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A proposed program of audio-visual education for the public schools of Weston, Massachusetts

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SCHOOL OF EDUCATION

Service Paper

A PROPOSED PROGRAM OF AUDIO-VISUAL EDUCATION FOR THE PUBLIC SCHOOLS OF WESTON, MASSACHUSETTS

Submitted by

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In partial fulfillment of the requirements for

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CHAPTER I

THE IMPORTANCE OF VISUAL AIDS IN A MODERN SCHOOL CURRICULUM

Purpose of Study

The purpose of this study is to develop for the public schools of Weston, Massachusetts, a program of visual aids and to integrate this program with the various courses of study included in the primary, elementary, and secondary school curriculum.

Scope of Study

Visual aids as defined by Charles F. Hoban, Charles F. Hoban, Jr., and Samuel B. Zisman[1] is stated as follows:

> "A visual aid is any picture, model, object, or device which provides concrete visual experience to the learner for the purpose of (1) introducing, building up, enriching, or clarifying abstract concepts, (2) developing desirable attitudes, and (3) stimulating further activity on the part of the learner. For convenience these various visual aids have been classified as (A) the school journey,

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[1] Charles F. Hoban, Charles F. Hoban, Jr., and Samuel B. Zisman, "Visualizing the Curriculum." The Dryden Press, Inc., New York, N. Y. 1937. Page 9.

> (B) museum material, (C) motion pictures, (D) still pictures, (E) graphic materials. Many other classifications have been made, but whatever the method of classification, the same visual aids are involved."

A program embracing all of the above-named groups of visual aids cannot be adequately developed within the time alloted for this study. Therefore it is necessary in this investigation to limit the area to those groups of visual aids known as the still and motion picture.

Research Studies in Visual Education

General Summary.- In the past twenty-five years many worthwhile studies and experiments have been carried out in the field of visual education. Walter Wittich[1] gives an excellent summary of the important work accomplished.

> "If a roll of the pioneers in the field of visual education could be drawn up, it would probably start with the names of David Sumstine, Joseph J. Weber, F. Dean McClusky, and Frank Freeman. These men, and others, plunged into the wilderness of untried techniques and tools with the determination to discover, if they could, the character, the function, the advantages, and the possible effective uses of this new and promising adjunct to classroom method. The period of their initial research can be designated as from 1918-1924. It was during this time that comparisons between visual and traditional methods of classroom presentation were begun. It was the time of Weber's research which inquired "are visual aids a fad or do they have a distinct value?" and of Freeman's first comprehensive survey, in the form of 13

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[1] Walter Wittich, "The Curriculum Clinic", Educational Screen. Nov., 1944. Page

> separate studies, which investigated the effectiveness of the silent film under varying classroom procedures and in competition with other media."
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> "The second period of research, 1924 to 1930, was marked by the continuing work of Frank Freeman, Daniel Knowlton, J. Warrick Tilton, Ben Wood, and investigators in England who succeeded in removing many of the unsatisfactory conditions found in previous studies. Their attempt, in addition to substantiating further the function of the motion picture film in the classroom, was to determine to what extent the new technique motivated pupil activity, increased the learner's reception of factual information as well as promoted or strengthened his ability to understand cause and relationships."
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> "Following this period, the advent of sound on film gave a rise to another cycle of experimental research. Beginning with investigations of Frances Consitt, V. C. Arnspiger, C. C. Clark, Phillip Rulon, William Westfall, Harry Wise, John Elmore Hansen, and up to such recent studies as those of David Goodman and others, the sound film in its relation to informational learning, as well as developmental thinking, in its relation to effective use of the silent film, and in its relation to effective and tried traditional classroom procedure, became the basis of much research. This period of study may be said to have observed the premise that sound films and silent films, when used in the classroom, must be valid; i.e (1) they should present information which is specifically adapted to the technique of motion and sound, and (2) they should do a better job of presenting a given area of information than other media -- slides, charts, textbooks, demonstrations, or lectures."
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> "These researches conducted by the people just cited have stood the test of time, the repetition of techniques in closely allied subject matter areas, and the examination and criticism of fellow research workers."

<u>Dr. Rulon's Studies.</u>- One of the most extensive and carefully controlled experiments in the field of visual education was carried out by Dr. Phillip Rulon of Harvard.

In this experiment Dr. Rulon set out to evaluate the effectiveness of the sound motion picture in the teaching of science in the ninth grade.

