

**ADVANCED  
ENGLISH  
VOCABULARY**

**WORKBOOK 3-A**

**UNITS 1—5**

**Helen Barnard**

**ADVANCED ENGLISH VOCABULARY**  
**WORKBOOK 3-A (Units 1–5)**

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## INTRODUCTION

The students for whom this course is intended fall into three main categories:

- (a) Students in non-English speaking countries proceeding to non-English medium universities, who need the non-technical vocabulary which will enable them to read English textbooks and other material on their professional subjects (i.e. the physical sciences, mathematics, technology, and the social sciences\*).
- (b) Students in non-English speaking countries preparing to take professional courses at English-medium universities at home or abroad.
- (c) Students of overseas origin in English speaking countries taking courses in English preparatory to entering universities or institutions in their host countries.

The students for whom the course was originally produced, and who for four years served as an experimental group for the development and revision of the course material, belong to the third category. They were Colombo Plan students from various countries taking a three months' intensive English course at the English Language Institute in Wellington, preparatory to entering New Zealand universities and technical colleges. Some of the course material has also been used by groups of students in the Wellington Polytechnic, Canterbury University (Christchurch), the University of the South Pacific (Suva), and by a group of Peace Corps teachers assigned to teach the English needed for science and mathematics in Fijian schools.

The needs of the three groups of learners listed above identify the purpose of the course. Its purpose is to teach the vocabulary which will enable these students to read English books and periodicals on their subjects and understand what they hear in lectures and seminars where English is used. It aims to teach this vocabulary not merely by introducing it into the course material but by explaining it and making the students thoroughly familiar with it.

The course consists of seven workbooks (each divided into sections) which can be covered in three months of intensive study, or spread out over a longer period. The workbooks are mainly self-instructional. A self-instructional course is essential for isolated students, and the workbooks are equally useful for pre-university

classes. Individual learning activities for large classes can only be provided by workbooks, in the absence of expensive equipment. Even in a situation where classes are smaller it has been found that a 'do-it-yourself' system produces better results, since it enables students to define their own objectives, programs a sequence through which they can attain them, and establishes the students as the navigators of their own progress.

### The Basis of the Course

The course is based on a two thousand word vocabulary called the 'second thousand' and 'third thousand' word lists. A 'first thousand' word list of 1,000 content words, together with about 275 structural words and phrases, is assumed to be known in advance. The complete list will be published in the book *3,500 Word English* (Newbury House). Words taught in each book are indexed at the back.

The first thousand word list takes into account the results of a previous study (especially M. West's 'Minimum Adequate' and 'General Service' lists, Basic English, Riewald's lists, and H. Bongers' K list). The usefulness of each item was also checked, over a period of four years, by observation of overseas teachers at the English Language Institute (Wellington) who used the vocabulary for paraphrasing, speech-making, teaching and defining words not in the vocabulary.

The second and third thousand word lists were compiled on the basis of counts of non-technical vocabulary in university science and social science textbooks prescribed in Osmania University, Hyderabad, India, and in Victoria University, Wellington. The glossary of 'The Structure of Technical English' (A. J. Herbert, Longman) was also consulted, and a few high frequency words included from counts of issues of 'The New Scientist' and the Indian 'Statesman'. Technical words were excluded because these words form part of the subject-matter of professional disciplines, and are therefore best taught through these disciplines.

### How to Use the Course

Each of the thirty sections of the course is divided into five subsections; (a) section vocabulary, (b) word study, (c) dictation exercises and dictations, (d) reading passages, (e) a short word-completion test on the section

vocabulary, which can be corrected by the students themselves.

The word study subsections include explanation and definition of words, explanatory diagrams and drawings, programmed learning passages, and exercises on the structure and syntax when words present such problems. Students can complete the word study tasks and exercises either on their own or under the supervision of a teacher. The dictation exercises and dictations require the aid of a speaker of good English or a tape-recorder. When students have worked through the word study and dictation subsections, they will have some familiarity with the section vocabulary. The reading passages can then be read without recourse to a dictionary or any other aid, and therefore offer the experience of an achievement. If the reading passages are studied in class they can be used as a basis for oral or written exercises and tests. Samples of such exercises and tests are given at the end of the first workbook. Finally, a short word-completion test (e) will help students to assess their familiarity with the vocabulary of the section.

Vocabulary is taught in the workbooks by cumulative techniques, i.e. by explanation followed by planned *repetition* of the words in a variety of typical contexts. The main condition for the attainment of the objectives of the course is therefore the careful completion of *all* the tasks and exercises it contains.

\*For present purposes, 'the social sciences' include economics, political science, anthropology, sociology, psychology, and geography.

## The Teacher's Guide to ADVANCED ENGLISH VOCABULARY

A complimentary copy of the Teacher's Guide will be sent upon receipt of an order for five or more copies of a workbook.

