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The New Encyclopædia Britannica

PROPÆDIA

Outline of Knowledge
and
Guide to the Britannica

How to use the PROPAEDIA

As its title indicates, the PROPAEDIA, or Outline of Knowledge, is intended to serve as a topical guide to the contents of the *Encyclopædia Britannica*, enabling the reader to carry out an orderly plan of reading in any field of knowledge or learning chosen for study in some depth. The PROPAEDIA's table of contents gives the reader an overview of the Outline of Knowledge as a whole; the introductory essays for each of the ten parts illuminate the major concerns of that part of human knowledge; the headnotes that are affixed to parts and divisions prepare the reader for examination of the subjects being covered there; and the outlined presentations of these subjects, with their lists of related article titles, enable the reader to carry on a course of study that may be more or less extensive and detailed in accordance with individual interests and desires.

Structure. Each of the 10 parts, 41 divisions, and 177 sections that make up the PROPAEDIA is marked in the table of contents by a heading, which is followed by the number of the page on which that unit of the PROPAEDIA begins. This structure provides three ways to utilize the outline: (1) one may turn to any of the parts as a whole and examine the contents of that part; (2) one may select a particular division of a part and examine the contents of that division; or (3) one may focus on a single section or several sections of such a division and examine the contents of that section or those sections.

Sectional outlines. The sectional outlines present, in an orderly arrangement of topics, subjects that are treated in articles in the MACROPAEDIA and MICROPAEDIA. Each section number incorporates the numbers of the part and division to which it belongs. For example, Section 725 is the fifth section in Part Seven, Division II; Section 96/10 is the tenth section in Part Nine, Division VI. In each sectional outline the major subjects are indicated by

capital letters ("A," "B," etc.). There are always at least two major subjects, but there may be many more in a given section. When it is necessary to subdivide a major subject, up to three additional levels may appear in the outline; the first is indicated by Arabic numerals, the second by lowercase letters, and the third by Roman numerals, as shown below:

B. Metallurgy

1. Mineral processing: crushing and grinding of ores, concentration of metallic minerals
2. Extractive metallurgy: separation of metallic elements from mineral form
 - a. Pyrometallurgy: processes that involve the use of heat
 - i. Roasting: oxidizing, reducing reactions
 - ii. Smelting: processes for removing molten metal from molten slag

The INDEX, with its alphabetically arranged subject headings, is indispensable in finding where a given subject appears in the Outline of Knowledge. These headings, where appropriate, carry specific citations pointing to the part, division, or section of the PROPAEDIA that covers the subject in question. A subject referred to in a sectional outline is, in many cases, treated fully in an article of the same title in the MACROPAEDIA or MICROPAEDIA, each such title being included in the list of suggested reading at the end of the section. These titles, as well as significant references to the subjects in other contexts, are cited in the INDEX. It may be helpful to compare the functions of the PROPAEDIA and the INDEX: Both are guides to the contents of the *Encyclopædia Britannica*, but the PROPAEDIA's primary purpose is to indicate *what* subjects are covered, while the INDEX's primary purpose is to indicate *where* they are covered.

THE CIRCLE OF LEARNING

“The alphabetical system of arrangement,” observed the Editors of the Eleventh Edition of the *Encyclopædia Britannica* (1910–11), “with its obvious advantages, necessarily results in the separation from one another of articles dealing with any particular subject.” Consequently, “the student who desires to make a complete study of a given topic must exercise his imagination if he seeks to exhaust the articles in which that topic is treated.” This result is certainly a serious defect in the system for anyone who feels—as did the Editors of the Eleventh Edition—that an encyclopaedia should not be merely a “storehouse of facts,” but should also be “a systematic survey of all departments of knowledge.” To remedy this defect, the Editors constructed a “Classified Table of Contents,” which they believed to be “the first attempt in any general work of reference at a systematic subject catalogue or analysis of the material contained in it.”

Remarkable as it was at the time, that Table of Contents did not fully succeed in achieving its objective of overcoming the defects of an alphabetical organization of encyclopaedic articles by means of a topical presentation of their content. A quick glance at the 24 major categories into which the Table of Contents was divided will reveal that the alphabet was still the thread on which the parts were strung: I. Anthropology and Ethnology; II. Archaeology and Antiquities; III. Art; IV. Astronomy; V. Biology; VI. Chemistry; VII. Economics and Social Science; VIII. Education; IX. Engineering; X. Geography; XI. Geology; XII. History; XIII. Industries, Manufactures and Occupations; XIV. Language and Writing; XV. Law and Political Science; XVI. Literature; XVII. Mathematics; XVIII. Medical Science; XIX. Military and Naval; XX. Philosophy and Psychology; XXI. Physics; XXII. Religion and Theology; XXIII. Sports and Pastimes; XXIV. Miscellaneous. In each of these categories, the only further subdivisions involved the distinction of general from particular subjects, and the distinction of both of these from biographical entries. Under each of these headings, titles of the encyclopaedia's articles were listed in strictly alphabetical order.