Three groups of ninth grade pupils (totaling more than 3000) were carefully equated as to general social economic level, intelligence, quality of school system, teacher excellence, and scientific background. To one of these equated groups ninth grade science was taught supplemented with specially prepared and correlated motion pictures. To another group the same units of science were taught but without the use of these special films. The third group was not taught any science during the period of the experiment and served as a check or control on the other two groups. Special tests were constructed to measure the degree of achievement made at the conclusion of each unit. Alternate forms of these tests were administered to the pupils following a time lapse of several weeks thereby measuring the degree of retention.

A careful comparison of test scores made by the three groups showed that the film group was superior by more than 20 per cent in immediate acievement and in the retention of factual information this group showed a gain of more than 37 per cent over the group taught the same units of work but without integrated films.

The above conclusions provide striking evidence of the value of sound motion pictures in the teaching of science. It should however be distinctly noted that these gains in achievement and retention were brought about through the use of carefully integrated film and presented to the group under very special conditions. As Dr. Rulon[1] states:

> "The results of this experiment can be interpreted in their entirety only as they apply to situations similar to that in which our films were employed. That is, our results may be generalized only as they apply to good and genuinely supplementary sound motion pictures employed systematically in connection with the usual textbook and modern teaching procedures in the teaching of a school subject which has for its educational objective the permanent acquisition of information concerning, and the lasting understanding of relationships among, directly observable facts, objects, and events."

Dr. Arnspiger's Studies.- In 1932 Dr. Arnspiger while working at Columbia University carried out experiments to show the effectiveness of sound motion pictures in the teaching of natural history and music. Dr. Arnspiger followed a technique similar to that of Dr. Rulon. He carefully equated two parallel groups. To one group was taught music and natural history supplemented with correlated film, and to the other group these same subjects were taught but without the supplemented motion pictures.

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[1] Phillip Justin Rulon, "The Sound Motion Picture in Science Teaching" Cambridge Harvard University Press 1933. Page 105.

Through the use of special tests Dr. Arnspiger compared the degree of achievement made by these two groups. Results obtained by this comparison showed a gain of 22 per cent for the group having seen the supplemented film thereby confirming Dr. Rulon's work at Harvard. From these two studies it seems fair to state that when sound motion pictures are integrated with the units of work taught that there is a substantial increase in immediate achievement and still greater increase in retention.

Pertinent research conclusions.- Since 1930 many other research studies have been carried on in many areas, showing the influence of integrated sound motion pictures on achievement, retention, voluntary reading habits, interest, and oral response. Still other work has shown the effectiveness of sound film at different age levels and for different mental ability groups. The following summary brings out the important conclusions of these research studies:

(a) Educational silent film has been proven a useful adjunct to classroom method.
(b) Educational sound film has been proven a useful adjunct to classroom method.
(c) Sound film has been conclusively proven to be of value in immediate and retained learning.
(d) Sound film is somewhat more effective with low mental ability groups but is of definite benefit to all groups.
(e) Sound film stimulates voluntary reading habits.
(f) Sound film stimulates interest.

(g) Sound film is effective at all age levels.
(h) Sound film develops attitudes and inductive thinking.
(i) Sound film develops oral responses.

Factors Influencing Success in Visual Education

Facts as revealed through research studies in visual education distinctly prove the value of motion pictures and other aids in the teaching of nearly all subjects. Other studies made to determine the extent to which visual aids are used show that the majority of communities have done little or nothing toward developing a constructive program of visual aids and integrating these aids with the curriculum of the school. There are of course excellent examples of well developed programs of visual aids,but the important point is that in the majority of cases visual aids are not used in an effective manner. With such striking evidence available as to the value of visual aids in the learning situation the question can be very appropriately asked as to why actual educational practice is so far behind the work accomplished in educational research? The cause of this backwardness on the part of public education is due to four major factors, (1) lack of teacher training in the use of visual aids, (2) inadequacies of the school plant and lack of proper physical equipment, (3) lack of funds to properly support an adequate program, and lastly but

by no means least (4) failure to correlate and integrate the visual aids program with the various courses of study comprising the school curriculum. A brief discussion of each of these major factors follows.

Teacher Training.- It has been proved that the sound motion picture has little value as a teaching device when used without teacher participation. Films must be introduced into the learning situation and after showing must be followed with carefully thought out plans of discussion. Children must be told what to look for and new words usedin the oral accompaniment must be explained and defined. All of this adds up to a special technique which the teacher develops through training. As Dr. Rulon[1] states:

> "Hence we must conclude that the value of the film technique is due in a larger part to its merits as a point of departure in instruction and as a stimulus to pupil activity than to its ability to supply information for passive absorption or to answer questions already in the mind of the child."

