Introduction to 500

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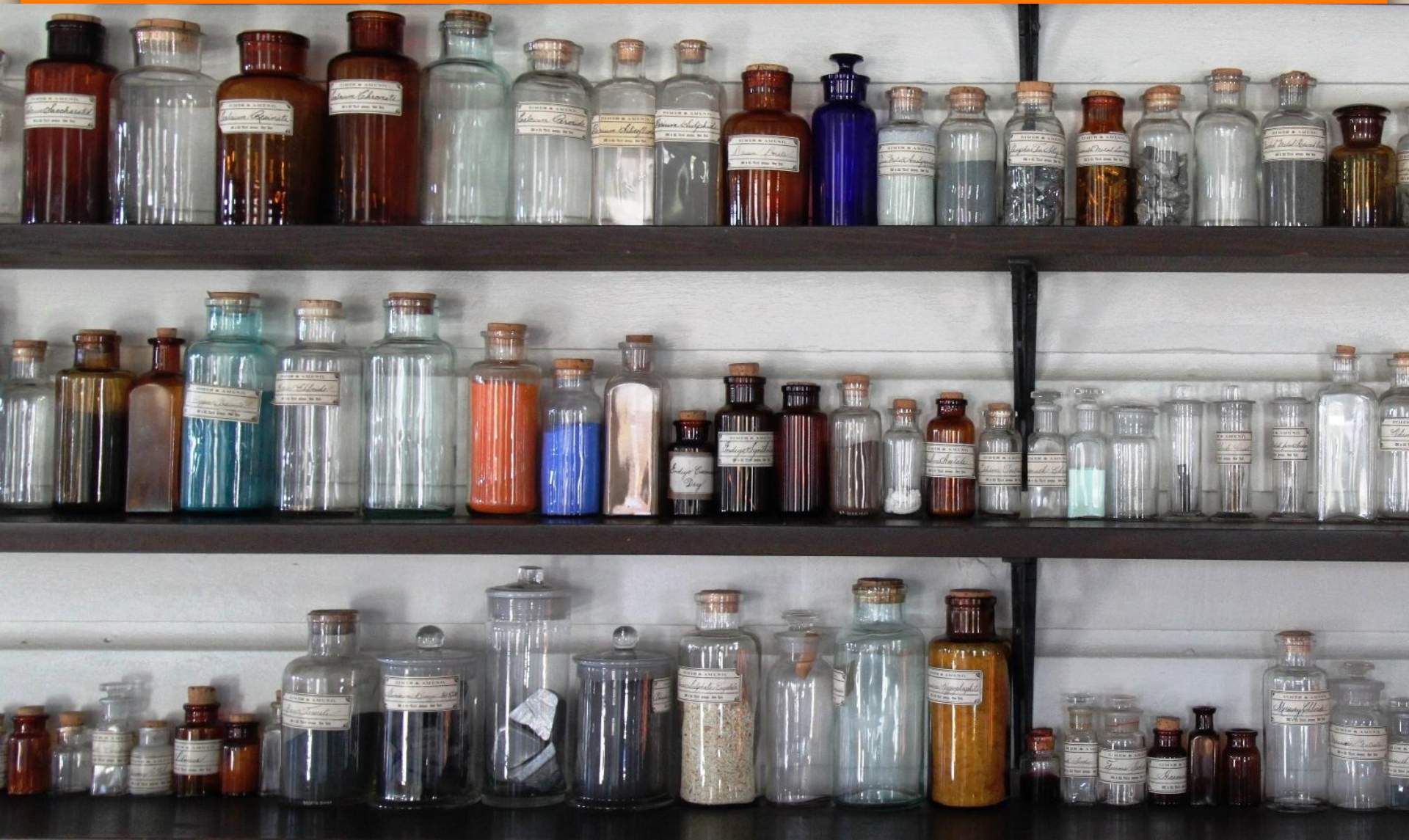
Learning objectives

The learner will:

- Understand the overall structure of 500:
  - 500-559
  - 560-599

- Be able to build numbers in areas of 500, particularly 570-590

Scope and structure of 500s



Scope of 500s (1)

500 Natural sciences and mathematics

Natural sciences: sciences that deal with matter and energy, or with objects and processes observable in nature

For example:

- Order and disorder : science essentials for the non-scientist
- Why can't elephants jump? : and 113 other tantalizing science questions answered

Scope of 500s (2)

