



DIRECTORATE OF SCHOOL EDUCATION, MADRAS

State Institute of Educational Technology

STATE FILM LIBRARY

# Catalogue of Films and Film Strips

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State Institute of Educational Technology

STATE FILM LIBRARY

**CATALOGUE OF  
FILMS AND FILM STRIPS**





## INTRODUCTION

The Directorate of School Education, Tamil Nadu is now releasing the latest catalogue of films and filmstrips. The sixth five-year plan envisages the adoption of new innovations in Educational Technology for the universalisation of primary education and qualitative improvement at all levels of education. The Government of Tamil Nadu is spending a considerable amount every year for the purchase of Educational films and filmstrips. For a long time it was felt that a codified catalogue of available films and filmstrips will be of considerable help to the Heads of Institutions who plan to avail the existing facilities. The catalogue contains about 450 films and 750 filmstrips arranged in the order of subjects. It will be seen from the titles given in this catalogue that a large number of films and filmstrips can be easily integrated with the regular classroom teaching work. It is now accepted that teaching is no longer an art nor is it yet a science. It is the skilful application of knowledge with experience and scientific principles to the purpose of setting up an environment to facilitate learning. Thus teaching is a technology. The different kinds of soft-ware enlisted in this book will certainly provide the teacher a vast range of opportunities to select and utilise proper ones for supplementing his classroom teaching.

It is now hoped that Heads of schools will make the best use of this catalogue so that vast avenues of applying technology in the realm of education can be opened up in future. I am indebted to the Director of School Education, Madras who is always our source of inspiration in this task of bringing out this valuable catalogue.

My thanks are due to the members of the State Institute of Educational Technology for their hard endeavour bringing out this catalogue in time.

OFFICE OF THE  
DIRECTOR OF SCHOOL EDUCATION,  
MADRAS-600 006.

**J. GOPALAKRISHNAN,**  
*Deputy Director of School Education*  
*(Educational Technology).*

## TO THE USERS.

The Government of Tamil Nadu have graciously permitted to print this film catalogue with complete details of the films and filmstrips available in the State Film Library in their Order G.O. Ms. No. 651, Education, dated 27th May 1981. This catalogue is supplied freely to all schools in our State.

The procedure for enrolling the school as a member of the State Film Library and the method of taking films and filmstrips on loan and returning them to the State Film Library are furnished hereunder for the guidance of the Heads of Educational Institutions in Tamil Nadu.

The Heads of schools who possess a 16 mm. sound projector or a 35 mm. filmstrip projector have to apply in the form given in Appendix "A" of this catalogue to the Director of School Education to enrol their institutions as members of the State Film Library. *No membership fee* will be charged. On receipt of intimation from this office about the enrolment of their schools as members of State Film Library, the Heads of such schools can apply for loan of films and filmstrips in the prescribed application form given in Appendix "B" of this catalogue. The conditions for the loan of films and filmstrips are given in Appendix "C". The application for loan of films/filmstrips has to be sent atleast two weeks before the date of the show. The films will be sent by registered parcel post and the films have to be properly packed and then returned by the school by registered parcel post addressed clearly to the State Film Library, Directorate of School Education, Madras-6, along with the report on the film show in the form given in Appendix "D."



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**DIRECTORATE OF SCHOOL EDUCATION, MADRAS -6.**  
**STATE INSTITUTE OF EDUCATIONAL TECHNOLOGY CELL**  
**STATE FILM LIBRARY.**

**CATALOGUE OF 16 MM FILMS :**

**ART**

- 1. What is art : Sound/Colour/68 m. 6 min.**

The film provides an introduction to the series and shows elements which are to be presented separately, encourages children to discover the basic elements in the world around them, to find new relationships, to experiment with a variety of materials and to understand what the elements mean in terms of art.

**ASTRONOMY.**

- 2. A world is born : Sound/Colour/240 m. 22 min.**

The position of the sun, meteors, stars, action of volcanoes and the formation of crust are presented. Evolution of living things from unicellular to multicellular things like fish, amphibians, reptiles and mammals are shown in bright colour.

- 3. Sun and how it affects us : Sound/B & W/105 m. 9 min.**

This film presents a comprehensive study of the sun, its size, distance from the earth, physical nature and its effect on life, weather and tides on earth. It provides a basic understanding of the probable origin and effects of the corona, prominences, flares and sunspots.

**BIOLOGY.**

- 4. How insects help us : Sound/ B & W/115 m. 10 min**

Two boys go fishing and become aware of many useful insects. Some are valuable because they destroy others that are harmful. Some become food for fish and birds. Bees carry pollen and make honey, silkworms and others are beautiful to observe.

- 5. Adaptations of plants and animals : Sound/B & W /120 m. 11 min**

The film illustrates with examples the adaptations of living things to environments, for getting food and for protection.



**6. Bushland fantasy : Sound/Colour/120 m. 11 min.**

The behaviour of birds and animals are studied in nature's environment. It shows thousands of flowers spread all over the country. It shows animals such as Kangaroos collecting food and feeding their young ones. Birds build their nests even under the ground.

**7. Essence of life : Sound/Colour/240 m. 22 min.**

The characteristics of the lives of plants and animals are presented clearly in colour. The locomotion, food habits, reproduction in plants' response to stimuli are presented through various examples of plants and animals. The life stages of silkworm, the structure of plant cell and animal cell, the functions of nucleus are also presented.

**8. Interdependence of living things : Silent/B & W/120 m. 15 min.**

The film shows the planting of a sapling, growth of new roots and the various methods of grafting. The grafting of evergreens during winter, grafting of apple roots and the bud grafting of roses are presented in this silent film.

**9. Making a balanced aquarium : Sound/B & W/120 m. 15 min.**

The film shows how to make a good and balanced aquarium. Two boys collect gravel from running water and place soil above the gravel. They pour clear pond water, and water plants are planted and then fish and algae are collected for the aquarium. The film also shows the maintenance of the aquarium.

**10. Nature's plan : Sound/Colour/120 m. 11 min.**

The film shows the various steps in the life cycle of a typical flowering plant, the pea. It identifies the roles of roots stems, leaves, flowers, fruit and seed. Live action shots are dramatized through the medium of time lapse photography.

**11. Nature's symphony : Sound/Colour/120 m. 11 min.**

Nature has many things, big and small, bright and beautiful. The film shows the behaviour of plants and insects like butterfly etc., and other big animals. Advantages of cross pollination are explained. Nature has many beautiful things that will captivate the hearts of everyone.

**12. Through the woodlands : Silent/B & W/90 m. 8 min.**

A pond and its surroundings are beautifully photographed. Water birds swim in the pond. Beautiful flowers are really a feast to the eyes.

A typical nursery where saplings are raised and classified according to families is shown.

**13. Where the desert blooms : Sound/B & W/120 m 11 min.**

The story of the development of the village- Suratgarh is well narrated. This model farm in the desert area around Suratgarh in Rajasthan is the result of the technical co-operation of the Government of U.S.S.R.

**14. Worms to wings : Sound/B & W/150 m. 14 min.**

The film shows the metamorphosis of the butterfly. Micro photography is used to study the later stages of development inside the egg. The caterpillar grows rapidly as it feeds on the leaves of the plant shedding its skin now and then. It prepares a silky loop for the pupal stage and finally emerges out as a fully grown butterfly.

**15. Leaves : Silent/B & W /75 m. 7 min.**

The film analyses the various functions of the leaves. Fresh leaves make their appearance in spring. Leaves manufacture food for plants. The blossoming of a horse chestnut bud is presented through time lapse photography. The presence of chloroplasts and stomata are explained.

**16. Pollination of plants : Silent/B & W /360 m. 33 min.**

This film explains the process of pollination by wind, insects and self pollination. The various parts of the flower are explained. Wind pollination is seen in the wild Geranium and the characteristics of insect pollinated flowers and devices favouring cross pollination are shown in the poppy, schizanthus, Broom Meadow, sage and cora flower. Speeded up photo micrography shows the germination of pollen grains in a sugar solution and the growth of the pollen tubes and penetration of the ovule is explained by animated diagrams.

**17. Golden Antelope : Sound/B & W/360 m. 33 min.**

Here is a story of a greedy king who tries to own the antelope which toes forth gold coins. A shepherd boy hides the antelope from the clutches of the pursuers. The king threatens to kill the boy. When the antelope was finally brought before the king, it agrees to toe forth gold coins subject to the condition that if the king said "enough" all the gold will turn into clay. This happens at the end.

## CHEMISTRY.

**18. Air all about us : Sound/B & W/105 m. 9 min.**

The concept of air pressure is clearly explained in this film. The role of air pressure in cycle tyres, bus tyres and in aeroplane is also explained.

**19. Blast furnace : Sound/B & W/195 m. 16 min.**

Blast furnace and its parts are explained. The mode of functioning is also well illustrated. The different types of furnaces which are used in the production of iron, steel and glass have been described.

**20. Chemical changes all about us : Sound/B & W/120 m. 11 min.**

The results of a chemical change are explained. Definition of a compound is given. The formation of a compound is also shown. Chemical reactions in which heat is produced or absorbed and the chemical changes that take place in our body are shown.

**21. Hydrogen : Sound/B & W/150 m. 14 min.**

This film gives the history of the discovery of hydrogen and shows how it is produced in the laboratory and commercially. The film also gives an account of important industrial uses including new developments in the fields of nuclear energy.

**22. Oxygen, its nature and uses : Sound/B & W /180 m. 18 min.**

This film describes the principal properties of Oxygen and demonstrates its vital significance for human beings, animals and plants. Also shows the extensive uses of oxygen in various branches of technology.

**23. Safety in Chemistry laboratory : Sound/B&W/150 m. 15 min.**

This film shows professional chemists using safety measures in their experiments. The High School Students are learning the correct way of using laboratory aprons. The necessity of laboratory manual is insisted. It emphasises the students to read the labels on the bottles and warns them against testing the chemicals by crude methods like touching and tasting.

**24. Sulphur and its compounds : Sound/B&W/120 m. 11 min.**

The film shows the places of occurrence and the properties of sulphur. The allotropic forms, compounds of sulphur and the uses of sulphur and its compounds in the field of medicine and agriculture are highlighted.

### **CITIZENSHIP.**

**25. Are you a good citizen : Sound/B&W/120 m. 11 min.**

The film defines the nature and the qualities of a good citizen. The film shows that a good citizen will perform basic civic duties, take part in group activities, know and obey law, keep informed on public affairs and will be a good neighbour.




**26. Citizens and Citizens :** Sound/B&W/120 m. Tamil 11 min.

The film explains the importance of good citizenship. It stresses the need for proper training of boys and girls during their young age so that they may become good citizens.

**27. Citizenship and you :** Sound/B&W/120 m. 11 min.

The film highlights the qualities and behaviour of a good citizen.

**28. Focus on Fraud :** (Tamil) Sound;B&W;120 m. 11 min. 

This film throws light on the anti-social elements and shows the methods employed by them in cheating the public. It stresses the need for public co-operation with the authorities for the successful detection of crime.

### FORESTRY.

**29. Adventuring in Conservation :** Sound/B&W/150 m. 14 min.

This film shows the interdependence of living things in nature. The importance of our nature's resources and what we can do to conserve them is stressed. Camping practices, that will help to conserve nature resources is explained.

**30. The changing forest :** Sound/B&W/210 m. 20 min.

The film shows the behaviour of birds and animals in the forest. The development of forest, new vegetation, various seasons and the soil of the forest are explained.

**31. Forest grows :** Sound/Colour/120 m. 11 min.

This film presents the story of growth of forests and describes the various elements that contribute to the development of forest zones in relation to temperature and rainfall and defines the phrase "The Climax forest."

**32. Uses of forests :** Sound/B&W/105 m. 9 min.

The film presents the various uses of trees and plants in the forest. Trees and woodshavings are used as firewood, plywood is used for roofing. Its use in the paper industry is also depicted. It shows the hills are the natural resources of forest.

### FOOD.

**33. Clean milk :** (Films Division) Tamil Sound/B&W/180 m. 17 min.

This is an instructional film for both the layman and milkman which tells them how to rear cattle under clean and healthy conditions. Essential precautions to be taken while milking and preserving milk in the right way are shown.

**34. Fruits and vegetables :** Silent/B&W/60 m. 5 min. (2 copies.)

This film shows the various uses of fruits and vegetables used by human beings and animals. The film ends with the recapitulation of the names of fruits and vegetables.

**35. Pepper :** Sound/B & W/210 m. 20 min.

The film shows in detail the various improved methods in pepper cultivation, like selection of parent vines, control of diseases and pests. It depicts the scientific manuring and the right way of harvesting to obtain best results.

**36. Vitamin "D" :** Silent/B&W/120 m. 11 min.

This film explains the importance of vitamins in the life of human beings. Shows the sources and foodstuffs rich in Vitamin 'D' and the diseases caused by deficiency of Vitamin 'D'.

### GENERAL.

**37. America on the moon :** Sound/Colour/105 m. 9 min. (2 copies.)

This film gives a vivid picture about Apollo 11's journey to the moon. Astronauts' landing on the moon, their stay on the moon and their return journey are explained.

**38. Carpenter :** Sound/B&W/120 m. 11 min.

The film stresses the important role of the carpenter in the community just like the doctor, lawyer and the school master. The film shows the carpenter at work with his tools. Shows the son being apprenticed by his father and the sense of pride that he gets when he acquires his father's skill.

**39. Here comes the circus :** Sound/B&W/105 m. 9 min.

This is a general film showing the various activities in the circus.

**40. Jungle Marauders :** Sound/B&W/90 m. 8 min.

In the forests of Africa, a ferocious tiger, the jungle marauder is seen stalking his prey. His unsuccessful attempts at carrying off a baby elephant, a panther and a caribon are shown. Finally the marauder attacks an indolent python.

**41. Light house Keeper :** Sound/B&W/120 m. 11 min.

This film presents the duties of a light house keeper and the maintenance and the working of a light house.

**42. Men for Machines :** Sound/B&W/95 m. (Films Div.) 8 min.

Describes the selection and technical training of young boys and shows how the employment exchanges help and guide the young people to choose the right type of career that suits one's ability.

**43. National Defence Academy :** Sound/B&W/95 m. 8 min.

This is an account of the training given to the future officers of India's three armed services. The National Defence Academy at Dehra Dun is the centre where cadets are trained for the Army, Navy and the Air Force. The entire course of training is presented in a vivid manner.

**44. People who work at night :** Sound/B&W/180m. 18 min.

The film shows a taxi driver on duty at night. Shows the workers of various firms who work at night. Taxi driver meets people waiting in the station for the arrival of the train and the workers work in a milk factory and bakery, policemen, fire men, doctors and nurses in the hospital, paper boys and milkmen work at night.

**45. World on show :** Sound/B&W/135 m. 12 min.

The 1958 Brussels World Fair is brought to screen with all its pageantry and international flavour. Forty three nations are shown building a world in miniature to display the best that each country produces.

### **GEOGRAPHY.**

**46. Ancient Greece :** Sound/B&W/120 m. 11 min.

Presents the geographical location and the historical period of ancient Greece. Pottery making, architecture, sculptures, beauty and dignity of the people of Greece are shown in this film.

**47. Australia—land and people :** Sound/B&W/180 m. 18 min.

Shows the two halves of the continent, the upper hotter area and the lower cooler area. Presents the geographical location, distance from various important countries and the life of the people of Australia and their occupations.

**48. Cliff hangers :** Sound/Colour/105 m. 9 min.

The film shows the experiences of cliff hangers in climbing over the mountains. The dress and shoes worn by them and their climbing the cliff using ropes are also shown.

**49. City of many faces :** English/Sound/Colour/180 m. 18 min.

The various activities at the harbour, fish factory, steel industry club and hotel, sports, skating and the salient features of a big canadian city are presented in this film.

**50. Climate of North America :** Eng./Sound/Colour/180 m. 18 min.

This film presents a visual explanation of what climate is and how it shapes the vegetation and the life of the inhabitants of North America's climatic regions.

**51. Climate of India :** English/Sound/B&W/330 m. 30 min.

The cycle of seasons and their causes, the onset of monsoon on western ghats, cyclonic winds in the eastern and Northern regions and snowfall in the Himalayan ranges are all shown in detail. Temperature atmospheric pressure—the factors affecting the climate formation of sea breeze and land breeze and blowing of the wind are illustrated.

**52. Calcutta :** Eng./Sound/B&W/240 m. 21 min.

This film brings to the screen the salient features of India's largest city—Calcutta and the activities at the harbour—railway station—cine-drome—schools and colleges—factory, Museum—Industries—Zoo, etc.

**53. Coastal plains of India :** Eng./Sound/B&W/240 m. 21 min.

This is an interesting travelogue on the trip of land along the seacoast of peninsular India. It depicts the physical features, climatic conditions vegetation and the people of the region pursuing varied occupations.

**54. China—land and people** Sound/B&W/150 m. 14 min.

We visit Nanking, the old capital and learn about crowds—traffic, styles and superstitions. People live and labour just as their ancestors have lived for thousands of years. Celebration of New Year Festival at an ancestral temple, the foreign influences and China going modern are shown.

**55. Children of Italy:** Silent/B&W/120 m. 11 min.

This film presents the day in the lives of children who live in a farm near Rome. Children are going to school—praying, studying and playing games. The family's bread is baked in an oven outside.

**56. Golden river :** Tamil/Sound/B&W/110 m. 9 min.

The film is about the holy river, the river of fertility, the golden river of the south—the Cauvery. It flows eastwards for nearly 500 miles before entering the Bay of Bengal,—its water being utilised for the generation of electric power at Sivasamudram. The life along its shores and the Mettur Dam where its water is used for irrigating thousands of acres of land are shown.

**57. Ganges :** Sound/English/B&W/180 m. 18 min. 2 copies (3 reels).

The film presents the story of the Ganga, the longest river in India and traces its course from the Himalayas through Hardwar, Banaras and plains of Bihar and Bengal where it finally joins the Bay of Bengal near Calcutta.

**58. Godavari :** Sound/B&W/180 m. 18 min.

This film traces the course of the river Godavari as it flows through the Deccan Plateau and spotlights the river's contribution to the enrichment of its soil.

**59. Indo Gangetic plain (Part I) :** Sd/B&W/240 m. 21 min. Eng.

Presents the physical features, flora and fauna of the Indo gangetic plain.

**60. Indo Gangetic plain (Part II) :** Sound/English/240 m. 21 min.

The film shows the Himalayas, the forests on the mountain, the, beautiful lakes and valleys and vegetation, the west coast regions, the Nilgiri hills and Bombay. The black soil which is ideal for the growth of cotton and the comparative features of the rivers of North India with that of South India are highlighted.

**61. Indo Gangetic plain (Part III) :** Sound/B&W/240 m. 21 min.

An interesting travelogue to the cities situated at the banks of river Ganga and pilgrimage centres—Haridwar, Mathura—Banaras—Golden temple at Amritsar—Pataliputra and Taj Mahal, the queen of architecture and Terracota's architecture, the Kutabminar, the Red Fort, the various activities at Delhi and the Industrial cities Kanpur—Digbair and Calcutta, the centre of industry and trade are also shown.

**62. Indian Canoemen :** Sound/Colour/105 m. 9 min.

Two men start on a voyage by a canoe through Hudson Bay. The film presents a pictorial narration of their experiences on the way.

**63. Indonesia land and people.—Sound/B&W/120 m. 11 min.**

The Republic of Indonesia is a group of islands. People from various parts of the world migrate and settle at Indonesia. It is a nation in transition. The film shows the life of the people, their workmanship in handicrafts and their traditional methods of entertainment.

**64. Italy—the peninsula of contrast.—Sound/Colour/180 m. 18 min.**

The film shows the Terrain, Milan of Northern Italy ; Florence and Rome of Central Italy ; Naples at the south, the Cathedral at Milan, farmers using modern machines in agriculture, development of Rome and Modern Rome as compared with ancient Rome. In spite of its many contrasts, Italy is a modern country playing vital role in the history of mankind.

**65. Japan—land and people.—Sound/B&W/105 m. 9 min. (2 copies).**

The modern island nation, small, mountainous with limited amounts of land takes on the tremendous job of growing and supporting itself. The relationship between the climate and the crops, between trade and industry and its age long production of rice, tea, silkworms and timber as the basis for its modern industry are the highlights of the film.

**66. Kerala.—Sound/B&W/180 m. 18 min. (Tamil).**

This film brings to the screen, the scenic grandeur of Kerala, the wildgame sanctuary on the banks of the picturesque periyar lake—various uses of coconut—the celebration of Onam festival—a thrilling boat race—the spectacular temple festival and the famous dance drama Kathakali.

**67. Life in cold lands.—Sound/B&W/110 m. 10 min. (2 copies).**

Life of an Eskimo family in the Arctic region is presented. Fishing and hunting are their occupation. They try to keep them warm. Fish is caught and the meat is dried and stored.

**68. Life in mountains.—Sound/B&W/120 m. 11 min. (2 copies).**

The film presents the life of a family near a mountain, their activities, dress and their food habits.