Today few of our normal schools include training in the use of visual aids. Many colleges have no organized program of visual aids. The result is that the teacher just starting out has to learn for himself or not attempt the use of these effective aids to learning.

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[1] Phillip Justin Rulon, "The Sound Motion Picture in Science Teaching". Cambridge Harvard University Press 1933. Page 9.

Incorrect use of visual aids causes discouragement and develops the feeling throughout the school system that visual aids are of little value in teaching. Dr. Arnspiger[1] summarizes the situation effectively - "A greatly expanded program of teacher education is a must if this modern aid is to be used effectively."

Limitation of Plant and Equipment.- Motion pictures to be effective must be presented in a classroom situation. This entails, opaque curtains, special ventilation, electrical outlets and suitable screens. Equipment should be modern and in good mechanical condition. The majority of schools are not well equippedwith motion picture projectors, film strip projectors, and slide projectors. The result is that even the well trained teacher finds it almost impossible to make use of valuable visual aids material. Teachers cannot be expected to make use of visual aids if to do so entails great inconvenience. Critical examination of many of the recently constructed school buildings reveals little opportunity for the effective use of visual aids. This definitely shows a lack of good planning. To be effective a program of visual education must not be handicapped by physical limitations

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[1] V. C. Arnspiger, "Films and Education", Sierra Educational News, Feb. 1944, Page 20.

within the school plant.

Financial Support.- An effective program of visual education must have a director with certain allocated funds with which to purchase equipment, rent or purchase film, and pay part of the salary of the director who must at least have his regular teaching load reduced to provide time of the administration of the visual aids program. It is of course true that all this means additional taxes but on the other hand it is a small amount to pay in comparison with the increased efficiency of teaching. If a large corporation learned of some device that would increase production by more than 20 per cent there is little doubt that they would spend almost unlimited amounts of money to put such a device in operation. It seems as if this idea should hold in the field of education. Can communities afford not to provide the money necessary to adequately support a program of visual education.

Integration with the Curriculum.- Probably the greatest single reason for failure in the administration of a visual aids program is due to the fact that there is little integration of the visual aids program with the curriculum of the school. Too often motion pictures are brought in at any odd time when the class is working on

material of a very different nature from the content of the film. Films shown in this manner have little or no educational value and are the cause of a great loss of time. To be successful, a visual aids program must be developed within the curriculum of the school. When this is done the visual aids usedgreatly create an atmosphere of realism to the learning situation. Paul Reed[1] ably states the importance of integration in the visual aids program.

> "The answer to what should be learned in school classrooms and why, is the curriculum, and curriculum must be the starting place and the focal point for any audio-visual program if it is to be effective. This concept must also become an integral part of our audio-visual thinking. Decisions as to which pictures should be seen and heard, and which sound experiences should be listened to, should not be made in terms of the audio-visual materials alone. The film isn't the starting point for visual thinking; the curriculum is. There may be justifiable instances, in school situations where current curriculum is out-moded and does not meet learner needs, when modern audio-visual materials can be used to bring about a rethinking of what should be learned by whom and why. But this is not a healthy condition; at best it is expediency. Curriculum thinking should precede audio-visual thinking, and the selection and use of audio-visual thinking, and the selection and use of audio-visual materials -- the means for communicating essential learning experiences effectively and efficiently -- should be curriculum centered."

Restatement of Problem

The purpose of this introductory chapter has been to

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[1] Paul C. Reed, "The Curriculum Clinic", Educational Screen, Sept. 1945. Page 287.

review the research carried out in the field of visual aids and to bring out the importance of visual aids in a modern school curriculum. As Dr. Arnspiger[1] states:

> "Any program of education for the future must contribute to the effectiveness of classroom instruction. Increasing demands will be made steadily on our educational system to provide our people with the knowledge and understanding which will equip them to participate intelligently in the modern world. Reading alone is inadequate today. To meet this demand for more education for more people there must be a readjustment of the educational program both in content and in method, with a more efficient presentation of instructional materials. The expanded use of the sound film is seen as a result of the necessity for vicarous experience through visualization of concepts. There must be more complete integration of the film with the school program."

In the following chapters a program of visual aids will be planned for the public schools of Weston, Massachusetts. This program will be developed under the major factors that contribute to success in visual aids, i.e. (1) the administration of the program, (2) school plant and equipment, (3) training of teachers and pupil assistants, and (4) integration with the school curriculum.