But:

Class scientific principles of a subject with the subject, plus notation 015 from Table 1, e.g., scientific principles of photography 770.15

and:

For applied sciences, see 600

Structure of 500-559 (1)

- **500.2 Physical sciences**
  - See references to 520, 530, 540, 550
- **500.5 Space sciences**
  - See references to 520, 550
- **500.8 Groups of people**
  - Displaced from 508

Structure of 500-559 (2)

- **501-507 Standard subdivisions**
- **508 Natural history**
  - Groups of people displaced to 500.8
- **509 History, geographic treatment, biography**

Structure of 500-559 (3)

- 510 Mathematics
- 520 Astronomy and allied sciences
- 530 Physics
- 540 Chemistry and allied sciences
- 550 Earth sciences

Structure of 560-599 (1)

- 560 Paleontology
- 570 Biology
  - 571-575 Internal biological processes and structures
  - 576-578 General and external biological phenomena
  - 579 Natural history of microorganisms, fungi, algae
- 580 Plants
- 590 Animals

Structure of 560-599 (2)

Manual note on 579-590 vs. 571-575 Biology of whole organisms vs. Biology of internal processes

- Use 579 or 580-590 for general and external biological phenomena of specific kinds of organisms. Use 571-575 … for internal biological processes and structures of specific kinds of organisms.
- [Read the note for the distinction between the biology of whole organisms in 579 or 580-590 (the first biology) and the biology of internal processes in 571-575 (the second biology)]
- Natural history is at the core of the first biology, and approximates the whole of it; physiology is at the core of the second, and approximates the whole of it.

Structure of 560-599 (3)

- 571-575 Internal biological processes and structures
  - 571-572 General internal processes common to all organisms
    - 571 Physiology and related subjects
    - 572 Biochemistry
  - 573 Specific physiological systems in animals, regional histology and physiology in animals
  - 575 Specific parts of and physiological systems in plants

Structure of 560-599 (4)

- 576-578 General and external biological phenomena
  - 576 Genetics and evolution
  - 577 Ecology
  - 578 Natural history of organisms and related subjects
    - 579 Natural history of microorganisms, fungi, algae
    - 580 [Natural history of] Plants
    - 590 [Natural history of] Animals

Number building

Number building

The 500s have a variety of methods of number building. In this presentation we will look at three specific areas:

- 546-547 Inorganic and organic chemistry
- 571-575 Internal biological processes and structures
- 579-599 Natural history of animals, plants, etc.

546-547 Inorganic and organic chemistry

- 546 Inorganic chemistry and 547 Organic chemistry each have an add table with a different structure in each
- The add table at 546 has more topics (the element, compounds, mixtures)
- Both add tables have theoretical chemistry, physical chemistry, and analytical chemistry

546 Inorganic chemistry

546 Inorganic chemistry

Add to each subdivision identified by * as follows:

> 1-3 The element, compounds, mixtures

1 The element

2 Compounds

22 Acids and bases

24 Salts

25 Complex compounds

3 Molecular and colloidal mixtures

4 Theoretical chemistry

5 Physical chemistry

6 Analytical chemistry

547 Organic chemistry

547 Organic chemistry

Add to each subdivision identified by * as follows:

04 Special topics

044 Theoretical chemistry

045 Physical chemistry

046 Analytical chemistry

Example 1 (1)

***Silicon and its compounds* 546.6832**

LCSH:

Silicon
Silicon compounds

Relative index entries:

Silicon—chemistry	546.683
Compounds (Chemicals)	546

Example 1 (2)

546 Inorganic chemistry

Class here general topics of chemistry applied to specific elements, compounds, mixtures, groupings; comprehensive works on inorganic and organic chemistry of specific elements, compounds, mixtures, groupings

Specific compounds are classed with the first element named, except that hydrogen is disregarded for acids

Add to each subdivision identified by * as follows:

. . .