**69. Life in a fishing village.—Sound/B & W / 105 m. 9 min. 2 copies).**

Life of a fisherman making fishing, net-fishing activities, their ways of working, their constructing a new house are presented in this film.

**70. Life in hot wet lands.**—Sound/B & W/ 120 m.

Life of the people near equator, Congo basin, Amazon river basin and East Indies and their food habits and their ways of entertainment are presented in this film.

**71. Life in hot dry lands.**—Sound/B. & W./ 120 m.

The film shows the land without water—mountain top—green deserts at various places in the world, hot desert—desert plants and birds reptiles and the camels used for transport.

**72. Life in low lands.**—Sound/B. & W./ 120 m.

Grand-father shows Nina and Peter how much of their country was reclaimed from the sea and made rich into fields of farm land. The basic relationship between man and his environment is depicted in the film.

**73. Madurai.**—Sound /B. & W./120 m./Tamil—11 min.

The great and imposing story of the thousand pillared Meenakshi Temple of Madurai is told vividly in this documentary which presents the intimate details of the ancient sculpture and architecture of this famous temple.

**74. Malaya peninsula.** Sound/B. & W./120 m. 11 min.

This film depicts life in Malaya and of the impact of western culture on the culture of the east. The economic importance of Malaya as a producer of tin, rubber, tea and rice and the development of Singapore as a trading centre are highlighted.

**75. Mexico.**—Sound/B. & W./ 90 m. 8 min.

The life and activities and the entertainment of the people of Mexico are depicted in this film.

**76. Physical features of India.**—Sound/B. & W./ 300 m. 28 min.

The physical features—hills—rivers—valleys, food habits of the people—Flora and fauna are shown in this film. Physically India is divided into three parts (1) Himalayan region (2) Indo-gangetic plain (3) Peninsular India.

**77. River Krishna.**— Sound/B. & W./180 m./ Tamil. 18 min.

The second big river of India, River Krishna flows through the States of Maharashtra, Mysore and Andhra Pradesh touching various places of historical architectural and mythological importance. These places include Satara with a famous fort, Sri Sailam, the Twelve jyotirlingas, Amaravati and Nagarjunakonda once a seat of the Buddhist learning and now the site of an gigantic dam.

**78. Round of the seasons.** Sound/B. & W./105 m. 9 min.

The change of the seasons, the occurrence of day and night, the relationship between the earth, the sun and the moon are shown in the film with globe and diagrams.

**79. Soviet Union-land and people.**—Sound/B. & W./ 180 m. 18 min.

Surveying the largest country in the world, this film shows its diversity in landforms, climate and human activities. Emphasis is laid upon the expansion of heavy industry increased production and wider use of previously under developed land. Life in the forest belt area—Black earth region and coal mining are depicted.

**80. South-East Asia land and people.**— Sound/B. & W/ 120 m. 11 min. (2 copies).

Shows the four countries of South-East Asia—Burma, Thailand, Malaya and Indochina as vital sources of world products such as rubber, oil, teak and rice. Fish is the chief source of food for the people. The busy cities of Singapore and Rangoon are also shown in the film.

**81. Song of snow.**—Sound/B. & W./120 m. 11 min. (Tamil).

Portrays the majestic height of the Himalayan peaks including Mount Meru, the legendary centre of earth and the seat of Lord Vishnu, and the ageless, timeless Mount Kailas. Also depicts how snow is transformed into glaciers which give birth to rivers like the Ganga, Yamuna, Brahmputra and Kasi.

**82. Story of Storm.**—Sound/B. & W./ 105 m. 9 min.

The dramatic story of a single storm showing the conditions that cause a rainstorm. The film shows the different kind of clouds, the pressure areas, fronts and the meteorological instruments that are being used.

**83. Seven islands.**—Sound /B. & W./ 210 m. 19 min.

Bombay, the thickly populated land once consisted of seven swampy islands jutting out into the Arabian sea. Today a very different scene unfolds. The seven islands now team with three million people comprising different castes, creeds and nationalities. Its expanding docks handle the imports and exports of the vast hinterland of India—cotton, oilseeds, skins, machinery, motor car, chemical and petrol.

**84. Silent Sentinel.**—Sound/Colour/210 m. 19 min.

Shows how the Himalayan mountains have been an intimate part of our art, literature and mythology through the centuries and how they have influenced various aspects of our lives and have become a part of



our heritage. The origin of many rivers, the valley of Kashmir and its people—the various tribes and their occupation and the cultivation of potatoes, coffee, apple, pine-apple, etc., are also shown in the film.

**85. Tanjore :** Sound/B. & W./ 165 m. Tamil 15 min. (2 copies).

This documentary highlights the historical and cultural background of Tanjaore and gives a graphic account of the various arts and architecture that have flourished in this region.

**86. Tungabadra :** Sound/B. & W./ 115 m. Tamil 10 min.

Describes the Tungabadra dam in the south as one of the largest dams and its storage reservoirs showing a unique experiment inter-state co-operation. This project is designed to benefit the drought stricken areas in the districts of Bellary and Raichur in Mysore State and Anathapur, Cuddapah and Kurnool in Andhra Pradesh regions.

**87. Wanders of the desert :** Sound/Colour/120 m. 11 min.

The Arabian desert and the life of the people in the desert lands, their food habits and their entertainment are depicted in this film.

**88. Face of the Earth :** Sound/Colour/ 120 m. 11 min.

Shows the changes in the face of the earth from its beginning as a molten sphere to its present state. Portrays the forces of nature at work building up and tearing down the land forms. Gives some good sequence of part of earth in a molten state and of lava flowing from volcanoes.

## HISTORY

**89. Century of Indian archaeology :** Sound /B. & W./ 180 m., Tamil 8 min.

This film depicts the beginning of archaeology in India and briefly recounts the archaeological work done during the last 100 years. Some dramatic discoveries like the paleolithic finds in South India and the foot hills of the Himalayas, megalithic monuments, the excavations at Harapa, Mohenjodaro, Ranpur, Lothal, Hastinapur have been highlighted

**90. Moguls :** Sound/Colour/240 m./Tamil. 21 min.

Depicts the Mughal period from the advent of Babar to the coming of the British. Presents the Mughal monuments of Delhi, Agra, Fatehpur Sikri and Sikandara. Also depicts history through paintings and diagrams.

**91. Mogul glory : Sound/Colour/240 m. 21 min.**

This film brings to the screen the architectural beauty of the monuments of Agra and Fatehpur Sikri. The monuments shown here include the famous Jama Masjid. The Dewan-i-Khas, Queen's chambers and Panch Mahal from where Akbar listened to the music of Tansen.

**92. Meaning of Industrial Revolution : Sound/B. & W./120 m. 11 min.**

Traces the background and its repercussion on western civilisation. Men and women work together in various factories. Working of a power loom water-wheel in the production of power—coalmine in England—iron and steel industry—revolution in various industrial fields are highlighte . .

**93. Nalanda : Sound/B & W./105 m., Tamil 9 min.**

This film is in an attempt to capture the spirit that animated the ancient University of Nalanda—give a brief account of the scholastic activities of the University of Nalanda, the seat of learning and the temple of Buddha, proclaiming the doctrines of Buddha.

**94. Prehistoric times—world before man : Sound/B. & W./105 m. 9 min.**

This film shows the plants and animals that existed in the various eras which are called Geologic eras, viz., Archazoic, proterozoic, Paleozoic, Mesozoic, Cenozoic.

**95. Renaissance : Sound/B. & W./115 m. 10 min.**

This film highlights the revolutionary changes in the intellectual and scientific knowledge in the period from 1,300 to 1,600 AD, the invention of printing and the consequent expansion of knowledge—Galileo's invention of the principles of pendulum and the law of falling body—rebirth of learning, literature, Sir Thomas Moore, Shakespeare—painters, sculptors and architects like Leonardo-da-vinci, the Madonnas of Raphael and Michaelangelo.

**96. This is a challenge : Sound/B. & W./105 m. 9 min.**

This film depicts the evils of war and the destruction caused by it, the foundation of United Nations Organisation and the tasks of United Nations Organisation to banish war and to preserve peace and the various tasks of the United Nations Organisation to meet the challenge and to spread the knowledge of science for the welfare of the nations especially in the fields of agriculture, fisheries, industrial development, food, nutrition and health.

**97. UNESCO and India : Sound/B. & W./240 m. 21 min.**

This film highlights India's role in the building up of the UNESCO and provides glimpses of work carried in the country towards the implementation of UNESCO's programmes. Projects such as Fundamental education, Mass communication—books for schools and libraries, building up of Art galleries and museums, developing agriculture and industry, social education and community development, adult education are all depicted.

**98. Workshop for peace : Sound/B. & W./360 m. 30 min.**

Building up of peace and fighting for freedom, the organs of United Nations Organisations are their functions in the cause of peace are highlighted.

**99. Story of a life saver : Sound/B. & W./115 m. 10 min.**

The Setting up of the streptomycin factory in 1962, by the Hindustan Antibiotics, Pimpri and the manufacturing process of this drug are explained in brief in this film. This miracle drug has proved effective in the treatment of dysentery, plague, cholera, meningitis, pneumonia and most others especially in reducing the dangers of tuberculosis.

**100. Winged scourge : Sound/Colour/115 m. 10 min.**

Points out that the Anopheles mosquito alone transmits malaria and shows its development from the larva stages to full growth when it becomes a menace. Various means of combating the mosquito are demonstrated.

**101. Life's Victory : Sound/B. & W./225 m. 20 min.**

This film highlights the various steps taken for the rehabilitation of the persons afflicted with paralysis and other physical disabilities.

## INDUSTRIES.

**102. Durgapur : Sound/B. & W/120 m./Tamil 11 min.**

The film traces the history of the construction of a steel plant at Durgapur, shows the working of its different departments and the various amenities provided to the workers.

**103. Neyveli : Sound/B. & W./120 m./ Tamil 2 copies 11 min.**

The little known village, Neyveli has grown into an important industrial centre since the establishment of the integrated Lignite project.

The progress achieved up to now on the Lignite mining site, the introduction of the continuous bucket wheel excavator and the commissioning of the 250 Mega watt thermal power station are depicted in this film.

**104. Rourkela :** Sound/B. & W./120 m./Tamil 11 min. (2 copies).

A film on Rourkela, one of the three steel plants set up in the public sector to produce steel to feed India's industries and to strengthen her economy. This film shows how the village of Rurkela in Orissa has blossomed into a town with a gigantic steel plant dominating the surrounding landscape. It also briefly explains the process of production of steel at Rourkela.

**105. Story of Lac :** Sound/B. & W./210 m.

Lac is an important subsidiary crop of the hill tribes of Chota Nagpur, as well as an important export item for India. This film tells the story of the scientific cultivation of lac, explaining in detail the proper methods of inoculation, pruning, harvesting and refining in order to obtain a good crop.

### PHYSICS.

**106. AC & DC :** Sound/B. & W./90 m. 8 min.

This film explains the differences between AC and DC currents, shows the movement of electron equipment using AC current, Transformer and rectifier and charging of a battery.

**107. Atomic fuel :** Sound/B. & W./300 m. 28 min.

The film depicts the production of atomic fuel elements from basic atomic materials found in India. It starts from the recovery of monasite from the black sands of the coast of Kerala and Madras. The working of the factory Indian Rare Earth and all the processes from monasite to the finished fuel elements are shown in this film.

**108. Electro magnets :** Sound/B. & W./120 m. 11 min.

Properties of an ordinary permanent magnet, magnetic field around a copper wire carrying electric current, making of an electro-magnet factors which increase the power of the electro-magnet, uses of electro-magnets in various fields and in our daily use are highlighted in this film.

**109. Electricity and light :** Sound/B. & W./120 m. 11 min.

Part I deals with the filament lamp, explaining the principles involved and the development of the lamp up to the modern tungsten filament.

Part II explains the working of the arc lamp, the first practical electrical light and its present day refinements.

**110. Electrical Terms :** Sound/B. & W./180 m. 18 min.

This film defines and explains the electrical terms : Volt, the unit of electrical pressure, the Ampere, the unit of electrical flow, the ohm, the unit of resistance and Watt, the unit of electrical power, their inter-relationship and shows how to calculate the power consumption of electrical bulbs in our home.

**111. Electricity—Principles of safety :** Sound/B. and W./120 m. 11 min.

This film describes the characteristics, uses and dangers of electric current. It also tells about the over-loaded circuit, short circuit, fuse wire. This film also highlights how electricity can be used safely.

**112. Engines and how they work :** 120 m./2 copies/11 min.

Explains the operating principles of various types of engines including steam, gasoline, diesel, turbine jets and rockets. Develops an appreciation for the importance of engines and discusses the free piston engine and the ionic propulsion engine.

**113. Energy from the sun :** Sound/B and W/210 m. 19 min.

Describes the sun as the great inexhaustible source of energy showing by means of unique telescope stop-motion photography, the experiments carried at the High Altitude Observatory at Climax, Colorado.

**114. Force of Pressure and pressure :** Sound/B and W/105 m. 9 min.

This film defines force and pressure and their direction to each other, Pressure exerted on unit area by various objects like van tractor, trailer, rail, etc., the use of increased pressure in various machines and the manufacture of objects with the help of the pressing machines are also shown in the film.

**115. Matter and energy :** Sound/B and W/105. m. 9 min.

Presents the basic concept that everything in the universe is composed of matter and is affected by energy. Matter in its different forms is presented and elements, compounds and mixtures are defined. It also explains the difference between a physical and a chemical change and hence with a brief exposition of atomic energy.

**116. Nature of heat : Sound/B and W/105 m. 9 min.**

Heat as the energy of molecular action is demonstrated through experiment and animation. The transfer of heat by conduction, convection and radiation is clearly illustrated. The film poses problems that are designed to promote discussion and experimentation to develop better understanding of the nature of heat.

**117. Reflection : Sound/B and W/120m. 11 min.**

The film shows how light rays are reflected, how light is seen, how mirror reflects images, various tricks with mirrors, a candle that appears to burn under water, how a periscope works, a toy periscope that you can make.

**118. Tea Kettle of James Watt : Sound/B and W/105 m. 9 min.**

Depicts James Watt's work on the development of today's steam engine and explains the theory behind the phenomena and the actual working of the steam engine.

**119 The Vernier : Sound/B and W/150 m. 14 min.**

The film describes the construction of vernier calipers and its use in various fields. It also explains how vernier is read and how the least count of the vernier is arrived at. Vernier is used to find the length or the diameter of an object accurately.

**120. Wheel, axle and pulley : Sound/B and W/120m. 11 min.**

The film shows—How to make a wheel and axle?—How a wheel and axle multiplies force or speed?—How a pulley is used?—Types of pulleys—How a small boy can defeat four strongmen in a tug-of-war with the aid of a home made pulley—How wheels and axles and pulleys are used in every day life.

## PHYSICAL EDUCATION

**21. Broad jump : Sound/B and W/105m. 9 min.**

The various exercises such as pull ups, walking (normal and slow) running, hurdles, high jump, long jump, hop step jump are shown in the film.

**122. High jump : Sound /B and W/180 m. 18 min.**

Technique of the side roll and belly roll are demonstrated by both regular slow-and-stop motion photography. Essentials of successful competition such as proper approach take off and correct turning of the body to maintain a low centre of gravity are shown in detail.

A final sequence deals with the high hurdles, applying techniques learned in the high jump and the importance of body rhythm.

**123. Simple stunt : Sound/B and W/120 m. 11 min.**

Various stunts such as stunts for strength; stunts for skills and stunts with sticks are demonstrated. Methods and techniques of push-ups, crawl and hopping are highlighted.

**PHYSIOLOGY****124. Basic functions for the human body : Sound/B and W/115 m. 10 min.**

The structure and functions of various systems such as skeleton system, Muscular system, Circulatory system, nervous system, sensory system, digestive system, lymphatic system, excretory system and endocrine system are highlighted.

**125. Digestive system : Sound/B and W/120 m. 11 min.**

This film deals with the mechanical and muscular process involved in mastication, swallowing and digestion, shows the secretion of saliva and its action on cooked starch, the gastric glands, the secretion of intestinal juice, bile and pancreatic juice and their action.

**126. Forms and uses of teeth : Silent/B and W/120 m. 11 min.**

This film highlights the form and structure of teeth of various animals such as snakes, horse, elephant, lion, tiger, sheep, rabbit, etc. The different kinds of human teeth such as incisors, cuspids, bicuspids and molar and their function in chewing the food are explained. The importance of good teeth as an asset for good health and appearance is also stressed.

**127. Healthy lungs : Sound/B and W/120 m. 11 min.**

By knowing some things of the structure and work of the lungs, it is easy to understand how to protect them from infection and injury. 'Healthy lungs' show the parts of the breathing mechanism in contact

with the air—the wind pipe, larynx, bronchial tubes, small air tubes and tiny air sacs and demonstrates how the exchange of waste products for oxygen takes place.

**128. Human machine :** Sound/Colour/180 m. 188 min.

This film explains the various functions of the human body the flexible frame work of bone, cartilage and muscles, the chemistry of digestion, lubrication and temperature control, the heart, circulatory and nervous systems.

**129. Human body : Circulatory system :** Sound/B and W/120 m. 11min.

A study of the system and general circulation of the blood in the human, body showing the structure and functions of the heart, lungs arteries, veins and capillary network. The heart cycle and the exchange of oxygen and carbondioxide in the air sacs of the lungs and in the cells of the body are also shown.

**130. Human body : Excretory system :** Sound/B and W/ 120 m. 11 min.

Several cinematic devices are used to present a picture of the kidneys and their functions. An enlarged view of the cross section of the Kidney shows the structure and function of Bowman's capsule, nephron and glomerulus. The process of urine formation and elimination of waste matter is explained.

**131. Human body : Heart lungs and circulation ;** Sound/B & W/120 m. 11 min.

Illustrates the position of heart, thickness and walls of artery, vein and capillary vessels and explains pulse and heart beat. It also explains the position, structure and function of lungs and the exchange of Oxygen and carbondioxide in the airsacs of the lungs.

## SCHOOL ADMINISTRATION

**132. New hope :** Sound/B & W/120 m./Tamil 11 min. (5 copies)

The film deals with the implementation of compulsory primary education scheme in a village in South India. An education Officer explains the scheme, the village panchayat takes the initiative and the teachers and the villagers through self help make the scheme a success.



**133. Education for life :** (Tamil) Sound/B & W/240 m. 21 min  
(2 copies.)

This film explains the Gandhian scheme of rural education through handicrafts. In 1937, Gandhiji evolved this scheme, whereby learning was related to the needs and interests of a pupil's life. This film shows the working of the experimental schools which have been started in Madhya Pradesh, Delhi, Uttar Pradesh, Bihar, Orissa, Bombay, Mysore and Madras to implement the programme of Basic Education.

**134. Literacy for progress :** Sound/Colour/360 m. 30 min.

Describes the importance of literacy, emphasising how the ability to read and write can lead the way to a better life. People who are engaged in different occupations could improve their products through education. With a view to eradicate illiteracy and to enable the people to get the benefits of education, an adult school is started. The illiterate folk offer to share the expenses connected with the starting of an adult school.

**135. Marusya's first year at school :** Sound/B & W/800 m. 70 min.

Marusya, young girl runs away from her home and joins a school as a first form student. Her experiences such as the first uniform, the friendship and the fights, etc., are vividly described.

**136. Primary teacher :** Sound/B & W/300 m. 28 min.

The primary teacher contributes largely to the "human wealth" of a nation. This documentary shows the life of a typical village teacher, his devotion to work and how he trains a talent boy to become a worthy citizen.

**137. Secondary School Education :** Sound/B & W/240 m. 21 min.

This film shows the introduction of the multi-purpose school system in the secondary school stage. The importance of diversification of schools into academic and vocational stream and choosing an optional craft for earning and for supplementing the income. The following aspects of education viz., teaching through regional language, making each subject a living subject, introduction of audio-visual aids in the class room and recreational and field visits.

## SCIENCE

**138. Newton Isaac :** Sound/B & W/120 m. 11 min.

Life of Sir Issac Newton who significantly changed the course of several branches of the physical sciences and of Mathematics; Newton's researches in the Binomial theorem, the differential and the integral calculus, his theory of light, his law of gravitation and laws of motion are dramatically re-enacted as they related to his life and work in England.

**139. Principles of flight :** Sound/B & W/105 m. 9 min.

This film explains the principle of flight and the forces that act upon the aeroplane while flying—Lift, thrust, Gravity and Drag, etc. The principle of kite flying is also explained. The function of the propeller is high-lighted.

## TECHNICAL EDUCATION

**140. Chisels :** Sound/B & W/120 m. 11 min.

Present a general introduction to all types of chisel and gauge and how they are used,—the making of an oilstone case for an oil stone, demonstration of the use and cutting action of the different chisels and gauges and in the end shows the oil stone being used sharpen a firmer chisel.

**141. Files and Filing :** Sound/B & W/105. 9 min.

The use of different types of files and the different purposes for which they are used are shown in this film. The filing processes have also been described.

