

Return To [Middle School Lesson Plans](#)

Title: Reclamation and Recycling

Level: Middle School

Time: Each activity will take 45 - 90 minutes

KERA Goals: 2.1; 2.3; 2.30; 2.33

Objectives:

1. Students learn the many uses of mined lands after reclamation has been completed.
2. Students learn the importance of recycling, and the difference between manufacturing with recycled materials and newly extracted materials.

Each activity is designed to be completed in 1-2 classroom periods.

Through reclamation projects, modern miners return mined land to a useful or better condition. They replace mine sites with wildlife habitats, recreation areas and other developments. When the land is reclaimed, it's hard to tell the mine site ever existed. Reclamation specialists work with state and federal agencies to plan the projects.

Recycling is another key to better managing our mineral resources. Because of the rising price of gold and silver, it is now economical to go back and re-mine some old mining areas. Miners also reuse many of the solutions used in processing minerals and constantly recycle water used in their operations. All of us, as consumers, can help conserve our mineral resources by recycling and reusing the many mineral products that we use each day.

Background Information:

1. Since minerals are a natural resource, it's important that miners use the land responsibly, and that consumers use mineral products wisely.
2. Reclamation is returning land that has been mined to a useful condition.
3. Recycling is using materials over and over, to reduce waste and the amount of new resources that must be mined.

Activity 1: A Mine is a Terrible Thing To Waste

Materials:

A Mine Is a Terrible Thing to Waste Word Scramble

1. Explain to class that modern miners reclaim mine sites to be many different things. Often they replace topsoil and return an area to the same type habitat that it was previously. Sometimes they use the land for farming, recreation areas, or development.

2. Copy and distribute A Mine I a Terrible Thing to Waste Word Scramble Puzzle and have students complete as a classroom assignment.

Activity 2: Use It Today...Reuse It Tomorrow

Materials:

Use It Today... Reuse It Tomorrow Student Worksheet

Recycling: Use It Today...Reuse It Tomorrow Worksheet

Whether your family drops it off or has it picked up at the curb, many of us are now separating our garbage and recycling it. But sometimes we forget that things we throw away could be reused. Like a piece of paper. Did you write on both sides of it before throwing it away? How about your sandwich? Did you toss out leftover bread crumbs for hungry birds? Make a list of everything you throw away in one day, and then note if it could be recycled or reused. Your garbage might be worth something after all!

Item	Recyclable	Reusable	Mineral?

Item	Recyclable	Reusable	Mineral?
Soda Can	X		X
Paper	X	X	X
Candy Wrapper	X		
1/2 Sandwich		X	

Reclamation and Recycling - Middle

1. Discuss with the class that the average person throws away 3.5 pounds of garbage every day. By recycling and reusing, we can reduce the amount of garbage that goes to the landfills. At the same time, recycling helps us to reduce the amount of new minerals that need to be mined.
2. As a lesson in the importance of recycling, copy and pass out the student log, Use It Today...Reuse It Tomorrow. They should list everything that they throw away until the next time the class meets, and mark if it was recyclable or reusable, and if it was a mineral product.
3. In the next class, go over the student's logs. Could they have recycled or reused some of the things that they threw away? What is the recycling situation where they live and at the school, and does their family separate trash for recycling?

Activity 3: Reclamation

Reclaim your own area of the school. Is there an unsightly area on the playground or schoolyard that could be reclaimed? Maybe it's a hole where a piece of playground equipment used to stand, or barren dirt where grass could grow. Your reclamation project could be as simple as planting grass seeds and putting a fence around the area, or maybe the class could pitch in and plant a tree or some flowers. Just like on real reclamation sites, this task will require some planning. If you are planting, make sure the species is native to the area and that you plant and fertilize it properly.

Reclamation: A Mine Is a Terrible Thing to Waste

That's why modern miners reclaim the land after the mineral deposit has been mined! Reclamation projects transform mined land into many useful purposes.

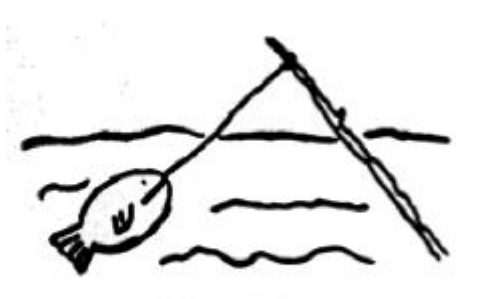
Look at these pictures clues and unscramble the letters to find out what an old mine could be today.



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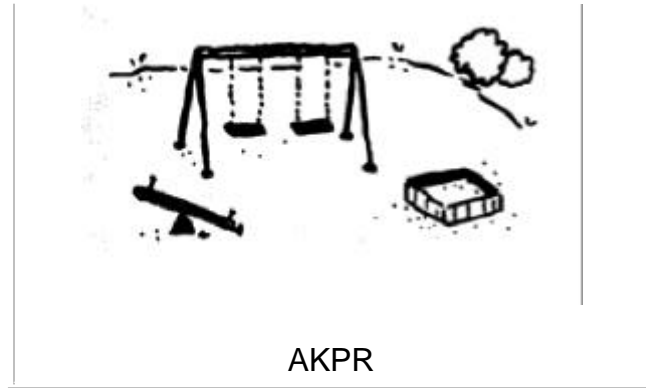


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Reclamation and Recycling - Middle



Answers:

Neighborhood
Wildlife Habitat
Fishing Lake
Golf Course
Park

Provided by Caterpillar, Inc.