## INSTRUCTIONS FOR THE STUDENTS

1. You learn the words in this course by reading them and hearing them and saying them again and again in natural situations and contexts. So you should do *every part* of the course carefully. *Do not leave out anything*. Follow all instructions carefully.
2. When you study the items in Word Study you will see blank spaces, but read each sentence softly to yourself, *including* the missing words. The blank spaces should be filled in by your mind's eye, but not with pen or pencil. The reason for this is that as soon as you *write* the words, you have lost your chance of revising this part of the work.
3. After you have gone through the Word Study items once, turn to the vocabulary list at the beginning of the unit. Read through the list and put a mark (✓) against the words you are sure that you know. If you do not feel sure about any word, turn back to the Word Study pages and study that word again. The reading passages and the little test at the end of the unit will also show you that there are some words you need to review (i.e. study again).
4. Notice that for the Dictation Exercises and Dictations you will need the tapes that are provided with this course *or* the help of someone who can speak English well.
5. You will find that you can read the Reading Passages without much difficulty, because you will be familiar with the vocabulary they contain. Try to understand the ideas and information in each passage. After reading a passage three or four times, write the *title* of the passage on a piece of paper\* and shut your book. Then try to write one or two paragraphs on the same topic (=subject), using ideas and sentences that you remember from your reading.

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### ALPHABETICAL INDEX

## UNIT 1

## 1.1 VOCABULARY

These are the words you will practice in this unit:

## VERBS

affect	(af-fect')	(+ noun)
bore (e.g., a hole)		(+ noun)
engage in	(en-gage')	(+ noun)
extract (from)	(ex-tract')	(+ noun)
hide, hid, hidden	(hid'-den)	(+ noun)
keep pace with		(+ noun)
locate	(loc'-ate)	(+ noun)
located in or on (a place)	(loc-at'-ed)	
manage	(man'-age)	(+ noun)
manage to	(man'-age)	(+ verb)
*purchase	(pur'-chase)	(+ noun)
recover (get back)	(re-cov'-er)	(+ noun)
*refine	(re-fine')	(+ noun)
remain (= be left over)	(re-main')	
rust		
suit		(+ noun)
survey	(sur-vey')	(+ noun)
weave		(+ noun)
wove		(+ noun)
woven	(wov'-en)	(+ noun)
yield		(+ noun)

## NOUNS

abundance of	(a-bund'-ance)	*a navy	(na'-vy)
an alloy	(al'-loy)	(an) ore	
*an article (= a thing)	(art'-i-cle)	output	(out'-put)
(a) capacity (for, to)	(cap-ac'-i-ty)	*a plant (industrial)	
*a citizen	(cit'-i-zen)	a potential	(pot-en'-tial)
*(a) decoration	(de-cor-a'-tion)	a product	(pro'-duct)
diversity	(di-vers'-i-ty)	productivity	(pro-duc-tiv'-i-ty)
*a dividend	(div'-i-dend)	a property	(pro'-per-ty)
(an) extraction	(ex-trac'-tion)	(of a substance)	
a fiber	(fi'-ber)	(a) prospect	(pro'-spect)
*a furnace	(fur'-nace)	a raw material	(mat-er'-i-al)
*a geologist	(ge-o'-log-ist)	(the) remainder	(re-main'-der)
*geology	(ge-o'-log-y)	a reserve	(re-serve')
*a heap		reserves	(re-serves')
inflation	(in-fla'-tion)	the rest	
labor (= work-force)	(la'-bor)	rust	
*labor (= work)	(la'-bor)	(a) sale	
a locality	(loc-al'-i-ty)	a shortage	(short'-age)
a location	(loc-a'-tion)	a survey	(sur'-vey)
machinery	(mach-in'-er-y)	textiles	(tex'-tiles)
*a merchant	(mer'-chant)	*(the) upkeep (of)	(up'-keep)
*a mill		*a venture	(ven'-ture)

## UNIT 1

### 1.1 VOCABULARY

#### ADJECTIVES

abundant	(a·bund'·ant)
*crude	
*decorated	(de·cor·at'·ed)
diverse	(di·verse')
engaged in	(en·gaged' in)
fair	
*geological	(ge·o·log'·i·cal)
intermediate	(in·ter·med'·iate)
*manual	(man'·u·al)
*mental	(ment'·al)
*mercantile	(mer'·can·tile)
overall	(o'·ver·all)
*overseas	(o'·ver·seas)
potential	(pot·en'·tial)
*precious	(pre'·cious)
productive	(pro·duct'·ive)
raw	
reasonable	(rea·son·a·ble)
refined	(re·fined')
rusty	(rust'·y)
textile	(text'·ile)
unfair	(un·fair')
woven	(wov'·en)

#### ADVERBS

fairly	(fair'·ly)
*overseas	(o·ver·seas')
potentially	(pot·en'·tial·ly)
reasonably	(rea·son·a·bly)
unfairly	(un·fair'·ly)

#### PHRASES

at least	
in abundance	(a·bund'·ance)
in reserve	(re·serve')
*in behalf of	(be·half')
for sale	
on sale	

\*Words marked with an asterisk are explained in footnotes, exercises, or reading passages.



## Unit I

## 1.2 WORD STUDY

**INSTRUCTIONS:** Study the following words and the uses of them:

**affect**

Notice the spelling of this verb!

One thing *affects* another when it has an effect on it. A person's actions, attitudes, etc., affect another person when they have an effect on him or her.