In planning this Fifteenth Edition of *Encyclopædia Britannica*, the Editors, while deciding to retain the alphabetical ordering of the articles in the set, sought to improve upon the effort that their predecessors had made to overcome the defects of an alphabetical organization by giving the reader a truly topical, and totally nonalphabetical, Table of Contents. It would

serve the purpose that the Editors of the Eleventh Edition had in mind, which was to enable the reader to “make a complete study of a given topic”—that is, a department of knowledge or field of learning.

It may be asked why it was not thought better to abandon the alphabetical principle entirely and construct a purely topical encyclopaedia, in which all the articles would be assembled, volume after volume, according to some general schema for the organization of human knowledge. The answer is twofold. First, a purely topical organization of the articles themselves cannot avoid the appearance of a certain tendentiousness or arbitrariness in the editorial commitment to one rather than another organizing schema or set of principles. The reader is, therefore, provoked to ask: Does this order, volume by volume and article by article, reflect the only right or proper exposition of the whole of human knowledge?

Second, a purely topical encyclopaedia provides its readers with only one mode of access to its contents. This may be alleviated somewhat, perhaps, by the addition of an alphabetical index; but an index, by its very nature, serves the purpose of enabling the reader to look up *particular* items of information; it does not provide a general and systematic mode of access to the contents of the encyclopaedia.

The basic plan of the new *Britannica*, therefore, aims to give its readers access to its contents by both the topical and the alphabetical modes. General and systematic topical access is provided by the Outline of Knowledge contained in this volume, called the “Propædia” because it is a kind of preamble or antechamber to the world of learning that the rest of the encyclopaedia aims to encompass. Alphabetical access is provided not only by the two-volume Index but also by the alphabetical ordering of the short articles in the Micropædia.

Unlike the Classified Table of Contents in the Eleventh Edition, which was alphabetically organized by categories and subjects, the Outline of Knowledge in this Fifteenth Edition is a purely topical presentation of the subjects covered in the articles to be found in both the Macropædia and the Micropædia. It is, therefore, reasonable to ask how such a purely topical outline of encyclopaedic content avoids the tendentiousness or arbitrariness that is attributable to an encyclopaedia in which the articles themselves are topically rather than alphabetically arranged. Does not the Outline of Knowledge here presented reflect, perhaps even con-

ceal, a commitment to one set of organizing principles rather than another? Does it not embody biases or preconceptions that are not universally acceptable?

It is hardly possible to say "No, not at all" to these questions. Two points, however, can be made affirmatively that tend to reduce or alleviate whatever degree of arbitrariness remains unavoidable in a topical outline of the whole of human knowledge. One is that the Outline of Knowledge, while conceived by the Editors, was constructed and corrected in the light of detailed recommendations, directions, and analytical contributions from scholars and experts in all the fields of knowledge represented. A list that includes the advisers who worked with the Editors in the construction of the Outline of Knowledge follows Part Ten of the *Propædia*.

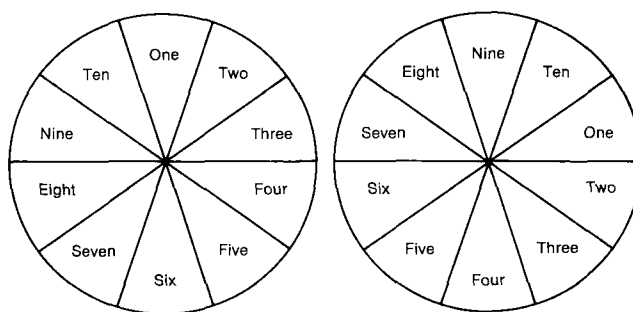
The second point is that the Outline of Knowledge is conceived as a circle of learning. To say that the contents of an *en-cyclo-pædia* form a circle of learning is more than a literal transliteration from Greek to English. In Greek or English, reference to the circle introduces a powerful metaphor, the understanding of which should help the reader to overcome whatever arbitrariness still resides in the Outline of Knowledge in spite of determined efforts on the part of all concerned to minimize this defect. A circle is a figure in which no point on the circumference is a beginning, none is a middle, none is an end. It is also a figure in which one can go from any point, in either direction, around the circumference; in addition, one can go across the circle from any point to any other; or, by any number of transecting lines, starting from a given point, one can go to any number of other points on the circumference, near or far.

