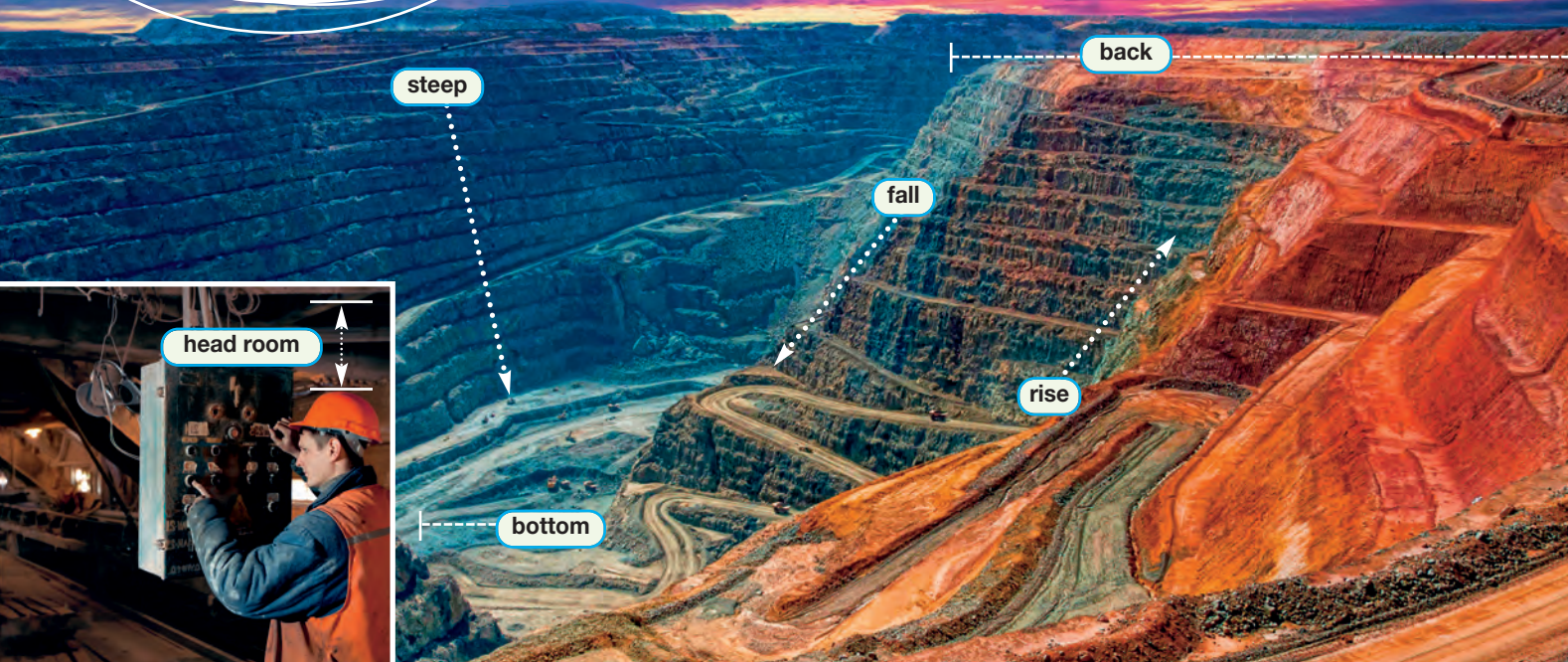


12 Describing Places in a Mine

Get ready!

1 Before you read the passage, talk about these questions.

- 1 Why are directions important in mining?
- 2 What does a foreman need to report?



Date: March 12

South Queens Mine

Foreman Reports

Regina Plumb, Foreman, Section 3

The **breast** is 20 meters farther **inby** today. We are continuing with a 10% **fall**. The **bottom** is at 1,200 feet. Our **underhand** progress is satisfactory. We have plenty of **head room**.

Max Ruiz, Foreman, Section 7

The breast is 25 meters farther inby today. We are continuing with a 5% **rise**. The **back** is at 800 feet. Have significant **overhand** progress. Head room is somewhat limited.

Dan Halloway, Foreman, Section 6

The breast is 5 meters farther inby today. We are doing **outby** work. We want to expand the mine. We need more head room. We also need more workers for the **steep** rock face.

Reading

2 Read the report. Then, choose the correct answers.

- 1 What information is NOT included in the report?
A The progress of different crews.
B The amount of head room in different sections.
C The direction of mining work progress.
D The cost of expanding a mine.
- 2 What is true about Max Ruiz's crew?
A They don't have enough head room.
B They are moving upwards.
C They are working at a surface mine.
D They need more workers.
- 3 What does Dan Halloway report?
A His crew is moving downwards.
B He doesn't have enough workers.
C His team has not made any progress.
D He wants to work in a different section.

Vocabulary

3 Read the sentence pairs. Choose which word or phrase best fits each blank.

1 **inby / outby**

- A Work going away from the mine entrance is _____.
- B Work going toward the mine entrance is _____.