*Examples:* The disease has only aff\_\_\_\_ed the right side of his body. Some substances, for example silver, are a\_\_\_\_ted by light. The changes in taxation will not a\_\_\_\_t me personally. The range of sounds which a\_\_\_\_t the human eardrum is quite limited. The points you have raised do not a\_\_\_\_t my argument. Remember that your decision will a\_\_\_\_t a large number of people.

Exercise on **AFFECT, AFFECTS, AFFECTED**

Put one of these words into each of the sentences given below to complete its meaning.

1. Most organisms are by sudden changes in their environment.  
\_\_\_\_\_
2. These incidents will the progress of the peace talks.  
\_\_\_\_\_
3. The human body is by sudden changes in acceleration.  
\_\_\_\_\_
4. The reorganization of the business will not your salary.  
\_\_\_\_\_
5. The hot damp climate the health of many Americans.  
\_\_\_\_\_
6. These criticisms do not essentially his theory.  
\_\_\_\_\_
7. It is hoped that the change of management will not working conditions.  
\_\_\_\_\_
8. He was not by their suffering.  
\_\_\_\_\_
9. The President said his government's policy would not be by external pressures.  
\_\_\_\_\_
10. His hostile attitude the atmosphere of the meeting.  
\_\_\_\_\_

**hide**  
**hid**  
**hidden**

To *hide* something is to put it in a place where you hope people will not see it or find it; or to prevent something from being seen, found or known.

*Examples:* When Tom goes out he h\_\_\_\_s his key near the front door. He usually h\_\_\_\_s it under the mat. Yesterday he *hid* it under the mat, but when he came home it was missing. Someone had discovered his *hiding place*.

## UNIT 1

### 1.2 WORD STUDY

She was unable to h\_\_\_\_\_ her feelings. He did not attempt to h\_\_\_\_\_ his displeasure. He h\_\_\_\_\_ his intentions from his family. The moon was completely *hidden* in the clouds. If the future were completely h\_\_\_\_\_n from us, it would be impossible to plan or organize anything.

#### suit

(a) A thing *suits* a person when it is suitable for his purpose(s) or way of life, or when it is good for his health, physical or mental.\* In the same sense we can say that something suits his purpose(s) or his health. In a few contexts the subject of the verb "suit" can be a person: in a few contexts the object of this verb can be a group or an institution.

(b) In the second sense of the verb a thing *suits* a person, especially something worn, when it looks nice on him or makes him look nice. In the same sense a thing suits a place or its surroundings when it looks nice there; it suits other things in its surroundings when it looks nice with them because it fits in well with them.

*Examples:* (a) The house they now occupy s\_\_\_\_\_s them very well. We will have the meeting tomorrow; what time will s\_\_\_\_\_ you? I am afraid you will not s\_\_\_\_\_ this school. This post will s\_\_\_\_\_ someone with two or three years' experience in a teaching institution. A smaller car will s\_\_\_\_\_ my purpose better. Life in large communities does not \_\_\_\_\_ everybody. The climate does not really \_\_\_\_\_ his health.

(b) Does this coat \_\_\_\_\_ me? Long hair does not \_\_\_\_\_ long faces. Glasses with large lenses often \_\_\_\_\_ people with big noses. The carpet does not \_\_\_\_\_ the furniture at all. Brightly colored walls or heavily decorated\*\* walls do not \_\_\_\_\_ a small room. The surroundings of the new town hall do not \_\_\_\_\_ it.

#### (a) prospect

(in uncountable uses) = hope or expectation

(in countable uses) = something hoped for or expected, a future development

*Examples:* There seems little p\_\_\_\_\_t of his passing his examination (i.e.,\*\*\* little hope of his passing it). There is now some p\_\_\_\_\_ of a settlement of the dispute. Mining industries in this country have excellent p\_\_\_\_\_. The p\_\_\_\_\_ of large-scale investment in hotels and motels brought him here. The maintenance of our present standard of living does not seem a likely prospect.

#### locate

##### to be located in

##### or on (a place),

##### a location

##### a locality

(a) To *locate* something is to discover its position or show its position or to establish it in a particular place.

(b) *To be located in* (or *on*) a place is to be discovered, shown, or established in (or on) a place or to be situated in (or on) a place. The *location* of a thing is the place where it is discovered, shown, established or situated; or the action of locating it.

(c) A *locality* is a place, district or neighborhood without definite boundaries, especially a place where someone (spoken of in the context) lives or where activities or events (spoken of in the context) occur.

*Examples:* (a) I tried to l\_\_\_\_\_e your house, but I did not have enough information. Sailors l\_\_\_\_\_e their position at sea with the help of charts and accurate chronometers. This map l\_\_\_\_\_s the most important bus stops. It is important to l\_\_\_\_\_ industries in areas where a supply of labor is available.

---

\*mental = of the mind

\*\*decorated: We decorate a room, a wall, a book cover, etc., when we add something to it to make it prettier or more beautiful, especially something which has a pattern.

\*\*\*i.e. = that is

## 1.2 WORD STUDY

(b) After several days of searching, the missing plane was l\_\_\_\_\_ed in the Pacific Ocean ten miles north of Fiji. The new school is l\_\_\_\_\_ed in a very inconvenient place. The United States is l\_\_\_\_\_ed on the North American continent. The town is l\_\_\_\_\_d at the junction of two important highways. This map shows the l\_\_\_\_\_n of the property I intend to buy. L\_\_\_\_\_n of the island will be impossible without more detailed information.

