

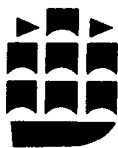
NUCLEUS

ENGLISH FOR SCIENCE AND TECHNOLOGY

NURSING SCIENCE

Teacher's Notes

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Longman

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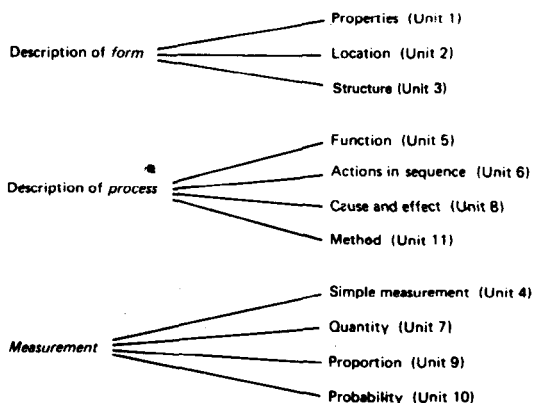
Introduction to the Series

Nucleus introduces the language learner to uses of English which are essential to scientific and technological communication. It is intended for students with some knowledge of general English, who need to reactivate this knowledge and apply it to the comprehension of written and spoken discourse.

The series consists of two parts. The General Science course presents and practises language which is shared by the various branches of science and technology, including semi-technical lexical items like *diameter*, *ratio*, etc., and items of general use such as *consist*, *adjust*, *depend*, etc., together with essential grammatical items such as the passive, sentence connectives, modal verbs, etc. The other books in the series, catering for specific subjects, present these shared items in combination with specialised language uses and in the context of reading and listening passages related to the subjects. In the General Science course the emphasis is on motivating the student and engaging him actively in the use of English. The exercises are set in familiar contexts, drawn from general knowledge and elementary science, and are intended to be both relevant to the learner's field of study and interesting in themselves. With the latter consideration in mind, considerable use is made of activities involving problem-solving and the transfer of information from diagrams to written and spoken texts.

The other books in the series consist of exercises in the comprehension of written and spoken texts about the student's subject. Each unit begins with various productive language activities, supported by diagrams, tables, etc., through which the student is presented with and manipulates the new language items, gaining confidence in their use before going on to handle them in the context of continuous discourse. As with the General Science book, the comprehensive exercises draw on basic concepts and reasoning processes which the student needs to develop in the study of his subject.

The texts and exercises demonstrate ways in which the scientist and technologist describe the phenomena and processes which they are concerned with. Each unit of each book is based on an aspect of the world which the scientist or technologist describes, together with language items associated with it. Together they form three conceptual groups, which are interwoven in the course, for the sake of variety.

