

Human's Dependence on Earth's Mineral Resources Unit 3

Mining and Mining Impacts

Alternative Activity with Pre-Unit AML & Superfund Homework: Gallery Walk (Run)

Learning objective

- Describe how wastes are created and managed during the different stages of mineral resource production and what can be done to minimize the negative effects of mining and related processes.

This Gallery Walk (Run) activity builds upon the AML and Superfund pre-unit homework in a way that fosters small group discussion and analysis, and offers the opportunity to summarize and correct any misconceptions as a large group. This activity could be used *in addition to* the activities already included in this unit or *instead of* one of the activities in this unit, especially if the other activities do not fit the instructor's timeframe or classroom setting. As written, this activity should take approximately 35 minutes but could be shortened if necessary.

For more general information on how to run a Gallery Walk/Run and possible variations, benefits, challenges, and methods of assessment, please see:

<http://serc.carleton.edu/introgeo/gallerywalk/what.html> and the included links.

How It Works

The students should complete the pre-unit homework assignment on AML and Superfund (after completing the pre-reading for the unit) and bring the completed assignment with them to class. The instructor might want to remove the three "Follow Up Questions" from the homework assignment, as students will broach these concepts within the class setting instead.

In this Gallery Run, questions (on large sheets of paper, white boards, or laptops) are posted in different locations around the room. Students are split up into five groups with three to five students per group. Each group has a different-colored marker (or is assigned a font of a different color if using a computer) and is assigned to a different starting question (one group per question). After approximately four to five minutes at each question, the instructor asks the groups to switch to a new question/location (i.e., rotating through the questions clockwise). Once students return to their initial station, they create a summary of answers written by all groups and report out to the classroom. You want to provide enough time for students to be able to think about the question, review what previous groups have written, and write some answers to the question, but not so much time that they list all possible answers before the other groups are able to address that same question. For large classes, multiple cells of the gallery walk could be created, using the same questions (e.g., three cells of the same six questions, where student groups rotate only within their smaller cell).

How to Run It More Specifically

Supplies:

- 6 colored markers (a different color for each group).
- 6 large sheets of paper, or 6 whiteboards, or 6 laptops, or, if necessary, 6 sheets of regular lined paper, for groups to collectively list the answers to the questions.
- Students should bring their completed pre-unit AML/Superfund homework.

The Gallery Run Questions (written in advance of the activity at each station):

- 1) What types of contaminants were at your site(s)? Why are they of concern?
- 2) How long have the cleanups been going on at your site(s)? Why, in general, do cleanups take so long?
- 3) What types of things could be done to prevent active mine sites from ending up as Superfund sites later?
- 4) What might be some potential benefits of enacting appropriate regulations within a certain industry (such as the mining industry)?
- 5) What might be some potential benefits of NOT having regulations within a certain industry (such as the mining industry)?
- 6) What do you think is the condition of the land around legacy and active mines in other countries around the world and why?

Instructions for Students

After briefly reviewing the concepts and terms behind the assignment (i.e., NPL, Superfund, AML, legacy mine, etc.), the instructor should provide instructions to the students:

- 1) You will be broken up into small groups (3–5 students). Keep your completed AML homework assignment with you.
- 2) Stations are set up around the room. Each group will be assigned a starting location and a colored marker. Keep that marker with you the entire time.
- 3) On the large sheet of paper or white board provided, write (in bullet point form) answers to the question asked at your location. You will have about four minutes at this location. Please write legibly.
- 4) When I say “rotate,” move to the next location (clockwise), read through the new question plus any answers from previous groups, and add additional input from your groups.
- 5) Once you get back to your original question, work with your group to quickly synthesize the answers from all groups. Your group will report out to the class on this question.

Assessment:

The pre-unit written homework assignment can still be collected and graded as the instructor deems appropriate (throughout completion or specific answers).

Informal evaluation is recommended for this particular Gallery Walk (Run) and includes walking around the room during the activity and checking on groups to ensure participation. The “reporting out” at the end can also help the instructor assess general student learning. However, if appropriate and necessary, the instructor could let the students know that their participation (as groups, and as individuals within groups) will be noted.

For more information on alternative assessment strategies for Gallery Walks, please see <http://serc.carleton.edu/introgeo/gallerywalk/assessment.html>.