

TEMPLATE FOR CMAP PROJECT

Each participant who participated in the CMAP workshop signed an agreement to conduct a CMAP project and write up. This template is provided to you as a guide for the CMAP project you agreed to conduct with your students.

Please complete a detailed write-up of your CMAP project using this template. Use the kind of language and detail so other teachers can take your project to conduct in their classrooms. An archive of CMAP projects will be made available for Utah educators.

Send to: Jared Covili, UEN Professional Development
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or Email/share with jared@uen.org

Project Title: The Atom
Created by: Joy White
Class: 8th Science

Project Description	Develop a model using google maps of an atom to describe the scale and proportion of atoms.
Community Issue or Problem Selected	The atom is so small, students do not realize how much empty space is between each of the electron energy levels.
-How project evolved?	Students will measure the distance between each energy level,

	with Dixie Middle science classroom as the Nucleus) then using Bohr's model, place waypoints (to represent electrons) to show how many electrons are in that energy level. The way points need to be a local business or community site.
Community Partner(s)	Local businesses and Washington County Sites (examples, City pool, Sand Hollow Reservoir)
Project Objectives	-Use google maps to make a scale model of an atom. The nucleus will be in the classroom and they will find locations in the area where the electrons will be located. -Obtain information about the scale and proportion of an atom by analyzing and interpret the map and the spatial distance between each electron.
Utah Core Standards/Objectives	8.1.1 Develop a model to describe the <u>scale and proportion</u> of atoms and molecules. Emphasize developing atomic models of elements and their numbers of protons, neutrons, and electrons, as well as models of simple molecules.
Essential Question(s) -Spatial Issue	How far apart are electrons in different energy levels from the nucleus?
Assessments (rubrics, scoring guides)	Students will use google maps to create a model of Bohr's atom. The generated model will be used to assess student understanding.
Project Products	Printed student generated google map.
Project Timeline (include a step by step Procedures)	1- 80 minute class period In the classroom, we have a model of the NUCLEUS of the atom Neon (Ne). If the nucleus of our atom is in our classroom, where would the first two electrons be? Allow groups time to calculate the distance of the first electron cloud, then as a class check calculations for accuracy. Use the map in google maps to draw a scale model of the Ne atom. Using the element Neon (Ne) label the location of the nucleus, the two electrons in the first shell, and the eight electrons in the second shell. When drawing the nucleus include the correct number of

	<p>protons and neutrons. To do this, use the map to find local businesses or community locations on the model.</p> <p>Use different colors to represent the different parts of an atom (protons, neutrons and electrons.)</p>
Resources Needed	<p>Google Maps Google Drive Chromebooks</p>
Skills Required	<p>Basic Computer skills Basic Google Maps skills</p>
Project Team Member Roles	<p>Teacher(s): Ensure understanding of google maps and how they work with the classroom Chromebooks</p> <p>Students: To create the model and ask questions for clarification, and complete a think, pair, share.</p> <p>Partner(s): Updated Location information</p>
Celebration/Presentation	<p>Students will have an awesome digital model they will print out and place in their science binder, along with, a better spatial understanding of the distance between electrons in an atom</p>
Project Evaluation	<p>Students will be evaluated on the google map models they created.</p>
Project Bibliography	<p>Google Maps https://www.google.com/maps/@37.0919334,-113.5834996,17z?hl=en Utah 8th grade seed https://www.ck12.org/user%3Adxrhac1vzxitzg9l1nbhcnruzxy2sxmi5vcmc./book/8th-Grade-Science-for-UT-SEEd-Standards/</p>
Plans for Future CMAP Activities	<p>Storyline on landforms in National Parks</p>

Optional:

- Lesson Plans
- Student Artifacts
- Publicity

Example of projects

