

**CAREER  
PATHS**

# Petroleum I

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Express Publishing



# Petroleum I

Book  
**1**

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**Express Publishing**

## Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Jobs in the Oil Industry 1	An occupational manual	accountant, engineer, geochemist, geologist, geophysicist, hydrologist, landman, lawyer, marketing executive, salesperson	Introducing yourself
2	Jobs in the Oil Industry 2	Job advertisement	derrick man (derrick monkey), diver, driller, gauger, medic, production foreman, pumper, rig manager (toolpusher), rig welder, roughneck, roustabout	Asking for information
3	In the Company	“Who We Are” webpage for an oil company	barrel, distribution, downstream, explore, extract, offshore, oil field, onshore, operations, pipeline, platform, producer, proven reserves, recover, transportation, upstream	Clarifying information
4	In the Oil Field	Rig worker trade magazine article	catline, catwalk, doghouse, fish, fishing, flare, hand, joint, knowledge box, pill, possum belly, wildcat	Asking for help
5	Work Locations	Memo to employees	arctic, coast, desert, island, jungle, polar, prairie, region, relocation, remote, tropical, tundra	Expressing interest
6	Weather Conditions	A manual for rig workers	arid, blizzard, evacuate, extreme, gale-force wind, hail, humid, hurricane, lightning, monsoon, precaution, rain, sandstorm, snow, thunderstorm, tornado	Asking for an opinion
7	Working Conditions	Recruitment pamphlet for an oil company	arduous, facility, harsh, hazardous, hours on/hours off, manual labor, on leave, perk, salary, shift work, skills	Seeking additional information
8	Actions	Job advertisement	assemble, bail, bolt, cap, clear, climb, derrick, dig, erect, inspect, locate, plug, provide, repair, screw, supply, tighten	Confirming information
9	Basic Tools	Catalog page for a tool company	chainsaw, chisel, drill, drill bit, file, grinder, hacksaw, hammer, pipe wrench, pliers, saw, screwdriver, spanner, vice, welder	Asking for something
10	Specialized Tools	Webpage for a tool manufacturer	bumper sub, drilling jar, fishing jar, fluid bailer, gas buster, hydraulic, intensifier, mechanical, overshot, packer, pig, swage, tongs	Describing an object
11	Numbers	Memo regarding production costs	add, and, comes to, equals, estimate, hundred, is, less, minus, multiplied by, plus, subtract, times	Estimating
12	Geometry	Course description	circle, cube, cylinder, diagonal, height, hexagon, horizontal, length, octagon, rectangle, sphere, square, surface area, triangle, vertical, volume, width	Expressing confusion
13	Measurements	Article on using measurements	acre, centimeter, cubic inch, cubic meters, depth, feet, gallon, hectare, inch, kilometers, liter, meters, miles, millimeter, pint, quart, thickness, yard	Agreeing
14	Measuring Tools	Webpage for a company that sells tools	bellows, bourdon tube, caliper, differential pressure bellows, helical bourdon tube, inventory, level, measuring tape, rotameter, ruler	Disagreeing
15	Safety Equipment	Worker safety poster	chemical, coverall, ear plug, face shield, fumes, gloves, hard hat, high visibility jacket, require, respirator mask, steel-toe boot	Reminding

