

24.10.49

(1949) Department.

Ms. SERIES.

G.O. NO.

3285

(Edu)

Dated

28/10/49

pp 327

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pp 1234 copy by A 20

[Despatch Abstract.]

Examin

✓ (VIII) Standard Public Exam in 1950 - Inclusion of elementary Science as an additional Compulsory Subject - Introduction postponed to the Examination in 1952. Orders passed.

Back Papers.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
250	13	Edn	3/1/48				
250	2691	Edn	27/10/48				

Further Papers.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

SUBJECT.

VIII Standard Public Examination 1950 - Inclusion of Elementary Science as an additional compulsory subject-proposal for further postponement for 1952 examination.

Station: Madras. R.C.156-E/49, Dated 4-10-1949.



(Name) Sri D.S.Reddi, M.A., (Oxon.),
(Designation) Commissioner for Government Examinations,
M A D R A S.

To The Secretary to Government,
Education and Public Health Department,
Fort St. George, M a d r a s.

Sir,

In G.O. No. 2691 Edn., & P.H., dated 27th October 1948, Government approved the proposals of the Commissioner for Government Examinations, Madras, for the postponement of the introduction of Elementary Science as an additional compulsory subject for the VIII Standard Public Examination of 1950, and the collection of the usual examination fee of Rs. 2/- only for the examination of 1949.

On consideration of the criticisms and comments received in the office on the suggestions for modifications in the draft syllabus published in the Fort St. George Gazette, dated 10-8-'48, it was felt necessary that the syllabus should be so revised as to suit the larger number of rural Elementary Schools presenting candidates for the examination. As the syllabus needs close scrutiny, it will take some time before it can be finalized. I therefore request that the orders of Government may be obtained and communicated to me at an early date, for postponement of the introduction of Elementary Science as a compulsory subject to the VIII Standard Public Examination to be held in 1952. The subject will be introduced in Standard VI in 1949-50, in Standard VII in 1950-51 and in Standard VIII in 1951-52.

Government will be addressed in May 1950 about the continuance of this examination in future.

K. S. Angaravayalath
4.10.49.
for COMMISSIONER.

CP/4-10.

e.No.76633/49.

E.& P.H.(G2).

Order/Ms. No. 3285 Edn. dated 28.10.49

Sub:- VIII Standard Public Examination 1950 -
Inclusion of Elementary Science as an additional
compulsory subject - Introduction postponed to
the Examination in 1952 - Orders passed.

Read again:- G.O.No.13, Education, dated 3-1-48.
G.O.No. 2691, Education, dated 27-10-48.

Read also:- From the C.G.E., R.C.No.156-E/49
dated 4-10-49.

In the circumstances stated by the C.G.E., in
his letter read above, the Government approve his
proposals to postpone the introduction of Elementary

Science as an additional compulsory subject for the
VIII Standard *Public Examination to be Examina-*
tion to be held in 1952 and to collect the
examination fees at the rate of Rs.2/- until the

introduction of the above subject. The Govt. also
approve his proposal *to introduce Elementary*
Science in Standard VI in 1949-50, *in* Standard
VII in 1950-51 and *in* Standard VIII in 1951-52, to
enable the students to appear for Elementary Science
in the final Examination in 1952.

To

The C.G.E.

" A.G.tho' Finance.

Copy to the D.P.I.
Finance.

P.T.O.

Note:-

Please see the letter from the C.G.E. in the c.f. In the circumstances explained, the C.G.E.'s proposal to postpone the introduction of Ely.Science as an addl. compulsory subject for the VIII Standard Examination, to 1952, may be approved. The draft order overleaf is for approval.

Finance may see.



E.P.H. No. 6.16.78633-
92/49 dated 17-10-49.



Fri (Sap B)

The draft order overleaf may be accepted

then Sap A.

Ames

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19.10.49



EDUCATION DEPARTMENT.

R.C. NO.1024-E.4/48

Office of the Director of
Public Instruction, MADRAS,
Dated: 31st July 1950.

From

The Director of Public Instruction,
MADRAS.



To

The Secretary to Government,
Education Department,
Fort St. George,
MADRAS.