2 Compounds

Example 1 (3)

546.683 * Silicon

* Add as instructed under 546

Example 1 (4)

***Silicon and its compounds* 546.6832**

546.683	Silicon
2	Compounds (from notation 2 at 546, following footnote at 546.683)

570-590 – Choice of number (1)

- Before looking at number building in 571-575 and 579-599, you need to consider several choice of number issues. The main notes affecting choice of number in 570-590 are at:

Note location	Note type
571-575	Preference order note
576-578	Class-elsewhere notes
579	See references
580-590	See references

570-590 – Choice of number (2)

Note at 571-575 Internal biological processes and structures:

- Unless other instructions are given, class a subject with aspects in two or more subdivisions of 571-575 in the number coming last, e.g., cytology of animal circulatory system 573.136 (*not* 571.1 or 571.6)

570-590 – Choice of number (3)

Notes at 576-578 General and external biological phenomena:

- Class general and external biological phenomena of microorganisms, fungi, algae in 579
- Class general and external biological phenomena of plants in 580
- Class general and external biological phenomena of animals in 590

570-590 – Choice of number (4)

Note at 579 Natural history of microorganisms, fungi, algae:

- *For internal biological processes of microorganisms, fungi, algae, see 571.29*

Note at 580-590 Natural history of plants and animals

- *For internal biological processes of specific kinds of plants and animals, see 571-575*

570-590 – Choice of number (5)

These notes mean that:

- Dewey gives preference to 571-575 over 579-599 for internal processes in specific organisms.
- Dewey gives preference to 579-599 over 576-578 for external processes in specific organisms.

Number building in 571-575

571-575 Internal biological processes and structures (1)

The two most common number-building patterns in 571-575 are:

- Combining a topic in 571-575 with a kind of organism from 579-599
- Combining two topics from 571-575

571-575 Internal biological processes and structures (2)

Combining a topic in 571-575 with a kind of organism from 579-599:

- Notation 1 adds notation from 591-599 for animals
- Notation 2 adds notation from 581-588 for plants
- Notation 29 adds notation from 579 for microorganisms, fungi, algae

571-575 Internal biological processes and structures (3)

Examples of notation 1 and 2 in 571-575:

- 571.1 for physiology of animals
- 571.2 for physiology of plants
- 571.29 for physiology of microorganisms, fungi, algae
- Notation 1-2 at 571-572
- Notation 1-2 at 571.5-571.9
- Notation 1-2 at 572.5-572.8
- Notation 1 at 573 [animals only]
- Notation 2 at 575 [plants only]

Example 2 (1)

Insect endocrinology **573.4157**

LCSH:

Insects

Endocrinology

Relative index entries:

Insects	595.7
Endocrinology	573.4

Example 2 (2)

573.4 * Endocrine and excretory systems

Class here endocrinology

* Add as instructed under 573

Example 2 (3)

573 Specific physiological systems in animals, regional histology and physiology in animals

Except for modifications shown under specific entries, add to each subdivision identified by * as follows:

. . .

1 Comparative physiology of the system

Add to 1 the numbers following 59 in 591-599, e.g., the system in mammals 19

. . .

Example 2 (4)

Insect endocrinology 573.4157

573.4 Endocrine and excretory systems

1 Comparative physiology
(from notation 1 at 573, following footnote at 573.4)

57 Insects
(from 595.7, following instructions at notation 1 at 573)

571-575 Internal biological processes and structures (4)

Combining two topics from 571-575:

- Notation 3 at 571.5-571.9
- Notation 3-4 at 572.5-572.8
- Notation 2-4 at 573
- Notation 3 at 575

571-575 Internal biological processes and structures (5)

Combining two topics from 571-575 – first example:

571.5-571.9 Tissue biology, regional physiology, cell biology, biological control and secretions, reproduction, development, growth, diseases

Except for modifications shown under specific entries, add to each subdivision identified by † as follows:

. . .

3 Anatomy and application of processes to other processes

. . .

33-38 Anatomy and application of specific processes to other processes

Add to 3 the numbers following 571 in 571.3-571.8, e.g., anatomy 33, biophysics 34, cell biology 36

. . .

571-575 Internal biological processes and structures (6)

Combining two topics from 571-575 - second example:

572.5-572.8 Specific biochemicals and biochemical genetics

Except for modifications shown under specific entries, add to each subdivision identified by † as follows:

. . .

3 General topics in biochemistry

. . .

33-39 Anatomy and application of specific processes to other processes

Add to 3 the numbers following 572.3 in 572.33-572.39, e.g., molecular structure 33 ...

4 Metabolism and genetic aspects

. . .