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## Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Parts of a Drilling Rig	Company webpage	bit, blowout preventer, crown block, derrick, drill collar, drill pipe, drill string, engine, hook, kelly, mud hose, mud pump, rotary table, sump pit, swivel, traveling block	Talking about cost
2	Types of Offshore Rigs	Company brochure	barge-type, depth, fixed platform, jack-up rig, moon pool, permanent, raise, semi-submersible, shallow, steel cable, suitable, tension-leg rig	Making a suggestion
3	Parts of an Offshore Rig	Company newsletter	accommodation module, ballast tank, barge, drilling pipe deck, flare stack, heli-deck, hull, jacket, piles, pontoon, service crane, store area	Expressing surprise
4	Rig Power Systems	Advertisement for a rig power system	air-purging system, console, converter, current, DC bus, eddy current brake system, fuse, induction motor, switchboard, top drive, torque, transformer, ventilator fan, voltage	Trouble-shooting
5	Rig Rotary Systems	Textbook page on rotary systems	bearings, bottomhole assembly (BHA), cement casing, innermost string, kelly bushing, master bushing, riser, stabilizer, stand, sub, threaded connection, tool joint, tubing pipe, tubular	Giving feedback
6	Rig Circulation System	Excerpt from a rig handbook	additive, annular space, clay, cutting, detergent, emulsion fluid, invert-emulsion system, mud, mud pit, nozzle, rotary hose, shale shaker, spotting fluid, thinner	Asking for information
7	The Modern Drilling Process	Oil company website	break up, circulate, diameter, drill, drilling fluid, generate, lubricate, monitor, onsite, pipe, pressure, pump, wellbore	Describing a process
8	Drilling Problems	Excerpt from a company manual	blowout, corrosion, differential pipe sticking, dogleg, downtime, embrittlement, fatal, kick, lost circulation, shale sloughing, stuck pipe, suspend, wasted	Delivering bad news
9	New Drilling Technology	Article in a trade magazine	benefit, coiled tubing drilling, conventional, decibel, deviation drilling, directional drilling, displace, disruptive, multilateral drilling, slant drilling, slimhole drilling, underbalanced drilling	Making comparisons
10	Well Completion	Advertisement	abandon, case, cased hole completion, completed, completion, dry hole, flow path, openhole, perforation, plug, reservoir, sandscreen, well completion	Scheduling an appointment
11	Well Stimulation	Email about well stimulation	acidizing, frac fluid, frac job, fracturing, mud cake, paraffin, production, production target, radial fracture, reactivate, reopen, sidetrack drilling, well stimulation	Discussing agreement
12	Crude Oil Products	Pamphlet on products	asphalt, crude oil, diesel fuel, distillation, fossil fuel, gasoline, grease, hydrocarbon, jet, kerosene, lubricating oil, naphtha, petroleum, residuals, tar	Interrupting
13	Cleaning Crude Oil	Webpage on refining oil	alteration, blend, catalytic, coking, component, condense, conversion, fractional distillation, refine, refinery, steam cracking, thermal cracking, treat, unification, vapor, visbreaking	Asking for repetition
14	Transporting Oil	Transportation schedule	batch, crude tanker, deadweight, field gathering system, fuel tanker, harbor, oil tanker, pipeline, product tanker, railway, storage tank, terminal, transport	Apologizing
15	At the Gas Station	Business letter	brand, branded station, commercial, company-owner, convenience store, dealer, distributor, end-user, independent, pump, retail, unbranded station	Refusing

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## Scope and Sequence

Unit	Topic	Reading context	Vocabulary	Function
1	Blowouts	Safety leaflet on blowouts	blow up, cap, capping stack, downhole pressure blowout, evacuate, fatality, influx fluid, kill, kill fluid, subsea blowout, surface blowout, underground blowout, well control	Describing an incident
2	Workovers	Work order for a service company	abrasion, bailer, cement squeeze job, corrosion, guy lines, holiday, outrigger, perforate, service company, shut in, sidetracking, split, workover, workover rig	Making a prediction
3	Rig Dismantling	Company newsletter	debris, decommission, detach, dismantle, dispose, mounting, plug, recycle, removal,, salvage, scrap, tow, well abandonment	Giving instructions
4	Automation (Robotics in the Oil Field)	Trade magazine article	adapt, advantage, automation, efficiency, operator, productivity, program (v), remote control, repetitive, robot, technology, unmanned	Describing pros and cons
5	Improved Oil Recovery	Memo on ways to improve oil recovery	carbon dioxide, chemical flood, detergent, enhanced oil recovery (EOR), enhancement, fire flood, injection, miscible gas process, nitrogen, polymer, reservoir drive, streamflood, surfactant, thermal recovery, waterflood	Expressing agreement
6	Finding Oil	Email	accumulation, buoyancy, cap rock, cement, deposit, geological trap, kerogen, maturation, permeability, porosity, reservoir rock, sedimentary rock, source rock	Summarizing
7	Geographical Features	Textbook	basin, coastal plain, continental shelf, continental slope, delta, dune, geographical feature, lagoon, reef, ridge, shoreline, submarine canyon, subsurface oil, trench	Expressing possibility
8	Petroleum Mapping	Course description	contour lines, cross section, foliation, geologic map, gross thickness, isopach map, lineation, map, net thickness, orientation, pay zone, plunge, scale, slope, topographic map, trend	Changing the theme
9	Mud Logging	Advertisement for a mud logging service	assess, cased-hole logging, chromatograph, core, data acquisition system, depth strip, lithology, mud log, mudlogger, openhole logging, plot, rate of penetration (ROP), show zone, zone of interest	Offering assistance
10	Petroleum Traps	Email	angular unconformity, anticline, deform, fault, fold, impenetrable, petroleum trap, pinch-out, saddle, salt dome, stratigraphic trap, structural trap, truncate, uplift	Recommending
11	Contracts	Business letter	adhere , breach of contract, compensation, contract, draw up, expire, lease, lessee, lessor, negotiate, party, remain in force, sue, term	Asking for clarification
12	Finance	Financial report	account, asset, balance sheet, capital, contingency, depreciate, expenditure, expenses, finance, fluctuate, incur, liability, loss, market price, profit, statement	Stating objectives
13	Marketing	Email	advertisement, brand awareness, campaign, customer, feature, image, marketing, media relations, place, press release, price, product, promotion, target group, trade fair	Making suggestions
14	Oil Spills	Advertisement	absorb, biological agent, break down, concentrated, containment, containment tank, dispersant, fertilizer, in situ burning, oil slick, oil spill, run aground, skimming, sorbent, tar ball	Talking about consequences
15	Environmental Impact	Press release for an oil company	adverse, biodiversity, conservation, emissions, environmental impact, flaring, habitat, renewable energy, reputation, side effect, socially responsible, sustainable, waste	Asking for information