(c) There have been several thefts in this l\_\_\_\_\_ty recently. People living in the l\_\_\_\_\_ty complain of traffic noises which disturb them at night. The climate of a particular l\_\_\_\_\_ty depends on its altitude and protection from winds as well as on its latitude.

a product

textile

textiles

(usually plural)

machinery

labor (= work force)

(a) raw material  
(often plural)

output

raw

refined

yield (= produce)

a reserve

(often plural)

reserves

in reserve

(a) shortage

The *products* of an industry or of a factory are the things which it produces. The products of the carpet industry are c\_\_\_\_ts. The p\_\_\_\_\_t of the cotton industry is cotton. The pr\_\_\_\_s of the *textile* industry are *textiles*. The wool textile industry is one branch of the t\_\_\_\_\_e industry. The wool t\_\_\_\_\_le industry produces woollen cloth. The cotton t\_\_\_\_\_le industry produces c\_\_\_\_\_n c\_\_\_\_th. The silk t\_\_\_\_\_le industry p\_\_\_\_\_ces silk, i.e., cloth made of silk.

The p\_\_\_\_\_t of the cotton textile industry is c\_\_\_\_\_ cl\_\_\_\_. The p\_\_\_\_\_t of the wool textile industry is woollen cl\_\_\_\_. The p\_\_\_\_\_t of the silk textile industry is s\_\_\_\_\_.

A factory which produces woollen cloth uses *machinery* to produce it. In industrialized countries cloth is not made by hand. It is made by m\_\_\_\_ry. (Machinery is a collective word for machines). But a factory producing woollen cloth requires workers to operate the machinery. It requires *labor*. (Labor is a collective word for workers.) So a factory producing woollen cloth must possess the necessary m\_\_\_\_ry and it must also employ l\_\_\_\_r. When a man wants to start a factory, he must establish it in an area where there is an adequate supply of l\_\_\_\_r. New factories are usually l\_\_\_\_\_ted in areas where supplies of l\_\_\_\_r are available.

For the production of woollen cloth l\_\_\_\_r is required and m\_\_\_\_ry is required. But something else is also required. Woollen cloth is not made out of nothing. It is made out of w\_\_\_\_. Who made the wool? Nobody made it. W\_\_\_\_ comes from sheep. It is *a raw material*. Raw materials are substances which are used in industry but found in nature. A r\_\_ m\_\_\_\_l is either a mineral, or part of an animal, or part of a plant, or it may be a gas like oxygen. The r\_\_ m\_\_\_\_l from which woollen cloth is made is part of an \_\_\_\_\_. The r\_\_ m\_\_\_\_l from which our knives and forks are made is a m\_\_\_\_l.

An industry, therefore, depends on three things. These three things are l\_\_\_\_r, m\_\_\_\_ry and r\_\_ m\_\_\_\_ls.

The quantity of goods produced by a factory in a given period is called its *output*. The average quantity of grain produced by a farm in a year is its average annual output of grain. The quantity of oil produced by a country in a particular year is its o\_\_\_\_\_t of oil in that year. In 1966 Nigeria's o\_\_\_\_\_t of oil was 2,500,000 metric tons. In the year 1964-5 Russia's o\_\_\_\_\_t of *raw* sugar was over ten million metric tons. The sugar industry is Cuba's major industry. Her o\_\_\_\_\_t of raw sugar in 1964-5 was over six million metric tons, second only to Russia's o\_\_\_\_\_t. Raw sugar must be processed and *refined* (i.e., purified) before we can eat it. The sugar we eat is a p\_\_\_\_\_ct of the sugar refining industry. We enjoy eating r\_\_ fruit, and we often use r\_\_ vegetables in salads (except for a few r\_\_ vegetables such as potatoes and turnips) but we do not usually eat r\_\_ sugar, r\_\_ meat or r\_\_ fish.

Cows *yield* milk. Fruit trees yield fruit. Rubber trees y\_\_\_\_d rubber. Russian sugar farms y\_\_\_\_\_ millions of tons of r\_\_ sugar. Nigerian oil wells \_\_\_\_\_ large quantities of oil.

## 1.2 WORD STUDY

Rice fields \_\_\_\_\_ rice crops. Factories, of course, **produce** things but they do not **yield** anything, because nothing is grown or found as a natural substance in a factory. We say that investments **yield** profits! Perhaps we say this because the money we invest, like nature, creates and gives us something (i.e., the interest or profit) which we did not produce or create ourselves.

A *reserve* of something (e.g.,\* of money, or of a mineral, or of food) is a quantity of that thing which is not used now but which can be used later. *Reserves* of food are quantities of food that are kept for future use. A bank's re\_\_\_\_\_ves are the amounts of gold and other money which are stored in the bank and not used for ordinary purposes. Every bank tries to maintain permanent r\_\_\_\_\_ves; a bank which loses its r\_\_\_\_\_ves is obviously in a very dangerous position. Reserves of minerals in a country are minerals which still lie under the ground or in the rocks but which can be dug out or removed in the future. China has some of the largest coal r\_\_\_\_\_ves in the world. When there is a war between two countries, each country tries to keep certain r\_\_\_\_\_ves of food so that the people will have enough to eat when it becomes difficult to produce or import food. Each country tries to keep a certain amount of food *in reserve*. A good housewife often keeps some cans of food \_\_\_ r\_\_\_\_\_ve so that she can feed unexpected guests.