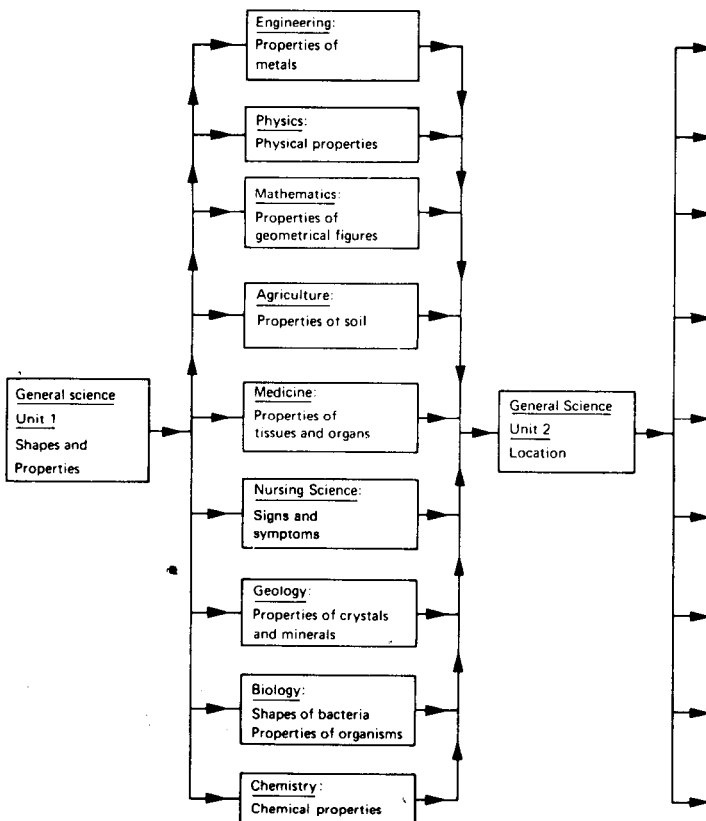


Thus the course is mainly concerned with ways in which the scientist and technologist describes and measures forms and processes in English, these activities being fundamental to the language of all the disciplines. Various other communicative activities occur incidentally, including observation, explanation, conclusion, prediction and proof.

Each book also contains revision materials: Units A, B and C, together with the final consolidation unit. In these the various concepts are shown in combination in continuous reading and listening texts.

The different parts of the series may be used together or separately. The General Science book is suitable for any educational level where the student is about to or beginning to specialise. It can be used on its own, as an introduction to English for specific purposes, or as a lead-in to the books for different specialities. The specific books are, however, designed to stand on their own, in cases where the student has begun to specialise and has little time available.

If the General Science book is used in combination with the specific books, it may either precede them as a whole or be used in parallel with them: all students doing Unit 1 of the General Science course, then dividing into subject-groups for Unit 1 of the specific groups, then going on to Unit 2 of the General Science course, and so on. The chart shows the first stage of such a syllabus, with topics covered in Unit 1 of each specific book.



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Introduction to Nucleus: Nursing Science

1 Content and aims of the Students' Book

The aim of the nursing science course is to give practice in using English both actively and receptively, so that the student learns how to take information from both written and oral texts and from visually presented material such as tables and diagrams.

With the exception of revision units and Unit 12, each unit begins with active language exercises. The language taught is either essential or relevant to nursing, and in particular to the texts which students of nursing study. Although one of the main aims of the course is to help students who are required to read textbooks in English, passages of continuous prose are very short in the first few units of this course, gradually becoming longer, until Unit 12 consists chiefly of two reading passages.

The units are based on material which should be familiar to students from their nursing studies, including various topics from anatomy, physiology, the measurement of drugs, dietetics and nursing care. It is important for the teacher to realise that the book makes no claims to be teaching these subjects, but merely to use them as a suitable vehicle for language instruction.

2 Aims of the Teacher's Notes

The comments on each unit consist of *a*) a brief summary of the aims of that unit; *b*) an outline of the language items taught; *c*) notes on the background and medical content of the texts and exercises; *d*) the listening text (also on cassette) and answers to exercises.

The purpose of the notes (*c*) is to help the teacher see clearly what items of language are being introduced, and their relevance to nursing students. Any special difficulties of language or content are pointed out. It is assumed that the teacher has no special knowledge of the subjects nurses have to study, so any terminology or information specific to the profession is explained.

3 The language content

The language taught in this book is simple in structure, but varied, and includes a heavy load of specialist vocabulary.

The structures lie mainly (but not entirely) within present simple tense usage (active and passive). They are chiefly the structures used in making statements of description of physical form (as in anatomy) or description of a process (in physiology the course of a disease, or a nursing care procedure). Such descriptions may occur on the page, simulating a textbook, or on cassette, simulating the language of formal lectures.

4 The nursing content

One point that should be made here is that anatomy, physiology and the measurement of drugs may be considered as branches of scientific study, and therefore answers to questions on these subjects need to be accurate. Nursing care itself, on the other hand, involves techniques and attitudes to the patient which may vary without necessarily being right or wrong. Dietetics is another area of study where opinions matter as well as facts. For these reasons there are a number of exercises throughout

the course to which there is more than one correct answer, and a list of possibilities or suggested answers is given in the Teacher's Notes. This type of topic is more open to discussion than a more rigidly scientific one, and questions will be found at various points in the course which may be used as the basis of class discussion.