1/ V. C. Arnspiger, "Films and Education", Sierra Educational News, Feb., 1944. Page 20.

CHAPTER II

PRESENT STATUS OF AUDIO-VISUAL EDUCATION IN THE WESTON PUBLIC SCHOOLS

Basic Facts Relating to the Schools of Weston

The town of Weston.- In 1944 and 1945 a co-operative study of the Weston Public Schools of Weston, Massachusetts was carried out by the townspeople and teachers together, guided by the Center of Research in Educational Administration and by members of the staff of the Harvard Graduate School of Education. In the published report[1] of this study the town of Weston is described as follows:

> "Weston is a town of 4,375 people (by the Census taken by the Committee on Public Safety - 1942) lying west of Waltham and north of Wellesley. It can be characterized as a residential suburban community of the most desirable type and its general location with respect to the Boston metropolitan area and other suburbs, as well as its

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[1] Weston Studies Its Schools, 1946. A Co-operative Study of the Public Schools of Weston, Massachusetts. Page 214.

> zoning restrictions and traditions, indicate that it will enjoy its enviable status for many years to come."
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> "The public schools are housed in three buildings closely grouped on a site not far from the geographical center of the town. Grades Seven through Twelve, with a total membership of 310 pupils in the school years of1946-47, are housed in a building completed in 1932. The pupils in the Kindergarten and first six grades are housed in two much older buildings, the younger pupils in what is known as the Primary Building, which was completed in 1910, and the upper elementary grades in the Grammar Building, which was used for High School purposes prior to 1932 and which was built in 1898. For the school year of 1946-47 these buildings are accomodating 415 pupils.

<u>A Survey of School Buildings in Weston.</u>- In the cooperative study of the Weston Public Schools a special committee carefully surveyed and rated the three buildings comprising the Weston School Plant. Results of their findings[1] follow:

> "The Weston High School buildings scored 619 points [out of a possible 1000 points], which places it in the sub-satisfactory category. The building from its general appearance might be expected to get a higher score but its rating on certain features, particularly in regard to special classrooms, special rooms for pupil activities, and special rooms for administration is very low. In general, however, the building is such that additions and revisions can be made to care for these inadequacies and make available a structure which will be reasonably adequate for a proper Secondary School program."

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[1] Ibid., pp. 214, 227 and 228.

> "The building now being used for Kindergarten and Primary grades was given a rating of 127 points [out of a possible 1000 points] and practically every feature of the building falls into the unfit, inadequate, obsolete, or even dangerous category. No money should be spent upon this building except as necessary to keep it functioning in a safe manner until it can be replaced at the earliest opportunity."

The above stated findings of the special committee studying the school buildings of Weston resulted in this committee making the following recommendations:[1]

> "It is the recommendation of the committee that a thoroughly modern elementary school be erected on a site separated from, but not far away from the present school site and that this school house all of the public-school elementary pupils in Weston.
>
> "It is recommended that the present high school building be remodeled and that an addition be made to it so that the completed structure will be thoroughly adequate for a modern secondary school program."

As a result of these specific recommendations regarding the school buildings of Weston, the citizens of the town voted that a special building committee be appointed to study the question further, and report within four weeks their recommendations regarding the advisability of constructing a new elementary school building to replace the present primary and grammar schools. In a special town meeting held in June of 1946 this committee recommended the appropriation of five hundred thousand

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[1] Ibid., pp. 214, 227 and 228.

dollars for the erection of a twenty-room elementary school building on a site near the present elementary buildings. A vote was taken and the above-mentioned sum of money was appropriated. Already teachers and school administrators have been interviewed by the architect regarding the many details desired for this building. All possible speed is being given to the project and it is definitely expected that this new elementary school building will be ready for occupancy for the school year beginning in September of 1948. Adherence to this building schedule will result in the present primary and grammar school buildings being used for only one more school year at which time they will either be scrapped or perhaps used as a temporary overflow for the high school during the transitional period of building the recommended addition to the high school building.

The years just ahead will see many changes in the school buildings of Weston and consequently wise and careful planning must be carried out in order that these new buildings are equipped with the facilities to successfully administer an audio-visual aids program. One of the major objectives of this service paper is to study these needs and to make specific recommendations as to what facilities and equipment should be provided.