Nowadays certain minerals are scarce. There is a *shortage* of these minerals. There is, for example, a world sh\_\_\_\_\_age of silver. Many silver mines cannot y\_\_\_\_\_ any more silver. The r\_\_\_\_\_ves of silver will soon be exhausted and substitutes for silver must be found. In some countries there is a s\_\_\_\_\_age of coal, and few existing r\_\_\_\_\_ves of coal. Many coal mines are ex\_\_\_\_\_ed. They do not y\_\_\_\_\_ any more coal. In these countries other sources of power must be found. Because of the s\_\_\_\_\_e of coal in England, atomic power stations have been developed and attempts are also being made to use natural gas as a source of power. There is not a s\_\_\_\_\_e of food in the world as a whole, but food supplies are inefficiently organized and distributed. Many scientists believe that the earth can yield enough food to support at least twice its present population.

**potential**  
**potentially**  
**(a) potential**

A thing is *potential*, or exists *potentially*, when it does not exist now, or is not put to use now, but will come into existence or show itself (or show its power) under suitable conditions, or if the natural process of coming into existence is not prevented. (A) *potential* is (a) power or (a) resource which has not yet been used or developed. In electricity, *potential* is electro-motive force expressed in volts.

*Examples:* Every child is a p\_\_\_\_\_tial artist. Every child is p\_\_\_\_\_lly an artist. In physics p\_\_\_\_\_tial energy is the energy a thing possesses because of its position (e.g., a stone at the top of a hill) not when it is moving. Because of its mineral reserves, the Northern Territory\*\* of Australia has great p\_\_\_\_\_l wealth. Before a company decides to manufacture a new product, the management must investigate the p\_\_\_\_\_l sales of the product. Human beings are p\_\_\_\_\_lly capable of understanding each other, but they do not always know how to use this capacity (i.e., ability; see definition in the next section). Asia's p\_\_\_\_\_l water power is greater than that of the other continents; it is more than twice that of the next largest continent, Africa. Australia has industrial p\_\_\_\_\_l which is almost incalculable. Young people have a \_\_\_\_\_ for learning which, up to now, has been neglected. Currents of high \_\_\_\_\_ should not be made available for domestic purposes.

\*e.g. = for example

\*\*territory = land ruled by the government; see Unit 2.

## 1.2 WORD STUDY

(a) **capacity** (to, for) (second meaning) (usually an uncountable noun)  
**productive**  
**productivity**

The noun *capacity*, in this sense, is related to the adjective *capable* (of). "Capacity" is ability (to do or produce something, to learn, understand, etc.), especially potential ability.

A *productive* undertaking, business, farm, region, etc., is one which produces a good output or a good yield. A productive investment is one which increases production. The **productive capacity** of an undertaking is its capacity to produce. The *productivity* of an undertaking, a factory, an economy, etc., is the fact that it is productive, or the amount that it produces in a given time, or the rate at which goods are produced.

*Examples:* Young people have greater c\_\_\_\_\_ty for remembering things than older people. The pr\_\_\_\_\_tive c\_\_\_\_\_y of a country depends on the level of its technology as well as on its supplies of r\_\_\_ materials and l\_\_\_\_r. John has no c\_\_\_\_\_ for friendship. A man's c\_\_\_\_\_ for work depends on his health as well as on his character. The results of intelligence tests do not always reflect a child's real in\_\_\_\_\_l c\_\_\_\_\_y. Human beings have the c\_\_\_\_\_ to understand each other, but they do not always know how to develop this c\_\_\_\_\_.

An increased use of fertilizer will make the land more p\_\_\_\_\_. Our civilization is distinguished by a high proportion of nonp\_\_\_\_\_e careers and occupations. He is a p\_\_\_\_\_ writer. The p\_\_\_\_\_ity of Japanese industry cannot wholly be accounted for in economic terms. P\_\_\_\_\_y in the aircraft industry has risen rapidly in recent months. Comparative p\_\_\_\_\_y statistics reveal the predominance of countries with a diversified economy. In some regions where irrigation schemes have been introduced, the p\_\_\_\_\_y of the soil is exhausted.

**at least** = this amount and perhaps more

*Examples:* The journey will cost him a l\_\_\_\_\_t ten dollars. A university should possess \_\_\_\_\_t one teacher for every twenty students. If you want to pass your examination, you must work \_\_\_\_\_ two hours a day. At l\_\_\_\_\_ a quarter of the world's population is underfed. \_\_\_\_\_ thirty per cent of the sun's radiation\* which reaches the earth's atmosphere escapes immediately. Steam engines are inefficient because they waste \_\_\_\_\_ half of the power which is used to drive them. The cost of sending a man to the moon amounts to \_\_\_\_\_ 100 million dollars.