Sir,

Sub: ELEMENTARY SCHOOL LEAVING CERTIFICATE EXAMINATION -
Introduction of Elementary Science as an additional
compulsory subject - Introduction to take effect
from the examination in 1953 - Proposal submitted.

Ref: G.O. No. 3285 Education dated 28-10-1949.

The revised syllabus in Elementary Science adopted in the meeting of the Board held on 10th April 1950 has been published as a supplement to Part I B of the Fort St. George Gazette dated 11-7-1950.

2. The revised syllabus ~~with~~ will come into force immediately and be introduced as an additional compulsory subject in Standard VI during the current year (1950-51), in Standard VII during 1951-52 and in Standard VIII during 1952-53.

3. The first E.S.L.C. Public Examination according to the revised syllabus will be held at the end of the academic year 1952-53, for which the examination fee shall be raised from Rs.2-0-0 to Rs.2-8-0 per candidate.

4. I have in this connection issued the necessary instructions to the Inspecting Officers, directing them to notify the introduction of this compulsory subject to the managements of all Higher Elementary Schools. I am also sending separately a notification to the Superintendent, Government Press for publication in the Fort St. George Gazette.

Yours faithfully,

A. S. S. S.

for Director of Public Instruction.

Copy to the Secretary to the Commissioner for
Government Examinations, MADRAS.

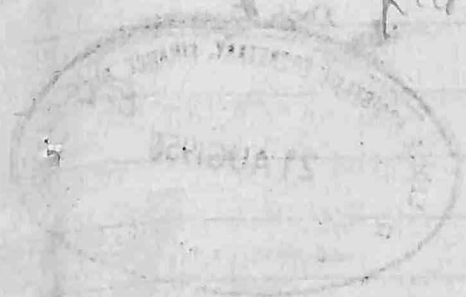
k.v.s./31-7.



h3d (B) p1c

PT 19/3

17/11/50 h3d (B) p1c



To Shree 6/9
The D.P.I.
M.B.G.
A.G. (through Finance)
Copy to C.G.C.
Finance Dept
(S.C.)

Read again G.O. No 3285 Edn d 28/10/49
From the ~~Order~~ R.C. No 1024-E4/48 d 31/5/50
Examinations - E.S.L.C. Examination.
Introduction of Elementary Science as an additional compulsory subject. Introduction to take effect from the examination in 1953.
Memo No 22061/F/50-2 Edn d 1/9/50

In modification of the orders issued in the G.O. cited above, the Govt. approve the proposal of the D.P.I. to postpone the introduction of Elementary Science as an additional compulsory subject for the VIII standard public Examination to the Examination to be held in 1953 and to collect the usual examination fee at the rate of Rs 2/ until the introduction of the above subject. They also approve his proposal to introduce Elementary Science as an additional compulsory subject in standard VI during the current year (1950-51), in standard VII during 1951-52 and in standard VIII in 1952-53 to enable the students to appear for Elementary Science in the final examination in 1953.

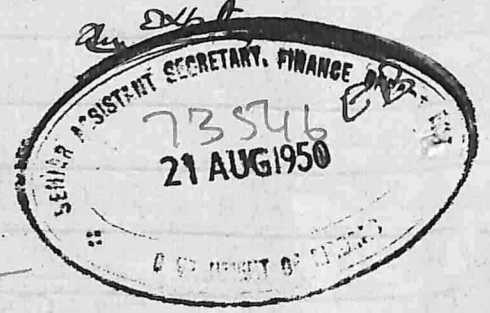
By 17/9/50
18850

Note please see the letter from the D.P.I. on p1c f. As it P.T.O

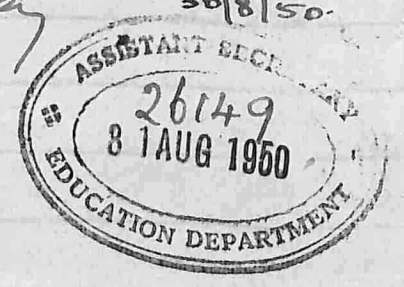
has been proposed to postpone the introduction of Elementary Science as an additional compulsory subject for the VIII standard Public Examination to the examination to be held in 1953, the orders in G.O. No 3285-Edu d 28/10/1949 require modification. Draft Memo overleaf is for approval. Finance may see.