## FIRST AID

**142. Accidents need not happen :** Sound/B & W/150 m. 14 min.

The film shows how by providing proper training to railwaymen of all categories, accidents can be avoided. The staff is given intensive training through the medium of the models and other methods. It is an instructional film for the railway staff.

**143. Fire in town :** Sound/B & W/240 m. 21 min.

Depicts the causes of various domestic fire and the measures of prevention.

## TRAVELS

### 144. Scout Camp : Sound/B & W/900 m. 85 min.

This is an adventure story of two boy scouts who while out on a scout camp in jungle wander into the cave of some dacoits and help the police to capture them.

### 145. Train Journey : Silent/B & W/120 m. 11 min.

The film depicts in detail the various functions of the Station master. A family party travelling in the train observes the various sceneries during the journey. The luggage cabin and the dining section of the train are shown in detail.

### 146. Yatra—Part I and II : Sound/B & W/720 m. 60 min.

This film depicts the culture heritage of our country. A party of students going on an excursion to the various parts of the country visits important places of historical and cultural importance. The film represents the glory of our past sculpture, temple art and fine arts like Bhāratha nāṭyam, music, drama etc. The students having the charshan of the last prime minister Nehru and his words of wisdom to them, the children witnessing the Republic Day celebration at New Delhi, their visits to Dams and other industrial and religious centres of the country are all highlighted with a view to inculcate the sense of unity in diversity of our motherland.

## VISUAL EDUCATION

### 147. How to make handmade lantern slides : Sound/B & W/240 m. 21 min.

This film demonstrates the production and utilisation of seven types of "3½ x 4" handmade lantern slides by teachers and pupils in various school situations. Stresses sources of picture materials and special production techniques such as the placement of the copy its size, the use of a margin guide, and binding techniques.

## ZOOLOGY

### 148. A day at the Zoo : Sound/B & W/180 m. 18 min.

This is a film on the evolution of man shown against the background of a batch of school children visiting a Zoo. It shows how it has taken millions of years for the trilobite, the first living creature to reach the latest stage on the path of evolution—that of human being.

**149. Animals protect themselves : Sound/B & W/120 m. 11 min.**

The film portrays the various means adapted by the animals to protect themselves such as armoury, camouflage, horns, etc.

**150. The butterfly—Life cycle of an insect : Sound/B & W/75 m. 7 min.**

The various stages in the life cycle of butterfly such as egg, larva and caterpillar, pupa and last the insect stage are depicted.

**151. Crocodile thrills : Sound/B & W/105 m. 9 min.**

Hunters in the Amazon valley and the Burmese jungles try to capture the giant crocodile alive.

**152. Chameleon : Sound/Colour/105 m. 9 min.**

The colour adaptation of chameleon to the environment as a means of protection is highlighted in this film.

**153. Elephants in Africa : Silent/Colour. 45 m. 4 min.**

The wanderings and living habits of elephants in the forests of Africa are depicted in this film.

**154. Grasshopper : Sound/B & W/60 m.**

A biological study of this insect pest explains the physical development and habits, accounts for the futility of preventives, reveals the murderous traits of the female, the migratory habits and the process of reproduction.

**155. Giraffes in Africa : Silent/Colour/50 m. 5 min.**

The wandering and food eating habits of Giraffee in the forest are depicted in this film.

**156. How birds feed their young : Silent/Colour/75 m. 7 min. (2 copies).**

Full colour Kodachrome photographs by Dr. Arthur A. Allen, Professor of Ornithology, Cornell University. Indigo Bunting, Towhee, Thrush, Blue Bird, Cedar waxing, Gold finch, Humming bird, Heron, Snake bird, Least Bittern Quail and Grouse are shown in full, vivid natural colours—each with its own distinctive feeding habits.

**157. Hippos in Africa : Silent/Colour/75 m. 7 min.**

Depicts hippopotame with their young ones swimming in water and basking on land. Close ups show structure of body, head and tusks.

**158. Jackie visits the Zoo : Sound/B & W/105 m. 9 min.**

The thrilling experiences of Jackie during his visit to the Zoo and the behaviour of animals in the Zoo are depicted.

**159. Nature's half acre : Sound/Colour/360 m. 30 min.**

This film shows in beautiful colour the hatching and rearing of young ones and the mother birds love towards its young ones. It also shows the life cycle of bee, butterfly and silk worm from the laying of the egg through the development of the larva and the emerging of the mature insect. Details of life in a hive of wild bees and gathering of nectar and food eating habits of Frog, Chameleon, ant eater are also depicted. The slow motion photography of blooming of various flowers is quite attractive.

**160. Ostriches in Africa : Silent/Colour/90 m. 8 min.**

Shows the ostrich in its natural environment, scenes of wild ostriches in South Africa, Close ups of a few birds feeding, the hen birds on nests, newly hatched chicks amongst their broken shells and distant view of adult birds.

**161. Our feathered friends : Sound/Colour/240m. 21 m.**

Brings intimate pictures of the habits, characteristics and distinguishing marks of a variety of Indian water birds, covers resident as well as migratory birds. A courtship dance, nest building, protection of eggs, the birth of chicks, the quaint ways of feeding and various scenes of large colonies of birds are unfolded in colourful detail.

**162. Pond culture : Sound/B & W/210 m. 19 min. (Tamil).**

A film on the breeding of fish in confined waters. The cultivation of fish in inland waters, if managed in a systematic and scientific manner not only becomes a profitable occupation but brings extra food to hundreds of people. Today, Government research stations are finding out ways of having better breeding grounds and producing better breeds of fish in quicker time.

## BIOLOGY.

**163. Adaptations of plants and animals : Sound/B & W/120 m. 11 min.**

Illustrates the adaptations of living things to environment, how they get food and protect themselves.

**164. Characteristics of plants and animals :** Sound/B & W/120 m.  
11 min.

Depicts the basic characteristics of plants and animals and the fundamental similarities of all living organisms. Develops the points that all life comes from pre-existing life, that all living organisms have common characteristics and that the cell is the structural unit of living things. Includes many good shots of cells and simple plants and animals.

**165. Life in a pond :** Sound/B & W /120 m. 11 min.

Pond life is present 'in action' here showing student's microscopic animals, food-chains and a wealth of plant and animal life that provide examples of important principles of natural science. The film blends natural setting scenes and controlled set ups with a wide variety of underwater and microscopic scenes. A typical fresh water pond is shown as a home of a group of plants and animals. Among these are green plants—shoreward, floating and submerged plants. Then the abundant animal life is seen—water fleas, beetles, insect larvae, dragonfly nymphs and minnows.

**166. World of little things :** Sound/B & W/150 m. 14 min.

Life and behaviour of Amoeba and Paramecium, their locomotion, food eating habits and their reproduction are shown vividly. The production of pseudopodia is shown as also the Amoeba pursuing and capturing its prey and ingesting living organisms.

**167. World of Nature—Mouths of insects :** Sound/B & W/105 m.  
9 min.

The food eating habits and the mouth parts of Butterfly, Ant, Grasshopper, Dog, Fish, Housefly, Ant eater, Ant catcher and larvae of insects are clearly depicted.

**168. World of Nature—Mouths of animals :** Sound/B & W/105 m.  
9 min.

The food eating habits and the mouth parts of various animals such as bear, cow, horse, sheep, camel, zirconia, elephant, seal, polar bear, ape and man are shown clearly.

**169. World of Nature --Wisdom of animals :** Sound B & W /105 m.  
9 min.

The wisdom of various animals such as spider building its nest, honey bee collecting nectar, hen hatching eggs, rat finding its food hidden after many blind paths, ape constructing a bridge across a river to get its food placed in rock surrounded by water are highlighted in this film.

**170. Life cycle of a flower :** Sound/B & W/60 m. 5 min. Tamil;2 copies.

Describes the various parts of a flower and explains the functions of each part such as, sepals, petals, pistils and pollen grains. The fertilisation, fruit formation, dispersal of seeds and the uses of flower in various occasion are shown.

**171. Monocotyledons and dicotyledons :** Sound/B & W/90 m. 8 min.

Plants are divided into two major groups, monocotyledons and dicotyledons. The differences between monocot plant and dicot plant in their structure of roots, leaves, flowers, etc., are highlighted.

**172. Animals breathe in many ways :** Sound/B & W/ 120 m. 11 min.

The process of breathing in many animals such as Amoeba, fish, salamander, earthworm, grasshopper is highlighted. In Amoeba  $O_2$  enters into the body directly and  $CO_2$  is given off. Fish and salamander breathe by gills. Animals in land breathe with the help of lungs. Grasshopper breathe with the holes in the body.

**173. Animal friends ;** Sound/B & W/120 m. 11 Min.

The film tells how we can move friendly with animals, Children play with animals such as penguins, kangaroo, goose, ant eaters, dogs and snakes in the school Zoo. The service of S.P.C.A. in the welfare of animals is depicted.

**174. Animals that fly :** Sound/B & W/120 m. 11 min.

This film deals with the flying of three sets of animals, they are insects, birds, and bats. How an insect, Bat and bird fly are demonstrated by means of animated diagrams. Some insects like honey bee while fly make sound. In birds wings are covered with overlapping feathers. Birds clean their feather with their beak. The structure of bones and muscles that help the birds to fly are demonstrated with animated diagrams. Bats wings are similar to human hands.

**175. Animal move in many ways :** Sound/B & W/120 m. 11 min.

Movements of a number of animals are depicted. Living things like people and animals move about in different ways. People usually walk, dogs walk and run, deers and kangaroos jump in a different way. Grasshopper walks carefully in six legs, centipede and millipede walk on thousands of legs. Smail moves on its stomach, fish swim, birds fly.

**176. Animals protect themselves :** (Tamil) Sound/B & W/120m. 11 min.

The various methods adopted by animals and birds to protect themselves are shown in the film. Rabbits running fast, birds flying, squirrels climbing the trees, goats fighting with horns, snails and turtles drawing their heads into their shells are some of the methods shown in this film.

**177. Butterfly life cycle of an insect :** Sound/B & W/120m. 11 min.

Reveals the four main stages of butterfly-reproduction and growth, the formation of pupa or chrysalis and finally the emergence of a beautiful adult butterfly.

**178. Grasshopper a typical insect :** Sound/B&W/120m. 11min.

A biological study of this insect pest explains physical development and habits, accounts for the futility of preventives, reveals the murderous traits of the female, the migratory habits and the process of reproduction.

**179. Life cycle of Maize :** Sound/B&W/120m. 11 min.

A biological study of maize, the universal corn. The camera speeds up its growth from seed to harvest. A magnified section of the leaf surface shows the stomata in action in fine and wet weather, the mechanism of germination described, experiments show which mineral salts are needed in the soil.

**180. Feeding habits in animals :** (Tamil) Sound /B&W/120 m. 11 min.

Feeding habits of earthworm, snail, leech and butterfly are shown in this film. The structure of mouth parts and alimentary canal of those creatures are shown by means of animated diagrams. Earthworm gets its food from the swallowed soil. Snail grinding the leaves, butterfly collecting nectar and leech sucking blood are also shown.

**181. How plants reproduce :** Sound/B&W/120 m. 11 min.

This film describes the various parts of the flowers, mainly sepals, petals, stamens and pistol. The structure and functions of these parts, pollination, fertilisation, the changes that the flower undergoes after fertilisation are clearly illustrated.



**182. Dissection and anatomy of frog :** Sound/B&W/165 m. 15 min.

The film teaches the dissection techniques and the anatomy of the frog. The blood vascular system, digestive system, male and female reproductive systems, nervous system and excretory systems are explained by pointing out the organs of various systems.

**183. Seasonal changes in plants :** Sound/B&W/120 m. 11 min.

The film explains why and how plants change as the seasons change, using typical examples of annuals, biennials and perennials as illustrations.

**184. Adaptations in animals :** Sound/B&W/180 m. 17 min.

This film stresses that for the individual and therefore for the species as a whole, those adaptations which lead to survival tend to be inherited and passed on to the next generation whereas those organisms which are biologically inadequate tend to lose out in the struggle for survival. The adaptation of bacteria to streptomycin, the survival advantages of protected eggs against water-laid ones, the placenta in mammals and the size of an organism's brain indicate positive survival values. Other adaptations shown are examples of protective colouration, speed, physical strength and convergent evolution of fishes and whales.

**185. Life cycle of a paddy and life cycle of a bean :** Sound/B&W/120 m. Tamil. 11 min.

This film starts when the cultivation commences. The film shows ploughing, sowing, harvesting and thrashing of paddy. The bean part shows the complete growth of plant right from the seed. With the help of animation, actual shots and trick photography the film has come out very successfully and found very educative for school students.

**186. Life in an aquarium :** Sound/B&W/120 m. 11 min.

Shows how a classroom aquarium is set up and stocked with animals and plants and explains how the various animals live in it, how the fish swim, and breathe in water, how the frog develops from a tadpole and how the snails eat and move about.

**187. Stinging-celled animals : Coelenterates :** Sound/B&W/165 m. 15 min.

A great variety of coelenterates in their natural underwater habitats are shown. An anemone, a hydra, a Portuguese man-of-war and a jelly fish are shown capturing fish in their stinging tentacles. Live

photography shows asexual and sexual processes of reproduction in hydra. In an interesting experimental sequence the chemical factor that stimulates a feeding response in coelenterates is isolated and examined.

**188. Honey bee :** Sound/B&W/120 m. 11 min.

This remarkable film portrays and interprets the highly organised activities of the honey bee and it depicts the contrasting functions of the hive's three castes of bees—the queen, the workers and the drones. Unusual close up photography clearly reveals major stages in the life cycle of the honey bee. Also included are scenes of bees gathering food, making honey rearing the young protecting the hive and swarming to start a new colony.

**189. Knowing animals :** Sound/B&W/105 m. 9 min.

This film explains how the zoo babies like young deer and goat are fed, the dog gets man as his friend and cows are brought home after grassing. The film shows how dogs are being trained by the police officers.

**190. Tools and techniques of Cell study :** Sound/B & W/240 m. 21 min.

This film explains what a cell is and its various structures. Thin peels of onion are shown to explain the various structures. The movement of protoplasm is also shown through valisneria plant. A thin section of animal tissue was taken through a Microtome and various stages in the preparation of a permanent slide are also shown to the audience.

**191. Biology Kit No. 1—Botany :** Sound/B & W/120 m. 11 min.

This film deals with the importance of kit box for rural schools which cannot afford for a sophisticated laboratory. Nearly 100 experiments can be done with the help of this kit. This first part deals with botany and some of the experiments such as germination of seeds, absorption of water through roots, preserving of dried plants, respiration experiments are demonstrated.

**192. Biology Kit No. 2—Zoology :** Sound/B & W/180 m. 18 min.

This is the continuation of series No. 1 devoting attention only on Zoology. This film depicts the diversity of animals in nature and how some of the animals can be preserved as museum specimen. The process of preservation is also explained.

**193. Biology Kit No. 3— Human physiology : Sound/B & W/210 m. 19 min.**

This is devoted entirely to the various physiological aspects of human physiology. Experiments such as how saliva is acted by the acid and basic medium, nature of inhaled and exhaled air, condensation chambers, circulation of blood, measuring the amount of work done in the muscles through Ergograph are shown.

**194. Understanding animals : Sound/B & W/270 m. 25 min.**

This film portrays in general the various kinds of animals and how they are adapted to their natural environment. Various methods of feeding, movement, parental care, and an urge to live together in groups are shown.

**195. What is life : Sound/Colour/120 m. 11 min.**

This deals with the origin of life on earth before 300 million years. It explains how oceans were first formed as a result of thunder and lightening. Then it goes on to explain how protein molecules are formed as a result of interaction of ultraviolet rays and organic elements found on earth. It also traces the evolution of advanced species from the earliest simple types.

**196. Plant movements : Sound/Colour/120 m. 11 min.**

In general plants do not move as in the case of animals since they prepare the food materials by themselves. But various kinds of simple movements exhibited by plants due to natural stimuli such as light, gravitation, touch, water or otherwise known as tropisms are explained. In addition, plants special movements for catching food are also exhibited.

**197. Blood : Sound/Colour/120 m. 11 min.**

This film deals with the various constituents of human blood. Three major parts of human blood i.e., plasma, corpuscles and platelets with its inclusions are discussed. The various functions which are performed by these parts in human body are shown. The major systems of circulation in human body and the mechanism of clotting are also shown. Blood group and transfusion are also discussed.

**198. How living things change : Sound/B & W/ 20 m. 11 min.**

This film deals with the evolution of new species from the old ones and its causes. Three main theories of Dr. Lamarck, Darwin and Hugo-De-Vries were explained in detail with examples. It was also seen from the film that new varieties can be produced by artificial improved methods of crop plantation.

**199. Roots of plants :** Sound/Colour/120 m. 11 min.

The film describes the types of roots and the major functions of the root. Function of root cap and root hairs are described. The film demonstrates various experiments that illustrate characteristics of root growth and describes osmosis as one of the ways by which roots absorb water. Finally the film describes the value to man of certain roots like those of carrot, sweet potato and beet.

**200. Echinoderms and Mollusks :** Sound/B & W/180 m.

These two phyla are included under invertebrates of the animal kingdom. This film deals with the various characteristics features of these two phyla and the significant differences among them with numerous examples. It was also explained how these two kinds of animals protect themselves against enemies by various devices.

**201. Sponges and Coelentrates : Porus and sac like animals :** Sound /B & W/ 20 m. 11 min.

This film deals with many celled animals like jelly fish, coral animals, sea anemone and highly specialised types such as Hydra. This film depicts the various physiological aspects such as feeding, reproducing and locomotion of animals.

**202. Arthropods :** Sound/B & W/120 m. 11 min.

This is the largest phylum of animal kingdom characterised by jointed legs, exoskeleton and segmented body with appendages. Its main classification into meriapods, insects, Arachides and crustaceans are told with classic examples. It is also shown how this group of animals are useful to mankind.

## CARTOON AND GENERAL FILMS

**203. Christmas dream :** Sound/B & W/120 m. 11 min.

This beautiful puppet film, the work of Karal Zeman depicts the dream of a young girl, in which an old toy, discarded for a new one, performs a number of feats and finally succeeds in regaining the affection of his young mistress.

**204. Grandfather's clock :** Sound/B&W/105 m. 9. min.

This cartoon film depicts the parts of a timepiece and how it works in a playful way.

**205. Lullaby : Sound/B&W/75 m. 7 min.**

A charming tale of how a baby is put to sleep by a little puppet

**206. Merry Christmas : Sound/B&W/90 m. 8 min.**

A general film which shows men, women and children celebrating Christmas. The Christmas King comes and fills the homes with Christmas gifts.

**207. Three Little Kittens : Sound/B&W/90 m. 8 min.**

Provides a study of the characteristics and habits of cats and kittens. Traces the development and early experiences of three kittens from birth until they are taken from their mother. Depicts the mother as she cares for her babies and follows the growth of the kittens as they play, climb, eat and learn to care for themselves.

**208. The night before Christmas : Sound/B&W/75 m. 7 min.**

The film shows the Christmas King coming driving in a sledge drawn by reindeer and fills the homes with Christmas gifts to children and also wishing a happy Christmas to children.

**209. Children of the Sun : Sound/Colour/120 m. 11 min.**

A cartoon film by UNICEF to propagate the idea of feeding children of the world.

**210. Food for thought : Sound/B&W/120 m. 11 min.**

Brings to the screen the story behind a silent revolution in dietary habits that has taken place in Orissa since the introduction of 'Expanded Nutrition Programme' with the aid of UNICEF in 1960.

**211. High flyers : Sound/B&W/95 m. 9 min.**

A general and comic film about flying high in an aeroplane.

**212. India fighting draught problems : Silent/B&W/30 m. 3 min.**

The film is only a glimpse of how UNICEF helped alleviate the suffering of many people, specially mothers and children, during a time of disaster. UNICEF supplies food and provides medical examination to people.

**213. Introduction of Crefal : Sound/B&W/240 m. 21 min.**

This is a picture about the land and people around the lake paizuard lake of Mexico. This film describes in detail the lives of the people and their occupations.

**214. Little boy and the fish : Sound/B&W/210 m. 19 min.**

A little boy catches a fish and puts it in a jar of water in his house. He admires its swimming and plays with it. At last he leaves the fish in a pond.

**215. Music in schools : Sound/B&W/240 m. 21 min.**

This film shows how music is taught in Russian schools. Instrumental music is also taught. Music is an optional subject and many children join in the music class. Teaching of music is made interesting by various methods.

**216. Supervisor as leader : Sound/B&W/120 m. 11 min.**

This film describes the qualities of leadership through various examples. The qualities mentioned are responsibility, readiness to show appreciation, readiness to co-operate with workers, and readiness to take their part, etc.

**217. Television comes to the land : Sound/B&W/240 m. 21 min.**

This is a general film which shows the various uses of Television in the fields of medicine, machinery, sports and agriculture. This film also explains the necessities of TV clubs and their functions. Model TV programmes are telecast to the people in the rural area which help them to enrich their knowledge.

**218. We are one : Sound/B&W/180 m. 18 min.**

'We are one' describes the problems of children and the efforts taken by the UNICEF to provide for nutrition, education and food for the welfare of the children. The film stresses that peace must be created in the minds of the children, skills such as dance, working together in co-ordination and play are to be built up in them.