**engaged in** (verb participle)  
**engage in**

A man is *engaged in* work, or an activity, or a field of interest, when he takes part in it, or is busy or active in it, or is involved in it. He *engages in* an activity when he takes part in it. (Note: The intransitive verb with a person as subject is less frequent and is used mainly of hostile or semi-hostile activities.)

*Examples:* Ninety per cent of the inhabitants (i.e., ones who live in a city, etc.; see Unit 4.) are en\_\_\_\_\_d in pr\_\_\_\_\_ive work of some kind. The number of persons en\_\_\_\_\_ manual\*\* labor\*\*\* has greatly decreased. My uncle is e\_\_\_\_\_d \_\_\_\_\_ writing a book about the Indian textile industry. The work in which he is at present e\_\_\_\_\_d does not suit him. He is e\_\_\_\_\_d \_\_\_\_\_ a study of ancient civilization.

\*radiation = the act of sending out light, heat or energy; see Unit 2.

\*\*manual = of the hands (e.g., manual labor); working with the hands (e.g., manual worker)

\*\*\*labor = work

## UNIT 1

### 1.2 WORD STUDY

People who e\_\_\_\_\_ in politics tend to be insufficiently affected by the criticisms of those who disagree with them. The students claimed that they did not \_\_\_\_\_ hostilities before they were attacked.

**overall** = including everything; containing all

*Examples:* Though some departments have saved money, o\_\_\_\_\_ll expenditure on paper and office equipment has increased. The o\_\_\_\_\_ measurements of the box are 6" x 4" x 3". Cuba's o\_\_\_\_\_ output of raw sugar in 1964-5 was estimated at more than six million metric tons. The o\_\_\_\_\_ efficiency of the human body as a consumer of fuel and as a working machine is at least three times as great as that of a steam engine. Last year the company's \_\_\_\_\_ profits amounted to six and a half million dollars.

**keep pace with** To *keep pace with* a person or a thing is to go forward at the same rate as that person or that thing, or advance to the same stage as the other person or thing.

*Examples:* I cannot k\_\_\_\_\_ p\_\_\_\_\_ w\_\_\_\_\_ you if you walk so fast.\* A textbook must k\_\_\_\_\_ p\_\_\_\_\_ w\_\_\_\_\_ the latest developments in the subject in which it deals. The planners of transportation systems should try to k\_\_\_\_\_ p\_\_\_\_\_ w\_\_\_\_\_ the growth of the population, but they frequently fail to do this.

**recover** = get back; get back the use of

*Examples:* I lost my camera last week; I informed the police, but they have not r\_\_\_\_\_ed it. He was blind for six years, and then he r\_\_\_\_\_ed his sight. You will r\_\_\_\_\_r your losses if you work hard. Lost time cannot be r\_\_\_\_\_ed. He soon r\_\_\_\_\_d his self-control. Will Britain r\_\_\_\_\_r her leading industrial position?

**manage**  
**manage to**

(a) When a person *manages* a home, or manages an institution such as a school or a hospital, or a place where workers are employed such as a factory, the office of a company, or an airport, he (or she) organizes the work that is done there, makes arrangements and decisions and has the authority to get his (or her) decisions carried out. This person is often called a **manager**, e.g., an airport manager, a factory manager. His (or her) task is the **management** of the place where he (or she) works.

(b) When a man *manages to do* something, he succeeds in doing something which he finds difficult, or which costs him effort, or something in which his success is not expected.

*Examples:* (a) He offered to m\_\_\_\_\_ge my shop while I was away. She m\_\_\_\_\_s her large household most efficiently. The domestic arrangements of the school are m\_\_\_\_\_d by a school committee. The man who m\_\_\_\_\_s the city traffic is called the traffic m\_\_\_\_\_r.

(b) Although she felt angry, she m\_\_\_\_\_d to speak politely. I don't know how she m\_\_\_\_\_s to support eight children without help from her relatives or from anyone else. If you m\_\_\_\_\_ to pass your exams without attending lectures, it will certainly be an achievement. The progress of science is so rapid that few science teachers manage to k\_\_\_\_\_p p\_\_\_\_\_e with important new discoveries and ideas. The police caught the thieves, but did not \_\_\_\_\_ recover the stolen goods. I cannot \_\_\_\_\_ pay your fare unless I borrow some money. Perhaps the government will \_\_\_\_\_ avoid another financial crisis. Though several words were missing, he \_\_\_\_\_ interpret the message.

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\*Note: The verb phrase "keep pace with" can be used about people walking or in abstract contexts like those above. It is **not** used about trains, cars, ships, etc. A **pace** means "a step."