By 17/8/50
18850
Finance -
Edu. (F) 22061/12/50-1
21/8/50

The letter from the S.P.D. on p. 107, may be perused and the draft memo overleaf accepted.
A 30/8/50
27-8-50



The draft order on the previous page may be
31.8.50
B 1.9.50



After issue will be filed with G.O. 3285-Edu d 20/10/49

R.C. NO. 1024-E.4/48

Office of the Director of Public Instruction, Madras, Dated 13-11-1950.



From The Director of Public Instruction, Madras.
To The Secretary to Government, Education Department, Madras.

Sir,
Sub: E.S.L.C. Public Examination - Introduction of Elementary Science as an additional compulsory subject - Syllabus.
Ref: My letter RC.No.1024-E.4/48 dated 31-7-1950.

The syllabus published as a supplement to Part I B of the Fort St. George Gazette dated 11-7-1950 and referred to in my letter quoted above contains two parts - one the syllabus proper with topics and the other the number of lessons to be allotted for each or a group of topics. This was not properly understood by some authors, publishers and teachers and they requested clarification. To avoid any confusion and correspondence involving delay in the introduction of the syllabus, an errata has been published in the Fort St. George Gazette at Page 612 of Part I B dated 3-10-1950.

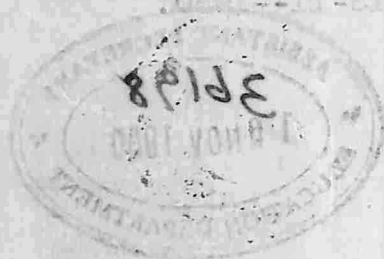
2. A copy of the syllabus together with the errata pasted to it is enclosed for favour of information.
Yours faithfully,

after handwritten 15-11-50
for Director of Public Instruction.

RVR 14/11/-

No action seems called for on this.
at (A) May be filed with G.O. 3285 Edu d 28/10/49.
21250

Office of the
Director of Public Instruction,
Madras, Dated



The Director of Public Instruction,
Madras.

The Secretary to Government,
Education Department,
Madras.

Sub: E.S.S. Public Instruction - Instruction of the
primary balance as an additional compulsory subject
in the syllabus for Standard VII.

Ref: Letter No. 1024-E-448 dated 22-9-1950.

The syllabus for Standard VII in the subject of Science
as revised in 1947-48, and the syllabus for Standard VIII
as revised in 1948-49, contain two parts - one the syllabus
and the other the number of lessons to be allotted to each
of the subjects. This was not properly understood by some
teachers and they requested clarification. It is a well known
fact that correspondence involving delay in the instruction of the
syllabus has been published in the Fort St. George Gazette at
the bottom of the page.

S. A copy of the syllabus for Standard VII and VIII
is enclosed for your information.

**Errata to the Revised Syllabus in Elementary Science for
Standards VI to VIII in Higher Elementary Schools.**

To the Revised Syllabus in Elementary Science for Standards VI to VIII in Higher Elementary Schools, published as a Supplement to Part I-B or the *Fort St. George Gazette*, dated 11th July 1950, the following errata are issued:—

I. The entire portion appearing under 1. Garden work, 2. Museum activities and 3. Field activities at page 7 in the syllabus be transferred to page 3 thereof and inserted under a new heading "Practical activities suggested" between "Cast iron wrought iron, steel—differences in properties; their uses" and "Organize a cleanliness squad and ensure the cleanliness of the school" appearing under the heading "Employing products of nature for human comfort" in the syllabus for Standard VII.

II. The words "and fruits" be inserted between "Manufacture of starch and storage as in seeds" and "and importance of sunlight" occurring as item 4 under the heading "Food" in the syllabus for standard VIII at page 3.

III. The headings "Practical activities suggested", "Minimum requirements of apparatus, etc.", "charts" and "Museum specimens of stuffed birds" and the matters appearing thereunder at page 9 of the syllabus be transferred to page 4 and inserted just below "4. Milk and products of milk—wood, hides, horns, hoofs, tendons, bones, ligaments, cartilage" occurring under the heading "Animal Product" in the syllabus for Standard VIII.

IV. Delete the following:—

(1) The entire paragraph commencing with "while it is desirable that the study of animals and plants" and ending with "has been drawn up" occurring at the bottom of page 4 of the syllabus.