41-49 Specific aspects of metabolism

Add to 4 the numbers following 572.4 in 572.41-572.49, e.g., biosynthesis 45

Example 3 (1)

Molecular modeling of nucleic acids 572.833

LCSH:

Nucleic acids—Structure—Congresses

Relative index entries:

Nucleic acids	572.8
Nucleic acids—biochemical genetics	572.8
Molecular structure—biochemistry	572.33

Example 3 (2)

571-575 Internal biological processes and structures

Unless other instructions are given, class a subject with aspects in two or more subdivisions of 571-575 in the number coming last, e.g., cytology of animal circulatory system 573.136 (*not* 571.1 or 571.6)

Example 3 (3)

572.8 †Biochemical genetics

Class here cytogenetics, molecular biology, molecular genetics, physiological genetics; nucleic acids

Class developmental genetics in 571.85; class comprehensive works on genetics in 576.5; class genetic aspects of a specific biochemical with the specific biochemical in 572.5-572.7, plus notation 4 from table under 572.5-572.8, e.g., genetic regulation of enzymes 572.74

†Add as instructed under 572.5-572.8

Example 3 (4)

572.5-572.8 Specific biochemicals and biochemical genetics

Except for modifications shown under specific entries, add to each subdivision identified by † as follows:

. . .

3 General topics in biochemistry

. . .

33-39 Anatomy and application of specific processes to other processes

Add to 3 the numbers following 572.3 in 572.33-572.39, e.g., molecular structure 33, nutritional requirements 39

. . .

Example 3 (5)

572.33 *Molecular structure

Class here bonds, conformation, sequences of polymers and other component units of large molecules, theoretical chemistry

Class structure-activity relationships in 572.4; class molecular biology (biochemical genetics) in 572.8