This course never seeks to teach anything but language, and the teacher is likely to find that the students have a far greater knowledge of the background nursing material than he or she has. This in itself can be useful, in that it allows the students to feel that they know something better than their teacher, although he or she knows English better. However, it is useful for the teacher to acquire a certain amount of background knowledge of the subject, in order to be able to talk to the students about matters that concern them professionally. Good contact with a colleague who teaches nursing studies is particularly useful. Being a largely practical and non-academic branch of study, the background to nursing is particularly easy and interesting for the non-professional to pick up.

5 How to use the course

This book is aimed at elementary level students whose main interest in English is as a means of studying nursing. They may, either in their own country or in England, be instructed wholly in English, or may find that they need a reading knowledge of the language because many of the textbooks they have to study have not been translated into their native language.

The time available for English language lessons may mean that this course is used in isolation, or it may be used as one element in a programme which includes other language work.

The primary aim of the course is to help students to acquire enough knowledge of the language to be able to read texts related to their subject, and also, to a lesser extent, to be able to understand the sort of spoken English they might hear in a lecture. These aims do not mean that the student's participation in the course should be passive and receptive only. New language items are introduced with active practice for the student, and on certain topics discussion is both possible and desirable. At such points in the course the teacher may feel that it is necessary to bring in additional drills and exercises, or to make up further examples.

Each unit of the course will need careful preparation for the teacher to see in advance what is needed in the way of extra practice for a particular class, and what visual aids — either real objects or pictures — can usefully be taken into the classroom.

UNIT 1 Properties

Aims

To teach the vocabulary used in making statements about a number of common signs and symptoms of diseases. To classify signs and symptoms. To practise giving and recording information about patients.

Main language items

Statements in the present simple which give information about a patient's condition, e.g. *The patient feels sick. The patient complains of nausea.*

Can/cannot, e.g. *The nurse can observe it.*

Sentence patterns: *The patient is constipated. The patient has constipation.*

Specialist vocabulary: *oedema, cyanosis, etc.*

Notes

It is important for a nurse to know the generally accepted terms which are used in giving information about a patient. This information has to be passed on accurately to doctors and other nursing staff.

Section 1 presents the difference between a sign of disease, which can be observed (i.e. seen, felt or detected by means of an instrument), and a symptom, which cannot, and has to be reported by the patient.

A large number of vocabulary items are introduced, and the first exercise involves classifying them as signs or symptoms. It may be necessary to spend some time on explanations of these terms, but many of them will occur again and again.

Terms like *pulse* can easily be demonstrated, and many others, e.g. *swelling*, can be shown by simple diagrams on the blackboard. However, here (and in many of the following units) the kinds of charts and diagrams found in handbooks of anatomy and physiology may be very useful.

Section 2 gives further practice in using medical vocabulary. The term *complains of* is introduced in Exercise 3. This is used by medical staff to refer to a condition which the patient himself mentions. The nurse is not reporting that the patient suffers from a certain condition, but that he *says* he does.

Exercise 4 practises making statements about a patient's condition, using nouns and adjectives.

Section 3 introduces the idea of writing brief notes on a patient in order to give information to other medical staff. There are no hard and fast rules about this, but some words, e.g. *patient* and *complains of*, are commonly abbreviated. *Refused* and *tolerated* are frequently used terms. The general principle is to give the information as clearly as possible — which involves good handwriting — and at the same time as briefly as possible. Section 4 gives practice in doing this.

Listening text for Section 4

Exercise 6

At 8.30 the patient was sitting in a chair. The nurse noticed that his pulse was strong and regular.

At 8.45 he said that he felt very dizzy, and that he had a headache.

At 8.50 he went to bed.

At 9.00 when the nurse brought him his usual medication, he said 'I don't want to take it because I feel sick.'

After a short time he began to feel better.

At 9.30 he drank some water and he did not vomit.