(2) All the items and entries at pages 5 to 9 (except those transferred as per I and III above).

V. Insert the following at the conclusion of the syllabus under a new heading "Number of Lessons contemplated".
"The syllabus for each of standards VI to VIII may be spread over about 45 to 50 lessons."

S. GOVINDARAJULU,
Director of Public Instruction in-charge.
Madras, 22nd September 1950.

REVISED SYLLABUS IN ELEMENTARY SCIENCE.

(Revised and adopted in the meeting of the Board held on 10th April 1950.)

STANDARD VI.

FOOD.

1. Uses of food to plants and animals for growth and work—Articles commonly used as food by man—wholesome and nutritious food—importance of vegetables—milk.
2. Food habits of local animals from point of view of structural adaptation—Cow, horse, cat, dog, squirrel—The feeding of bulls, bullocks and cows.
3. Why should food be cooked? Boiling, steaming, frying and roasting.—Their advantages and disadvantages.

BREATHING.

1. Difference in air breathed in and breathed out.
2. Respiratory organs in man—Expansion and contraction of chest during breathing.
3. Effects of bad air—and need for ventilation.

COMING INTO BEING.

The life history of the house-fly, the mosquito, the frog and silk moth.

MOVEMENTS.

1. Modes of locomotion of animals—walking, running, jumping, creeping, swimming, flying.
2. Rapid modes of travelling on land, sea and air by man.

MAINTAINING PHYSICAL EFFICIENCY AND HEALTHFUL LIVING.

1. Chief aids to health—Food, exercise, sleep, air and sunshine.
2. Clothing—the need for cotton, silk and woollen articles of clothing—Their suitability for season and climate and relative capacity to absorb and evaporate moisture.
3. Personal cleanliness—Care of eye, teeth, ears and nose.
4. Safety in walking, safety on the road.

BUILDING A HOME.

1. Building materials—Wood—types of the locality stones—varieties in the locality and their preparation.
2. The housing of cattle cowsheds.
3. Lighting, ventilation and cleaning—whitewashing, painting and disinfection.

EXPLORING THE ENVIRONMENT.

1. Air necessary for breathing (plants and animals)—Air necessary for burning.
2. Animals—Vertebrate and invertebrates—Typical examples of each group.
3. Factors affecting the growth of plants soil, water, climate and sunlight.
4. Different kinds of soil—Gravel, sand, clay and loam.
5. Tilling—Fertilizers and manures—The earthworm friend of the farmer—rotation of crops—Its importance.
6. Plants—adaptation in respect of soil—water, climate and temperature.
7. The three states of matter: solid, liquid and gas.
8. Light—Its relation to life and seeing chief source of light—The sun and stars.
9. Sensing—The five senses organs and their connection through nerves with the brain.

EMPLOYING PRODUCTS OF NATURE FOR HUMAN COMFORT.

Making of paper.

PRACTICAL ACTIVITIES SUGGESTED.

1. Gardening should form an essential part of the course—If space for gardening could not be had, pot gardening may be tried, common vegetables and flowers of the locality should be grown and observed.

(a) Vegetables providing proteins, starch, minerals, flavour, vitamins, etc.

(b) Flowers providing colour and gaiety, fragrance, etc.

A collection of articles of food used in the locality may be made—as a museum activity.

A collection of pictures and models.

2. The following field activities are suggested :—

(a) Visit to the fields to study the mode of cultivation of the common food articles.

(b) Observation of the mode of feeding of the common animals—cat, dog, cow, etc.

(c) Examination under field (and laboratory) conditions of the mosquito, the house-fly, with magnifying glass.

(d) Observation of the modes of travel in the locality and the uses of wheels, animals.

(e) Visit to brick kilns.

(f) Identifying a few prominent star groups.—Pole-star, Great Bear, Orion Pleiades.

(g) Organize a safety squad for the class and give the regular practice in safety first exercises—Daily health examination of the eye, ear, nose, teeth, etc.

(Testing the vital capacity of pupils.)

STANDARD VII.

Food.

1. Composition of food—carbohydrates—proteins fats—vitamins and their importance, minerals salts—water.
2. Mixed diet—balanced diet.
3. Food value of common food articles—milk and milk products—Their food values.
4. Alimentary system in man—Digestion—absorption—assimilation and excretion.