Present Facilities for an Audio-Visual Aids Program

School Buildings.- As previously described, the primary and grammar school buildings are very old and inadequately equipped. None of the classrooms are provided with opaque shades, convenient electrical outlets, or adequate systems of ventilation. The auditorium located in the grammar school is the only room equipped with opaque shades and all motion pictures, film strips, and slides must be projected in this assembly hall. This hall is large and not well adapted for classroom movies. It is in constant use serving as the auditorium for the entire twelve grades. This use of the assembly hall as a room for the projection of educational motion pictures is very unsatisfactory, but in view of the fact that these two elementary buildings will soon be discarded it seems extremely unwise to recommend any costly changes to make possible the classroom use of audio-visual aids equipment.

The high school building, a modern building built in 1932, is not well equipped for use of audio-visual aids equipment. Only two of the classrooms have opaque shades and one of these is so small and shallow that it is literally impossible to use projection equipment. Ventilation is adequate and electrical outlets are available.

Addition of opaque shades to any of the classrooms would make them well adapted for visual aids equipment. These have been ordered for some of the rooms andit is expected that by the beginning of the school year 1947-48 at least four of these classrooms will be suitably prepared for the use of any kind of projection equipment.

Equipment.- The audio-visual aids equipment now available in the Weston public schools is used by all of the twelve grades. Therefore, in listing this equipment it is impossible to classify it as belonging to any particular building. This interchange of equipment works very well with the present building "setup" but will have to be discontinued as soon as grades I through VI are housed in the new building. A list of the equipment now owned by the school department follows:

PRESENT AUDIO-VISUAL AIDS EQUIPMENT.

No.	Instrument	Age	Condition
1	Combination Opaque and glass Slide Projector.	20 yrs.	Poor
1	16 m.m. Bell & Howell sound motion picture projector.	6 yrs.	Fair
1	Combination 2"x2" slide and 35 m.m. film strip projector.	1 yr.	New
1	Tripod Glass Beaded Screen Size 53" x 50"	6 yrs.	Good
1	Tripod Glass Beaded Screen Size 73" x 50"	6 yrs.	Poor
4	Portable combination radio and record player	5 yrs.	Fair
1	Two speed (78 and 33 1/3 rpm) portable combination record and transcription player.	1 yr.	New
1	Microphone	1 yr.	New

Present Program of Audio-Visual Education

General Statement.- The present program of audio-visual education in the Weston public schools is mainly concerned with sound motion pictures, with some attention being given to film strip, slides, recordings, radio programs, and opaque material. Supervision of the program is the responsibility of the vice-principal of the high school who carries a more or less informal title of director of audio-visual education for the entire twelve grades.

Motion Pictures.- In April of each school year all teachers are urged to carefully select for the next school year, suitable films to correlate with the various units of their courses of study. Selection of these films is determined from past experience, ratings and descriptions appearing in the H. W. Wilson Educational Film Guide, and recommendations given in professional magazines. Few films are ever previewed before selection. After selection of suitable films teachers then prepare a working schedule and request the desired films for certain dates in the school year to follow that will closely integrate the objectives of the film with unit planned. Orders for these requested films are placed with various film libraries and as near as possible bookings

are made on the dates requested by the classroom teacher. Throughout the school year as the scheduled films arrive it is the duty of a paid high school student to make all necessary arrangements with the classroom teacher as to time and place for projection. Teachers are not required to operate projectors as this work is done by members of the projection club of the high school. Due to the fact that only one classroom in the entire twelve grades is equipped with opaque shades it is necessary to project nearly all the films in the assembly hall of the elementary building. This causes an excessive demand on the assembly hall often resulting in serious conflicts between various departments and grades within the school. At best this procedure is extremely bad as it causes a great amount of confusion and loss in teaching time to transport classes to and from the assembly hall. It is agreed by all experts in the field of audio-visual education that the proper environment for the showing of educational motion pictures is the classroom.

A detailed record is kept on all films used together with the classroom teacher's estimate of value to the objectives of the unit studied. This record is very valuable in the selection of films for another year. No formal plan of in-service training on the correct use of

DISTRIBUTION OF MOTION PICTURES THROUGHOUT DEPARTMENTS AND GRADES
1946-1947

Grades I - VI

Grade	Subjects
Kindergarten	12
Grade I	6
Grade II	11
Grade III	8
Grade IV	2
Grade V	22
Grade VI	13
Assembly	2
Total	76

Grades VII-XII

Spanish	9
French	10
English	6
Home Economics	23
Social Studies	
7th and 8th	40
9th - 12th	23
Music	8
Science	27
Physics	15
Chemistry	5
Biology	24
Industrial Arts	3
Physical Education	2
Assembly	10
Total	205
GRAND TOTAL	281

educational films is in operation and consequently the effectiveness of these films varies a great deal depending on the teacher using the film.