**219. When the mountain moves : Sound/B&W/120 m. 11 min.**

Depicts the mountains of Columbia, where the peasants lived, isolated out side world and where a wide radio net work for fundamental education has been established by Unesco.

**220. Your dog's tale :** Sound/B&W/180 m. 18 min.

This film depicts the various kinds of dogs and their behaviour.

**221. Devils of the ocean :** Sound/B&W/180 m. 18 min.

The film presents only the catching of big fish such as Shark, etc., By means of special under water cameras the intimate shots taken with great risk and daring are presented.

**222. Hints and Tips :** Sound/B&W/180 m. 18 min.

This is a film giving hints and Tips for the proper and careful keeping of things. Care of little things such as keeping a soap, details of cooking, peeling of cooked potatoes, baking cakes, cleaning mirrors and windows, bringing up of pets with care, etc., are highlighted.

**223. Drag :** Sound/Colour/105 m. 9 min.

The film depicts the evils of smoking.

**224. Robinson Crusoe/Sound B&W/105 m. 9 min.**

This is an imaginary cartoon about the adventures of Robinson Crusoe.

**225. Bear Circus :** Sound/B & W/360 m. 30 min.

This film depicts the various acrobatic actions of bear in a circus.

**226. Abominable snowman :** Sound/B&W/105 m. 9 min.

This film is a humorous cartoon in which one of the two friends acts as an abominable snowman and playfully threatens the other.

**227. Sleeping beauty :** Sound/B&W/150 m. 15 min.

The film tells the story of the princess who pricks her finger on spinning wheel, falls asleep for a hundred years and the prince who comes and wakens her with a kiss.

**228. Where there is smoke; Sound/B&W/150 m. 15 min.**

This is a comic film depicting the idea 'cigarette smoking is injurious to health'.

**229. Horse circus/Sound B&W/150 m. 15 min.**

The film depicts the various acrobatic actions of horses in a circus.

**230. Alibaba and forty thieves :** Sound/B&W/360 m. 30 min.

The story of 'Alibaba and forty thieves' is presented with the help of puppets.

**231. Down in the forest :** Sound/B&W/120 m. 11 min.

The film presents the life and habits of Kangaroos in Australian forests.

**232. Revolt of toys :** Sound/B&W/180 m. 18 min.

This is a comic picture in which a toy makers' shop in the occupation area is invaded by a Nazi soldier who maltreats and tramples the toys. The toys get together in revolt, pooling all resources and finally succeed in throwing him out of the shop.

**233. Crocodile hunters :** Sound/B&W/120 m. 11 min.

In the rivers and billabongs of northern Australia the aborigine hunts small fresh water crocodiles using spear and canoe, to provide food for its family. But in recent years, a new industry has become established in these regions—the hunting of the crocodile for its skin, which brings a high price in the south when manufactured into hand bags, shoes, wallets and ornaments. Teams of hunters make their camps by the rivers and estuaries where fresh water and salt water varieties are found.

**234. Circus at Zoo :** Sound/B&W/120 m. 11 min.

A general film on circus performed by the monkeys and horses.

**235. The police force :** Sound/B&W/120 m. 11 min.

A group of students are taken to a police station and they are told about the duties of the police department.

## CHEMISTRY.

**236. Acids, bases and salts :** Sound/B&W/240 m. 21 min.

Surveys the early theories of Arrhenius and the theories of Bronsted Lowry and Lewis. Uses the Arrhenius classical definition of acids, bases and salts to explore the properties and uses of these important chemical compounds.



**237. Carbon and its compounds :** Sound/B&W/120 m. 11 min.

Properties and uses of carbon compounds such as petroleum, sugar methane, Butane, Benzene are explained. The molecular and structural formulae of those compounds are shown by means of balls and sticks. The structure of butane and iso-butane is also shown.

**238. Halogens :** Sound/B&W/120 m. 11 min.

Laboratory demonstration presents in detail the physical and chemical properties of fluorine, chlorine, bromine and iodine in free state and in compounds.

**239. Hydrogen :** Sound/B&W/150 m. 15 min.

Gives the history of the discovery of hydrogen, shows how it is produced in the laboratory and commercially and gives an account of important industrial uses including new developments in the fields of nuclear energy.

**240. Laws of gases :** Sound/B&W/120 m. 11 min.

Explains the Gas Laws of Boyle, Charles, Dalton and Avagadro and their importance to physical science. Illustrates relationships between pressure, volume and temperature of confined gas, the law of partial pressures and the determining of the molecular weight of gases.

**241. Metals and non-metals :** Sound/B&W/120 m. 11 min.

Illustrates the various properties both physical and chemical properties of metals and non-metals with examples. The arrangement of elements in periodic table is done according to the properties of the elements.

**242. Nitric acid, compounds and nitrogen cycle :** Sound/B & W/210 m. 19 min.

Shows the preparation of nitric acid in the laboratory and also industrially and the manufacture of explosives, paints, photographic chemicals and fertilisers. Finally the nitrogen cycle is illustrated.

**243. Nitrogen and Ammonia :** Sound/B&W/210 m. 19 min.

Using laboratory demonstrations, the film examines the properties of molecular nitrogen and some of the simple compounds of nitrogen, oxides and nitrates. Most important of the simple nitrogen compounds is ammonia. It also shows how it is prepared in the laboratory. Its properties and uses are also described.

**244. Oxygen in nature and its uses :** Sound/B&W/225 m. 20 min.

Describes the principal properties of Oxygen and demonstrates its vital significance for human beings, animals and plants. Also shows the extensive uses of oxygen in various branches of Technology.

**245. Properties of gases :** Sound/B&W/105 m. 9 min.

Do gases have weight ? Can gases be compressed or transmit pressure ? Why can we drink through a soda straw ? A stunt to show, whether a small balloon will blow up a large one or vice versa when they are connected together. What effects temperature has on gases ? Harmless experiments with gases—all the above details are high-lighted.

**246. Properties of liquids :** Sound/B&W/120 m. 11 min.

What are the properties of liquids ? Stunts with liquids : how to turn-over a glass of water without spilling a drop, how to put your hand into water without getting it wet, how to find out whether jar of water weighs more if you hold hand in the jar without touching the sides or bottom, etc. Experiments to show that moving water has less pressure than still water (Bernoulli's principles applied to liquids).

**247. Properties of water :** Sound/B&W/120 m. 11 min.

Explains how to perform and understand experiments in electrolysis, boiling and freezing points, distillation, solutions, crystallisation, filtration, pressure cookery and to analyse the properties of water.

**248. Using the laboratory :** Sound/B&W/120 m. 11 min.

This film stresses the points to be observed while using a laboratory. A student prepares hydrogen in the laboratory observing minute details.

**249. Chemical changes :** Sound/B&W/120 m. 11 min

In understandable terms and simple experiments the film explains some of the chemical changes that are taking place all around us. Illustrates the difference between physical and chemical change and demonstrates some of the tests used by chemists in which chemical change place a part.

**250. Chemistry Kit :** Sound/B and W/180 m. 18 min.

This is a substitute for teaching chemistry at middle school level according to the revised syllabus. This film shows the various components of the kit box and how these are employed to carry out 65 experiments. Even, major experiments such as distillation of gases and electrolysis of water are shown with improvised apparatus.

## ENGLISH LITERATURE.

**251. Reading improvement—Comprehension Skills :** Sound/B&W/120 m. 11 min.

The film depicts the ways for improving reading. Explains how a paragraph should be organised and stresses on three points for improving reading (1) Preview to know the ideas. (2) Reading for main ideas and (3) Review for understanding and remembering those ideas.

**252. Reading improvement—Effective speed:** Sound/B&W/120 m. 11 min.

The film suggests various ways for reading fastly and speed with understanding. Points out the reasons for reading slowly.

**253. Reading improvement—Vocabulary Skills :** Sound/B&W/120 m. 11 min.

The film depicts new skills for building vocabulary and stresses in noting the new words as we come across, find the meaning of those words and use those words in conversation for remembering them.

**254. Sentences—Simple Compound Complex:** Sound/B&W/120 m. 11 min.

The film defines simple, compound and complex sentences and explains with various examples.

**255. Sentences—Subject and Predicate :** Sound/B&W/150 m. 15 min.

The film tells about the simple subject, compound subject, simple predicate and compound predicate by various illustrations.

**256. Spelling is easy :** Sound/B&W/120 m. 11 min.

The film explains the five rules of learning spelling which are (1) Hear the word (2) See the word (3) Repeat the word (4) Write the word and (5) Check the word with suitable illustrations.

**257. Verbs—Principal parts :** Sound/B & W/120 m. 11 min.

The film deals with the principal parts of verbs, regular verbs, irregular verbs, present, past, future and past participle verbs with adequate illustrations.

**258. Verbs—recognising and using them :** Sound/B & W/120 m. 11 min.

The film teaches how to identify verbs by finding complete subject and predicate as the first step. It explains by illustrations that the verb tells what the subject does, what is done to the subject and the state of being of the subject.

**259. Better choice of words :** Sound/B & W/120 m. 11 min.

This film teaches the various steps of choosing better words to express ourselves more clearly. Some of the steps such as building up one's vocabulary and having a clear picture in mind before expressing the words are dealt with.

## **GEOGRAPHY.**

**260. Asia—a continental overview :** Sound/B & W/180 m. 18 min.

This film shows the contrast in the physical features of Asia. The various regions of Asia such as the central Asia, the dry lands and the pastures and farms regions of eastern Asia are dealt with in detail.

**261. Changing coast :** Sound/B & W/150 m. 15 min.

This film deals mainly with the action of the sea in bringing about the changes in the coast line. Though reference is also made to the effects of subsidence and elevation. One section deals with erosion using examples and another section shows how the sea is adding to the land in certain areas.

**262. Clouds :** Sound/B & W/120 m. 11 min.

This film describes the changing clouds made of millions of water drops. They move with the winds and bring rain to the earth. In cold weather clouds bring snow which melts and turns into water in summer.

**263. Eclipses :** Sound/B & W/75 m (Tamil). 7 min.

The film shows how solar and lunar eclipses occur.

**264. Globes—an introduction :** Sound/B & W/105 m. 9 min

The film explains about the globe as a model of the earth. Land is surrounded by the bodies of water known as seas and ocean. The various continents of the earth, the mountainous system, the gulf, islands, seas, lakes, the equator and the poles of the earth are all shown in the film.

**265. Glaciation :** Sound /B & W/120 m. 11 min

The film shows how glaciers are formed as flowing masses of ice. The movement glaciers and the great heaps of rocks travelling with the moving glaciers are shown in the film.

**266. How we know the earth moves : Sound/B & W/ 20 m./11 min.**

The film tells through illustrations how we know the earth rotate and revolves around the sun.

**267. How we know the earth's shape : Sound/B & W/20 m. 11 min.**

The film shows how man is able to know the shape of the earth. Many ways of finding out the shape of the earth such as watching movements of ships, knowing the shape with the help of the shadows and lastly by taking photographs from the satellites.

**268. Life in the Alps : Sound/B & W/20 m. 11 min.**

This film describes the life of the people in the Alps during summer. People go to the Alps in summer and are engaged in different occupations in the Alps. Dairy forms their chief occupation. The green pastures provide food for the cattle and the cow's milk are made into cheese and butter. The women are engaged in cultivation of barley and potatoes in the mountain slopes. People pass their lives happily enjoying the summer in the Alps. In the beginning of the winter they get down from the Alps with a resolve to return again to the mountains in the summer. Leaving the Alps is celebrated as a festival.

**269. Life in grasslands : Sound /B & W /20 m. 11 min.**

The film describes the life in grasslands of Argentina called Pampas. People, whose occupation is dairy farming, produce chocolate milk and bread. Lands are ploughed with tractors and most of the lands are set apart for cattle feeding.

**270. Maps an introduction : Sound/B & W/20 m. 11 min.**

"Map" is an introduction to representation of our environment by symbols. Using a classroom setting, the film shows how a model of the community is constructed. Model is one way to represent place. The model is photographed and mapped by tracing the enlarged projected image. The teacher demonstrates how direction and distances are shown on the map. Country, State and World maps are introduced and on a vacation trip one of the class members is able to identify physical features symbolised on his road map.

**271. What is an eclipse : Sound/B & W/20 m. 11 min.**

This film explains in detail with illustrations how and when do the Solar and lunar eclipses occur.

**272. What is inside the earth : Sound/B & W/ 50 m. 15 min.**

The film explains in detail the various layers and regions inside the earth. When we dig the earth, we find soil, back soil mixed with sand and then different kinds of rocks known as strata. In the strata region water table, coal and minerals are found. As we go deeper and deeper inside the earth the temperature increases. So man uses various machines to go deeper. Oil well drill cuts a deep well. This film also explains how volcanoes burst in the surface of the earth and the flowing of lava is shown. The three regions of the earth's inner surface, crust, mantle and core outer and inner core are depicted in this film.

**273. Thunder storm : Sound/Colour/120 m. 11 min.**

This is a general film showing the behaviour of insects and birds and the appearance of plants before, during and after rain with thunder. Also shows a boy's affection towards his dog.

**274. A Kingdom in the clouds : Sound/B & W /240 m. 21 min.**

This film explains the physical features of Bhutan and the land and the life of the people. Early life of the people and recent development in education agriculture, transport, business are also depicted in the film.

**275. What makes clouds : Sound/Colour/225 m. 20 min.**

In this film experiments and observations of natural phenomena provide data for an investigation of conditions which cause clouds to form in the atmosphere. Evaporation and transpiration are found to be the source of invisible water vapour which condenses on tiny particles in the air form the millions of water droplets in a cloud. Time-lapse photography shows dramatic visual evidence for condensation by revealing how clouds appear to materialize in a clear sky.

**276. Plains and Plateaus :- Sound/B & W/120 m. 11 min.**

The film explains the physical features of plains and plateaus, the crop is cultivated in the level area and the animals graze in the slopes. This film also explains the advantages of plains over plateaus. People live in towns and cities of the plains but not many people live in plateaus. Water transportation and highways are not well developed in plateaus.

**277. Story in sand : Sound/B & W/120 m. 11 min.**

This film depicts the activity of people in the sands of the beach and how it helps for recreation, stimulation and relaxation. The film also highlights the important minerals such as monazite found in the sand and

the separation of the minerals from sand and the use of sand in the manufacture of glass. Discusses the effects of wind, water and temperature in the wearing of land and stone into sand.

**278. Earthquakes and the Volcanoes :** Sound/B&W/150 m. 15 min.

The film shows that of all the forces constantly acting upon the surfaces of earth, the earthquakes and volcanoes happen to be the most dangerous and spectacular. It shows that earthquakes and volcanoes are closely related and the reasons for the earthquakes and volcanoes. It explains that the earth is made of three kinds of different materials, inner iron core, the middle heavy rock and the outer light crust. The action of a volcano, flow of lava which flows like a river at a speed of 30 m.p.h. are depicted.

**279. History of living things :** Sound/B&W/150 m. 15 min.

This film studies the history of living things from fossils. It explains how fossils might have formed and analyses the age of fossils and rocks. It also traces back that all the living things both vertebrates and invertebrates were once microscopic.

## HISTORY.

**280. Mahatma Gandhi :** Sound/B&W/300 m. 26 min.

The film reviews the life story of one of the greatest leaders of our time—Mohandas Karamchand Gandhi from his birth to his death.

**281. Boyhood of Abraham Lincoln :** Sound/B&W/120 m. 11 min.

The film depicts the boyhood of Abraham Lincoln. Traces interesting events of Lincoln's early boyhood which reveal his unforgettable qualities of integrity, humour, commonsense and tenderness. Also shows how he worked hard in the farm and spent his leisure in studying books.

**282. Mahatma Part I and 283. Part II :** Sound/B&W/1,200 m. (Tamil) 100 min.

This film in 32 reels depicts the life and mission of Mahatma Gandhi from his childhood to his Martyrdom. This film deals with Gandhiji's early years; birth of Satyagraha, emergence of Gandhi, the great trial, epic March, new challenges, the nation's representative, a cry for justice and call of villages, quit India movement, hour of destiny, pilgrim of peace, India liberated and finally his martyrdom.

**284. World War II Background and causes :** Sound/B&W/150 m. 15 min.

This film describes in detail man's attempt to build up civilisation from the pre-historic days upto the present day. The five basic needs of man, namely Government, necessities of life, Communication, spiritual needs, artistic needs provide the basis of history.

**285. World War II—1939-41 :** Sound/B&W/150 m. 15 min.

The film shows the German invasion of Poland, the fall of France, the invasion of Russia and Japanese attack on the pearl harbour.

**286. Julius Caesar :** Sound/BW/360 m. 30 min.

The film is about the life of Julius Caesar. Right from the warning "Beware of Ides of March", the film shows the plot of Brutus against Caesar, the crowning of Caesar, the murder of Caesar by Cassius, Mark Antony's Oration and the Romans turning against Brutus.

**287. Boyhood of George Washington :** Sound/B&W/120 m. 11 min.

The film gives the story of the boyhood of George Washington. Born in Virginia, Washington begins his life as a son of a farmer and gets his education in America.

**288. Lepakshi :** Sound/B & W/120 m. Telugu. 11 min.

The film depicts the ancient temple architecture at the Siva Temple at Lepakshi a place in Andhra Pradesh. The sculptures and the forms of deities are almost similar to those in Tamil Nadu.

### MATHEMATICS.

**289. Decimals are easy :** Sound/B & W/120 m. 11 min.

The film explains the use of decimals in addition, subtraction, division and multiplication and shows with an every day example that the use of decimals are easier than the use of fractions.

**290. Fractions—find the common denominator :** Sound/B&W/150 m. 15 min.

The film explains what are like fractions and what are unlike fractions and the method of adding the fractions, finding the common denominator and least common denominator. Many examples are also given.



**291. Geometry and you :** Sound/B&W/150 m. 15 min.

Students will better appreciate the function of geometry when they see this practical demonstration of its everyday importance. In constructing a model porch with two boys, they will use protractor and ruler to apply their study of such figures as rectangles, triangles and circles and such principles as congruence, similarity and symmetry.

**292. Graphs—Understanding and using them :** Sound/B&W/120 m. 11 min.

As Joan graphs the number of bottles of pop she sold at each of the local baseball games, we learn that a graph is a visual representation of a set of ordered pairs. We see that graphs may be of various types, such as pictograph, the horizontal and vertical bar graphs, the divided bar graph, the circle and the line graph.

**293. Meaning of Area :** Sound/B&W/165 m. 16 min.

Explains the derivation of various formulas for finding the area of triangle, parallelogram, trapezium from the formula for finding the area of a rectangle also derives the formula  $\pi r^2$  for finding the area of a circle.

**294. Symbols in Algebra :** Sound/B&W/120 m. 11 min.

The film deals with Algebraic statements and the basic operations of using symbols in addition, subtraction, multiplication and division. Examples are given to show how algebra is used in solving problems.

**295. Triangles—types and uses :** Sound/B&W/120 m. 11 min

The film defines what a triangle is and explains various triangles, right, obtuse, Acute, equilateral and isosceles triangles. Also explains the congruency of two triangles, defines and explains the use of Pythagorean theorem.

**296. Pythagorean theorem :** Sound/B&W/60 m. 6 min.

The film defines and explains the theorem of Pythagores.

**297. Associativity:** Sound/B&W/135 m. 13 min.

This film deals with the associative property of addition. Explains with examples that addition is associative whereas subtraction is not associative.

**298. Equations :** Sound/B&W/135 m. 13 min.

Defines equation as a number sentence. Explains addition and subtraction of the elements of various sets. Explains Open number sentence, false and true number sentence and the use of equation.

**299. Inverse Operations :** Sound/B&W/150 m. 15 min.

Explains with examples addition and subtraction equations as inverse operations.

**300. Inequalities :** Sound/B&W/150 m. 15 min.

The film deals with the comparison of two sets. Presents inequality as the number sentence about two different numbers and the significance of the symbols. Inequality is also explained by means of animation pictures.

**301. Intersection of sets :** Sound/B&W/180 m. 18 min.

The film explains set, subset, empty set, and intersection of sets by venn diagram. Many examples are given to stress the phenomena.

**302. Metric system :** Sound/B&W/120 m. 11 min.

The film defines the basic units of Metric system and compares with the British system. Points out how metric system will simplify calculations and help trade, commerce, science and education.

**PHYSICS.****303. A study of Magnetism :** Sound/B&W/65 m. 6 min.

The film gives a neat exposition on the phenomena of Magnetism in a simplified style. In the film a magnet is personified to illustrate poles, lines of force, attraction, repulsion and magnetic induction. The film explains what makes a magnet, the difference in temporary and permanent magnets, how an electric current produces electromagnet and why a magnetic needle always points in North South direction.

**304. Action and reaction :** Sound/B&W/120 m. 11 min.

This film explains with various examples Newton's laws of motion "For every action there is an equivalent and opposite reaction". The examples shown are flying of a jet plane, throwing a ball, shooting a gun, etc.