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## OIL INDUSTRY JOBS



There are many job opportunities in the oil industry. Oil companies need workers in their offices as well as on rigs. Some of these office jobs require college degrees. **Lawyers** must have a law school degree. **Accountants, landmen** and **marketing executives** need business degrees. A **salesperson** position might also require a degree. However, there are companies that hire salespeople based on experience instead of education.

Businesspeople are not the only college-educated workers employed by oil companies. Scientists and **engineers** also find rewarding careers in the oil industry. **Geologists, geophysicists, geochemists** and **hydrologists** locate oil for oil companies. They work in offices, laboratories and in the oil fields.

## Vocabulary

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

- |                   |                           |
|-------------------|---------------------------|
| 1 ___ geologist   | 4 ___ marketing executive |
| 2 ___ hydrologist | 5 ___ geochemist          |
| 3 ___ accountant  | 6 ___ landman             |

- A a person who studies the chemistry of the Earth  
 B a person who develops advertising for a company  
 C a person who acquires mineral rights to a piece of land for a company  
 D a person who studies water quality and movement.  
 E a person who keeps financial records for a company  
 F a person who studies the Earth's structure and formation

## Get ready!

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

- 1 What are some jobs in the oil business that focus on the business side of the industry?
- 2 What are some jobs that require work out in the field?

## Reading

2 Read the excerpt from the occupational manual. Then mark the following statements as true (T) or false (F).

- 1 \_\_\_ Salespeople need a college degree.
- 2 \_\_\_ Geologists find oil for oil companies.
- 3 \_\_\_ Lawyers are hired based on experience.

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

## Word BANK

lawyer salesperson engineer geophysicist

- 1 The \_\_\_\_\_ made a successful sales pitch.
- 2 The company's \_\_\_\_\_ drew up the contract.
- 3 Amy is studying the forces of the earth so she can become a(n) \_\_\_\_\_.
- 4 The \_\_\_\_\_ figured out the best place to dig the oil well.

- 5 Listen and read the excerpt from the occupational manual again. Where do scientists and engineers in the oil industry work?

## Listening

- 6 Listen to a conversation between two company employees. Choose the correct answers.

- 1 How did the woman get her current job?
- A She made a lot of sales to clients.
  - B She was promoted from her old position.
  - C She worked as an engineer's assistant.
  - D She graduated from a university.
- 2 What is true about the man?
- A He has been with the company a long time.
  - B His first job was as an office assistant.
  - C He earned a degree from a university.
  - D He met the woman the week before.

- 7 Listen again and complete the conversation.