Film Strip.- This last year a new combination 2" x 2" slide and 35 m.m. film strip projector was purchased. This instrument is now used in the industrial arts, science, and social studies departments. A great deal remains to be done to encourage and train teachers throughout the school system in the use of this valuable teaching aid. At the present time thirty strips have been purchased. More and more material is becoming available, suitable for integration with many of the courses of study. Plans are already under way for the purchase of many more of these valuable film strips.

Recordings.- In the English department of the high school recordings are frequently used. Students record their own voice and learn their own speech defects through hearing their own voices when these recordings are played back. Recordings are also used in some of the literature classes. All recordings are purchased.

Radio Programs.- This year in the classes of social studies the students were given opportunity to listen to certain programs of the Columbia School of the Air. Although many of these programs were excellent it was very

difficult to allow students to listen to these programs because of the disruption it caused in the scheduled classes of the school day. This attempt to actually listen to broadcasts will not be attempted again. Transcriptions of these broadcasts seem to be the only practical method of using these valuable radio programs.

Opaque Projection.- At present the town owns one combination opaque and glass slide projector. This instrument is extremely old, heavy, inefficient and difficult to operate. For these reasons this equipment is little used. There is a demand on the part of several of the teachers to purchase modern equipment for the projection of opaque flat pictures. Plans are already under way to purchase a new single opaque projector for use in the school year of 1947-1948. Acquisition of this equipment will unquestionably develop interest in this phase of audio-visual education.

CHAPTER III

CRITICAL ANALYSIS OF THE PRESENT PROGRAM AND RECOMMENDATIONS FOR ITS IMPROVEMENT

Critical Analysis

Purpose of Chapter.- Before developing specific plans for the improvement of audio-visual education in the public schools of Weston, it is worthwhile to critically examine its present status with a view of determining the major factors that contribute to its ineffectiveness. The elimination of as many of these factors as possible will serve as the primary objective in developing plans for the further improvement of audio-visual education in Weston.

Lack of a Director to Administer the Audio-Visual Program.- A major fault within the present program of audio-visual education in the public schools of Weston is the fact that no individual within the school staff has been duly authorized and given the necessary time

to effectively administer the various details so vital to a successful program of audio-visual education. Schreiber and Calvert[1] speak of the importance of a director of the audio-visual education program as follows:

> "The director of the program, whether in a school system or an individual school, has as his primary responsibility the over-all co-ordination, administration, and supervision of audio-visual operations. Skill in administrative and supervisory techniques will stand him in good stead, but a real and abiding faith in the contribution of audio-visual materials to the curriculum should be his outstanding characteristic. He should combine, insofar as is possible, the educationally applicable aspects of the showman, salesman, and efficiency expert for it is up to him to overcome the state of inertia which the thought of audio-visual methods sometimes produces in teachers. His interests should be broad, so that some areas of guidance and the curriculum may not be exploited to the detriment of others.
>
> On the technical side, some mechanical aptitude is desired so that if the occasion should arise the director can supervise, direct, or actually make minor repairs on equipment. It is extremely helpful, also, if he possesses a knowledge of optics and acoustics. This will enable him to show teachers how to make the best use of available equipment in the rooms the school has provided and also to get the greatest value for each dollar spent on new equipment.
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> The director's supervisory responsibilities include the in-service training of teachers, audio-visual librarians, and teacher committees. Frequent audio-visual conferences, including stimulating discussions by leaders in the fieldand demonstrations ofthe uses of instructional materials,

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[1] Robert E. Schreiber, and Leonard Calver, Building an Audio-Visual Program. Science Research Associates. Chicago, 1946, p. 36.

> contribute much to the training of the staff and the preservation of a fresh viewpoint.
>
> Especially during the period when an audio-visual program is being set up, and later, when favorable community attitudes toward expending money on the developments are desirable, the importance of an effective public relations policy cannot be underestimated. Talks and demonstrations at P. T. A. meetings and before civic groups add much to community enthusiasm for the program.
>
> Optional services rendered by the director may include advisory counsel on proposed field trips, assistance in the preparation of radio broadcasts, and advice on the problems involved in the production of audio-visual materials for school or community use.
>
> In short, the director is a person of many roles and responsibilities. His is an important job demanding high qualifications and commensurate remuneration."