**305. Air pressure :** Sound/B&W/120 m. 11 min.

Facts about the pressure of the air that is all around us. Fascinating experiments such as a card that keeps water in a glass when the glass is turned upside down, home-made Guerickes hemispheres, a can that collapses because of air pressure and to boil coffee with ice.

**306. Archimedes principle :** Sound/B&W/120 m. 11 min.

Archimedes' classic discovery—displacement principle and its application in finding specific gravity, shows experiment done with modern laboratory equipment.

**307. Discharge through gases :** Sound/B&W/120 m. 11 min.

Shows the discharge patterns which occur when pressure is progressively reduced and explains the theory of discharge through rarified gases

**308. Energy :** Sound/B&W/120 m. 11 min.

This film explains with example what energy is. Energy is the ability to do work. Explains potential and kinetic energy. Potential energy can be changed into kinetic energy. Every substance in the world has some potential energy. This film demonstrates how potential energy of starch is changed into kinetic energy. Energy constantly changes from one form to another. Various forms of energy are, heat energy, electrical energy, chemical energy and light energy, etc.

**309. Engines and how they work :** Sound/B&W/120 m. 11 min

Explains the operating principles of various types of engines including steam, gasoline, diesel, turbine, jets and rockets. Develops an appreciation for the importance of engines and discusses the free piston engine and the ionic propulsion engine.

**310. Electro magnetic induction :** Sound/B&W/150 m. 15 min.

\* The generation, by induction of a current in a conductor situated in a magnetic field of changing intensity, is shown by animated diagrams and an electrically operated model railway. Diagrammatic demonstration that the induced electro motive force is proportional to the rate of change of magnetic flux. Application of this to the construction of generators and generators in operation are shown.

**311. Force :** Sound/B&W/135 m. 14 min.

What is a force ? How forces are added to find a resultant ? A force experiment with a toy boat. Stunts with forces, a cord that can't be straightened, a napkin that no one can move, why bridge cables and telephone wires have slack in them. Treats and demonstrates principles of sliding and rolling friction under various experimental conditions.

**312. Friction :** Sound/B&W/90 m. 8 min.

This film provides an understanding of the various characteristics of friction by observing friction which acts on the object in several experiments. The force of reaction is shown by using the photoelastic device. This film also shows the connection between the force of friction and gravity and the relationship between the condition of the surface and the force of friction.

**313. Gravity and centre of gravity :** Sound/B&W/120 m. 11 min.

This film explains the following—What is gravity ? How to find the centre of gravity of an object ? Why things keep their balance or fall over ? How to make a can roll up hill ? Balancing stunts, balancing a penny on the point of a needle, balancing a pencil by its point, etc.

**314. Gasolene engine :** Sound/B&W/90 m. 8 min.

This film explains the working of a gasolene engine or the otto cycle. The four strokes, intake stroke, compression stroke, power stroke and exhaust stroke. The change in pressure and temperature during those strokes are shown by means of diagram. It explains the first law of thermodynamics. Thermal efficiency  $E=1-\frac{Q^2}{Q^1}$

$$\frac{Q^2}{Q^1}$$

**315. Heat conduction :** Sound/B&W/105 m. 9 min.

This film explains how heat spreads in solids and which material conduct heat best. An interesting experiment to show that metals expand when heated and contract when cooled. It also explains how a thermostat works.

**316. Heat convection and radiation :** Sound/B&W/105 m. 9 min.

This film shows how heat is spread in liquids and gases by convection. Simple experiments are shown to show that hot water is lighter than cold water and hot air is lighter than cold water. It shows that heat from the sun is spread by means of radiation and the reason why people use white clothes during summer.

**317. How the vacuum tube works :** Sound/B&W/210 m. 9 min.

This film explains the working of diode and triode valves. Diode consists of two elements filament and plate. Current flows in one direction from filament to plate. Triode consists of three elements filament, plate and grid. This film shows how electrons move while current flows.

**318. Inertia of motion :** Sound/B&W/105 m. 9 min.

Why our body falls forward when a car stops suddenly ? Amazing stunts with inertia of motion. How to drive a nail through a piece of wood with nothing but your bare hands, how to break a pencil with a dollar bill ? How to tighten the head of a hammer using the knowledge of inertia ?

**319. Jets and Rocket engine :** Sound/B&W/120 m. 11 min.

Principle of Jet engine is explained with various examples. Newton's law "To every action there is an equal and opposite reaction" is highlighted. It shows the working of reaction engines such as jet engine, Ram jet engine and turbo jet engine. The functions of various parts of a jet engine is explained.

**320. Matter and energy :** Sound/B&W/120 m. 11 min.

Presents the basic concept that everything in the universe is composed of matter and is affected by energy. Matter in its different forms is presented, and elements, compounds and mixtures are defined. Ends with a brief exposition of atomic energy.

**321. Magnetism :** Sound/B&W/120 m. 11 min.

The film depicts what is a magnet, how magnets are made, what is North pole and South pole. The film also shows about electromagnetic induction and further explains why like poles repel and unlike poles attract.

**322. Mass and weight :** Sound/B&W/120 m. 11 min.

This film explains the differences between mass and weight. It also explains that the mass of a body does not vary and is same in North pole, equator and on the moon. It shows how mass can be weighed using a National balance which vibrates sideways. Measurement of weight is the force of gravity acting on it. This film also explains the gravitational mass and inertial mass.

**323. Nature of energy :** Sound/B&W/120 m. 11 min.

In clarifying the scientific concept of energy this film shows the relationships of atomic energy to the other forms of energy and the specialized forms of electricity, sound, light and heat.

**324. Nature of heat :** Sound/B&W/120 m. 11 min.

Heat as the energy of molecular action is demonstrated through experiment and animation. How heat is transferred by conduction, convection and radiation is clearly illustrated. The film also offers questions that are designed to promote discussion and experimentation to develop better understanding of the nature of heat.

**325. Nature of sound :** Sound /B. & W./120 m. 11 min.

The nature of sound is presented in a simple and clear way by a radio operator to a young boy. Explains by experiments that sound travels at a speed of 1,050 ft. per second mostly through air but better through solids and water and that it travels in waves of compression and expansion. It shows the pictures of varying types of sounds on an oscilloscope to explain the loudness, pitch and quality of sound and explains how a hard surface is a good reflector for waves but a soft surface will absorb them.

**326. Ohm's law :** Sound/B. & W./75 m. 7 min.

Explains the elements of electricity, electrical energy, its source, transmission and use, composition of matter, use of force and energy, how Ohm's law functions, resistance and the purpose and use of metres.

**327. Pascal's law :** Sound/B&W/105 m. 9 min.

Explains the facts about water pressure, how to show that water pressure depends on height. Experiments proving that water cannot be compressed but can transmit pressure. How this fact can be used to increase force and how automobile brakes work are explained in this film.

**328. Pendulum :** Sound/B&W/ 120 m. 11 min.

This film highlights on the following : What is a pendulum? On what does the speed of a pendulum depend? How to find centre of oscillation of an object? What is centre of percussion? Why a baseball bat breaks when the ball hits it at the wrong spot?

**329. Perpetual motion :** Sound/B & W/ 120 m. 11 min.

This film explains how energy is produced through various sources, muscle power, wind power and water power and how it is stored. The working of perpetual motion machines of an unbalanced wheel is explained. It also explains how the energy of falling water used to run the machine.

**330. Properties of electromagnets :** Sound/B. & W./ 210 m. 11 min.

This film explains in detail the characteristics of electromagnet and how it is made. It explains that the magnetic power can be increased by placing an iron rod inside the solenoid of an insulated copper wire and as the winding increases the magnetic power also increases.

**331. Refrigeration :** Sound/B. & W. /120 m. 11 min.

The film explains why a refrigerator keeps things cold, how evaporation produces cold and why a canteen cover keeps water cool. Experiments with evaporation that children can do and the mechanism of refrigerator are also shown clearly.

**332. Space Science: Comets, meteors and platetoids :** Sound/B. & W./ 120 m. 11 min.

The film explains the structure and the movements of comets, meteors and platetoids. It explains the formation of the planetoids, the elliptical path of the comet and its journey across the orbits of the planets.

**333. Space Science— Man-made satellite :** Sound/B&W/ 120 m. 11 min.

The functions and the uses of various satellites such as Passive satellite, Active satellite and Man-made satellite are explained. The journey, the period of the satellite and how to control the satellite are shown clearly in this film.

**334. Space Science—an introduction :** Sound/B&W./180 m. 18 min.

The film shows how rocket is sent to the space, escape velocity, orbital velocity, cislunar space, lunar space, interplanetary space, intergalactic space, apogee, perigee are explained. The effects of zero-g and weightlessness of a man are presented in an interesting way.

**335. Sound :** Sound/B&W/120 m. 11 min.

What is sound? Why sound cannot be transmitted in a vacuum? How to make tin-can telephone? Sounds that cannot be heard by the human ear. What is pitch? How to make a toy clarinet out of a soda straw. Relation of pitch to length of vibrating air column-are explained in an interesting manner.

**336. Surface tension :** Sound/B&W/120 m. 11 min.

How to make a needle float on water? How to make a full glass of water hold more? How to pour water along a string without spilling a drop? How soap cleans? Why a soap bubble is always round? A "mystery" boat that works because of surface tension.

**337. Simple machine: Inclined plane :** Sound/B. & W./60 m. 6 min.

Presents the principle of the inclined plane, including the wedge and the screw. Uses stop-motion photography and animation with familiar examples to help pupils recognize common forms of the inclined plane and to understand their functions as simple machines.

**338. Simple machine : levers :** Sound /B. & W./60 m. 6 min.

Introduces the concept that the lever is a simple machine which can change the amount of force and its direction. Presents the inter-relationship of force and distance. Shows such familiar forms of the lever as a sea-saw, a nut cracker and a beam as well as examples of more complex machines which utilize the principles of the lever.

**339. Simple machine : pulleys :** Sound/B. & W./60 m. 6 min.

Visualizes this simple machine and explains the principles of its operation. Both the fixed and movable pulleys are examined in detail along with the block and tackling system. The film then shows the function of different kinds of pulleys in every day use.

**340. Simple machine : Wheel and axle :** Sound/B. & W./60 m. 6 min.

Illustrates the force and distance relationships which exist in machines, utilizing the principles of the wheel and axle. Analyses the way in which the working wheels of a bicycle increase force or distance and examines such applications of the wheel and axle as the gear drive, belt drive and crank.

**341. Tea kettle of James Watt :** Sound /B. & W./120 m. 11 min.

This animated cartoon film describes the history of the invention of steam engine and explains the theory in a humorous style. It shows the mechanism and functioning of the simple steam engine and its successive derivatives. The film surveys the contributions of the great experimenters like Hero, New Comen, Trevithic, Stephenson, Fulton, who widened the scope of its application to ships and locomotives. The film emphasises the prominent role of steam engine in the progress of industry, trade and communication.

**342. Television—how it works :** Sound/B. & W./120 m. 11 min.

The film explains how the television camera analyses a picture into electrical impulses for broadcasting, and how the receiver reverses the process. The main parts of the equipment are demonstrated and carefully related to a working model.



### 343. Verniers : Sound/B and W/210 m. 9 min.

The film highlights the importance and the use of micrometer vernier and vernier calipers. Illustrates in detail the construction of 5 parts vernier and 10 parts vernier of a micrometer and 25 parts vernier of a vernier calipers. How to read a micrometer correctly upto .0001 of an inch is explained with various readings.

### 344. Xrays : Sound/B and W/210 m. 9 min.

Presents the origin nature and properties of these special rays which can penetrate opaque bodies. Tells how their harmful effects were brought under control and their energy made use for the benefit of mankind. The nature, properties and the application of X rays in various fields are explained in this film.

### 345. AC-&DC : Sound/B and W/120 m. 11 min.

Present the differences between AC and DC currents. Electric current is the movement of electrons. In AC electrons move both forward and backward. But in DC electrons move in only one direction. Explains the working of various machines with AC and DC currents. Presents the advantages of AC to DC. AC current is easy to generate, easy to transform and so easy to distribute. Tells the use of transformer and rectifier. Transformer converts big current low voltage to small current and high voltage and rectifier is used to convert AC to DC.

### 346. Cosmic Zoom : Sound/Colour/120 m. 11 min

The film gives the cosmic zoom of various objects. The nearest and the farthest appearance of objects are photographed by the method of zooming in and zooming out and analyses the composition of blood.

### 347. Density : Sound/B and W/ 120 m. 11 min.

Presents what density and what specific gravity is. An interesting demonstration of density is shown in which a layer of various liquids are poured in long glass tube and different objects float in different liquids. Many interesting experiments are demonstrated to show that cold water is denser than hot water and salt water is denser than ordinary water. Explains the use of hydrometer to test an automobile battery.

### 348. Electricity and heat : Sound /B and W/120 m. 11 min.

Gives explanation of the production of heat by electricity, explains how in a good conductor electrons can pass freely with little resistance, but in a bad conductor the movement of the electrons speeds up the

vibration of the atoms themselves, thus heating the material. The film shows how this heating effect can be varied.

**349. Electrons : Sound/B and W/120 m. 11 min.**

The film presents a graphic interpretation of the hypothesis that electricity consists of unit elementary charges. The meaning of the hypothesis is clarified by the use of animated drawing, working models and live photography. The following processes and concepts are clearly explained; conduction of electricity through solutions, gases and vacuum. Faraday's laws; valence; movement of charges in vacuum tubes; operation of photo electric cells; and reproduction of sound of film.

**350. Electrons and electronics—an introduction : Sound/B and W/120m. 11 min.**

The film starts with the fundamental idea of electron, its position and movement in an atom. Deals with the operation of vacuum tube which can control sound and light. The flow of electrons in diode and triode and the working of diode and triode are explained. The film highlights the role of electrons in radio broadcasting and modern application of X ray.

**351. Friction and its effects / Sound/B And W /120 m. 11 min.**

Defines friction as resistance to movement, which causes heat and wear. Illustrates the effects, uses and disadvantage of friction and methods of controlling it.

**352. Generation of electricity : Sound/B and W/120 m. 11 min.**

Opens with a survey of the uses of electricity in every day life. A simple laboratory experiment with magnet, solenoid and galvanometer is used to demonstrate the principles of electricity generation. Diagrams explain the operations of rotating coil and rotating magnet types of generators. Finally the film shows how water power is used to turn the turbines of generators used in power stations.

**353. How an electric motor works : Sound/B and W/180 m. 8 min.**

Presents the use of various kinds of electric motors that serve us everyday in our daily life. Electric motor converts electrical energy into mechanical energy or turning motions by electric current. This film explains how an electric magnet placed between a horse shoe magnet continues to rotate and thereby explains the working of an electric motor.

**354. How the television works : Sound/B and W/120 m. 11 min.**

The film explains how the television camera analyses a picture into electrical impulses for broadcasting and how a receiver reverses the process. The main parts of the equipment are demonstrated and carefully related to a working model.

**355. Light Part II : Sound/B and W/120 m. 11 min.**

The film deals about the concave and convex mirrors, definitions of various terms, formation of images, real and virtual images in spherical mirrors the applications of mirrors and caustic curve demonstration.

**356. Light—Part III : Sound/B and W/ 120 m. 11 min.**

The film deals with the refraction through a parallel-sided block, the famous sand and wheels experiment, refraction through a prism refraction from water to air, total internal reflection and refraction through right angled prism. The film also explains the construction and working of periscope and binoculars.

**357. Light—Part IV : Sound/B and W/ 120 m. 11 min.**

The film is about lenses. Deals with convex lens as a collection of prism sections, images formed by convex lens, application of the various object/image arrangements, effects of increased curvature, concave lens and images formed by a concave lens.

**358. Measurement in physical science : Sound/B and W/150 m. 15 min.**

The film presents the methods of measuring distance, mass and time accurately using various instruments. Shows what is a parallax error and how can it be avoided and the use of micrometer screwgauge to find thickness of a thin plate. Unknown mass is compared with standard-mass in a beam balance. Microbalance is used to find the mass accurately to one million of a gram. Time is measured accurately using photo electric device. Use of electro cardiograph and Oscillograph are shown.

**359. Molecular theory of matter : Sound/B and W/120 m. 11 min.**

The film examines evidence that supports the kinetic molecular theory. Interprets the three phases of matter—solid liquid and gas in terms of the relationship between (1) the velocity of molecules and (2) the inter attractive forces which bind molecules together. Examines the role of heat energy in bringing about change of phase.

**360. Pressure in fluids at rest : Sound/B and W/120m. 11 min.**

Defines what a fluid is. Pressure in a fluid at rest is caused by gravity. Pressure is the force at unit area. Shows that pressure depends on height and density, pressure in liquid is directly proportional to depth and not directly proportional in case of gases and shows that pressure in a fluid is responsible for buoyancy. The film ends with the explanation and verification of Pascal's law. The principle of hydraulic press is also explained.

**361. Sound — Part I : B and W/120 m. 11 min.**

Part I deals with the introduction to sound. Sound arises by vibrating source and explains oscillation, simple definition and frequency. The human vocal mechanism is explained with animated diagrams, the human ear, its various parts and their functions are explained by large scale model.

**362. Sound—Part II: B and W/120m. 11 min.**

This film deals with sound waves. Explains transverse waves, wave length, frequency and amplitude, speed of wave motion, longitudinal waves, wave length and sound waves. Gives the diagrammatic representation of longitudinal waves in the same way as transverse waves.

**363. Sound—Part III : B and W/120m. 11 min.**

Part III deals with the speed of sound, determination of speed in air and in water. Explains sound ranging, echo sounding and speed of sound in solids.

**364. Sound—Part IV : B and W/120m. 11 min.**

This film deals with the musical notes of sound, explains frequency and pitch, stretched strings, loudness, stringed instruments, vibrating columns of air, wind instruments, percussion instruments, overtones, quality and noise.

**365. Things expand when heated: Sound/B and W/105m./2 copies. 9 min.**

This film demonstrates the movement of molecules before and after heat is applied to them, as an understanding of contraction and expansion and provides an introduction to the Molecular theory.

**366. Planes : Sound/B and W/150m./2 copies. 15 min.**

The film identifies the common types of hand planes and shows the correct use and care of each.

**367. Electricity from power plant to home:** Sound /B and W/400m. 38 min

A field visit to power plant serves to acquaint the student with the basic facts regarding the generation and distribution of electric power for home use. Animated drawing are used to explain the process of magnetic induction.

**368. Friction all around :** Sound/B and W/90m. 8 min.

This film illustrates the utilization of friction by examining familiar situations. Heat is produced by sawing wood, a cigarette lighter heats the flint, making the sparks fly, rocket nose cones and meteors get hot. The film then shows how we can reduce friction by making things smoother and by using wheels, and how we can increase it by using bath tube mats by sprinkling sand on icy roads and so forth.

**369. Machines do work :** Sound/B and W/120m./2 copies. 11 min.

Introduces the concept of simple machines discussing the working of a lever, wheel and axle, inclined plane and pulley and shows how a complicated machine is constructed based on the principles of simple machines.

**370. Air, all around :** Sound/B and W/120m./2 copies. 11 min.

This film descriptively illustrates some of the ways in which we use air; in tyres, in airbrakes and air drills and in sand blasting. Use of air in furnaces and camp fires, for jet planes, for parachutes to fly kits, to turn windmills and to sail boats.

**371. Solids, liquids and gases :** Sound/B and W/120m. 11 min.

An introduction to three states of matter, defining liquids, solids and gases, showing in everyday terms how a substance can be changed from one state to another depending on heat and cold.

**372. Friction :** Sound/B and W/120m. 11 min.

The film introduces friction as a restraining and explains the various ways in which we try to reduce friction or try to serve our everyday needs.

**373. Magnetism :** Sound/B and W/120m. 11 min.

The film depicts what is a magnet, how magnets are made, what is North pole and South pole. The film also shows about electromagnetic

induction and various types of magnets such as Horse shoe magnet, bar magnet etc., The film further explains why like poles repel and unlike poles attract.

**374. The atmosphere in motion : Sound/B and W/210m. 11 min.**

The film studies the causes and effects of atmospheric movement. Uses simple experiments to illustrate and explain such atmospheric phenomenon as air pressure, the effect of heat on air, distribution of the sun's energy on earth, convection currents, the coriolis effect and others. Defines as weather the manifestations of atmosphere in motion.

**375. Teaching elementary Physics : Sound/B&W/210m. 19 min.**

Physics is found in almost all activities of our daily life. The new approach to the teaching of physics is activity oriented one and the film gives us a variety of instructional materials and locally devised improvised apparatus for teaching of physics at elementary level.

**376. Physics Kit Part I : Sound/B&W/210m. 19 min.**

This kit is intended for teaching physics at Standard VI. The various simple concepts such as thrust, pressure, area, volume, force and its units, thermal expansion, molecular cohesion are sought to be explained with the help of simple improvised apparatus.

**377. Physics Part II : Sound/B&W/210m. 19 min.**

This is the continuation of physics Kit No. 1 but it is intended for Standard VII. In this kit concepts such as kinds of energy, friction, conduction of heat, sound, air pressure are well taught with the help of simple experiments. The apparatus include a model of a clock also.