## 1.2 WORD STUDY

- a property** (of a substance, etc.) *A property* is a quality which belongs to a substance (sometimes to a thing) because of the essential nature of that substance; it is therefore a quality (or a way of behaving) which the substance always has and which enables us to recognize it. In chemistry textbooks, the atomic weights and formulas for different chemical substances are listed and their p\_\_\_\_\_ties are also described. We may not be able to identify a substance from a single p\_\_\_\_\_ty (though sometimes this is possible, for example, when a substance has a strong identifying smell), but chemists can usually identify a substance from a group of p\_\_\_\_\_ties. The most important class of p\_\_\_\_\_ties for a chemist is the class of p\_\_\_\_\_s determined by the chemical reactions of a substance, i.e., the way it behaves when brought into contact with other substances. Two of these reactions, burning and solubility in water (i.e., the capacity of the substance to dissolve in water), are familiar to most people.
- diverse** = (a) very different (b) of many different kinds. Often the adjective combines these two senses.  
**diversity** = a wide range of variety  
 (sometimes used with the indefinite article "a") *Examples:* The political systems and religions of Asia are d\_\_\_\_\_se. Size and d\_\_\_\_\_ity, both of physical features and populations, are two distinctive qualities of Asia, nowhere else in the world evidenced on so grand a scale. D\_\_\_\_\_se solutions to the problem of overpopulation have been suggested. Japan is a small country, but her factories manufacture a great d\_\_\_\_\_ty of products. Cultural d\_\_\_\_\_ty is a notable feature of every large Indian town or city.
- abundant** Things or substances are *abundant* when they exist in large quantities, when there is plenty of them.
- abundance of** = plenty of; a quantity that is more than enough  
**in abundance** = in large quantities  
*Examples:* Aluminium is an a\_\_\_\_\_dant metal, but it is not easy to extract (i.e., not easy to separate from the other substances with which it is found mixed; see definition in the next section.). In southern Asia trees of high commercial value are a\_\_\_\_\_ant, but many of the forests where they grow are difficult of access and far removed from major consuming centers. Mineral fuels are unevenly distributed among Asian countries, and although water power resources are a\_\_\_\_\_nt, they are also highly localized and present engineering as well as financial problems that can only be met with difficulty. India possesses a \_\_\_\_\_t deposits of mica and manganese. Sulphur is a \_\_\_\_\_t in Japan and is found elsewhere in Asia in association with volcanic activity.
- There is an a\_\_\_\_\_ce of evidence that children learn better when they identify themselves with the purpose of what they are learning. It is not yet known whether any valuable metal can be found in ab\_\_\_\_\_ on the moon.
- an alloy** The names of metals are not given in the vocabulary lists in these workbooks, but you should try to remember the names of the most important metals, especially **copper, brass, aluminum, tin and lead.** Iron, gold, silver, are probably words which are already familiar to you. **Steel** (you probably know this word too) is *an alloy*. An alloy is a mixture of metals or a mixed metal. Other substances are added to iron to make the stronger, more flexible metal called steel. Brass is also an a\_\_\_\_y. It is made by mixing copper and zinc. Zinc is a bluish-white metal which has two useful properties. The first is its hardness. On account of this pr\_\_\_\_\_ty, zinc is mixed with copper (a soft metal) to form the a\_\_\_\_y, brass. The other useful pr\_\_\_\_\_ty of zinc is that it is resistant to *rust*, and it is often used to coat other metals and protect them from rust. What is rust? If you allow an iron vessel to become wet and then leave it in a cupboard for a few days, you will find it
- rust** (uncountable)  
**a survey**  
**survey**  
**bore** (e.g., a hole)  
**extract** (from)  
**extraction** (usually uncountable)



## 1.2 WORD STUDY

(an) ore

covered with r\_\_t. Rust is the reddish-brown coating formed on iron and some other metals by the action of water and air. Students of chemistry will know that r\_\_t consists mainly of hydrated ferric oxide ( $\text{Fe}_2\text{O}_3 \times \text{H}_2\text{O}$ ).

Today there is a sh\_\_\_\_\_ge of many metals, partly because of the rapid increase in the world's population and partly because modern civilization uses metals for a great di\_\_\_\_\_ty of purposes. Known re\_\_\_\_\_ves of certain metals are almost exhausted. Another reason why there is a sh\_\_\_\_\_e of metals is that enormous quantities of metal are wasted every year. In America you can see large hills consisting of cars which have been thrown away. The metal is covered with r\_\_t. One way of avoiding waste is to coat metals like iron with material which resists r\_\_t. Another is to re\_\_ver the metal which has been thrown away and utilize it. Another is to stop listening to the mad voice of fashion and ambition which tells us that we must have a new car every year.

Governments organize *surveys* and geologists\* make surveys of areas thought to contain deposits of oil, coal, or other valuable minerals. Geologists *survey* these areas; in other words they investigate them to discover the presence or absence of such minerals, and make maps of the areas, showing where the mi\_\_\_\_\_ls (if there are any) are located.

Surveys are not made only by ge\_\_\_\_\_sts. Geographers s\_\_\_\_\_y regions in order to make physical or political maps of them. Civil engineers, employed by central or municipal authorities, make s\_\_\_\_\_ of land intended for industrial development or housing.

With the help of *geological* s\_\_\_\_\_ys, de\_\_\_\_\_ts of oil (i.e., petroleum) have been discovered in many countries. New oil fields are being developed in Arabia and Russia. There is oil, too, in certain inacc\_\_\_\_\_le regions which have not yet been completely s\_\_\_\_\_yed. The area around the North Pole shows signs of ab\_\_\_\_\_t oil deposits, and this area is still being s\_\_\_\_\_yed, though it would be difficult to transport oil from the North Pole. There is also thought to be oil in Abyssinia, but the difficulty there is also one of transportation. A long pipeline to the coast would have to be constructed. Nowadays it is often more difficult to transport oil from new oil fields than to *bore* oil wells and *extract* the oil. The p\_\_\_\_\_nce of oil (or any other mineral) in a particular area does not always mean that it will be p\_\_\_\_\_ble to remove it from that area.