As stated in the above quotation, the success of any worthwhile program of audio-visual education rests primarily on the shoulders of some qualified member of the school staff. To be successful, this individual must be officially appointed by the school committee and be so recognized by all other members of the school personnel. Policies and decisions involved in the purchase of equipment, rental of materials, training and guidance of teachers, planning of schedules, training of student operators, repairs on equipment, and publicity within the school and community, are all duties of the director of audio-visual education. Without some such qualified

person to assume the above-mentioned duties a program of audio-visual education is doomed to almost complete failure.

At present there is no officially appointed director of audio-visual education in the public schools of Weston. What little is done along administrative lines, is voluntarily carried on by the vice-principal of the high school who has so many other teaching and administrative duties that there is little or no time to give to the many important duties of director of audio-visual education. This lack of administrative staff seriously curtails any expansion or improvement in the program of audio-visual education.

Inadequately Trained Teachers.- Any new technique in a field as large as education, needs introduction to the profession and a long period of careful study and training. Audio-visual education is faced with the problem of new materials and facilities which most of the teachers of Weston know little or nothing about. Few of the present teaching staff have had much contact with audio-visual aids and techniques, in their college or professional training courses, and, hence their attitude has been conditioned by the widespread acceptance of 'movies' and other related visual aids as entertainment rather than as an instrument to vitalize a school

curriculum. As stated by Kingsley Trenholme,[1]

> "It is this problem of overcoming teacher and student reactions to all films as just a 'show' to be enjoyed with a minimum of mental effort, which compels the administrator to undertake a thorough training program before audio-visual aids can be accepted as a technique of instruction rather than a pleasant and somewhat interesting manner of passing the time. Thus, while it may be argued that teaching aids in the audio-visual field are not new, their constructive use in the classroom does represent a distinct innovation.
>
> However, the movement is growing rapidly. The newness will soon wear off. The great publicity given audio-visual aids by the military and naval service programs has done much to arouse the interest of the civilian teacher. The increased emphasis on realism in the school environment which has been one of the commendable results of the progressive movement, has made audio-visual material an essential element in the modern classroom.
>
> All this accounts for the great interest which teachers everywhere are displaying in this new educational technique, an interest that most administrators are welcoming and using to further their in-service training programs."

As previously described, considerable use is already made of motion pictures and other related visual aids in the public schools of Weston. Their effectiveness, as an aid to learning, varies greatly depending upon the teachers knowledge in using these devices. Where failure results on the part of the teacher it usually is due to

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[1] Kingsley Trenholme, "IN-Service Training", See and Hear (March, 1946) 1:33-39.

(1) poor selection of material, (2) incorrect timing of film with the topic under study, (3) unsatisfactory presentation and follow-up discussion, and (4) insufficient training in the operation of projection equipment. Clarence E. Spencer[1] summarizes this situation as follows:

> "The value of the proper use of audio-visual teaching aids is beyond question, but these are only aids to assist a teacher to do more effective job of teaching. Whenever they are considered anything else but teaching aids, they have lost their effectiveness. It is necessary that the use of any aid must be planned to fit into the organized school curriculum, must be presented properly, and must contribute to the learning situation at hand. The teacher must be just as familiar with the motion picture film, the film strip, or the set of slides to be used in a class as he or she is with the portion of the textbook being used. Such aids must be used with classes under normal classroom situations, and under a learning condition. The presentation of any such aid is an important part of the teacher's instruction, and should have a definite planned procedure with preparation to see the aid, with appropriate comment and questions, with a probable test, with possible actual practice, use, or follow-up of the information. Promiscuous showing of pictures, either in the classroom or auditorium, has no place in a school program and discredits a legitimate audio-visual educational program."

<u>Unsatisfactory Classrooms</u>.- As stated in Chapter II, only two of the thirty-four classrooms comprising the entire school plant are equipped with opaque shades. This makes it necessary to project nearly all motion pictures, film

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[1] Charles E. Spencer, "Postwar Use of Audio-Visual Aids", Phi Delta Kappan (January, 1947) 23: 219-220.

strip, and slides in the assembly hall of the elementary building. This causes an excessive demand on this room often resulting in serious conflict between various departments and grades within the school. At best, this procedure of projecting educational motion pictures and other related aids in the assembly hall is extremely bad as it results in a great amount of confusion and loss in teaching time to transport pupils to and from the auditorium. In fact it can be rightly questioned if the values gained in showing the film outweigh the loss in teaching caused by the confusion. Schreiber and Calvert[1] summarizes the importance of the classroom in the audio-visual education program as follows:

> "From an instructional standpoint, it has been the growing conviction of most audio-visual directors and teachers that -- if the motion picture and its associated aids are to become an integral part of the curriculum -- they rightly belong in the classroom itself. Conscientious teachers have, during the past several years, decried the pseudo-educational practice of herding the entire student body into the auditorium for an hour of 'movies' -- ranging from "The Adventures of Bunny Rabbit" to the "Molecular Theory of Matter". The use of projection rooms is, to be sure, an improvement over such practices, but it tends to delay the true integration of audio-visual materials and the curriculum."