**378. Physics Part III: Sound/B&W/210m. 19 min.**

This is the biggest kit in the series intended for Standard VIII. This film is confined to three major areas such as light, magnetism and electricity. The provision of ray box in the kit is very useful for carrying out almost all the experiments in light. Similarly the thermal effect, chemical effects and magnetic effects of electricity are easily taught with the help of simple experiments.

**379. Reaching for the stars : Sound/B&W/120m. 11 min.**

This is a film produced by Australian board of scientists regarding the seeing of stars in the galaxy. Seeing stars through powerful equipments has been developed much and especially the radio astronomy

has contributed much in this direction. This modern technique is superior to the conventional method of seeing stars. This film goes on explaining the developments made in this field.

**380. Universe : Sound/B and W/300 m. 27 min.**

The film deals with the various heavenly bodies which are found in the celestial galaxy. This film gives prominence to nine planets including the sun and shows how each one is different in nature, temperature, distance etc., It goes on to explain why human life is not possible in such planets. Finally the sun has been shown to be the final source of energy for sustaining human life on earth.

**381. Matter and Molecular theory : Sound/B & W/180m. 18 min.**

Things exist ordinarily in three kinds of state. They tend to change from one to another as a result of several forces. Heat is one of such factor. By applying heat the film explains how matter can be changed from one state to another and accounts for the reasons for such change. This is the molecular theory of matter presented in a simple form.

**382. Boyhood of Thomas Edison : Sound/B&W/180m. 18 min.**

Thomas Edison was one of the most famous scientists of 19th century and his contributions to modern science are well known. This film traces the early boyhood of the scientist and shows how he has made experimentation with several projects of electricity.

**383. Prelude to power -- Life and work of Faraday : Sound/B&W/ 300 m. 27 min.**

Micheal Faraday was a famous scientist lived early in 19th century. He started his life as a book binder and in his leisure times he slowly built up his knowledge and became the Director of the Royal Institute, London. This film also shows the several contributions in the field of electricity and magnetism.

**384. Carnot cycle—Kelvin Temp. scale : Sound/B&W/120m. 11 min.**

This film deals with the principal of heat engine and the law of thermodynamics. It illustrates how the second law of thermodynamics is useful to improve the efficiency of heat engines by reducing friction, acceleration and providing suitable insulation to prevent heat loss.

**385. Energy in our rivers : Sound/B&W/120m. 11 min.**

Energy is obtained from various sources for our daily life. This film shows how even water can be a profitable source of energy and illustrates

with examples ranging from water wheels to turbines. It also shows how electricity is generated and transmitted for use in major cities.

**386. Tape recording for instruction :** Sound/B&W/ 30m. 18 min.

Classroom instruction in order to be meaningful and lively has to be supplemented with various modern gadgets of teaching. Tape recorder is one of such aids for the betterment of instruction. The film shows the various useful ways in which the tape recorder can be usefully employed for teaching and the ways of preserving it for a long time.

**387. Law of Laziness :** Sound/B & W/30m. 3 min.

This film explains Newton's first law of motion with various examples.

## PHYSIOLOGY.

**388. Heart, lungs and circulation :** Sound/B & W/120m. 11 min.

The film explains the position and the functions of heart and lungs. General blood circulation and pulmonary blood circulation etc. explained with diagrams. The mechanism of respiration is demonstrated by means of a bell jar experiment.

**389. Human body : Respiratory system :** Sound/B&W/180m. 11 min.

The anatomy of the respiratory apparatus, the mechanism of respiration are portrayed diagrammatically. Respiratory system is explained in two parts, ventilation, breathing air in and out and diffusion in the lungs. The process of ventilation and the contraction and relaxation of diaphragm is compared with a bell jar experiment. The diffusion of oxygen from alveoli to capillary net work and carbon dioxide from capillary net work to alveoli is shown by animated diagrams. The reason for breathing hard by the athlete is also depicted.

**390. Muscle and bones of the body :** Sound/B & W/120m. 11 min.

The film explains why muscles are important to the body and arrangement of bones in the skeleton. The importance of skull and thoracic bones, various joints of the bones and how muscles and bones co-ordinate in doing a work. It explains the various types of muscles, voluntary, involuntary and cardiac muscles. The importance of exercises for building up of muscles is also stressed.



**391. Sense organs :** Sound/B & W/120 m. (Tamil) 11 min.

The film presents the structure of the five sense organs—eye, ear, nose, tongue and skin by animation. The function of each part and how we see, how we hear, are explained in detail.

**392. Endocrine glands :** Sound/B & W/120 m. 11 min.

The film explains the “glands of internal secretion” by means of controlled experiments, demonstrations and animated drawings. Presents the effects by the removal of parathyroid glands from a healthy goat, Pituitary and its influence on reproduction, the pancreas and diabetes, the thyroid and metabolic rate and the functions of hormones in reproduction and growth are highlighted.

**393. Open your eyes:** Sound/Colour/180 m. 18 min.

The film shows the working of an eye campaign organised by the UNICEF in a village.

**394. Human body : Chemistry of Digestion :** Sound/B & W/180 m. 18 min.

This film shows how starch molecules are formed from monosaccharides—disaccharides—polysaccharides. It explains how the nutrient molecules of protein, carbohydrates and fat are broken into smaller components by the process of hydrolysis. Various secretions and the enzymes of the digestive glands are shown. It also explains how the action of enzymes speed up the process of hydrolysis.

**395. Endocrine glands and how they affect you :** Sound/B & W/205 m. 19 min.

This film shows the various endocrine glands and their secretions, the hormones. It tells how the hormones regulate the countless life processes within our body and how they affect appearance, personality and behaviour.

**396. Human body : Nutrition & Metabolism :** Sound/B&W/180m. 18 min.

The film starts with the definition of metabolism that is based metabolism of the body which is otherwise known as the energy requirements of the cells of the body. The requirement may vary with individual and nature of work ranging from 1700 calories to 6,000 calories. This energy is supplied through nutrients which is of five kinds. This film also shows how carbohydrates, fat and proteins are taken into our body and analysed into simpler substances.

**397. How body uses energy : Sound/B and W/18cm. 18 min.**

The film starts with the common concept of the sun being the ultimate source of energy for all living things. Energy is transferred to human beings through plants and animals. The process of utilising energy with the help of oxygen (oxidation) is also explained. It shows how liver, pancreas and enzymes in the stomach help in the process of oxidation.

**398. Infectious diseases and body diseases : Sound/B and W/120m. 11 min.**

The film shows how our body is endowed with natural defences against infectious bacteria. The various defences are broadly divided into two major kinds. Outer body defences consisting of skin, eyes, nose, stomach acids and inner body defences such as phagocytes, spleen, liver and anti bodies in the blood. It also shows how anti bodies react against infecting bacteria.

**399. Ears, structure and care : Sound/B and W/120m. 11 min.**

The film shows the external and the internal structure of the ear and its various component parts. Special reference is paid to the cochlea and to the role of semi circular canals. The film also traces the several sources for the loss of hearing and suggests measures to prevent them.

**400. Teeth, structure and care : Sound/B and W/120m. 11 min.**

This film shows the dentition of the human body and the structure of a tooth. It shows how defective eating results in the decay of the teeth. Brushing at right time and in the right way will save the teeth from decay. The film demonstrates the various measures of protecting the teeth.

**401. Nose, throat and ears : Sound/B and W/120m. 11 min.**

This film deals in general with all the three regions of the human body. It shows how nose, throat and ear serve in a co-operative way for the body metabolism. Measures of clean and healthy habits of nose, functions of epiglottis and tonsil are also shown, in the film. It also suggests the general ways of caring the sense organs.

**SCIENCE (GENERAL)****402. National Science Exhibition : Sound/B and W/210m. 19 min.**

This is a film showing the various items displayed at the National Science Exhibition held at New Delhi. The exhibition had an assem-

blage of items relating to three branches of science. The exhibits pertaining to electronics are shown. The aim of the film is to bring about the national integration in the field of sciences.

**403. Teaching science through environment : Rocks and Minerals : Sound/B and W/210m. 19 min.**

The film deals with the topic 'rocks and minerals' for Standard V syllabus. It shows how teaching in the natural environment is more effective and meaningful. It shows the various steps in the preparation and planning of the lesson. It deals how barren rocks are formed and how they disintegrate due to natural forces.

**404. Improvisation of science aids: Series I, II and III Sound/B and W/120m. each 11 min.**

These films illustrate how science could be taught easily with the help of indigenous improvised materials prepared by the staff and children. The films deal with some of the items which can be locally prepared from waste materials such as spirit lamp, test tube stand, stethoscope, model of lungs, percussion of air distribution of stomach, force pump, centre of gravity and arc lamp.

**405. Science for children—3 parts: Sound/B and W/120m. each 11 min.**

These films show minor and natural phenomena involving science in our daily life such as electricity, harnessing river, effects of magnetism, radio telescope, planets, prehistoric evolution, aquatic animals and prehistoric animals. These items are shown with a view to inculcate the spirit of scientific thinking in the minds of young children.

**406. Vigyan ki Padai : No. 1 : Sound/B & W/240m. 21 min.**

This film is an attempt to reorient the teacher in adopting new approaches and techniques of teaching science. The main theme is to illustrate that the teaching should be child centred and supported by examples chosen from environment. Some of the low cost materials familiar to the children are well used to teach scientific principles.

**407. Vigyan Ki Padai : No. 2 : Sound/B & W/210m. 19 min.**

The film is intended to make the teacher understand that good science teaching is possible even without the help of sophisticated science laboratory. The environment available outside displays the great potential for science teaching. This is illustrated by examples drawn from daily life to teach air pressure, properties of air etc.

**408. Vigyan Ki Padai No. 4, Sound/B & W/240m. 21 min.**

This film deals with the pedagogical principles in acquiring scientific knowledge. They are perception of a problem, hypothesis formation, testing hypothesis and generalisation. These are illustrated with the help of topics chosen i.e., "three states of matter" from General Science.

**409. Vigyan Ki Padai : No. 6 : Sound/B & W/ 240m. 21min.**

One of the important scientific stages of acquiring knowledge is classification. The acquired data is classified with a view to usher in clarity and comprehension. This stage of classification is important in life also. This is illustrated by using the topic "living and non living".

**410. Vigyan Ki Padai : No. 7 : Sound/B & W/210m. 19 min.**

This film illustrates with examples what a mental model is. Teachers employ physical models in daily classroom teaching for better comprehension. This mental model is a complex concept and different from other kinds of models. Several examples have been taken to illustrate this principle.

**411. Vigyan Ki Padai : No. 9 : Sound/B & W/210m. 19 min.**

The modern trend of teaching science is to involve the children actively in the classroom. This basic principle is demonstrated well. A village school teacher involves the school children in teaching a lesson on "Plants and their uses".

**412. Vigyan Ki Padai : No. 10 : Sound/B & W/210m. 19 min.**

It is often said that a good teacher will fail in the classroom if the lessons are not well planned. Good planning leads to the success of a lesson. This is illustrated by means of concrete experience. A topic "Measurement of length and need of standard unit" is chosen to illustrate this principle.

**413. Vigyan Ki Padai : No. 11 : Sound/B & W/240m. 21 min.**

Teaching science without materials will prove to be ineffective but at the same time it should not be held that a well equipped laboratory is absolutely necessary. This can be substituted with the help of low cost materials chosen from environment. This will make teaching more meaningful and arouse interest in children.

**414. Vigyan Ki Padai : No. 12 : Sound/B&W/240m. 21 min.**

This film deals with another topic namely "Nutrition Education". The main idea is to make the teacher understand the availability of food at several regions and to make the best use of such types. The teachers are also made to understand the food value of several types of food and also the measures of avoiding wastage of Nutrition content of food.

**415. Physical Education Class in schools : Sound/B&W/120 m. 11 min.**

This film projects the importance of a sound mind in a sound body. Various body building exercises, indigenous exercises, asanas, acrobatics, rhythmic activities, athletics and recreational activities for the social development of individual are screened.

**416. Yogasanas : Sound/B&W/191 m. 19 min.**

This film explains the good effects of Yogasanas on health. The asanas are demonstrated in a sequential order. Both men and women can do asanas but women were not advised to do certain asanas for example-Mayurasana. Every sasana is shown by "step by step orderly movement". Some of the important asanas shown are Padmasana, Sirasasana, Sarvanga asana, Machasana, Mayurasana, Savasana.

**417. Selecting and using ready made materials: Sound/B & W/210 m. 19 min.**

The film gives an idea as to how readymade materials in teaching could be used so that the teaching learning processes is made more meaningful and useful. The effective use of the audio visual materials such as Films, Filmstrips, charts, models, Flannel board, record players tape recorders, Television inter-com-system, booklets are depicted clearly in the film. It also stresses that inspite of all these aids, the teacher is the most important person in communicating knowledge and skill.

**418. Science is doing : Sound/B&W/180 metres. 18 min.**

The film stresses that Science and Technology are essential in life especially in Agriculture and factories. Science deals with the products and process. Science is doing to know. Old method of science teaching causes only distraction in class room. If the science teacher is resourceful he should use the environment and should act as a companion and guide to children and do science teaching effectively. It also lays stress on 1. observation, 2. measurements, 3. classification, 4. use of numbers, 5. the relationship between distance and time, 6. prediction, 7. experimenting and 8. communication.

**419. Primary Science Kit : Sound/B&W/150. m. 15 min.**

This film explains the various items in the primary science kit prepared by NCERT. The use of these equipments are also demonstrated in this film and tells how teaching aids could be improvised from unwanted waste materials.

**420. Nuclear fuels : Sound/Colour/300 m. 27 min.**

This film explains the separation of uranium and Plutonium and the release of energy. A model of the working of the separation process and how a reactor also functions on the same lines are shown. Various chemical processes involved are well explained.

**421. Over head Projector : Sound/Colour/300m. 27 min.**

The film explains why an over head projector should be used and surveys its properties and advantages. It describes in detail the machine, how it works, and how to set up for use in the class room, operate it and look after it. Summarises points to consider when buying an over head projector. It gives practical advice on using the Over Head Projector to present information in a clear and effective way and includes a range of techniques and special effects. It also tells how transparencies could be prepared and includes advice on storage of transparencies.

**422. Education Technologique : Sound/Colour/300m/27 min.**

This film looks at an inservice training course in the French speaking region of Belgium, where technology forms a compulsory element in the secondary school curriculum. In the Belgian 'renovated' comprehension school curriculum, a programme of technological education, much like the 'Technology for Teachers' view of school Technology is rapidly being implemented. The programme shows Mons approach to inservice education and illustrates these points by two instructional units. The first instructional unit is concerned with the mechanism of a wheel brace and the second concerns the design of a lift.

**423. Market equilibrium : Sound/B & W/180 m. 18 min.**

In this film Prof. F.S. Brooman brings the supply and demand sides together to explain the idea of equilibrium in a market.

Prof. Brooman then goes on to consider what might happen if the demand curve and supply curve shift position, and what happens in the case of steep and shallow curves. He concludes by giving the example of a Chancellor of the Exchequer deciding to put a tax on two different goods, considering the effect of the price rise on both the demand for the goods and on the tax revenue.

**424. What is micro teaching : Sound/Colour/300 m. 27 min.**

The film opens with a young teacher, teaching a regular science lesson to a first year class in the school. This film reminds us how the students on conventional teacher training courses are often thrown in at the deep end. They either sink or they swim and they are not really given a great deal of guidance about how to teach effectively. The micro teaching programme avoids such a 'sink or swim' situation ie

what we see in the film. We watch a typical micro teaching sequence involving a group of five students and their tutor. The skill they are concerned with is that of variation and the sequence consists of two main stages—the various preteaching activities and the actual teaching session. Towards the end of the film, we are introduced to a special kind of bridging activity between micro teaching and teaching practice.

## PHYSICAL EDUCATION.

**425. Breast and butterfly stroke :** Sound/B. & W./120 m. 11 min.

A demonstration of arm and leg movement and breath control—the perfection of this stroke.

## TECHNICAL EDUCATION.

**426. Bars, punches and drifts :** Sound/B. & W./180 m. 18 min.

The film explains the construction, and use of various kinds of equipments such as bars, punches and drifts. Various types and the technique of using the equipments are depicted.

**427. Capacitance :** Sound/B. & W./360 m. 30 min.

Demonstrates electron flow through a circuit, the charging and discharging of condensers, variations of a charge on a condenser in relation to time and the behaviour of capacitance with alternating current.

**428. Reading and three view drawing :** Sound/B. & W./120 m. 11 min.

The film explains how to read a three view drawing of a tool from a blue print. Making the tool by reading the three view drawing is shown.

**429. Typing skills—Building up speed :** Sound/B. & W./135 m. 12 min.

The film explains how to build up speed in typing. Practice what you have learnt, improving attitude, developing good typing form, conditioning muscles and improving basic typing patterns help to build up speed.

**430. Typing skills—Daily job technique :** Sound/B. & W./180 m. 18 min.

The film presents how to become a successful typist by observing the following techniques.—

1. Plan to do a variety of jobs.
2. Plan each job and 3 plan for accuracy.

**431. Typing skills—Field of typing :** Sound/B. & W./180 m. 18 min.

The various fields of typing that a professional typist had to do are highlighted in this film.

**432. Typing skills—Position and key strokes :** Sound/B. & W./150 m. 15 min.

The film explains that a successful typist should bear in mind the position and key strokes. Position of the typist, height of the chair, height of the desk and the back of the chair are also to be considered for a good typing. The film also analyses the nature and movements of key strokes. It also stresses the importance of doing finger gymnastics.

**VISUAL EDUCATION.****433. Facts about projection :** Sound/B. & W./120 m. 11 min.

Stresses proper preparation in advance of the showing of 16 mm films. The need for setting up the projector and testing it before the viewers arrive are emphasized. Other suggestions for better projection are offered. Operational routines for starting and ending the show are included.

**434. Operation and care of 16 mm RCA Projector :** Sound/B. & W. 195 m. 19 min.

This film deals with the correct operation and care of the RCA 400 'Senior' and 'Junior' models. It describes the setting up of the projector and speaker system, threading, actual operation, rewinding and packing up of the unit. The importance of correct cleaning is emphasized and both correct cleaning and lubrication are pictured in detail.

**435. How to use a classroom film :** Sound/B. & W./195 m. 19 min.

This film depicts how a film can be used as an effective and valuable teaching aid. The success depends not only on the quality of the film but how it is used by the teacher. Selection of film according to the content, preparation of the students and class motivation, showing and students participation in the follow-up work—all the above points should be followed for the successful use of a film in the class room.



16 m.m. Films added during 1980-81.

**436. Life of Nomad People:** Sound/B & W/120m./11 min.

This film depicts the Life of Nomad People— people with no permanent home of the Arctic, Central Asia and North African regions, their life in tents, their food habits and their community life are well presented.

**437. The Ancient Orient:** Sound/B&W/180 m./18 min.

The film tells about the ancient civilisation of the Far East India, China and Japan. It traces the religions, philosophy of Buddhism and the concept of living of the Chinese during 3000 BC.

**438. The African Continent—An introduction:** Sound/B&W/180m./18 min.

The film introduces the huge continent, its world ties, varied landscape of rain, forests, savanna, barren deserts and mountains. The ruins of the Roman empire are also shown.

**439. Age of discovery—Spanish and Portugese Explorations:** Sound/B&W/120m/11 min.

The film depicts the historic discoveries of the Spanish and the Portugese in the 15th century. It tells about Columbus and his famous voyage across the Atlantic Ocean.

**440. Age of Discovery English, French and the Dutch Explorations:**  
Sound/B&W/120m./11min.

The film depicts the adventures of the English during the regime of Henry VII, the founding of New England, the exploring of the river Hudson and the exploits of the Drake and others.

**441. Ancient Egypt :** Sound/B&W/120 m./11 min.

This film explains in detail the ancient Egyptian civilisation. The great sphinx, the temple at Karnak and many examples of famous Egyptian sculpture are shown.

**442. Vigyan-Ki-Padhai :** Sound /B&W/240 m./21 min.

This film is an attempt to depict the scientific stages of acquiring knowledge in science and how the teachers are expected to guide the pupils with several examples.

**443. Khilone :** Hindi/Sound/Colour/240 m. /21 min

The film deals with the art of doll making from various sources and how they can be usefully employed to impart education to small children.

**444. Human body :** Sound/B&W/120 m./11 min.

This film gives an idea as to how the human body is made up of different systems each working in close unison with the other for the daily metabolic activities of the body as a whole.

**445. Suno Katha Shri Ramki :** Hindi/Sound/B&W/570 m./50 min.

This film depicts the ancient legend of Ramayana with vividness. It is in the form of dramatical sequence illustrating the whole story.

**446. A day in nature's community :** Sound/Colour/180 m./18 min.

This film deals with the life of various organisms and animals in natural biotic conditions of an habitat. It illustrates how in nature the food cycle (energy cycle) is maintained in a proper balance. Several examples are shown to illustrate the principle.

**447. You-the human animal :** Sound/Colour/90 m./8 min.

This film deals with the physiological activities of each of the several systems embodied in the human body and how they integrate to help the human being to carry on the normal activities of life.

