Project: Create a Chemistry App

FOR THE TEACHER

Summary
In this project, students will use Google accounts to create chemistry-themed apps, with no programming required. They will create a Google Drive spreadsheet containing scientific information, and link it to a free account on Glideapps.com. They will personalize the app on the Glideapps website. The resulting app will be available to view on devices that have the correct link.

Grade Level
Middle and High School

NGSS Alignment
This project will help prepare your students to meet the performance expectations in the following standards:

- **Scientific and Engineering Practices:**
  - Obtaining, Evaluating, and Communicating Information

Objectives
By the end of this project, students should be able to

- Compile relevant chemistry facts from reliable sources.
- Enter and manipulate information in a spreadsheet.
- Design an appealing and functional app.

Chemistry Topics
This project could support student understanding of

- Review material
- Elements and the Periodic Table
- Molecules & Bonding
- Acids & Bases,
- Physical & Chemical Properties

Time
Teacher Preparation: 30 minutes (to learn about and practice creating an app)
Lesson: ~90 minutes:
- 30-40 minutes to teach students the process
- 60 minutes to complete the project tasks

Materials
- Computers or Chromebooks (at least one per group, ideally one per student)

Safety
- Discuss internet safety with the students. Students should not share any personal information.

Teacher Notes
- Glideapps is a website that creates an app from a Google spreadsheet.
- It is simple to use, and doesn't require any programming or significant tech skills to use it. Previous spreadsheet use is helpful, but not necessary.

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• Create a teacher app before doing it with the students. Follow the instructions on the Student Handout and use the resources at Glideapps.com to become familiar with the process.
• Students can work in groups of 1 to 3. Larger groups should be avoided because there will be fewer opportunities for individual members to contribute to app customization.
• Encourage students to be creative and explore all of the possible functions at Glideapps.com.
• Create a Google spreadsheet where student share the links to their apps so the teacher and other students can view all of the work quickly.
• Show students a simple example spreadsheet and resulting app before they decide on a topic:
  o Spreadsheet: https://tinyurl.com/chemappspreadsheet (image below)
  o App: https://tinyurl.com/chemappexample (image below)

- This project could be used for review, or for an introduction to a specific topic. Some suggestions for possible project topics include:
  o The Elements and the Periodic Table
  o Gemstones
  o Acids and Bases
STUDENT

Lesson

Create a Chemistry App

Objective

You will create an easy-to-use and visually appealing app that conveys valuable chemistry information.

Materials

You will need a Google account and a computer or Chromebook with internet access.

Safety

Never share any personal information in your Google spreadsheet. Anything in the spreadsheet will appear in the app and be openly available on the internet. This includes information like your name, location, and school.

Procedure

Part 1:
1. Your teacher has discussed possible topics for your app. Talk to your group and decide which topic to pursue, or ask for your teacher’s approval on a new chemistry topic.
2. One student per group should create a "Chemistry App“ Google Sheets spreadsheet in their Google Drive account. They should share this spreadsheet with all group members and the teacher.
3. Decide what information needs to be added for a useful and interesting app. Make a list of this information.
4. Create column headings for this information. For example, if you are creating an app about elements, create column headings like "Element Name", "Element Symbol", Atomic Number", "Atomic Mass", “Image", and “Video”.
5. All members of the group can open the spreadsheet on different devices and concurrently add information to the rows. Divide the work in an equitable manner so that everyone contributes.

Part 2:
1. One member of the group should navigate to Glideapps.com.
2. Sign up for Glideapps using the same Google account that your group used to create the spreadsheet.
3. Select "New App”.
4. Link the "Chemistry App" Google Sheet to the Glideapps website.
5. Customize the appearance of the app in Glideapps.
6. Customize the entries in the spreadsheet as needed.
7. Go back and forth between editing the spreadsheet and adjusting the settings in Glideapps until you are satisfied with your app.

Part 3:
1. At the bottom left of the Glideapps screen, select "Share app". This will give you the option of looking at the app on a computer/Chromebook, or copying a link to your app.
2. Copy the link into an email and send it to your teacher and every team member, or paste the link into a Google spreadsheet shared with your teacher and the whole class.
3. When the link is opened on an Android device, it will give you the option of installing the app. On other devices, the app will open in a browser.