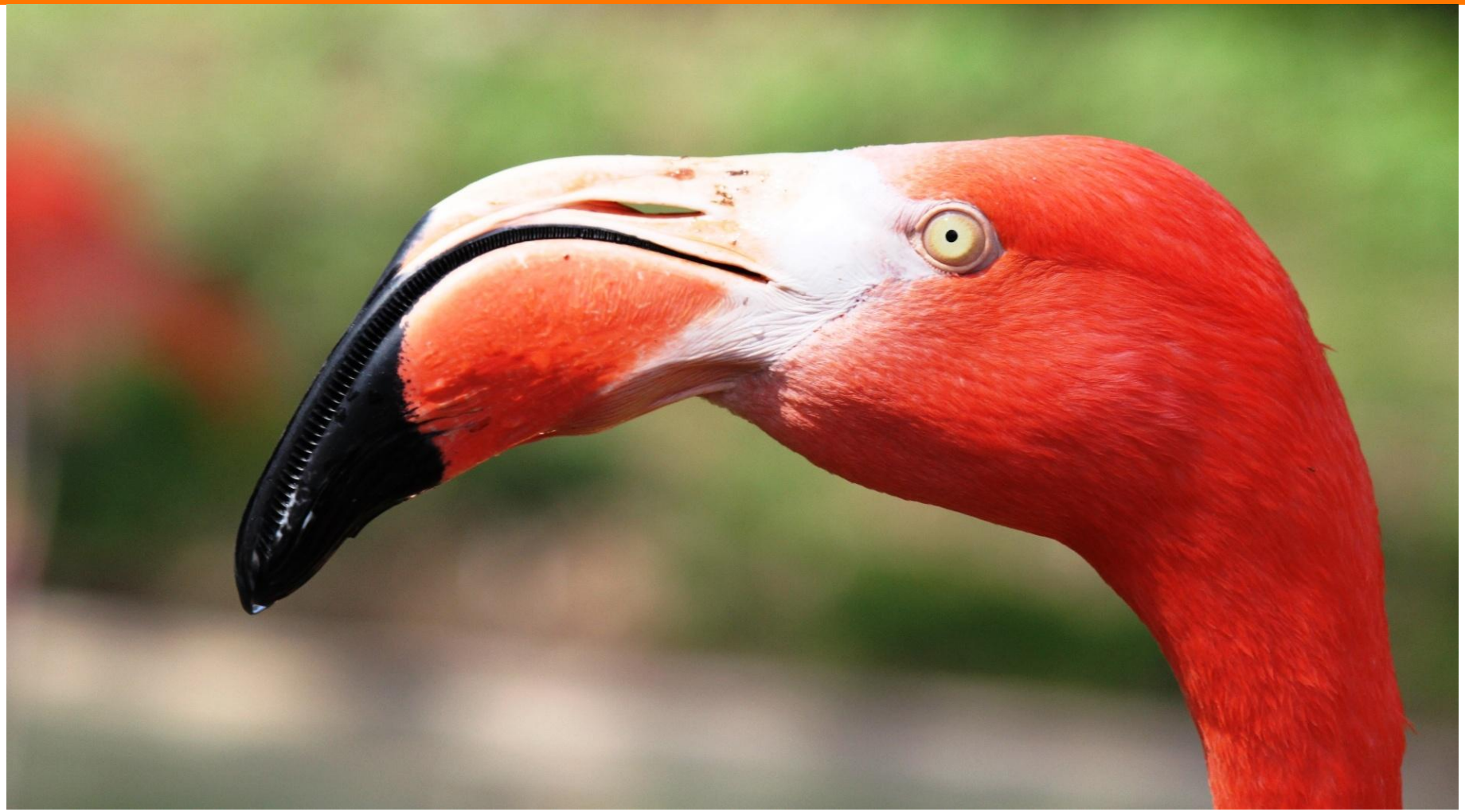
*Add as instructed under 571-572

Example 3 (6)

Molecular modeling of nucleic acids 572.833

572.8	Biochemical genetics
3	General topics in biochemistry (from notation 3 at 572.5-572.8, following footnote at 572.8)
3	Molecular structure (from 572.33, following instructions at notation 33-39 under 572.5-572.8)

Number building in 579-599



579-599 Natural history of animals, plants, etc. (1)

- In 579, 580, and 590 you can add for the "general topics" found in 576-578 using the facet indicator 1.
- The general topics are listed under 579.1, 581 and 591. For example, the general topic evolution is found at 576.8, but also at 579.138, 581.38, and 591.38.
- The instructions to add the general topics are at 579.2-579.8, 583-588 and 592-599.

579-599 Natural history of animals, plants, etc. (2)

Genetics and evolution	576	579.13	581.3	591.3
Age characteristics			581.39	591.39
Adaptation	578.4	579.14	581.4	591.4
Behavior				591.5
Miscellaneous nontaxonomic kinds of organisms	578.6	579.16	581.6	591.6
Ecology, organisms characteristic of specific environments	577 and 578.7	579.17	581.7	591.7

579-599 Natural history of animals, plants, etc. (3)

592-599 Specific taxonomic groups of animals

Except for modifications shown under specific entries, add to each subdivision identified by * as follows:

. . .

1 General topics of natural history of animals

Add to 1 the numbers following 591 in 591.3-591.7, e.g., beneficial animals 163, marine animals 177

Example 4 (1)

Essential fungal genetics 579.5135

LCSH:

Fungi—Genetics

Relative index entries:

Fungi	579.5
Genetics	576.5

Example 4 (2)

If you go to 576.5, you get redirected:

576.5 Genetics

For . . . genetics of microorganisms, fungi, algae, see 579.135 . . .

Example 4 (3)

Then upwards in the hierarchy from 579.135:

579.1 Specific topics in natural history of microorganisms, fungi, algae

Class a specific topic in natural history of microorganisms, fungi, algae with respect to a specific taxonomic group with the group, plus notation 1 as instructed under 579.2-579.8, e.g., useful fungi 579.5163

[This note has hierarchical force]

Example 4 (4)

579.135 †Genetics

Class here works on genetic constitution of microorganisms, fungi, algae that elucidate their total function

†Add standard subdivisions as instructed under 579.1

Example 4 (5)

579.2-579.8 Specific taxonomic groups of microorganisms, fungi, algae

Except for modifications shown under specific entries, add to each subdivision identified by * as follows:

. . .

1 General topics of natural history of microorganisms, fungi, algae

Add to 1 the numbers following 579.1 in 579.13-579.17, e.g., beneficial organisms 163

Example 4 (6)

579.5 *Fungi

Class here Eumycophyta (True fungi), filamentous fungi, mycology

* Add as instructed under 579.2-579.8

Example 4 (7)

Essential fungal genetics 579.5135

579.5 Fungi

1 General topics
(from notation 1 at 579.2-579.8, following footnote at 579.5)

35 Genetics
(from 579.135, following instructions at notation 1 under 579.2-579.8)

Summary

- The 500s are composed of a wide range of disciplines
- There are a variety of number-building methods in the 500s, some of which are limited to specific disciplines, such as the life sciences
- Very similar subjects may use different number-building methods, so it's always important to check in the schedules

Credits

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