My Maps

Subjects: Geography, History, Polish (or another native language), IT
Grade Level: 8 - 10 (14 - 16 years old)
Estimated time: Developed as a 4-week project. Can be shortened or extended.

About this learning scenario
School trips are a part of a regular programme of activities throughout all the levels of school education. The objective usually is to take students to interesting locations and connect the sightseeing with experiential learning of certain items of the curriculum. Most commonly these trips are planned as journeys to distant cities of cultural significance where the students are taken on a tour of museums, monuments and exhibitions, preferably with a stop at a national park on the way to refresh the minds. In this scenario we argue for the value of explorations of the environment surrounding the place where the young people live with its sites of historic, cultural and natural interest. Such trips are easier to organise than long-distance journeys because the transportation and accommodation costs are much lower. Our point here is to suggest ways to organise such trips as to tap into students' interest in digital technologies while addressing essential parts of the curriculum in the fields of Geography, History and native language.

Pro tips
This scenario originated in a place surrounded by the mountains of the Carpathian Range with many trails crossing small villages and settlements, some with unique architectural features. Many of our students and teachers are passionate hikers eager to take opportunities for new explorations and sharing their experience so this learning scenario comes naturally to us. But you will easily see that the steps we propose to follow can be adapted to other locations suited for hiking, whether it's a trail around a lake, a path along a coastline or a walkway to a nearby town.

Materials & Technology
- Equipment suited for hiking (depending on the trail)
- Mobile phones or tablets
- PCs with Internet access, at least 1 for a small group (2 - 4 students)
- Photo editing software installed on each PC
- Projector (recommended)

Before programme begins
Agree on the whole programme of activities in a team of Geography, History, native language and IT teachers. The important aspect of the scenario is cross-curricular learning so an involvement of all these teachers will ensure comprehensive outcomes. It is likely that the trips will be led only by 1 - 2 teachers, but the preparatory and follow-up stages are best implemented if all these different subjects show their relevance for a common goal that the class is going to attain.

Session 1: Project introduction

The learning scenario begins in a Geography class in connection with a lesson on maps. Depending on the grade the students are required to be able to use maps, including computer maps, to locate certain places and describe their characteristics as well as to use fieldwork to observe, measure and present human and physical features of their locality. The range of methods varies from less advanced (e.g. sketch maps) to a more demanding use of digital technologies as the students progress to higher levels. We begin at the stage where it is appropriate to introduce satellite navigation, GPS and GIS commonly used nowadays on computers and mobile devices.

- Divide the whole class in smaller groups (4 - 6 students). Half of the groups get paper physical maps covering their region, the other use only mobile phones, tablets or computers.
- Ask each group to locate a specific place on the maps, identify its position and measure the distance from the school. Make them also deduct any other features of the selected places - physical and human.
- The groups change the tools to compare the gathered data with the information that can be collected with the other method.
- Representatives from each group present their findings to the whole class.
- Close the lesson with challenging students with the following questions:
    - Did you get the same results?
    - Is the accuracy level the same?
    - What worked faster?
    - Which tools are more convenient?
    - Think of the advantages and disadvantages of both.

Session 2: Planning a class trip

The places that the students had to identify on the maps in the previous session were chosen as potential destinations for a school trip. Their choice already took into account required transportation and accommodation in the case of an overnight stay as well as availability of sightseeing attractions (cultural, historic and natural). Now the students need to be involved in a shared decision about what location to visit and explore. In our case we propose to align this session with a history lesson on the development of wooden architecture in the region but this can be easily changed and the scenario can be continued as a Geography project (geological features, natural monuments, etc.)

- Inform the students that the class is taking 1 - 2 days off school as part of an outdoor programme of activities in the vicinity. They have a say on the choice of the route and localities to explore.
- Divide the class in 3 - 4 groups and ask them to choose a place from shortlisted proposals reflecting the work conducted in the previous session. Ideally each group chooses a different place so that there is a scope for argumentation/negotiations.
- Ask the students to list characteristics of their chosen place which make it worth visiting. The search should be done on the Internet with the use of the available technology - PCs, tablets or mobile phones, deepening the initial knowledge gained from the maps.
- Facilitate a class discussion with a view to agreeing on a destination which gets most ‘likes’.
    - Why is the place attractive?

- What are its features that give insights into local traditions, customs, style of architecture, etc.?
- Where to start the trip and which route to take to get a proper view of the locality?
- How much time is needed to explore the place? Is the plan feasible?