**Salesperson:** Hi — I haven't 1 \_\_\_\_\_ before.  
Are you new here?

**Engineer:** Yes, I just started last week. My name's Evan Aubuchon.

**Salesperson:** 2 \_\_\_\_\_, Evan. I'm Irina Palmer. I work in sales. What do you do?

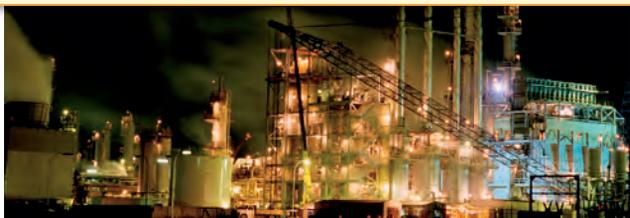
**Engineer:** I'm 3 \_\_\_\_\_.

**Salesperson:** Really? Where did you get your 4 \_\_\_\_\_?

**Engineer:** I went to Purdue University. 5 \_\_\_\_\_?

**Salesperson:** Oh, I didn't go to college. I worked 6 \_\_\_\_\_ . I started as an office assistant.

**Engineer:** That's impressive!



## Speaking

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

### USE LANGUAGE SUCH AS:

*My name's ...*

*I work in ...*

*I started as ...*

**Student A:** You are a company employee. Talk to Student B about:

- when he or she started working for the company
- what he or she does
- where he or she went to college

**Student B:** You are a new company employee. Answer Student A's questions.

## Writing

- 9 Use the conversation from Task 8 to fill out the employee profile.



Blackwell Oil Industries

## Employee Profile

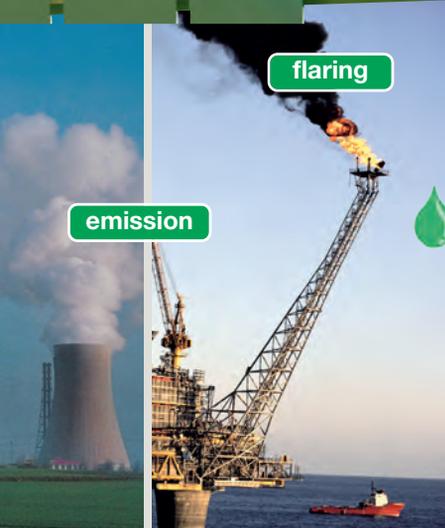
Name: \_\_\_\_\_

Date started work: \_\_\_\_\_

Job: \_\_\_\_\_

College degree: \_\_\_\_\_

\_\_\_\_\_



## TransOil Press Release

### Re: Environmental Impact

TransOil has earned a **reputation** as an oil company that cares about the environment. We have put a lot of effort into reducing our **environmental impact**. We are committed to preventing the **adverse** effects of oil drilling. One way we have cut down on our **emissions** is by stopping the use of **flaring**. Instead of burning off natural gas when we drill for oil, we capture it. This eliminates the harmful **side effect** of air pollution from flaring. The captured natural gas is then sold, instead of being burned off as **waste**.

TransOil also invests in **sustainable** energy. We realize that fossil fuels like oil are in **limited supply**. Therefore, **renewable energy** sources like wind, solar, and water are important for our planet's future. Our energy solutions department is coming up with ways to conserve limited energy sources. It also develops projects to create renewable energy from biomass such as trash and wood.

As a **socially responsible** company, we also support wildlife **conservation**.

TransOil has pledged not to drill in areas valuable for maintaining **biodiversity**. In addition, we donate over four million dollars a year to preserve wildlife **habitats**.



## Get ready!

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

- 1 What type of energy production uses unlimited resources?
- 2 What process on an oil rig causes air pollution?