BREATHING.

1. How breathing movements are effected.
Importance of breathing through the nose—disadvantages of breathing through the mouth.
2. Respiration in plants (using up oxygen and liberation of carbon dioxide).

COMING INTO BEING AND GROWING.

1. Growth of plants from seeds Embryo—seedling plant—conditions favourable for germination.
2. Propagation of plants from seeds and cuttings—layering and grafting.
3. Migration of animals, fishes in general—Birds in particular—when, how and where do they migrate.

MOVEMENTS.

1. Main bones in the human skeleton.
2. Joints and the nature of movements they permit (hinge, ball and socket, pivot).
3. Muscles and the part they play.

MAINTAINING PHYSICAL EFFICIENCY AND HEALTHFUL LIVING.

1. The skin and its function—Care of the skin—Clean clothing—regular baths—skin diseases—itch and ringworm.
2. The excretory system of our body organs and their functions.
3. Protected water-supply and milk supply.
4. Purification of drinking water.

BUILDING A HOME.

Bricks and tiles—how made lime, mortar, concrete, cement—how prepared and used. Use of asbestos sheets and glass.

EXPLORING THE ENVIRONMENT.

1. Air composition (qualitatively)—Oxygen, nitrogen, carbon-di oxide, water vapour and the part each plays.
2. Expansion of bodies when heated—Temperature. Thermometer. The Doctor's Thermometer.
3. Adaptation of animals to environment and climate, special adaptation for protection like colour, mimicry and poison apparatus.
4. Water finds its level. The water level and the spirit level.
5. The nervous system—its parts. Brain and its parts. Spinal chord, nerves. Voluntary and involuntary action.

HARNESSING OF NATURE.

Water-falls—water wheels—(wind mills—Lift pumps).

The wheel and axle.

The steam engine—its working (an elementary treatment).

EMPLOYING PRODUCTS OF NATURE FOR HUMAN COMFORT.

Cast iron, wrought iron, steel—differences in properties; their uses.

Organize a cleanliness squad and ensure the cleanliness of the school.

STANDARD VIII.

Food.

1. Food habits of local birds—parrot, crow, sparrow, duck, kite with special reference to beaks.
2. The egg and the food it contains for the baby bird.
(The different breeds of poultry—Their housing and feeding—production and rearing of chickens.
3. Soil and food supply to plants: how plants obtain food from water, soil and air.
4. Manufacture of starch and storage as in seeds, and importance of sunlight.

BREATHING.

1. Heart, arteries, veins, capillaries. Uses of circulation—Exchange of gases in the lungs and in the tissues.

COMING INTO BEING AND GROWING.

Parts of typical flowering plant. Flower and its parts. Pollination and fertilization. Fruits and seeds.

MAINTAINING PHYSICAL EFFICIENCY AND HEALTHFUL LIVING.

First-aid in dog bites, cuts, fracture, drowning and fainting—Fire engines, chemical fire extinguishers—First-aid in burns, scalds—stings of insects.

EXPLORING THE ENVIRONMENT.

1. Air burning, rusting.
2. Sun, a star, sun spots, meteors and comets.
3. Methods of transmission of heat—conduction, convection and radiation water and air currents. The thermos flask.
4. Division of matter into elements, compounds and mixtures.
5. Eye and its functioning: long-sight and short sight. The uses of spectacles.
6. Sun—source of energy, locked up by green plants and released during respiration.
7. Force of gravity—centre of gravity and conditions of equilibrium (stable, unstable and neutral).
8. The ear and hearing.
9. Sound—how produced and transmitted—Echoes—Musical instruments (stringed, wind and percussion) and the quality of sound they produce—The vocal chords.
10. The Radio—Elementary knowledge of what it is and how it works.

EMPLOYING PRODUCTS OF NATURE FOR HUMAN COMFORT.

1. Fuels—wooden charcoal, oil, coal and coke.
2. Common salt—manufactured and used.
3. Making of soap.

ANIMAL PRODUCT.

4. Milk and products of milk—wool, hides, horns, hoofs, tendons, bones, ligaments, cartilage.

Books of reference for Teachers.

