

Teacher Preparation Notes for Learning about Genetic Disorders¹

As indicated in the Student Handout, we have left it to individual teachers to decide:

- whether students will work on their own or in pairs or small groups
- the format for student reports
- whether and how students will share their reports.

One suggested approach would be to have students work in pairs or small groups to prepare their report (including a poster or PowerPoint) and then present their results to their classmates, who will be encouraged to ask (thoughtful) questions. Class reports with discussion are useful for (1) sharing information, reinforcing learning, and adding and clarifying important points, and (2) motivating students to develop a good understanding of the topic they are researching since they will need to be prepared to answer questions from their classmates and teacher.

One problem we have encountered is that students often copy information from their sources without understanding the material and putting it in their own words. Very helpful guidance on this issue and the appropriate use of quotations is available at https://owl.purdue.edu/owl/avoiding_plagiarism/best_practices.html. For example, this source previously recommended these steps to help students put information in their own words.

1. Reread the original passage until you understand its full meaning.
2. Set the original aside, and write the main points you remember on a note card.
3. Check your version with the original to make sure that your version accurately expresses the essential information in your own words.
4. Use quotation marks to identify any unique term or phraseology you have borrowed exactly from the source.
5. Record the source (including the page) on your note card so that you can credit it easily if you decide to incorporate the material into your paper. Also, underline or write a keyword or phrase to indicate the topic.

I also recommend encouraging your students to use online dictionaries to find the meaning of any unfamiliar technical terms.

The recommended sources are indeed very reliable. If your students use other sources, you may want to have them first read “Evaluating Internet Research Sources” (<http://www.virtualsalt.com/evaluating-internet-research-sources/>). The OMIM source is quite technical and will be too advanced for many high school students. This would be a particularly useful source if you want your students to investigate inherited traits such as albinism or blood type.

This activity provides a good opportunity for students to engage in the NGSS-recommended practice of Obtaining, Evaluating and Communicating Information.²

¹ By Dr. Ingrid Waldron, Department of Biology, University of Pennsylvania, © 2024. These Teacher Notes and the related Student Handout are available at <http://serendipstudio.org/exchange/bioactivities/GeneticsWebSearch>.

² See <http://www.nextgenscience.org/sites/default/files/HS%20LS%20topics%20combined%206.13.13.pdf>.