## Reading

2 Read TransOil's press release. Then choose the correct answers.

- 1 What is the press release mostly about?
  - A the problems caused by flaring
  - B the company's eco-friendly policies
  - C sources of renewable energy
  - D the company's charitable foundation
- 2 Which of the following is NOT mentioned as a measure taken by TransOil?
  - A giving money to be used for wildlife preservation
  - B abandoning the practice of flaring
  - C promising not to drill in areas of biodiversity
  - D using renewable energy at its company headquarters
- 3 What is the energy solutions department doing?
  - A raising money to fund wind farms
  - B capturing and selling natural gas
  - C researching ways to convert biomass into energy
  - D maintaining a wildlife conservation area

## Vocabulary

3 Match the terms (1-8) with the definitions (A-H).

- |                    |                            |
|--------------------|----------------------------|
| 1 ___ adverse      | 5 ___ reputation           |
| 2 ___ biodiversity | 6 ___ socially responsible |
| 3 ___ sustainable  | 7 ___ environmental impact |
| 4 ___ waste        | 8 ___ renewable energy     |

- A how something affects the environment
- B benefiting those around it by reducing its negative impact
- C the opinion people have that something is good or bad
- D the different types of plants and animals living in an area
- E materials left over after something is used
- F having a negative effect on people or things
- G being able to continue for a long time at the same level
- H energy sources that will not run out

**4** Complete the term that is similar in meaning to the underlined part.

- The factory produced a lot of waste gases that polluted the air.  
\_ m \_ \_ s \_ o \_ s
- There is a finite amount of oil on the planet.  
\_ \_ m \_ t \_ d \_ \_ u \_ \_ l \_
- The process of burning off natural gas is one of the less environmentally friendly activities that some companies do.  
\_ l \_ \_ \_ n g
- Preserving areas of land or water helps delicate ecosystems and endangered animals to survive.  
\_ \_ n s \_ \_ v \_ \_ o n
- The unwanted result of burning oil is air pollution.  
\_ v d \_ \_ f \_ e \_ t
- The place where a plant or animal lives was damaged by the wildfire.    h \_ b \_ \_ a \_

**5** Listen and read the press release again. What is the effect of flaring on the environment?

## Listening

**6** Listen to a conversation between a reporter and a CEO. Mark the following statements as true (T) or false (F).

- \_\_\_ Blackwell Oil realized that natural gas could be sold for a profit.
- \_\_\_ The company is running an ad campaign about the benefits of oil.
- \_\_\_ The company does not drill in ecologically sensitive areas.



**7** Listen again and complete the conversation.

**Reporter:** Thank you for 1 \_\_\_\_\_, Ms. Pearson. I know that as CEO of Blackwell Oil you must be very busy.

**CEO:** It's no problem. I really want people to know what we're doing.

**Reporter:** So, tell me ... what made Blackwell Oil decide to reduce its 2 \_\_\_\_\_?

**CEO:** We saw what TransOil did. They stopped using flaring and 3 \_\_\_\_\_ emissions.

**Reporter:** Their 4 \_\_\_\_\_ went up after that, didn't it?

**CEO:** Yes, and they made a profit on the natural gas 5 \_\_\_\_\_!

**Reporter:** So Blackwell Oil has stopped using flaring?

**CEO:** That's right. We cut back on air pollution and stopped wasting a 6 \_\_\_\_\_.

**Reporter:** What else have you done to become more eco-friendly?

**CEO:** We have an ad campaign promoting renewable energy right now.

**Reporter:** I think I've seen some of the commercials. Anything else you'd like our readers to know?

**CEO:** Blackwell Oil also supports the conservation of wildlife areas.

## Speaking

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

**USE LANGUAGE SUCH AS:**

*So tell me ... / What else ...? / It sounds like ...*

**Student A:** You are a reporter. Talk to Student B about:

- Blackwell Oil
- public image
- environmental measures

**Student B:** You are the CEO of an oil company. Talk to Student A about the changes Blackwell Oil has made.

## Writing

**9** Use the conversation from Task 8 to write the reporter's notes. Include Blackwell Oil's motivation for becoming more environmentally friendly, why it stopped the use of flaring, its new ad campaign, and its conservation efforts.