- 1 C. J. Piper and W. L. Beau- Every day Problems in Science (Scott Fores- champ. man and Company, Chicago).
- 2 J. E. Peabody and A. E. Hunt. Elementary Biology, Plant, Animal and Human (Macmillan & Co., Ltd.).
- 3 E. F. Van Buskirk and E. L. The Science of Everyday life (Constable and Smith. Company).
- 4 H. Mackay First Steps in Science Books (1—6) (Oxford University Press).
- 5 to 8 Andrade and Huxley .. Things around us, Science and Life, Forces at Work, Earth and Man (Basel, Blackwell, London).
- 9 W. Searr Science in common things in three parts. (Messrs. Longmans, Green & Co.).
- 10 W. F. F. Shear Croft .. (George, E. Harrap and Company, Ltd., Post Primary Science-Books, 1—4, London.)

While it is desirable that the study of animals and plants should be given a prominent place in the science syllabus of the Elementary School, it is felt that the pupils should learn something about Natural Phenomena and familiar processes and should have at least an elementary knowledge of human Physiology. Since at least a few of these pupils are likely to continue their studies in the high school classes, the syllabus should, to a certain extent, be correlated with the Science syllabus of the secondary school. With these considerations in view, the following tentative outline of syllabus for the higher elementary classes has been drawn up.

Fifty lessons are provided for each class, and of these, 30 lessons are assigned to animal and plant life and human physiology. Of the remaining 20 lessons about 12 are devoted to Natural Phenomena—Physics and Chemistry and the rest to subjects dealing with the "harnessing forces of nature", Home comforts and community comforts.

While dealing with animal life, besides the usual generalized studies of the life habits, movements and adaptation of animals, type studies of common animals have been included. Similarly type studies of plants too have been introduced. Physics and Chemistry have been reduced to the minimum.

If however, more time is available during the year, so that more lessons can be contemplated, the lessons on animal and plant life can be increased in number.

STANDARD VI.

I. PLANT LIFE (12 LESSONS).

	<i>Number of lessons contemplated.</i>
1 Living and non-living things. Characteristics of living things—Feeding, breathing, sensing, moving and reproducing. Plants too are living things that require food for their life activities ..	1
2 Plants too grow, work and reproduce like the animals. Importance of plants to animals	1
3 Main parts of the plant and their functions	1
4 Flowers—Different colours and odours—Opening and closing of flowers. Visitors to the flowers. Why they visit—Food, shelter, attraction and care for the young	2
5 Fruits—Edible and poisonous fruits, significance of fruiting. Popular conception of fruits	1
6 Seeds—Germination of the Bean Seed	2
7 Conditions necessary for germination	1
8 Dispersal of fruits and seeds	2
9 Common trees—Evergreens and deciduous erect and weak stemmed plants.	1

II. ANIMAL LIFE (13 LESSONS).

1 Food habits of common animals, structural adaptations—Cow, sheep, horse, cat, dog and squirrel	2
2 Locomotion of animals—adaptations—walking, jumping, running, creeping, swimming and flying	1
3 Vertebrates and invertebrates	1
4 Protective colouration in animals with familiar examples from reptiles, birds and insects	2
5 Fishes and their ways. Adaptation for an aquatic life	1
6 Domestic birds—Fowl, habits and upkeep	1
Pigeon—Habits and structural adaptations	1
7 Life history of the frog	2
8 Life history of the butterfly	1
9 Eggs. Purpose—hen's egg, a study of shape, structure	1

III. OURSELVES (6 LESSONS).

1 Importance of food for man and animals for growth and work. Articles commonly used as food, vegetarian and non-vegetarian food ..	1
2 Respiration in man—respiratory movements, organs of respiration ..	1
3 Importance of breathing through the nose, bad air and ventilation ..	1
4 Five senses. Sense organs and brain	2
5 Chief aids to health—Good food, exercise, sleep, air and sunshine ..	1

IV. NATURAL PHENOMENA (11 LESSONS).

	Number of lessons contem- plated.
1 The sun, moon and stars. The earth and its movements	1
2 The sun—a huge ball of fire, day and night, sunrise and sunset ..	1
3 The sun as a source of energy—Light. Necessity for sunlight for all life	1
4 Air—All pervading. Necessity for air. Breathing and burning ..	1
5 Water—Chief sources—Properties—Water, ice and water ..	1
Vapour—Clouds—Rain	2
5 (a) Drinking water—importance—purification	1
6 States of matter—solid, liquid and gas	1
7 Soil—different kinds—Gravel, sand, clay and humus—Mechanical analysis	1
8 Heat—Fire through the ages, uses of fire to man	1
9 Light—Importance of light. Natural and artificial	1