When engineers bore wells or holes they use drills to make deep holes in the earth. Petroleum engineers b\_\_\_\_\_ wells to extract oil. Coal-mining engineers b\_\_\_\_\_ holes or mine the earth (dig deeply into the earth) to ex\_\_\_\_\_t coal. A dentist ex\_\_\_\_\_s a tooth by pulling it out. A coal miner e\_\_\_\_\_s coal by digging it out.

When we extract things we remove them from the substances in which we find them, by a process which involves special work. The verb "extract" is derived from two Latin words, *ex* = from and *trahere* = pull or draw. To "extract" therefore means "to pull or draw (something) out." The *extraction* of a tooth is sometimes a painful operation. The extraction of oil is an operation requiring technological skill and knowledge.

A great deal of oil has already been ex\_\_\_\_\_ed *from* the earth, and not much more remains to be e\_\_\_\_\_ed. In 1944 it was estimated that the total known re\_\_\_\_\_ves of oil, in places where it can be e\_\_\_\_\_ed and transported at reasonable cost, amounted approximately to fifty-one thousand million barrels.\*\* In 1943 the total world production

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\*A **geologist** = a scientist who studies the structure of the earth and the substances of which the earth consists. His science is *geology*.

\*\*A **barrel** = a large cylindrical container and also a unit of oil capacity



## 1.2 WORD STUDY

of oil was over 2,000 million barrels. If these estimates are correct, it is obvious that the world will face a sh\_\_\_\_ge of oil in a few years. The position is serious. However, sources of natural gas have been found in the Atlantic, the Pacific and other oceans, and atomic energy is not being developed as a new s\_\_\_\_ce of power.

Mineral or metal *ores* are the rocks (or types of rock or earth) from which minerals or metals can be ex\_\_\_\_ed. It is not always easy to e\_\_\_\_ct metals from their o\_\_\_\_s. Some regions are rich in metal o\_\_\_\_s; others are poorer or have not yet been s\_\_\_\_yed, so that no one knows whether they possess o\_\_\_\_s from which useful or valuable metals can be e\_\_\_\_cted. The ex\_\_\_\_tion of a metal from its \_\_\_\_\_ is sometimes a complicated process. Aluminum is an abu\_\_\_\_nt metal, but it is not easy to ex\_\_\_\_\_ from its o\_\_\_\_\_.

Gold, silver, and platinum are called the *precious* (= of great value) metals. They are very scarce and therefore very valuable. They are so valuable that they are used to measure value. Some p\_\_\_\_\_s stones, especially diamonds, are treated as a store of value, though they are not used as currency because of their unsuitable pr\_\_\_\_\_ies.

**reasonable**  
**reasonably**

When a friend offers to sell you his old car, and asks a *reasonable* payment for it, he asks a price for the car which he has good reason for asking, i.e., not too much or too little, but about the average for this type of car in this condition. When students complain about the hostel food, their complaint is r\_\_\_\_able if they have good reasons for making it, e.g., if the food is of very poor quality or very badly cooked on many occasions. Their complaint might not be r\_\_\_\_able if they had been given a badly cooked meal on only one occasion. Students in a hostel can *reasonably* expect to be given good food most of the time. Teachers in a country which has a high standard of living can r\_\_\_\_ably demand salaries which compare well with salaries received by teachers in other countries with a similar standard of living, but teachers in countries with a low standard of living cannot r\_\_\_\_ably demand such salaries. Things which we can reasonably ask for, demand, expect, require, etc., are things which we can ask for, demand, etc., with good reason. A complaint, criticism, request, etc., is reasonable if we have a good reason for making it under the existing circumstances. A r\_\_\_\_able offer is one which a sensible person would have a good reason for accepting under normal circumstances. A r\_\_\_\_able price for an article\* is one which an average person can be expected to pay.

**intermediate**

= coming between, e.g., between two positions, stages, etc.

*Examples:* This insect begins as an egg and finally becomes a butterfly, but there are several inter\_\_\_\_iate stages. An in\_\_\_\_iate examination is held between matriculation and the degree exam in some universities.

**inflation**

Originally this word meant the act or result of **inflating** something, or causing it to swell. When we blow up a balloon we in\_\_\_\_e it. An in\_\_\_\_ted balloon is an expanded balloon. We also speak of *inflation* in financial and economic contexts. When the supply of money or bank notes is expanded, and there is no corresponding increase in goods or productivity, what will happen to prices? Prices will r\_\_\_\_, because in this situation the value of money decreases. This situation is called inflation. In\_\_\_\_n often leads to an economic crisis. When prices rise, the workers demand more w\_\_\_\_s. When w\_\_\_\_s in\_\_\_\_se, prices go up again. High prices make it difficult to ex\_\_\_\_ goods and obtain overseas\*\* trade,

\*an article = a particular material thing or type of commodity

\*\*overseas (adj. or adv.) = across the sea. Note that overseas is both an adjective and an adverb and can therefore be used in some contexts where abroad cannot be used.