hiroo Gakuen Senior High School
The text written by Yusuke Enomoto and Takeo Kitamoto