2 **underhand / overhand**

- A Work advancing upward is _____.
- B Work advancing downward is _____.

4 Match the words (1-6) with the definitions (A-F).

- 1 ___ back 4 ___ steep
 2 ___ bottom 5 ___ rise
 3 ___ breast 6 ___ fall

- A having a slope of more than 45 degrees
 B the highest point inside of a mine
 C degree of downward slope
 D degree of upward slope
 E the working face inside of a mine
 F the lowest point inside of a mine

5 Listen and read the report again. How do miners report the upward or downward slope in a mine?

Listening

6 Listen to a conversation between a foreman and a crew member. Mark the following statements as true (T) or false (F).

- 1 ___ The man is a new employee.
 2 ___ The woman works in Section 3.
 3 ___ The speakers will continue outby work.

7 Listen again and complete the conversation.

Foreman: Hi, you must be Corey. This is your 1 _____, right?

Crew Member: That's right. I'm really excited to start.

Foreman: Wonderful. Well, I'm Regina. I'm the foreman in Section 3. You're 2 _____.

Crew Member: Great. So what are we doing today?

Foreman: We're working on 3 _____ the section.

Crew Member: Why is that?

Foreman: The workers need a bit more 4 _____.

Crew Member: What about 5 _____ with the expansion?

Foreman: We'll continue 6 _____ with a 10 percent rise.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

So what are we doing today? / We're working on ...
What about after we finish ...?

Student A: You are a crew member. Talk to Student B about:

- what work you will be doing today
- why the work is necessary
- what work you will do after finishing

Student B: You are a foreman. Answer Student A's questions.

Writing

9 Use the conversation from Task 8 to complete the work progress report.

Work Progress Report

Foreman Name: _____

Description of Progress:

Today, our crew worked in Section _____.

First, we worked on _____.

This work was necessary because _____.

_____.

Afterwards, we _____.

_____.

14 Ventilation and Air Conditioning

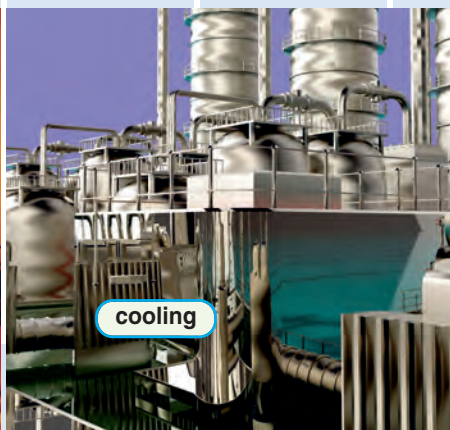
Get ready!

1 Before you read the passage, talk about these questions.

- 1 Why is mine ventilation important?
- 2 What are some processes related to mine ventilation?



heating



cooling



hood enclosure

Air Quality in Redding Mine

Air quality is a very important part of mine safety. At Redding Mine, we use a number of strategies to maintain good air quality.

Gas control helps remove dangerous gases and **exhaust**. We have installed the best **ventilation system** that we could afford. Ventilation systems keep the fresh air in and the dangerous air out. We check the **bleeders** on the **methane drainage** on a monthly basis. In order to move harmful gases out, we use **sprayfans**. These also help with **dust control**. We understand that dust control is also a key part of maintaining good air quality in our mine. Improper dust control can lead to explosions. We use a **hood enclosure** and have a system for **rock dusting**. We also installed **airway sealant** to prevent exhaust from entering certain areas.

For climate control, we have **heating**, **cooling**, and **dehumidification** equipment. Though costly, this equipment keeps the mine at a comfortable temperature for workers.

Reading

2 Read the report. Then, mark the following statements as true (T) or false (F).

- 1 ___ The report is mainly about the methods used to maintain good air quality at a mine.
- 2 ___ Sprayfans are used for both gas control and temperature control.
- 3 ___ Climate control equipment is expensive.

Vocabulary

3 Write a word or phrase that is similar in meaning to the underlined part.

- 1 The miner installed devices that direct air for better ventilation.
_ _ r _ _ _ a _ _
- 2 Whenever there is methane, workers need to make sure there are enough systems that dilute and move methane-air mixtures.
_ _ e _ d _ _ s
- 3 It is very important to remove waste gas from a mine so that it does not contaminate the air.
_ _ _ _ _ u _ _
- 4 Miners have to use proper methods of removing rock dust.
_ o _ _ _ _ _ i _ _
- 5 To take moisture out of the air, miners need a machine for making the air less humid.
_ e _ _ m _ _ i _ _ _ _ _ i _ _

4 Fill in the blanks with the correct words or phrases from the word bank.

Word BANK

hood enclosure methane drainage dust control
ventilation systems

- Workers have to empty the dust in the _____ often.
- Mines need to have working _____ to ensure high air quality.
- Whenever there is methane, mines need to have a working _____.
- Miners need to safely manage _____ when working with rock particles.

