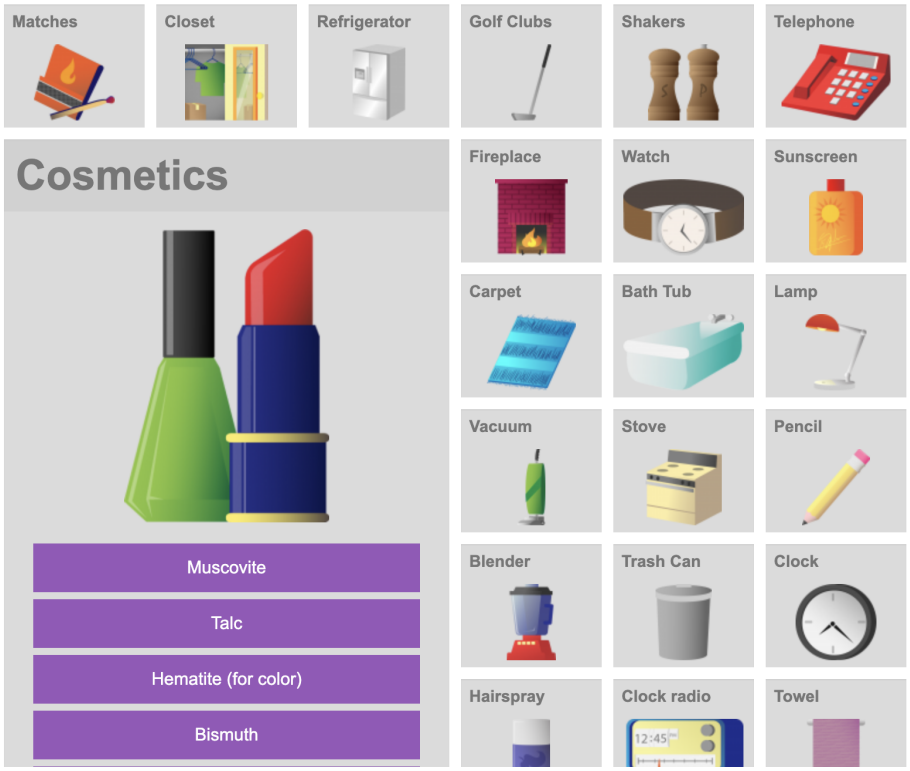
Authentic Data Integration Assignment by Yishan Lee

Data Sources:

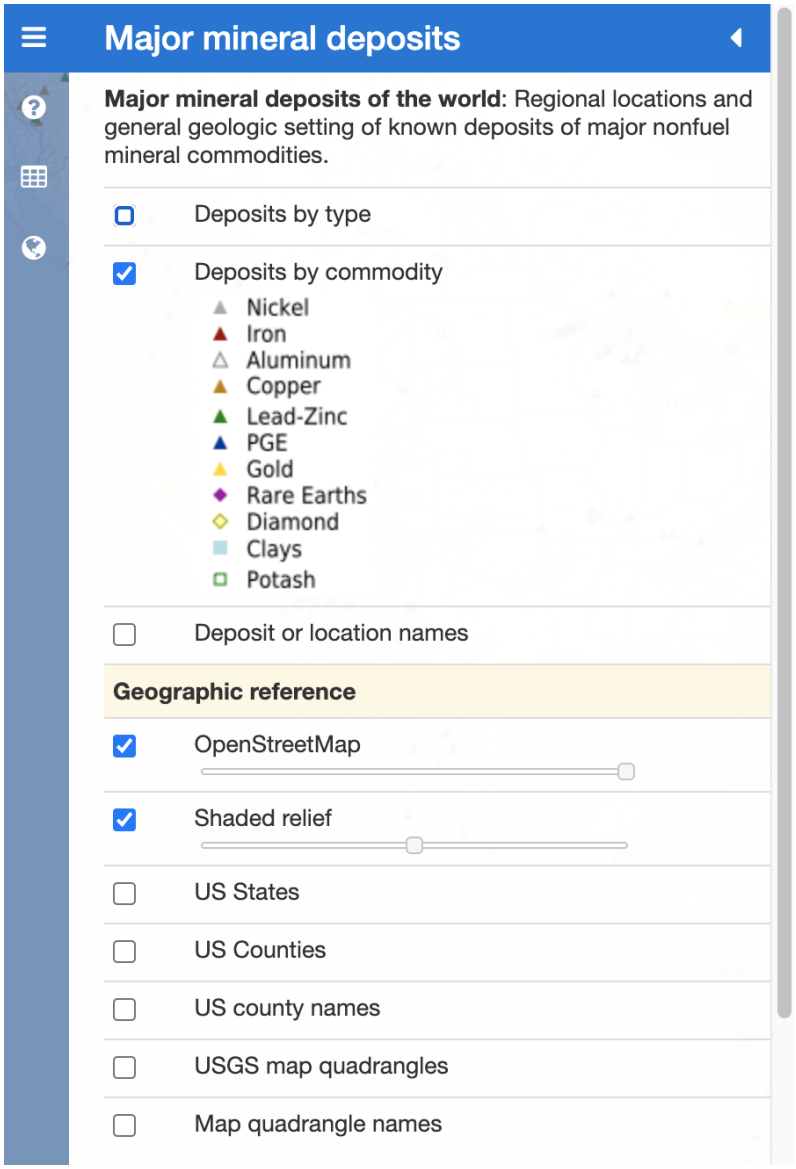
1) Minerals in Your House (Link)
2) Mineral Resources Online Spatial Data (Link)
3) Extension: Mineral Commodity Summaries 2022 (Link, pages 16-18)

Lesson Enhancement:

These data sources serve as intriguing entry points for our unit on rocks and minerals. Students begin collecting data about mineral usage via the “Minerals in Your House” interactive website. As students identify the various minerals that are commonly found in their homes, they will begin to appreciate the important roles minerals play in our lives. Students will analyze their collected data and make inferences about mineral resources, such as predicting the values and availability of specific mineral resources. Students can also ask curious questions based on their findings about minerals. The goal of this data source is to recognize minerals as an essential resource in our everyday life.



The second data source (Mineral Resources Online Spatial Data) can be used to address the uneven distribution of mineral resources and formation processes. Students will examine the world map showing mineral deposits around the world (see suggested setting below).



As students examine the patterns and trends they see on this interactive map, they can record their observations and begin to ask curious questions based on their analysis. For example, students might wonder why gold deposits tend to be on the west coast in America, or if some mineral deposits are associated with specific geologic features such as mountain ranges. Students can also make connections with the first data source to consider factors that could impact mineral availability and value. These noticings and wondering will help drive our upcoming lessons about the formation and classification of minerals. As an extension for students who are passionate about this topic, they can also examine the third data resource, which provides statistics from an economic standpoint.

I personally think the second data source can appear intimidating to my students initially. However, I believe that students will be able to learn to navigate the source after a quick demo. A carefully curated set of intentional prompts can also guide students throughout this process. Additionally, pacing will be a major factor, as students will need time to learn to navigate the data sources, interpret the data, and generate conclusions or questions about the data.

Interdisciplinary context:

The topic of mineral resources can be easily extended across other content areas, including geography, math, social studies, and technology. For example, students can brainstorm various methods to visualize their collected data to tell the story behind these mineral resources. We can examine historical mineral data for patterns/trends and make predictions about the future of our mineral resources. We can consider how mineral distributions impact societies around the world, whether they are negative or positive. We can also brainstorm ideas on how the data sources can help inform us best practices in the future when it comes to mineral extraction and usage.