Answers to exercises

Exercise 1

Examples of signs: haematemesis, pallor, jaundice, cyanosis, laceration, abrasion.

Examples of symptoms: hunger, thirst, dull pain, dizziness, stomachache, anorexia.

Why is cyanosis a sign? Because the nurse can observe it. She can see it.

Why is stomachache a symptom? Because the nurse cannot observe it. The patient tells her about it.

Etc.

Exercise 2

a) dyspnoea b) oedema c) cyanosis d) jaundice e) laceration f) irregular
g) haematemesis h) shallow i) anorexia j) bruising (a bruise)

Exercise 3

- a) The patient complains of thirst.
- b) The patient complains of nausea.
- c) The patient complains of insomnia.
- d) The patient has a rapid pulse.
- e) The patient complains of dizziness.
- f) The patient has dyspnoea.
- g) The patient complains of backache.
- h) The patient has haematemesis.
- i) The patient complains of constipation.
- j) The patient has diarrhoea.

Exercise 4

The patient is constipated, is cyanosed, has a sharp pain, is/feels hungry, has a laceration, is/feels dizzy.

The patient's right upper arm is oedematous.

The patient has an abrasion, has a rapid pulse.

Exercise 5

- a) For other members of the medical staff.
- b) Because it must be easy for other nurses and doctors to read it quickly.
- c) Pt. c/o headache d) Icebag to elbow e) Pt. refused food
- f) Strong regular pulse g) Pt. tolerated water h) Pt. c/o constipation
- i) Pt. cyanosed j) Morning – walking, 15.00 to bed

Exercise 6

<i>Hour</i>	<i>Remark</i>
8.45	C/o dizziness and headache
8.50	To bed
9.00	Refused medication, c/o nausea
9.30	Tolerated water

UNIT 2 Location

Aims

To present and practise expressions which refer to position and location. Expressions used in daily conversational language and specialist anatomical terms of position are covered.

Main language items

Statements about position. Sentence patterns:

The diaphragm is below the heart. The ribs are situated at the sides of the thorax.

Verbs particularly associated with position, used in the passive: *found/located/situated*.

Anatomical terms of position: *superior to, inferior to, etc.*

Notes

In Unit 2 the student continues to practise what was begun in Unit 1 – learning how to give an accurate description of something that concerns a patient's condition. This unit introduces, as well as the anatomical terms of position, a great deal of the more general vocabulary which a nursing student needs in order to study anatomy.

Section 1. Exercises 1 and 2 give practice in using diagrams to get information. Note that *vertebra*, like many anatomical terms, is a Latin word with the plural form *vertebrae*.

Exercise 4 introduces the term *in relation to*.

Section 2 deals with technical terms of position. The concept of the imaginary line called the median plane and anatomical right and left need careful explanation. The median plane is used to give an easy point of reference in diagrams. Anatomical right and left are the real right and left sides of the body, but appear in an illustration on the opposite sides. This can be demonstrated to students by showing how right and left appear on the opposite sides when the teacher faces the class.

Section 3. Exercise 8 gives the expressions of location commonly used by medical staff in referring to one particular part of the body, the abdomen. It also continues the vocabulary work started in Unit 1, by giving terms which are used in describing different kinds of pains.

Exercise 8 involves the student in transferring information from the text to a diagram. As diagrams play a large part in any anatomy textbook, it is hoped that the diagrams in this unit will help to prepare the student to use them.

Section 4 returns to the use of non-technical terms of position, and introduces vocabulary referring to commonly used pieces of medical equipment.

Listening text for Section 4

Exercise 10

A trolley

The trolley has two shelves. The sterile equipment is on the upper shelf, and a container for used instruments is on the lower shelf. A bag for soiled dressings is clipped to the side of the trolley.

A towel covers the upper shelf, and the equipment is placed on it. In the middle there is a large pad, and behind it are some small absorbent dressings. In front of the pad there is a paper towel. On the right there are some forceps and scissors, and on the left there are some cotton wool balls. Next to the cotton wool balls there is a small pot for lotions.