5 Listen and read the report again. How can a mining company make sure that air in a mine is safe?

Listening

6 Listen to a conversation between a shift manager and a miner. Then, mark the following statements as true (T) or false (F).

- ___ The mine will be closed for two days.
- ___ The closure is due to the breakdown of dust control equipment.
- ___ The mining company is updating their hood enclosures.

7 Listen again and complete the conversation.

Miner: See you tomorrow, Greg!

Shift Manager: Nope, not tomorrow. The mine's 1 _____ tomorrow, remember?

Miner: Oh, right. I completely forgot. Is it just tomorrow?

Shift Manager: No, it's also going to be 2 _____ Friday.

Miner: Okay. 3 _____ the closure, anyway?

Shift Manager: The company's 4 _____.

Miner: Really? What kind of updates are they making?

Shift Manager: They're installing new equipment 5 _____ . They're worried about 6 _____ .

Miner: I see. So ... is that it?

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

What's behind the ...?
What kind of updates ...?
They are trying out ...

Student A: You are a shift manager. Talk to Student B about:

- why the mine will be closed
- new methods
- new equipment

Student B: You are a miner. Answer Student A's questions.

Writing

9 Use the conversation from Task 8 to fill out the memo.

MEMO

To: All employees

From: _____

Subject: Mine Closure

I would like to remind everyone that the mine will be closed on Thursday and Friday. The purpose of the closure is to _____.

The updates include _____.

_____.

Additionally, the company will also be installing new equipment, like _____.

_____.

Please contact your shift manager if you have any questions about the closure.

Glossary

- regulatory bodies** [N-COUNT-U11] **Regulatory bodies** are government agencies that make and enforce rules.
- remediation** [N-UNCOUNT-U11] **Remediation** is the process of removing contaminants from waste ponds.
- rescue pod** [N-COUNT-U14] A **rescue pod** is a protected compartment in which people can be safely moved.
- rescue team** [N-COUNT-U14] A **rescue team** is a group of people who save disaster victims.
- respiratory diseases** [N-COUNT-U12] **Respiratory diseases** are diseases that affect the lungs, throat, and respiratory system.
- restore** [V-T-U11] To **restore** something is to return it to its original condition.
- revegetating** [N-COUNT-U11] **Revegetating** is the process of planting vegetation in an area.
- revolve** [V-IT-U4] To **revolve** is to move in a circular path.
- roasting** [V-T-U9] **Roasting** is a process of pyrometallurgy that purifies metals using reactions between solids and gases.
- robotics** [N-UNCOUNT-U15] **Robotics** is the field of science that deals with robots.
- rock fall** [N-COUNT-U13] A **rock fall** is an occurrence in which rocks suddenly fall from a vertical or inclined surface.
- rod mill** [N-COUNT-U4] A **rod mill** is a type of grinder that uses rods to grind materials.
- roof fall** [N-COUNT-U13] A **roof fall** is the cave-in of the mine roof.
- rotating trammels** [N-COUNT-U5] **Rotating trammels** are a series of circular screens that rotate, causing small particles to fall through the holes, while pushing larger particles down the line.
- route** [V-T-U4] To **route** material is to send it on a certain course.
- runoff** [N-UNCOUNT-U10] **Runoff** is the flow of excess water over land.
- run-of-mine ore** [N-UNCOUNT-U1] **Run-of-mine ore** is ore that is delivered from the mine to the processing mill.
- screen** [N-COUNT-U6] A **screen** is a woven grid with small openings in the surface that allows select substances to pass through them.
- seal** [V-T-U11] To **seal** something is to close it so that nothing can pass through.
- secondary crushing** [V-IT-U3] **Secondary crushing** is the process of crushing rock that has already gone through primary crushers.
- sedimentation** [N-UNCOUNT-U8] **Sedimentation** is a water treatment process that settles solids out of the water with gravity.
- semi-autogenous grinding** [N-UNCOUNT-U4] **Semi-autogenous grinding** is a grinding method that is similar to autogenous grinding but also uses grinding balls.
- separation** [N-UNCOUNT-U1] **Separation** is the act of removing the waste from ore so that only the valuable materials remain.
- seven days a week** [EXPRESSION-U2] If something occurs **seven days a week**, it happens every day of the week.
- shaking table** [N-COUNT-U7] A **shaking table** is a device that concentrates medium sized particles on a sloped surface.
- shock wave** [N-COUNT-U13] A **shock wave** is a sudden wave of energy that often occurs after an earthquake.
- short head crusher** [N-COUNT-U3] A **short head crusher** is a type of cone crusher that is typically used to finely crush materials.
- silicosis** [N-UNCOUNT-U12] **Silicosis** is a respiratory disease that people get from inhaling crystalline silica dust.
- siltation** [N-UNCOUNT-U10] **Siltation** is the pollution of water with silt or clay.
- sinkhole** [N-COUNT-U10] A **sinkhole** is a hole in the earth's surface that usually results from lack of underground support.
- size of liberation** [N-UNCOUNT-U4] The **size of liberation** is the largest size the rock can be before separating out the minerals.