The 10 parts into which the Outline of Knowledge is divided are disposed not along a finite straight line beginning at this point and ending at that; they are disposed rather as segments of the circle. While it is true that, in this arrangement, one part may lie next to another and at some distance from still another, it is also true that, since the circle can rotate around its axis, any one of the 10 parts can be regarded as standing at the top of the circle, or at the left or right side of it, or at the bottom. In other words, with the circular arrangement of the parts, and with the rotation of the circle, the reader can begin anywhere in the circle of learning and go to adjacent parts around the circle; or, moving along interior transecting lines, the reader can go from any part across the circle to parts that are not adjacent on the circumference. This view of the Outline of Knowledge can be represented in a number of diagrams.

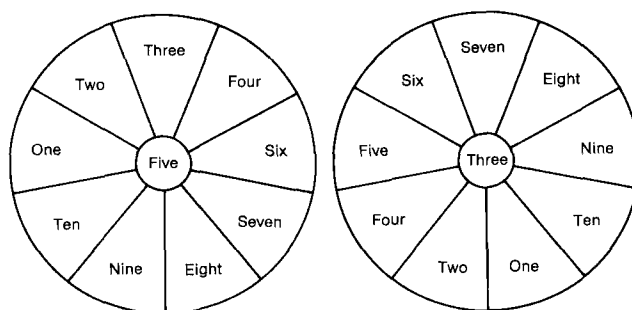
For a synopsis of the subject matter covered in each of the 10 parts of the outline, the reader is referred to that part of the Table of Contents set forth on pages 9–15 of this volume. The titles of the individual parts are given in the following list:

Part One.	Matter and Energy
Part Two.	The Earth
Part Three.	Life on Earth
Part Four.	Human Life
Part Five.	Human Society
Part Six.	Art
Part Seven.	Technology
Part Eight.	Religion
Part Nine.	The History of Mankind
Part Ten.	The Branches of Knowledge

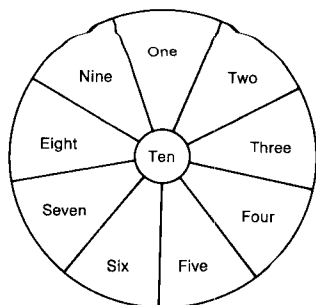
The pair of diagrams below shows the 10 parts as segments of a circle. Part One is placed at the top of the diagram to the left, and Part Nine is at the top of the diagram to the right, to illustrate the effect achieved by rotating the circle.



The second pair of diagrams, following, places one of the 10 parts at the centre of the circle with the remaining nine parts as segments of the circle formed by lines radiating from the centre. The point being made here is that any part can occupy the central position—the place in the circle of learning at which one begins, going thence in all directions to the remaining nine parts. To illustrate this, Part Five occupies the centre in the diagram to the left; Part Three, the centre in the diagram to the right.



The final diagram offers still another approach to the circle of learning. In this diagram, Part Ten occupies the central position; and here there is only one diagram rather than a pair because the reason for placing Part Ten in the central position applies to it alone and to none of the other nine parts.



The reason for this special placement of Part Ten stems from the one organizing principle to which the Editors were explicitly committed in planning and producing this new *Britannica*. Briefly stated, that principle involves a distinction between (a) what we know about the world of nature, of man and society, and of human institutions *by means of* the various branches of learning or departments of scholarship; and (b) what we know about the branches of learning or departments of scholarship—the various academic disciplines themselves. For the most part—there are a few exceptions—Parts One through Nine represent the knowledge of nature, of human society, of human institutions, and their history. In clear contradistinction, Part Ten mainly covers the disciplines themselves—the branches of knowledge or fields of scholarship—by which one inquires into, thinks about, or comes to have knowledge of the world in which he lives. Part Ten examines the nature, methods, problems, and history of the various branches of knowledge or scholarly disciplines, the actual content of which is set forth in Parts One through Nine.

Thus, for example, Section 10/34 in Division III of Part Ten examines the nature, methods, problems, and history of the biological sciences; but the knowledge of life that the biological sciences afford is outlined in Part Three. Or, to take another example, Section 10/41 in Division IV of Part Ten examines historiography and the study of history; but the actual history of mankind is outlined in Part Nine.

There are, however, three departments of learning that are exclusively treated in Part Ten—both with regard to the nature and history of the disciplines themselves and also with regard to the knowledge or understanding afforded by these disciplines. They are logic (in Division I of Part Ten), mathematics (in Division II), and philosophy (in Division V). The reason for this exceptional treatment of these three disciplines is given in the Introductory Essay to Part Ten.