Answers to exercises

Exercise 1

a) between b) in front of c) behind d) at the sides of e) above f) below

Exercise 2

vertebrae, cervical, column, below, lumbar vertebrae, situated/found/located, below, at the bottom

Exercise 3

a) True b) False: the sternum is in front of the heart. c) False: the coccyx is at the bottom of the vertebral column. d) True e) True

Exercise 4

- a) The sternum is located between the clavicles.
- b) The sacrum is situated between the lumbar vertebrae and the coccyx.
- c) The lungs are situated on each side of the heart.
- d) The cervical vertebrae are located at the top of the vertebral column.
- e) The thorax is situated above the abdomen.

Exercise 5

- a) lateral . . . medial
- b) superior . . . inferior
- c) posterior . . . anterior
- d) lateral e) posterior f) superior

Exercise 6

- a) The stomach is inferior to the heart.
- b) The vertebral column is posterior to the lungs.
- c) The outside arm is lateral to the inside arm.
- d) The lumbar vertebrae are inferior to the cervical vertebrae.

Exercise 7

inferior, superior, anterior, posterior, superior, lateral, inferior

Exercise 8

- b) right upper quadrant
- c) right lower quadrant
- d) supra-pubic area
- e) epigastrium
- f) left upper quadrant
- g) left lower quadrant

Exercise 9

- a) Severe pain — epigastrium
- b) Constant pain — right upper quadrant
- c) Slight pain — supra-pubic area
- d) Throbbing pain — left lower quadrant

Exercise 10

- a) bag for soiled dressings b) large pad c) small absorbent dressings d) paper towel e) forceps and scissors f) cotton wool balls g) small pot h) container for used instruments

Exercise 11

- a) upper b) on the right c) in the middle d) some small dressings

UNIT 3 Structure

Aims

To extend the ways of describing human anatomy presented in Unit 2 by introducing the language used in describing its structure.

Main language items.

Verbs associated with structure: *consist of, contain, be fitted into, be used for, be divided into, be attached to, be supported by, be covered by, lead from/to, be called, be made of, be coloured, be composed of, be connected to/by, include*

Statements using these verbs. Some are active, some passive.

Sentence patterns: *It contains a drug solution. The medicine chest is divided into compartments.*

Notes

The vocabulary load represented by these verbs is quite heavy, especially as a number of prepositions are included. Care should be taken to see that the students do not confuse those verbs that are used in an active form with the far greater number which are used in the passive.

Plenty of introductory examples and practice can be given using ordinary classroom objects, e.g. describing the structure of a pen, a chair or a box.

Some of these verbs are rather similar in meaning to others, and, as they are being taught for recognition in a text rather than for production, it is not always worth spending time on establishing a fine distinction. For example, no very important distinction is made here between the use of *consist of* and *be composed of*, although *consist of* has been used more frequently.

However, a definite distinction should be made between *consist of* (which is followed by a complete list of parts) and *include* (which is followed by some examples only). There is also a distinction to be made between *be attached to* (used here to refer to a direct join) and *be connected to/by* (used to refer to two parts being linked by a third).

Section 1 introduces the verbs of structure by giving examples based on pieces of hospital equipment. Thus it can be seen that these are not special terms, but can be used when referring to the structure of any object. Extra examples will need to be brought in here, e.g. a chair, a pen, a book, a shoe, a watch, or anything else found in the classroom. There is a heavy learning load and a lot of practice will probably be necessary.

Exercise 1 asks the student to use a diagram to help get the information needed, but a lot of the work is already done. Although similar, Exercise 3 demands more from the student.

Exercise 2 needs oral preparation in class before any writing is attempted.

Exercise 3 presupposes some knowledge of anatomy, as some of the items – those referring to the eye and the ear – have not previously been mentioned. Again, some anatomical charts or diagrams would be useful.

Sections 3 and 4 introduce no new structural points but bring in new vocabulary used in anatomy.