**448. You and your sense of touch :** Sound/Colour/90 m./8 min.

Sense of touch is one of the important functions of the human body. In this film, the organ associated with the sense of touch is explained in detail with good illustrations.

**449. You and your ears :** Sound/Colour/90 m./8 min.

The ears are responsible for the sense of hearing. The film shows how this function is carried on by the ear and also a little about the care of the ears.

**450. You and your eyes :** Sound/Colour/90 m./8 min.

Eyes are the most important organs and their normal function of vision is best illustrated in this film.

**451. Amazing Platypus :** Tamil/Sound/Colour/120 m./11 min.

Platypus is a mammal inhabiting Australia and its life cycle is illustrated with emphasis on its peculiar habits and features.

**452. In the Bush :** Tamil/Sound/Colour/120 m./11 min.

This film deals with the life activities of several Australian animals such as Platypus, Koalas, Marsupials, Kangaroo and also some special birds which are living in the natural setting.

**453. Kolas :** Tamil/Sound/Colour/120 m./11 min.

It is also one of the mammals living in the dense forests of Australia feeding on the tender leaves of Eucalyptus trees. This film deals with its life in a natural setting.

**454. Mitosis and Meiosis :** Sound/Colour/250 m./22 min.

This film deals with the two fundamental concepts of bringing secondary growth in cells. The two different processes are illustrated with good examples.

**List of Filmstrips in the State Film Library State Institute of  
Educational Technology—Office of the Director of School Education,  
Madras-6.**

<i>Serial number</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Art.</b>		
1. Further Design	.. .. .	2
2. Lettering in Design	.. .. .	2
3. Practical Application	.. .. .	2
4. Simple Design	.. .. .	2
5. Simple Principles	.. .. .	2
<b>Graphic Arts.</b>		
6. Copper Plating Engraving and etching 18th century		1
7. The Wood cuts of early printers	.. .. .	1
8. The roots of book illustration	.. .. .	1
<b>Astronomy.</b>		
9. Chief Constellation	.. .. .	1
10. Comet and Meteors	.. .. .	1
11. Great Astronomers	.. .. .	2
12. Movement of Earth and Sun	.. .. .	2
13. Sun and other Stars	.. .. .	2
<b>Biology.</b>		
14. Biology introduction	.. .. .	1
15. Mutual aid	.. .. .	2
<b>Biology and Rural Science.</b>		
16. Bee Keeping	.. .. .	3
17. Care of livestock-Stockman	.. .. .	4
18. Earthworm	.. .. .	3
19. Food Cycle-Carbon	.. .. .	3
20. Food cycle-Nitrogen	.. .. .	2
21. Good Gardener	.. .. .	4

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

22.	Grasshopper and Locusts .. .. .	2
23	Man and Health .. .	2
24	Poultry Keeping-Incubation brooding and housing	4
25	Poultry Keeping-Life of a hen ..	4
26	The rise of man .. .	2

### **Botany.**

27	Across the heath .. .. .	1
28	Apple harvest .. .. .	2
29	Conifers .. .. .	1
30	Crazy Paving .. .. .	1
31	Century of Progress-Agriculture .. .	2
32	Classification of Plants .. .	1
33	Cotton fields .. .. .	1
34	Flowers of the Moorland .. .	2
35	Familiar Trees .. .. .	2
36	Farming in the far north .. .	1
37	Flowers of Meadow and Corn field .. .	2
38	Field and farmyard .. .. .	2
39	Growth and structure of wood .. .	1
40	Herbaceous border .. .. .	1
41	In the garden .. .. .	2
42	In the hop field .. .. .	2
43	Know trees by shape .. .. .	1
44	Mushroom and toadstools .. .. .	2
45	Making of farms .. .. .	2
46	Out in the fields .. .. .	1
47	Photosynthesis .. .. .	1
48	Poisonous Plants .. .. .	2
49	Power for the soil .. .. .	2
50	Plant babies .. .. .	2
51	Plants and animals of the desert (Colour) .. .	1
52	Plant and animal ecology .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
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(1)	(2)	(3)
53	Rice cultivation .. .. .	3
54	Royal horticultural society .. .. .	2
55	Round the year on the farm .. .. .	2
56	Revolution in Agriculture .. .. .	2
57	Sowing and planting vegetables .. .. .	2
58	Story of banana .. .. .	3
59	The soil .. .. .	2
60	The farmer's tools .. .. .	3
61	The farmer's crops .. .. .	3
62	Useful Plants and Crops .. .. .	1
63	Vegetative reproduction in plants .. .. .	1
64	Woodland flowers .. .. .	2

### **Chemistry.**

65	Calcium and its compounds .. .. .	1
66	History of Chemistry .. .. .	3
67	Sodium Chloride and its halogens .. .. .	1
68	Sulphur and its compounds .. .. .	1

### **Clothing.**

69	Woollen Clothes .. .. .	2
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### **Citizenship Training.**

70	Opportunity for youth .. .. .	3
71	Rural Youth Groups .. .. .	1
72	Scout Movement .. .. .	4
73	Signals .. .. .	1
74	To serve all mankind .. .. .	1
75	Youth Hostels .. .. .	3

### **Domestic Science.**

76	What happens in washing .. .. .	2
77	What happens in cooking .. .. .	3

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Food.</b>		
78	Argentina Meat .. .. .	2
79	Clean Milk .. .. .	2
80	Cocoa and Chocolate .. .. .	2
81	Fats and Proteins .. .. .	1
82	Food from the land .. .. .	2
83	Internal triangle (colour) .. .. .	2
84	Man's food .. .. .	2
85	Milk, Butter and Cheese .. .. .	1
86	Story of Coffee .. .. .	1
87	The story of wheat .. .. .	2
88	Vitamins and Mineral Salts .. .. .	3
89	World food supply and U. N. .. .. .	3
90	Wheat .. .. .	1
<b>Fiction.</b>		
91	Aesop's fables .. .. .	1
92	American folk tales .. .. .	9
93	Artist and his material .. .. .	2
94	Beauty and the beast, Part I colour .. .. .	2
95	Beauty and the beast, Part II Colour .. .. .	2
96	Black beauty .. .. .	1
97	Boots and shoes .. .. .	1
98	Cherish the hand that feed us .. .. .	1
99	Charades .. .. .	1
100	Caps .. .. .	1
101	Cranes .. .. .	1
102	Children's gallery .. .. .	1
103	Colour .. .. .	1
104	Danger spot .. .. .	1
105	Down the lanes .. .. .	1
106	Evil spider (colour) .. .. .	1
107	Greedy Dog (colour) .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
108	Great writers of 19th century .. ..	1
109	Gilpin .. ..	1
110	Helmets .. ..	1
111	How to behave at home .. ..	1
112	How to behave at holiday .. ..	1
113	Homes of many lands .. ..	1
114	Handel .. ..	1
115	Introduction to reading, Part I .. ..	2
116	Introduction to reading, Part II .. ..	2
117	Introduction to reading, Part III .. ..	2
118	Introduction to reading, Part IV .. ..	2
119	Life for the blind .. ..	1
120	Life at timberlane (colour) .. ..	1
121	Little red hen (colour) .. ..	2
122	Letter and Parcel .. ..	2
123	Meet the engine driver .. ..	1
124	Meet the country person .. ..	3
125	Midsummer night's dream .. ..	1
126	On the high road .. ..	1
127	Proverbs .. ..	2
128	Peter the Whaler .. ..	1
129	Puzzling places .. ..	1
130	Picture pie, part I .. ..	1
131	Picture pie, part II .. ..	1
132	Postage stamps .. ..	1
133	Papua .. ..	1
134	Perils on the sea .. ..	2
135	Queer Quadrupeds .. ..	1
136	Red hiding Hood .. ..	1
137	Roman lettering .. ..	2
138	Riddle-me-ree .. ..	2
139	Spelling bee .. ..	2
140	Swiss Family Robinson .. ..	1
141	Stamps and Savings .. ..	2



<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**Fiction—cont.**

142	Silly rabbit (colour) .. .. .	1
143	Traditional English customs .. .. .	1
144	The dog crusoe .. .. .	1
145	Tongue Twisters .. .. .	1
146	What is it ? .. .. .	2
147	What is wrong? .. .. .	2
148	Working man's University .. .. .	1
149	Wolf in sheep's clothing (colour) .. .. .	1
150	Work and workers .. .. .	1
151	Wordsworth .. .. .	1
152	Zakki and Poppi (Eskimo) .. .. .	1

**Forestry.**

153	Field and forest .. .. .	3
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**Geology.**

154	Coral Sea .. .. .	1
155	Development of river and their valleys .. .. .	2
156	Excavations at U. R. .. .. .	2
157	Glaciation .. .. .	2
158	Glaciers and their work (colour) .. .. .	1
159	Great lakes and waterways .. .. .	1
160	Hot springs and geysers (colour) .. .. .	1
161	Land forms .. .. .	3
162	Land and sea .. .. .	1
163	Mountain building .. .. .	1
164	Rivers .. .. .	1
165	Rivers and lakes .. .. .	1
166	Rocks .. .. .	2
167	The earth's surface .. .. .	2
168	Useful minerals .. .. .	1
169	Valcanoes in Action .. .. .	1
170	Valcanoes .. .. .	2

**Geography.**

(World and general geography)

171	Around the village .. .. .	1
172	Air routes Egypt to India .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
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(1)	(2)	(3)
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**Geography—cont.**

173	Air routes England to Egypt .. .. .	1
174	Desert and dry lands .. .. .	1
175	Desert land forms .. .. .	1
176	Four seasons .. .. .	1
177	Frozen lands .. .. .	2
178	G. W. R. Train journey .. .. .	1
179	Getting about on land .. .. .	1
180	Getting about on water .. .. .	1
181	Geographical terms .. .. .	2
182	Hot grass lands .. .. .	1
183	How to look at a sea port .. .. .	1
184	How to look at a village .. .. .	1
185	Introduction to maps .. .. .	1
186	Man on earth .. .. .	1
187	Men of many races .. .. .	1
188	Natural regions .. .. .	1
189	People of the great plains .. .. .	1
190	Reclaiming the desert .. .. .	3
191	The advancing desert .. .. .	1
192	Water in the desert .. .. .	2
193	World population .. .. .	3
194	Where is it ? .. .. .	1

**Economic Geography.**

195	Empire products, Part I .. .. .	1
196	Empire products, Part III .. .. .	1

**Geography British Isles.**

197	Bristol to Carlisle .. .. .	1
198	Cardiff .. .. .	1
199	Eastern England .. .. .	1
200	English lake lands .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**Geography British Isles—cont.**

201	Land of Britain North East .. .. .	1
202	Liver pool .. .. .	2
203	London's Water supply .. .. .	1
204	New deal for South Wales .. .. .	1
205	Port of London .. .. .	1
206	River Thames .. .. .	1
207	The Clyde .. .. .	1

**Geography Europe—I.**

**(Mediterranean lands).**

208	Survey of Spain .. .. .	1
209	Italian Lakes .. .. .	1
210	Modern Greece .. .. .	1
211	Malta .. .. .	1

**Europe -- Western Main land of Europe.**

212	France, Part I .. .. .	1
213	Germany North .. .. .	1
214	Belgium .. .. .	1
215	Holland .. .. .	2

**Balkan Regions.**

216	Finland .. .. .	1
217	Poland, Part I .. .. .	1
218	Poland, Part II .. .. .	1

**Central High Land States of Europe.**

219	Czechoslovakia, I .. .. .	1
220	Czechoslovakia, Part II .. .. .	1
221	Vienna .. .. .	1
222	Switzerland, I .. .. .	2
223	Tyrolese Alps .. .. .	1
224	Hungary .. .. .	2

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**Balkan States.**

225	Balkans .. .. .	2
226	In diary land .. .. .	1
227	Roumania, Part I .. .. .	1
228	Roumania, Part II .. .. .	1
229	Russia, Part I .. .. .	1
230	Russia, Part II .. .. .	1

**Asia—South west Asia.**

231	Asiatic Russia .. .. .	1
232	Turkey .. .. .	1
233	Palastine .. .. .	1
234	Syria .. .. .	2
235	Iraq .. .. .	2
236	Madeira and the Canary islands .. .. .	1

**India, Tibet, Burma and Ceylon.**

237	Bengal to Bombay .. .. .	1
238	Cycling from Bombay to Balkans .. .. .	1
239	Indian city .. .. .	2
240	India—North India .. .. .	2
241	India, Part I (Historical) .. .. .	2
242	India, Part II (land) .. .. .	4
243	India, Part III (people) .. .. .	2
244	In the tea fields of Assam .. .. .	3
245	Mysore .. .. .	1
246	Peninsular India .. .. .	1
247	Village life in India .. .. .	1
248	Burma .. .. .	1

**Everest Series.**

249	Ascent of Everest (colour) .. .. .	4
250	Sherpas of Everest (colour) .. .. .	1
251	Through Nepal to Everest .. .. .	2

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
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(1)	(2)	(3)
	<b>Everest Series—cont.</b>	

252.	Ceylon and the people .. .. .	1
253.	China (North India) .. .. .	1
254.	China (Central and South) .. .. .	1
255.	Mangolia and Manchuria .. .. .	1
256.	Japan—old and new .. .. .	1
257.	Malaya .. .. .	1

#### Africa.

258.	North Africa .. .. .	1
259.	Tangiers .. .. .	1

#### America (North and South).

260.	Canadian people .. .. .	2
261.	Canadian Eskimo .. .. .	2
262.	Geographical regions of Canada .. .. .	1
263.	Life in Canada—Forest Wealth .. .. .	1
264.	Life in Canada—Introduction .. .. .	2
265.	Life in Canada—Women at home .. .. .	2
266.	Ottawa .. .. .	2
267.	S. W. Region of U.S. .. .. .	1
268.	New foundland .. .. .	1
269.	Pacific coast .. .. .	3
270.	Introducing the Caribbean colonies .. .. .	1
271.	Land of Inca .. .. .	1
272.	West Indies, Part I .. .. .	2
273.	West Indies, Part II .. .. .	2
274.	South America .. .. .	3

#### Australia.

275.	Australia Product .. .. .	2
276.	Australia, Part I .. .. .	1
277.	Australia, Part II .. .. .	1
278.	Australia, Part IV .. .. .	1
279.	Australia—the land .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Australia—cont.</b>		
280.	Australia—Mineral Industry .....	2
281.	Australia—Pastoral Industry .....	2
282.	Australia—Wild life vegetation .....	2
283.	Australia—crops and forests .....	2
284.	Voyage to Australia .. .. .	1
285.	Newzealand—people and their work I .. ..	1
286.	Newzealand—People and their work part II ..	2
287.	Newzealand—Agriculture .. .. .	1
<b>History.</b>		
288.	A visit to United Nations .. .. .	2
289.	Aims of U. N. Charter .. .. .	3
290.	Arts and life .. .. .	1
291.	Abolition of slavery .. .. .	1
292.	American war of independence .. .. .	2
293.	America—Civil war to present day .. ..	2
294.	America discovery .. .. .	2
295.	Britain Advances No. 3 .. .. .	1
296.	Britain Advances No. 4 .. .. .	2
297.	Britain aids colonial progress .. .. .	1
298.	British army .. .. .	1
299.	British Prime Minister and Foreign Secretary ..	1
300.	Britain 1900–1950 .. .. .	1
301.	British Museum .. .. .	1
302.	British railways .. .. .	1
303.	Century of progress—Police .. .. .	2
304.	Coronation Regalia .. .. .	1
305.	Colonial economic development .. .. .	1
306.	Changes in franchise .. .. .	1
307.	Capital world tour .. .. .	1
308.	Life and work of the people of England in the 17th Century (Home life) .. .. .	1
309.	Life and work of the people of England in the 18th Century (Home life) .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
	<b>History—cont.</b>	
310.	Life and work of the people of England in the 14th Century (Work of the country side)	1
311.	Life and work of the people of England in the 15th Century (work of the country side)	1
312.	Life and work of the people of England in the 16th Century (Work of the country side)	1
313.	Life and work of the people of England in the 17th Century (work of the country side)	1
314.	Life and work of the people of England in the 18th Century (Work of the countries side)	1
315.	Crusades	1
316.	Domestic System	1
317.	English social life (1902-1918)	2
318.	French Revolution—Part I	1
319.	French Revolution—Part II	1
320.	General Election in Britain	3
321.	Hundred Years war	2
322.	Land transport	1
323.	Life in the middle ages	1
324.	Mata Dunia	1
325.	Mile stone (Human rights)	1
326.	Mount Batten of Burma	1
327.	Methods of travel	1
328.	Mt. St. Michael	2
329.	Napoleon	3
330.	Normandy	1
331.	Non-governmental organisation and U.N.	1
332.	Queen Victoria	2
333.	Royal anniversary	1
334.	Rehabilitation and Resettlement of disabled	2
335.	Royal military academy	2
336.	Robert Burns	2
337.	Renaissance	1
338.	Ships that have made history	1
339.	Story of transport—Part I	1

<i>Serial number.</i>	<i>Name of the Filmstrips</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**History—cont.**

340.	Siege Weapons .. .. .	1
341.	There shall be peace .. .. .	1
342.	Transportation and communication (colour) ..	7
343.	Transportation .. .. .	2
344.	The story of exploration .. .. .	1
345.	Viscount Alexander of Tunes .. .. .	1
346.	Who is it ? .. .. .	2
347.	William Caxton .. .. .	2
348.	William Penn .. .. .	1

**History —Biographical**

349.	Captain cook .. .. .	2
350.	Charles Dickens .. .. .	2
351.	Christopher columbus .. .. .	2
352.	Nelson .. .. .	2

**History—Social, Economic and Industrial.**

353.	Cavemen and hunters .. .. .	3
354.	Co-operative ideals .. .. .	2
355.	Social Worker .. .. .	2
356.	The plough .. .. .	2
357.	What are banks? .. .. .	2
358.	World Movement .. .. .	4

**Hobby.**

359.	Camera Optics .. .. .	2
360.	Good photography with your first camera ..	3

**Hygiene.**

361.	Battle against disease .. .. .	1
362.	Clearing the slums .. .. .	1
363.	Century of progress in medicine .. .. .	1
364.	Colonies fight against leprosy .. .. .	1
365.	Diseases of the bone .. .. .	1



<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Hygiene—cont.</b>		
366. First Aid—Part I	.. .. .	2
367. First Aid—Part II	.. .. .	2
368. Fighting infection	.. .. .	1
369. History of medicine	.. .. .	1
370. Histology—Lung	.. .. .	1
371. Infant Welfare	.. .. .	1
372. Itch	.. .. .	1
373. Measles	.. .. .	1
374. Man's Microbe—enemies—Part I	.. .. .	2
375. Man's Microbe—enemies—Part II	.. .. .	2
376. Mosquito danger	.. .. .	1
377. Nursing in Britain	.. .. .	1
378. Plague	.. .. .	2
379. Pneumonia	.. .. .	2
380. Prevention of T.B.	.. .. .	2
381. Registered nurse	.. .. .	1
382. Urban Clinic	.. .. .	1
383. Why wash ?	.. .. .	1
384. When you are the nurse ?	.. .. .	1
<b>Infant School Series.</b>		
385. Jack and jill learn road safety (colour)	.. .. .	2
386. Paper tearing (colour)	.. .. .	1
<b>Industry.</b>		
387. Asbestos	.. .. .	1
388. Book binding and publishing	.. .. .	1
389. British carpet industry	.. .. .	1
390. British film industry	.. .. .	1
391. Designs in industry	.. .. .	1
392. Iron industry	.. .. .	1
393. Old country crafts	.. .. .	2
394. Petroleum	.. .. .	1
395. Salt mining in Canada	.. .. .	2