Session 3 - 4: Digital mapping technology

The scenario moves to an IT class. Most of the students are expected to be familiar with Google Maps, still perhaps only few would know specific applications for mapping routes in the terrain. Only some hikers and bikers may know digital maps for trail navigation like Wikiloc or AllTrails. The purpose of this session is to introduce this technology to all the students, giving both theoretical background and practical guidance on its use.

- Explain and demonstrate to students how Google My Maps work: how to create a customised map, add places to it, choose layers and save directions, etc.
- Divide students in smaller groups and ask them to create a map of the area which they are going to visit during the trip with marked routes, sights to explore and basic info on these places (pics and descriptions from the Internet).
- Introduce trail navigation tools (e.g. Wikiloc) and make students install the apps on one mobile device in each group.
- Do simple path recording exercises in the vicinity of the school or even on its premises if walking distances are sufficient.
- Give the students the following tasks for homework:
    - Record your path to school with Wikiloc and mark a few waypoints illustrated with pics.
    - Mark the same path on Google My Maps.
    - Calculate the distance covered and elevation gain/loss.
    - Search for interesting online trails in your area shared by others on the Internet.

Session 5: Route mapping on a school trip

Before going on a school trip the students should have mastered basic path recording and mapping skills on their mobile devices. Now they will have an opportunity to apply these skills in practice. The places to visit on the trip had already been preselected during History or Geography classes (or even a Biology class if the trip explores natural habitat). The trip's objective is to see these places in the real and document the sightseeing tour on an interactive map. It is important to plan the tour as a walk from one place to another with stops at points of interest so that the route can be reflected on the map.

- Divide the whole class in smaller groups, each having a mobile device to record the walkway (some students may not have mobile phones with sufficient parameters so be sensitive to this issue).
- Ask the groups to turn on the tracking functionality as they start walking and then place their phones in their pockets (so that the progress of the trip isn't hindered).
- When they see an interesting or characteristic point they should stop to mark a waypoint on the map and take a picture/s to illustrate it.
- The places which are in particular focus of the trip should be documented in more detail with full photographic coverage and notes on their features (the content will

depend on the objectives of the trip which may relate to different school subjects, Geography, History, Biology).
- At the final destination the students finish the tracking and save their mapped paths for further elaboration in the classroom.
- On the way back it is a good occasion to discuss the learning experience:
    - What difficulties have you encountered?
    - Is it a good way to record explorations?
    - How can we improve/develop this learning path further?

Session 6 - 7 Describing selected features

The gathered resources in the form of photographs and notes should be elaborated into consistent documentation of the visited sights. This is a possible task for a native language lesson where students practise concise informative writing to describe a place or an object seen on the trip. The fieldwork can now be extended into gathering data from the Internet or other available sources so that the students have additional material to draw on.

- Divide the class into the same groups that did the mapping on the trip. Their paths with marked waypoints provide a framework for the editing/writing tasks.
- To describe each location they should choose 1 - 3 pictures from the trip and elaborate brief notes made while visiting the place into proper informative paragraphs.
- Monitor their progress to help with editing quality texts in terms of content and style.
- At the end of the session each group delivers a presentation of their work. It is likely that the descriptions of the same places visited on the trips will differ which opens a venue for a discussion:
    - Why do we have different perspectives on the same object?
    - Where do we have information gaps?
    - How to fill them?
    - Where to search for further data? (possible homework activity)

Session 8 Updating the digital maps

This is a task for an IT class in which the students will focus on technical tasks related to illustration and annotation of their maps as well as their online presentation. At this stage all the content for the customised maps is ready - the issue is how to assemble and present it.

- Introduce photo editing software for use in class which may differ from applications used by the students on their own devices.
- Ask them to edit the photographs with which they want to illustrate the waypoints on their maps. Offer consultation on the proper format and size of the pics.
- Make them upload all the material - both pictures and descriptive texts - to relevant waypoints on the maps.
- When all the maps are finalised and saved, explain how to embed them on other portals with relevant themes.
- The whole scenario is completed with students sharing their maps with other prospective visitors of the places which they explored. This final task can lead to follow-up questions as:
    - How to best position your resources on the Internet?

- What should you do to elicit feedback from the audiences you want to engage?
- Where to search for relevant “communities of interest”?

Learning outcomes: After completion of the learning experience the students will be able to:

- Do geographical fieldwork in their locality with the use of mobile devices
- Create customised maps of selected routes and places
- Develop better geographical awareness through these maps
- Share the maps online with interested users
- Explain the potential of mobile technologies for a spatial representation of localities
- Compare advantages and disadvantages of using digital maps versus paper maps