Listening text for Section 4

Exercise 6

The female reproductive system

The female reproductive system consists of the uterus, the Fallopian tubes, the ovaries and the vagina.

The ovaries are two glands which are located on each side of the uterus. They contain ova. The ovaries are connected to the uterus by the two Fallopian tubes. The uterus consists of two parts, the body and the cervix, or neck. The cervix leads into the vagina, a muscular tube which leads out of the body.

Answers to exercises

Exercise 1

supported by, consists of, covered by, divided into, connected by, attached to

Exercise 2

Example:

The respiratory system consists of the trachea, lungs etc. The lungs contain air. The trachea leads from the larynx to the bronchi. The lungs are divided into sections. These are called lobes. The lungs are coloured pink. They are covered by the pleura. The bronchioles are attached to the bronchi. The lungs are used for breathing.

N.B. *Bronchi* is the plural of *bronchus*.

Exercise 3

a) consists of b) contains c) covered by d) covered by e) connected to
f) contains g) divided into/composed of h) consists of

N.B. If a passive form is to be used, *is* or *are* is already supplied in the exercise.

Exercise 4

- a) The skin consists of two main layers.
- b) The dermis contains blood vessels and nerve endings.
- c) The body is covered by skin.
- d) The epidermis is composed of a superficial layer and an inner layer.
- e) The appendages of the skin include the hair and the nails.
- f) The parts of a hair are called the shaft and the root.

Exercise 5

- a) The vertebral column consists of twenty-four vertebrae, the sacrum and the coccyx.
- b) The skull contains the brain.
- c) All bones are covered by a membrane.
- d) Blood is composed of red and white cells, blood platelets and plasma.
- e) The respiratory system includes the lungs and the trachea.
- f) The bones of the spine are called vertebrae.

Exercise 6

a) Fallopian tubes b) ovary c) cervix d) ova e) uterus (body) f) vagina

Exercise 7

a) False: the female reproductive system consists of the uterus, ovaries, etc. b) True
c) True d) False: the ovaries are connected to the uterus by the Fallopian tubes.

Exercise 8

a) The two parts of the uterus are called the body and the cervix or neck.
b) The vagina is a muscular tube which leads out of the body.
c) The ovaries are connected to the uterus by the Fallopian tubes.

UNIT A Revision

Aims

To revise the linguistic items introduced in Units 1, 2 and 3. To extend the student's knowledge of the vocabulary and situations with which these items can be used.

Notes

Exercises 1 and 2 refer to the thyroid gland. Before doing them, several vocabulary items should be introduced: *be shaped like, bridge, tube, spherical, cylinder, jelly*. If the students are also using *General Science*, shapes such as cylinders and spheres should be familiar, but if *Nursing Science* is being used in isolation, they may need to be taught.

The new vocabulary for Exercise 3 is given in a glossary of terms.

In Exercise 4 there are a number of new vocabulary items which should be introduced before the students read this passage: *hollow, approximately, surround, lubricate, chamber, valve, crescent* and *semi-lunar*. *Atrium* has the Latin plural *atria*. *Hollow* and its opposite *solid* can be described with the use of an empty box and a piece of chalk. *Approximately* can be shown by giving the approximate time, or the approximate number of students in the class. *Lubricate* can best be explained by giving the example of a machine and the need to grease it. The action of a *valve* can be shown by diagrams on the blackboard:



Similarly, diagrams can be used to explain the terms *surrounded by, semi-lunar* and *crescent*. It should be explained that *semi* always means *half*.

Answers to exercises

Exercise 1

a) hyoid bone b) thyro-hyoid membrane c) thyroid cartilage d) cricoid cartilage
e) isthmus f) trachea g) lobes

Exercise 2

a) consists of b) connected c) situated d) coloured e) shaped like f) composed of
g) contain h) attached to

Exercise 3

Suggested notes:

Hours	Remarks
15.00	Rapid, shallow pulse. Dyspnoea
15.15	Dressing removed from wound. Thick, purulent drainage. C/o pain upper left leg. Clean dressing. Pt. comfortable