The special character of Part Ten thus explains the diagram in which it occupies the centre of the circle of learning, but that must not be interpreted as attributing prime importance to it. This diagram simply indicates the special function Part Ten performs in relation to the other parts. It alone stands in close relation to all the rest; there are varying degrees of relatedness among the other parts. For example, Parts Three and Four,

dealing with Life on Earth and with Human Life, are closely related; Parts Four and Five, dealing with Human Life and with Human Society, are also closely related; but Part Four has a different relatedness to Part Three, on the one hand, and to Part Five, on the other. In the presentation of the Outline of Knowledge, the headnotes and the cross-references give the reader an indication of these interrelationships.

Anyone who is in a position to compare the classified list of articles in the Eleventh or even the Fourteenth Edition with the Outline of Knowledge will be persuaded, the Editors think, that whereas the immediately preceding editions of *Britannica* represented a 19th- and early 20th-century view of the state of human knowledge, the new *Britannica*, in its Fifteenth Edition, is an encyclopædia that reflects the many changes and innovations in man's knowledge and understanding that are emerging at the end of this century and will continue into the next.

The reader's attention should be called to the following features of the Propædia, or Outline of Knowledge:

1. It serves as a Table of Contents for the long articles in the Macropædia and also for the tens of thousands of shorter articles in the Micropædia.
2. Each of the 10 Parts of the Outline and the several Divisions of each of those Parts is prefaced by a brief summary of the topics covered.
3. The Divisions of each Part are followed by a number of Sections in which each of the topics covered is outlined.
4. At the end of each sectional outline, there is a list of Suggested Readings, first in the Macropædia, second in the Micropædia, which is followed by a list of the biographical articles that are relevant to the subjects covered in the outline of that Section.
5. In the topical outline of each Section, cross-references are made, when relevant, to other Sections in the Propædia on which related subjects are treated.

Because it is constructed in this manner, the Propædia provides the reader who wishes to pursue the study of a whole field of knowledge with an easily used guide. The Propædia thus offers readers a more comprehensive and detailed study guide for the use of the *Encyclopædia Britannica* than has ever been furnished before.

To facilitate their use of the Propædia as a study guide, readers should turn to pages 9–15, which follow. Here they will find a synoptic Table of Contents of the Propædia itself, set forth in the order of the 10 Parts, under each of which the component Divisions are listed, and under each Division, the component Sections.

This synoptic Table of Contents gives readers an overview of the Outline of Knowledge as a whole. The introductory essays for each of the 10 Parts, each writ-

ten by an authority in that field, illuminate the major concerns of that area of human knowledge.

The Propædia, or Outline of Knowledge, helps readers answer for themselves the question that, in its most general form, is as follows: *What can I learn from the Britannica concerning one or another area of human knowledge?* More specifically, the question might be: *What can I learn about the Earth?* or *What can I learn about art?* The reader's interest may be even more specific. In the field of the Earth sciences, the question might be: *What can I learn about the Earth's constituent minerals and rocks?* or *What can I learn about weather and climate?* In the field of art, the question might be: *What can I learn about the theory and classification of the arts?* or *What can I learn about music?*

Another point should be mentioned because, in the view of the Editors, it distinguishes the Fifteenth Edition from all preceding editions.

The Outline of Knowledge presented in this Propædia volume was constructed *before* those articles themselves were named, outlined, commissioned, written, and edited. The outline served as the basis for determining what articles should be written, what their scope should be, how they should be related to other articles, and so on. It was, therefore, in origin a table of *intents* rather than a table of *contents*. It represented the intentions of the Editors in laying down a

comprehensive plan for producing a new encyclopædia, appropriate to the state of human knowledge and learning at the end of the 20th century and looking forward to emergent developments in the century to follow. What was originally, or in the planning stage of the work, a Table of Intents, then subsequently became, after the writing and editing of the articles was completed, a Table of Contents that tries to reflect accurately and faithfully the actual content of the articles.

All preceding editions of *Britannica*, as most other encyclopædias, have been constructed from classified lists of articles. Such classified lists may vary from one edition to another, as they have from the First Edition of *Britannica* through the Fourteenth, but the variations are relatively minor as compared with the fact that they are all the same in form—nothing but classified lists of articles, as exemplified by the one presented in the Eleventh Edition, already referred to. In sharp contrast to such editorial procedures, the Fifteenth Edition has the distinction of being planned not in accordance with a classified list of articles, but rather in the light of an orderly topical outline of the whole of human knowledge, in the form of the circle of learning that is an *en-cyclo-paedia*.

MORTIMER J. ADLER
Director of Planning

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