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Mathematics.</b>		
396.	Circles .. .. .	1
397.	Graphs—Part I .. .. .	1
398.	Graphs—Part II .. .. .	1
399.	Graphs—Part III .. .. .	1
400.	Laws of growth—I .. .. .	1
401.	Laws of growth—II .. .. .	1
402.	Mathematics made easy .. .. .	4
403.	Mathematics .. .. .	18
404.	Triangles and Parrallel lines .. .. .	1
405.	The Bicycle .. .. .	1
<b>Meteorology.</b>		
406.	Sky, weather and climate .. .. .	2
<b>Physics.</b>		
407.	Audio frequency amplification .. .. .	1
408.	Atomic energy .. .. .	3
409.	British Telephone System .. .. .	4
410.	Capacitive reactance .. .. .	1
411.	Century of progress—Air .. .. .	2
412.	Effects of heat .. .. .	2
413.	Electricity Part I .. .. .	2
414.	Electricity Part II .. .. .	2
415.	Electricity Part III .. .. .	2
416.	Electricity Part IV .. .. .	2
417.	Electricity and magnetism .. .. .	5
418.	Hearing and noise .. .. .	2
419.	Heat Part I .. .. .	2
420.	Heat Part II .. .. .	2
421.	Heat Processes .. .. .	2
422.	Heat sources .. .. .	2
423.	Heat and temperature .. .. .	2
424.	Inductive reactance .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Physics—cont.</b>		
425.	Introduction to A.C. .. .. .	2
426.	Introduction to radio .. .. .	2
427.	I.C. Engine Part I .. .. .	4
428.	I.C. Engine Part II .. .. .	4
429.	Lenses .. .. .	2
430.	Lever .. .. .	2
431.	Measuring electrical units .. .. .	1
432.	Mechanics Part I .. .. .	1
433.	Mechanics Part II .. .. .	1
434.	Milestone in aviation .. .. .	1
435.	Movement and energy Part II .. .. .	1
436.	Movement and energy Part III .. .. .	1
437.	Optical instrument .. .. .	2
438.	Radio frequency amplification .. .. .	1
439.	Reproducers .. .. .	1
440.	Radio .. .. .	1
441.	Radio-regeneration .. .. .	1
442.	Refraction of light .. .. .	3
443.	Reflection of light .. .. .	3
444.	Sound Waves .. .. .	3
445.	Sound invention .. .. .	2
446.	Sources of energy Part I .. .. .	2
447.	Sources of energy Part II .. .. .	3
448.	Thermometres .. .. .	2
449.	Tuning .. .. .	1
450.	Telephone .. .. .	3
451.	The earth and the structure of matter — Atom .. .. .	1
452.	Water, taps, pipes cistern .. .. .	1
<b>Physical Education.</b>		
453.	Backstroke .. .. .	1
454.	Breast stroke .. .. .	1
455.	Butterfly and breast stroke .. .. .	1
456.	Crawl .. .. .	1
457.	Cricket coaching series—introduction to cricket .. .. .	2

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies</i>
(1)	(2)	(3)

**Physical Education—cont.**

458.	Cricket coaching series—batting strokes P I	2
459.	Cricket coaching series—batting strokes P II	2
460.	Cricket coaching series—batting strokes P-III	2
461.	Cricket coaching series—bowling	2
462.	Cricket coaching series—fielding and catching	2
463.	Gliding	2
464.	Hints on cricket	1
465.	Hints on football	1
466.	High jump	2
467.	Hockey	1
468.	Judo	1
469.	Long jump	1
470.	Net ball	2
471.	Old English sports & Pastimes	1
472.	Olympic games	3
473.	Posture	2
474.	School boy boxing	2
475.	Soccer serial No. 1	2
476.	Soccer serial No. 2	1
477.	Swimming Part I	1
478.	Swimming Part II	1
479.	Swimming Part III	1

**Physiology.**

480.	Bones and skeleton	1
481.	Elimination (colour)	1
482.	Embryology of teeth	1
483.	Eyes to see with	1
484.	How I teach sex Part I	1
485.	How I teach sex Part II	1
486.	How I teach sex-Part III	1
487.	Human skeleton	2
488.	Pasteur and microbes	1
489.	Respiratory system	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
490.	Spleen, spinal cord .. .. .	1
491.	The human body .. .. .	1
492.	Take care of your teeth.. .. .	3
<b>Psychology and School Administration</b>		
493.	Century of progress in Elementary Education ..	1
494.	Colonial Empire—Battle against ignorance ..	1
495.	Discipline .. .. .	2
496.	How to behave at work .. .. .	1
497.	Nursery school .. .. .	1
498.	One teacher schools .. .. .	1
499.	Right to Education .. .. .	1
500.	Right to Education—Fundamental Education ..	1
501.	Right to Education—Technical Education ..	1
502.	Scottish Education .. .. .	2
503.	The centralised school .. .. .	1
504.	Village college .. .. .	2
<b>Science</b>		
505.	Air ships .. .. .	1
506.	Corrosion .. .. .	1
507.	Great inventors .. .. .	1
508.	Galileo .. .. .	3
509.	Newton .. .. .	3
510.	Power and Energy .. .. .	2
511.	Power Part I (Wind & Water) .. .. .	1
512.	Vulcanicity .. .. .	1
513.	Water .. .. .	2
<b>Technical Education.</b>		
514.	Basic Wood work joints .. .. .	2
515.	Craftsman and wood .. .. .	1
516.	Crafts man and metal .. .. .	1
517.	Elementary hand weaving .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

### Technical Education—cont.

518. Fabric structure .. .. .	2
519. How to Plane .. .. .	2
520. Lithography .. .. .	1
521. Raw materials .. .. .	1
522. Spinning & Weaving .. .. .	1
523. The manufacture of textiles—colouration .. .. .	1
524. The manufacture of textiles—finish treatment .. .. .	1

### Technical Education—Commerce.

525. Balance sheet of Bert Havabash .. .. .	2
526. Cheques .. .. .	2
527. Commercial documents .. .. .	2

### Visual Education.

528. Growth of Visual Education Part I .. .. .	1
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### Vocational Guidance.

529. Bricklayer and Stone masons .. .. .	2
530. Building construction cement & lime .. .. .	1
531. Building construction bonding & Bonds .. .. .	1

### Zoology.

532. Ants .. .. .	1
533. Animals that work for man .. .. .	1
534. Bird studies—Part I .. .. .	1
535. Bird studies—Part II .. .. .	1
536. British wild life .. .. .	2
537. Britains beef cattle .. .. .	1
538. Birds (colour) .. .. .	1
539. Caddis fly .. .. .	1
540. Common British insects .. .. .	2

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies</i>
(1)	(2)	(3)

**Zoology—cont.**

541.	Classification of animals	4
542.	Canadian beef cattle	1
543.	Domestic animals in other latitudes	1
544.	Extinct vertebrates P III	1
545.	Extinct vertebrates P IV	1
546.	Elephants	4
547.	Frogs	1
548.	Game birds	2
549.	Growth & Metamorphosis	1
550.	Honey bee	1
551.	Hedge row spider	1
552.	How to watch birds	2
553.	Reptiles of the world	1
554.	Respiration of animals	1
555.	Snakes and Lizards	1
556.	Some queer creatures	1
557.	Song birds	3
558.	Sea birds	1
559.	Wild animals of the World I	1
560.	Wild animals of the World II	1
561.	Water birds	2

**List of 35mm Filmstrips added to the State Film Library during  
the year 1973-74.**

562.	Arrangement of floral parts	1
563.	Common fungi	1
564.	Climbing Plants (Colour)	1
565.	How plants make food and respire.	1
566.	Life cycle of flowering plants	1
567.	Meiosis (colour)	1
568.	Mitosis (colour)	1
569.	Plants and their food	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>List of 35mm Filmstrip added to the State Film Library during the year 1973-74—cont.</b>		
570.	Vegetative reproduction (colour)	1
571.	Wild plants	1
572.	Woodland plants	1
<b>Chemistry.</b>		
573.	Copper its alloys and uses	1
574.	Lead its alloys and uses	1
575.	Silver its alloys and uses	1
576.	Sodium and its compounds and uses	1
577.	Sodium chloride and halogens	1
<b>Geography—(General, Economic).</b>		
578.	Atmosphere	1
579.	Our earth	1
580.	The earth's crust Part I	1
581.	The earth's crust Part II	1
582.	The solar system (colour)	1
583.	The story of coffee	1
584.	The story of rubber	1
585.	The story of time	1
586.	The work of rivers (colour)	1
587.	Wind	1
588.	World economic geography	1
<b>Geography—Europe.</b>		
589.	Finland	1
590.	France	1
591.	Germany Part-I	1
592.	Germany Part-II	1
593.	Sweden	1
<b>Geography—India.</b>		
594.	Bombay	1
595.	Calcutta	1



<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
<b>Geography—India—cont.</b>		
596. Delhi	.. .. .	1
597. Ganges Basin	.. .. .	1
598. Rajasthan	.. .. .	1
<b>Geography—Africa.</b>		
599. Africa Part I	.. .. .	1
600. Africa Part II	.. .. .	1
601. West Africa	.. .. .	1
<b>Geography—Australia.</b>		
602. Australia—fight against draught	.. .. .	1
603. Australia—Problem of tropics	.. .. .	1
604. Australia—Murry—daling basin	.. .. .	1
605. Australia and Newzealand	.. .. .	1
<b>Geography.</b>		
606. Newzealand Part I	.. .. .	1
607. Newzealand Part II	.. .. .	1
<b>Mathematics.</b>		
608. Area of a circle	.. .. .	1
609. Introduction to volume	.. .. .	1
610. The sets Part I	.. .. .	1
611. The sets Part II	.. .. .	1
<b>Physics—Physiology.</b>		
612. Magnets	.. .. .	1
613. Take care of your teeth	.. .. .	1
614. The human body (colour)	.. .. .	1
<b>Zoology.</b>		
615. Animal metamorphosis	.. .. .	1
616. Development of frog I	.. .. .	1
617. Earthworm	.. .. .	1
618. How insects fly	.. .. .	1
619. Insects in the garden	.. .. .	1
620. Insect life (colour)	.. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**LIST OF 35 MM FILMSTRIPS ADDED TO THE STATE FILM  
LIBRARY DURING THE YEAR 1974-75.**

**Botany.**

621.	About inflorence	.. .. .	3
622.	Dispersal of fruits and seeds Part I	.. .. .	1
623.	Dispersal of fruits and seeds Part II	.. .. .	1
624.	Epiphytes and Parasites	.. .. .	1
625.	Flowers	.. .. .	1
626.	Fruits..	.. .. .	1
627.	Hydrophytes	.. .. .	1
628.	Movement in plants	.. .. .	1
629.	Plant Kingdom I	.. .. .	1
630.	Plant Kingdom II	.. .. .	1
631.	Pollination	.. .. .	1
632.	Seeds and their germination	.. .. .	1
633.	Special modes of nutrition in Plants	.. .. .	1
634.	Sunflower Plant ..	.. .. .	1
635.	Xerophytes	.. .. .	1

**Chemistry**

636.	Calcium and its compound	.. .. .	1
637.	Chemistry	.. .. .	1
638.	Nitrogen and its compound	.. .. .	1
639.	Role of Chemistry in modern life	.. .. .	1

**Geography.**

640.	Clouds and rain	.. .. .	1
641.	Day and night	.. .. .	1
642.	Eclipses	.. .. .	1
643.	Latitude, Longitude and time	.. .. .	1
644.	Movement of the earth and measure of time	.. .. .	1
645.	Origin of solar system	.. .. .	1
646.	Rivers	.. .. .	1
647.	Scenic Beauty of India (colour)	.. .. .	1
648.	U. S. A.—Part I	.. .. .	1
649.	U. S. A.—Part II	.. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**History.**

650.	Folk dances of India (colour) .. .. .	1
651.	Historical monuments in Delhi (colour) .. .. .	1
652.	India celebrates Republic Day .. .. .	1
653.	Indus Valley Civilisation .. .. .	1
654.	Man through the ages (colour) Part I .. .. .	1
655.	Man through the ages (colour) Part II .. .. .	1
656.	Nehru the architect of modern India .. .. .	1
657.	Religions in India (B & W) .. .. .	One set.
658.	Religions in India (colour) .. .. .	One set.
659.	Saga of seven pagodas .. .. .	1

**Hygiene.**

660.	Hazards of drinking and smoking .. .. .	1
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**Mathematics and Infant School Series.**

661.	Points sets and relevant operation .. .. .	3
662.	The Elementary Geometric figures and coordinate plane .. .. .	3
663.	Road safety (colour) .. .. .	1

**Physics.**

664.	Buoyancy and Archimedes Principle .. .. .	1
665.	Image construction in lenses .. .. .	3
666.	Levers .. .. .	1
667.	Levers Part I .. .. .	1
668.	Levers Part II .. .. .	1
669.	Refraction of light in lenses .. .. .	1

**Physical Education.**

670.	Yogasana Part I .. .. .	1
671.	Yogasana Part II .. .. .	1

<i>Serial number.</i>	<i>Name of the Filmstrips.</i>	<i>Number o copies.</i>
(1)	(2)	(3)

**Physical Education—cont.**

672.	How to play basket ball	1
673.	How to play cricket	1
674.	How to play football	1
675.	How to play hockey	1
676.	How to play volleyball	1

**Physiology.**

677.	Bones and joints	1
678.	Brain and sense organs	1
679.	Digestion of foods	1
680.	Elimination	1
681.	Heart and circulation	1
682.	Respiratory Organs	1

**Visual Education.**

683.	Handmade globe	1
684.	How to make diaramas	1
685.	How to make models	1
686.	How to make filmstrips	1
687.	How to make handmade filmstrips	1
688.	Making 3-D teaching aids in plaster of paris (colour)	1
689.	Silk screen process	1

**Zoology.**

690.	A visit to the zoo Part I	1
691.	A visit to the zoo Part II	1
692.	Animals with backbone	1
693.	Birds	1
694.	Orginal development of animal life on earth	3
695.	The Classes of insects	3
696.	Useful and harmful insects (colour)	1

<i>Serial Number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)

**LIST OF 35MM FILMSTRIPS ADDED TO THE STATE FILM  
LIBRARY DURING 1976-77**

**Biology.**

697.	Species of butterflies Part I .. .. .	1
698.	Species of butterflies Part II .. .	1
699.	The honey bee (colour) .. .	1
700.	Crab (colour) .. .	1
701.	The Hermit crab (colour) .. .	1

**Geography.**

702.	Rain .. .. .	1
703.	Rocks .. .. .	1
704.	P.M's 20 point Economic Programme Part I, II & III .. .. .	3 sets.
705.	World War I—Part I .. .. .	1
706.	World War I—Part II .. .. .	1
707.	World War II—Part I .. .. .	1
708.	World War II—Part II .. .. .	1
709.	World War II—Part III .. .. .	1
710.	Mughal Empire Part I .. .. .	1
711.	Mughal Empire Part II .. .. .	1
712.	Makers of modern India Part I .. .. .	1
713.	Makers of modern India Part II .. .. .	1
714.	Makers of modern India Part III .. .. .	1
715.	Belgium .. .. .	1

**Mathematics.**

716.	Sets I .. .. .	1
717.	Sets I .. .. .	1
718.	System of whole numbers .. .. .	1
719.	Addition .. .. .	1
720.	Subtraction .. .. .	1
721.	Multiplication .. .. .	1

<i>Serial Number.</i>	<i>Name of the Filmstrips.</i>	<i>Number of copies.</i>
(1)	(2)	(3)
722.	Division .. .. .	1
723.	Venn diagram .. .. .	1
724.	Number theory Part I .. .. .	1
725.	Number theory Part II .. .. .	1
726.	Numerical system .. .. .	1
727.	Decimals .. .. .	1
728.	Operation of fractional numbers .. .. .	1
729.	Set of fractional numbers .. .. .	1
730.	Signs and symbols of Modern Mathematics .. .. .	1
731.	Relations .. .. .	1
732.	Basic concepts in Geometry Part I .. .. .	1
733.	Basic concepts in Geometry Part II .. .. .	1
734.	Graphs I .. .. .	1
735.	Graphs II .. .. .	1

### Physics.

736.	Magnetism and Electricity .. .. .	1
737.	Floatation .. .. .	1
738.	Rockets, Missiler & Satellites (colour) .. .. .	1

### Filmstrips added during 1979-80.

739.	Pakistan .. .. .	1
740.	Bangladesh .. .. .	1
741.	Nepal .. .. .	1
742.	Burma .. .. .	1
743.	Ceylon .. .. .	1
744.	Afganistan .. .. .	1
745.	China .. .. .	1
746.	Great Britain .. .. .	1
747.	U.S.A. .. .. .	1
748.	U.S.S.R. .. .. .	1
749.	U.A.R. .. .. .	1
750.	Sea Routes .. .. .	1
751.	Air Routes .. .. .	1
752.	Rotation of earth .. .. .	1

## APPENDIX 'A'

GOVERNMENT OF TAMIL NADU—STATE FILM LIBRARY  
Office of the Director of School Education, College Road, Madras-6.

## Form of Application for Membership.

From

.....  
Headmaster

..... High/Higer Secondary School,

.....

..... District, Pincode.....

To

The Director of School Education,  
College Road,  
Nungambakkam,  
Madras-600 006.

Sir,

Sub : State Institute of Educational Technology—State  
Film Library—Membership—Application.

I request you to enrol the undermentioned school as a member of the State Film Library, Office of the Director of School Education, Madras-6.

1. Name and address of the school :
2. Name of the Headmaster :
3. Type of Projector available :
4. Undertaking by the Headmaster/  
Headmistress. :

I,.....(name) being the Headmaster of the above school shall if admitted as a member, abide by the rules and regulations relating to the above library and further, I hold myself personally responsible for the due fulfilment by the school of all obligations arising out of such membership.

Place :

Signature :

Date :

Designation :

N.B.—When there is a change of personnel, the New Headmaster should sign such a declaration and send it to this Office.

## APPENDIX—B

## GOVERNMENT OF TAMIL NADU.

STATE INSTITUTE OF EDUCATIONAL TECHNOLOGY,  
MADRAS-6.*State Film Library.*

Application form for loan of films and filmstrips from State Film Library, Office of the Director of School Education, Madras-6.

1. Name of School .. ..
2. Address and districts .. ..
3. Is the school equipped with 16mm Projector ? (Mention sound or silent) .. ..
4. Is the School equipped with filmstrip Projector ? .. ..
5. Date of show and time .. ..
6. The films may be sent by post to post office or by authorised messenger who will call at State Film Library .. ..
7. The films and filmstrips will be returned by Registered Parcel or by Messenger to State Film Library .. ..

8(a). Details of films/film Strips required.

<i>Serial number and title of films or filmstrips.</i>	<i>Number of reels.</i>	<i>Sound or Silent.</i>	<i>Catalogue number.</i>
(1)	(2)	(3)	(4)

1.

2.

3.



## (b) ALTERNATIVES.

<i>Serial number and title of the films or filmstrips.</i>	<i>Number of reels.</i>	<i>Sound or Silent.</i>	<i>Catalogue number.</i>
(1)	(2)	(3)	(4)
1.			
2.			
3.			
4.			
5.			

## 9: Undertaking

I undertake to return the films/filmstrips immediately after the show. I undertake to observe the rules and carry out the terms and conditions of this loan and in particular (1) that only projectors in perfect condition and totally free from defects will be employed for projecting the films lent, (2) that the projectors and films will be handled only by trained hands, (3) that if there should be any loss or damage to the films/filmstrips while in the custody of the school such loss or damage will be fully made good and the cost of any replacement rendered necessary will be borne by the school.

I also undertake that the films, etc., applied for will be used only in our school and for the pupils belonging to it, and that they will not be sublet or sublet to others whether schools or other organisations or individuals.

Date :

School Office Seal.

Signature of Headmaster/  
Headmistress.

## APPENDIX—C.

**Conditions for the loan of films and filmstrips. Hire charges for 16 mm. films per reel per day.**

	<i>Silent films.</i>	<i>Sound films.</i>
Black and white ..	Rs. 1.50 p.	Rs. 2.50 p.
Colour .. ..	Rs. 2.50 p.	Rs. 3.50 p.

2. Hire charges for filmstrips will be 0.50 p. per filmstrips per day.

3. No film or filmstrips shall be allowed to be kept beyond a period of three days ; and not more than three films and six filmstrips may be borrowed by a party at one and the same time. If a film or filmstrip is kept beyond the maximum period prescribed the charges payable for the additional period shall be one and a half time what would be payable for an equal period in the first instance.

4. Hire charges will be levied for all the days the films/filmstrips are retained in the school, irrespective of the fact that they are exhibited or not.

5. When films/filmstrips are sent by post, transit period is excluded for purposes of computing the charges due. The day of receipt of films/filmstrips in the school and the day of despatch to the post office or delivery to the State Film Library in person will be excluded subject to a minimum of one day's hire charges. Government holidays will be excluded for calculating hire charges.

6. The films should be *returned without rewinding as they are examined immediately after receipt.*

7. Bills for hire charges and postal charges should be paid within five days of their receipt and the chalans sent to the film library *immediately.*

**APPENDIX—D.****GOVERNMENT OF TAMIL NADU.****STATE FILM LIBRARY.**

Office of the Director of School Education, Madras-6.

**REPORT ON FILM SHOW.**

(To be filled up by the school making use of films/filmstrips and submitted to the Director of School Education, Madras, along with the parcel of films/filmstrips.)

1. Name of school    ..    ..    ..
2. Address and district    ..    ..
3. Date of delivery of films/filmstrips to the school.
4. Date of show    ..    ..    ..
5. Date of return of films/filmstrips to the Post Office or to the State Film Library, Madras in person.
6. Was it a general show or was it in conjunction with class lessons ?
7. Nature and strength of the audience—
  - (a) What was the number ?
  - (b) Whether they are pupils of one class or several classes.
  - (c) To what age-group they belong ?

## 8. Details of films/film strips shown;—

<i>Number and title of the film/ filmstrip.</i>	<i>In case of films.</i>			<i>Audien- ce app- recia- tion.</i>	<i>Number of times projected on the occasion.</i>
	<i>Sound or silent.</i>	<i>Colour or B. and W.</i>	<i>Number of reels.</i>		
(1)	(2)	(3)	(4)	(5)	(6)

1.

2.

3.

4.

5.

6.

Place :

Signature :

Date :

Designation :

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