V. HARNESSING FORCES OF NATURE (3 LESSONS).

1 Air pressure—Barometer	2
2 Windmill	1

VI. HOME COMFORT (3 LESSONS).

1 Building a house—Timber and stones	2
2 Ventilation, cleaning and white washing	1

VII. COMMUNITY COMFORT (2 LESSONS).

1 Paper making	1
2 Common metals and uses	1

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STANDARD VII.

I. PLANT LIFE (12 LESSONS).

	Number of lessons contem- plated.
1 Absorption and transpiration—Roots and leaves. Significance of the deciduous habit	2
2 Storage in plants—Stem, root, leaves. Seeds ginger, Amor- phophallus. Potato, Radish, Carrot, cabbages and other familiar examples of fruits and seeds	2
3 Defences in plants	1
4 Flowers—Parts of a flower—Thesposia. Bean, Datura. The functions of various parts	2
5 Plant adaptations for the environment. Climbers and Twiners ..	1
6 Vegetative propagation. Cutting, layering	1
7 Seeds—Germination of the date seed. Comparison with Bean ..	1
8 Monocots and Dicots. Main external differences with familiar examples	1
9 Cultivation of cotton	1

II. ANIMAL LIFE (12 LESSONS).

1 Food habits of common birds. Structural adaptations crow, hen, pigeon, parrot, woodpecker, kite, duck and crane	2
2 Monkeys and their ways	1
3 Spiders and their ways	1
4 Structure and habits of parrots	1

II. ANIMAL LIFE (12 LESSONS)—cont.

	Number of lessons contem- plated.
5 Structure and habits of owls	1
6 A study of the common lizard and bloodsucker	1
7 Earthworms—Structure and what they do	1
8 Defence in animals (1) poison Snakes—Scorpions and (2) External covering—Tortoise, crab and snail	2
9 Social insects—The ways of ants	2

III. OURSELVES (6 LESSONS).

1 Nutritious food—Importance of mixed diets and vegetables. Cooking of food—Elementary ideas regarding digestion and absorption ..	1
2 Clothing—need for different kinds	1
3 Personal Hygiene—Eye, ears, teeth, nose and hair	1
4 Skeleton—Use—Main parts	1
5 Muscles—Use—Situation—Voluntary and involuntary	2

IV. NATURAL PHENOMENA (12 LESSONS).

1 The sun a star. Meteors and comets	1
2 The earth—its rotation—seasons	1
3 Air—Composition of air	1
4 Pressure in liquids. Water finds its level. Water level and spirit level	2
5 Weight and volume. Their measurements	1
6 Gravity. Equilibrium—Different kinds	2
7 Water in the soil—Dry and marshy soils—Aeration of the soil—Soil and plant growth	1
8 Expansion of bodies when heated. Temperature—Thermometers Clinical Thermometer	2
9 Reflection in a plane mirror	1

V. HARNESSING FORCES OF NATURE (2 LESSONS).

1 Water-falls—Water-wheels	1
2 Steam Engine—Elementary ideas	1

VI. HOME COMFORT (2 LESSONS).

1 Bricks and tiles. Lime, concrete and cement. How prepared—sheet glasses and asbestos	2
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VII. COMMUNITY COMFORT (4 LESSONS).

1 Common salt	1
2 Common alloys and their uses	2
3 Making of glass	1

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1. *Garden work.*—(a) In addition to the work outlined for VI, the following to be included—Cultivation of ginger, turmeric, sweet potato and Amorphophallus (Senai); (b) Practice in the vegetative methods of preparation mentioned in the class; (c) Germination studies of the Bean and date seeds; (d) Growing cotton plants, if possible.

2. *Museum activities.*—(1) Collection, identification and preservation of the eggs of common birds (2) collection, identification and mounting of the feathers of common birds.

3. *Field activities.*—
(a) Observation of the common birds regarding their nesting, food habits and cries.