# Glossary

- pliers** [N-PLURAL-U9] **Pliers** are a small metal tool, formed from two pieces of crossed metal, used for gripping small objects or for shaping and cutting wire.
- plug** [V-T-U8] To **plug** something is to close a hole or gap in it.
- plus** [PREP-U11] **Plus** is used to show that one quantity or number is added to another.
- polar** [ADJ-U5] If an area is **polar**, it is either near the North Pole or the South Pole.
- possum belly** [N-COUNT-U4] A **possum belly** is a tank or pit that stores drilling fluid, after it is returned from downhole.
- prairie** [N-COUNT-U5] A **prairie** is a large, flat stretch of land that is covered in grass but does not have trees.
- precaution** [N-COUNT-U6] A **precaution** is a safety measure taken to prevent something bad from happening.
- producer** [N-COUNT-U3] A **producer** of oil is a company that takes oil or gas from the ground.
- production foreman** [N-COUNT-U2] A **production foreman** is a person whose job it is to direct the production activities on an oil rig.
- proven reserves** [N-UNCOUNT-U3] **Proven reserves** are places where it is fairly certain that oil can be produced.
- provide** [V-T-U8] To **provide** is to make something available for use.
- quart** [N-COUNT-U13] A **quart** is a unit for measuring liquid that equals two pints.
- rain** [N-UNCOUNT-U6] **Rain** occurs when drops of water fall from clouds.
- recover** [V-T-U3] To **recover** is to find and take oil or gas from a place.
- rectangle** [N-COUNT-U12] A **rectangle** is a figure with four straight sides, two longer than the other two.
- region** [N-COUNT-U5] A **region** is an area of land that has certain characteristics.
- relocation** [N-UNCOUNT-U5] **Relocation** is the act of moving to a different place.
- remote** [ADJ-U5] If an area is **remote**, it is far away from cities or towns.
- repair** [V-T-U8] To **repair** is to fix something that is not working properly.
- require** [V-T-U15] To **require** is to have to do something due to a law or rule.
- respirator mask** [N-COUNT-U15] A **respirator mask** is a device worn over the nose and mouth, to prevent a person from breathing in dangerous fumes or chemicals.
- rig manager (toolpusher)** [N-COUNT-U2] A **rig manager (toolpusher)** is a person whose job it is to oversee the operations of the entire oil rig.
- rig welder** [N-COUNT-U2] A **rig welder** is a person whose job it is to build or repair metal frames on an oil rig.
- rotameter** [N-COUNT-U14] A **rotameter** is a tool that is used to measure the flow rate of a liquid or gas through a tube.
- roughneck** [N-COUNT-U2] A **roughneck** is a person whose job it is to do manual labor on a drilling rig.
- roustabout** [N-COUNT-U2] A **roustabout** is a person whose job it is to do various duties assigned, such as cleaning, digging, and repairs.
- ruler** [N-COUNT-U14] A **ruler** is an object used to measure straight lines. It consists of a long, flat strip of metal, wood or plastic, which is marked with numbers.
- salary** [N-COUNT-U7] A **salary** is the money someone is paid for doing a job.
- salesperson** [N-COUNT-U1] A **salesperson** is a person whose job it is to sell products or services for a company.
- sandstorm** [N-COUNT-U6] A **sandstorm** is a strong wind that carries sand or dust, usually occurring in desert regions.
- saw** [N-COUNT-U9] A **saw** is a metal tool used for cutting metal or wood. It has a handle and a flat blade, with sharpened teeth on one edge.
- screw** [V-T-U8] To **screw** is to rotate something to tighten a connection.
- screwdriver** [N-COUNT-U9] A **screwdriver** is a tool with a piece of metal extending from a handle. The metal has a blade that is used to turn screws.
- shift work** [N-UNCOUNT-U7] **Shift work** is a type of work schedule that ensures a company's operations run continuously, 24 hours a day.

# Petroleum I

**Career Paths: Petroleum I** is a new educational resource for petroleum industry professionals who want to improve their English communication in a work environment. Incorporating career-specific vocabulary and contexts, each unit offers step-by-step instruction that immerses students in the four key language components: reading, listening, speaking, and writing. **Career Paths: Petroleum I** addresses topics including jobs in the industry, types of oil rigs, petroleum mapping, oil rig mechanical systems, and the drilling process.

The series is organized into three levels of difficulty and offers a minimum of 400 vocabulary terms and phrases. Every unit includes a test of reading comprehension, vocabulary, and listening skills, and leads students through written and oral production.

**Included Features:**

- A variety of realistic reading passages
- Career-specific dialogues
- 45 reading and listening comprehension checks
- Over 400 vocabulary terms and phrases
- Guided speaking and writing exercises
- Complete glossary of terms and phrases

The **Teacher's Guide** contains detailed lesson plans, a full answer key and audio scripts.

The **audio CDs** contain all recorded material.



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