(b) Study of spiders or blood-suckers.

(c) Visits to a brick-laying yard, lime kiln and salt bed.

(d) Study of the making of mortar, concrete and concrete bricks.

STANDARD VIII.

I. PLANT LIFE (13 LESSONS).

	<i>Number of lessons contem- plated.</i>
1 How food is made by the plant. Importance of sunlight Co ₂ and green colour, work of leaves	2
2 Respiration in plants	2
3 Movements in plants—Geotropism, Heliotropism, Hydrotropism and Sleep movements	2
4 Reproduction by grafting	1
5 Flowers—Pollination, how effected, significance of pollination and fertilization	2
6 Plants and environment. Water plants—Prickly-pear	2
7 Cultivation of paddy	1
8 Flowering and non-flowering plants—Familiar examples of the latter	1

II. ANIMAL LIFE (13 LESSONS).

1 The habit—Structural adaptations—Ways of living	1
2 Snakes—Poisonous and non-poisonous. Casting off of skin, and its significance, movements, food habits	2
3 The scorpion—a general study	1
4 Monkeys and their ways	1
5 Wild animals—The cat family and the dog family	2
6 Bats—Neither beast nor bird. Life habits	1
7 House-fly—Life history. Carrier of diseases	2
8 Dragon flies—Life history	1
9 Grasshopper—Life habits—Pest, eradication	1
10 Social insects—Honey bee	1

III. OURSELVES (6 LESSONS).

1 Food—Building materials and builders. Fuel foods—Food values of common articles—Balanced diet	2
2 Circulation of blood—Work of the heart—Arteries and veins—Impure and pure blood. Purification of blood	2
3 Excretion—Skin and kidneys and lungs—Necessity for excretion—Care of the skin. Regulating the bowels	2

IV. NATURAL PHENOMENA (14 LESSONS).

1 Eclipse—Solar and Lunar	1
2 Stellar constellations	1
3 Rainbows	1
4 Air—Burning and rusting. Preparation of oxygen, carbondioxide and nitrogen	2
5 Elements, compounds and mixtures	1
6 Acids, alkalies and salts—Common examples for the first two and tests for	2
7 Fertility of the soil—Tilling—Fertilizers and manures—Rotation of crops	2
8 Transmission of heat—conduction, convection and radiation—Water and air currents, thermos flask	2
9 Crystal—Properties—Preparation—Nature of solutions	2

V. HARNESSING FORCES OF NATURE (1 LESSON).

1 The siphon	1
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VI. HOME COMFORT (2 LESSONS).

1 Lighting the home—Lamps through the ages. Merits and demerits.	2
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VII. COMMUNITY COMFORT (1 LESSON).

1 Soap-making	1
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Practical activities suggested.

1. (a) Garden work: Besides the work suggested in Standard VII. Simple studies in grafting may be undertaken. Also, garden experiments with common vegetables grown with and without manuring.

(b) Maintaining a beehive if possible.

2. Museum activities—

(a) Collection of different kinds of flowers and seeds.

(b) Collection of different kinds of fern fronds, mushrooms and bracket fungi.

(c) Collection of the cast-off skins of snakes and identifying.

3. Field studies—

(a) Observation of monkeys, bats, dragon flies and grasshoppers.

(b) Observation and recording of birds and insects visiting flowers.

(c) Field studies of the stages in the cultivation of paddy, rotation of crops—plants used for rotation.

(d) Visit to a soap factory if there is one nearby.

(e) Observation and identification of common Stellar constellations.

Minimum requirements of apparatus, etc.

Three glass beakers without spouts, a few test tubes, a test tube holder, a collection of corks, a spirit lamp, an ink filler, few lengths of glass tubing one or two bell jars with tube cores, a glass pane, a circular shallow porcelain dish, balance with weights, spring balance, thermometer, a powerful magnifying glass (mounted), spirit level, tripod stand, a plane mirror (not framed) model of windmill and water-wheel made in prevocational class—siphon.

Charts—Purchased or drawn in the school—Food values—Human physiology, animal and plant life.

Museum specimens of stuffed birds—at least a few candles, tincture of iodine, phosphorus, common acids and alkalis, litmus papers.

Madras,
3rd June 1950.

D. S. REDDI,
Director of Public Instruction.