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[1] Robert E. Schreiber, and Leonard Calvert, Building an Audio-Visual Program. Science Research Associates. Chicago, 1946, p. 45.

It is generally agreed by experts in the field of audio-visual education that the proper environment for the showing of educational motion pictures is the <u>classroom</u>. Therefore, the inadequacy of the classrooms of the Weston public schools constitutes a major problem in the effective use of motion pictures and other related aids.

<u>Inadequate Equipment</u>.- Another serious problem contributing to the non-success of the present program of audio-visual education is the lack of audio-visual aids equipment. In the Weston schools several worth-while pieces of equipment are available (See Page 19 in Chapter II), which are used to great extent by many grades and departments within the school. However, the amount of this equipment is inadequate from the standpoint of quantity, quality, and variety. It is difficult to determine the specific amount of additional equipment needed to serve the needs of an expanded program of audio-visual education. As stated by Schreiber and Calvert[1]:

> "The equipment needs of a school cannot be arbitrarily set down, since -- with the expanding use of audio-visual aids -- no one knows what may constitute a good representative program five years from now. However, in terms of current functioning situations and theoretical proposals, some idea may be gained.

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[1] Ibid., pp. 39.

> The main types of equipment necessary to an audio-visual program include: sound motion picture projectors, stereoscopes, minature and standard slide projectors, filmstrip projectors, opaque projectors, screens, radios, record and transcription reproducting equipment, recording apparatus, and public address systems."

Helen Hart Seaton[1] suggests the following method for determining the equipment needs for a modern audio-visual aids program.

> 1) Every school of two hundred enrollment should have a sixteen millimeter sound motion picture projector.
>
> 2) One combination filmstrip and minature slide projector for each unit of two hundred students.
>
> 3) One opaque projector is needed by each school regardless of enrollment.
>
> 4) One screen is needed for every projector in the school.
>
> 5) One set of thirty-five stereoscopes for each four hundred students in the elementary schools.
>
> 6) One portable radio for each school.
>
> 7) One two-speed (78 and 33 1/3 r.p.m.) portable combination record and transcription player for each school.
>
> 8) One recording machine for each school.
>
> 9) One portable or built-in public address system for each school.

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[1] Helen Hardt Seaton, "A Measure for Audio-Visual Programs in Schools". American Council on Education. Washington, 1944. p.

Applying this criteria to the school system in Weston (See Page 51 in Chapter III) clearly indicates a decided lack of suitable audio-visual aids equipment. This lack of equipment seriously limits the further expansion of the audio-visual aids program.

Problems Involved in the Rental of Motion Pictures.- Another factor which seriously hampers the success of the present program of audio-visual education in the schools are the many difficulties encountered in the rental of motion pictures. At best this procedure is difficult and hectic to administer. As stated by Schreiber and Calvert[1]:

> "The problem of whether to rent or to own the films required in the school's program is a crucial one in which important factors other than cost must be considered. Individual films may be more effectively and adequately utilized.if they are immediately available to teachers. On the other hand, the competent teacher plans somewhat in advance for her needs, and sufficient time should thus be available to make necessary arrangements with rental agencies.
>
> The best general criterion to apply in deciding whether to rent or to buy any particular film is to ascertain -- on the basis of one year's rental and use figures -- whether the cost per use of the film during its effective life, if purchased, would be substantially less than the rentals accruing over the same period. By "effective life" is meant two things: physical life of

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[1] Robert E. Schreiber, and Leonard Calvert, Building an Audio-Visual Program. Science Research Associates. Chicago, 1946, pp. 43 and 44.

> the print and how "dated" the film may be before it is in unsatisfactory screening condition. Many films produced shortly before or during World War II are now so dated as to be valuable only as a historical collection. Changing customs in attire materially affect the usefulness of many otherwise excellent films. Recent world political changes have outmoded previously valuable footage, and the rapidity of scientific development provides hazards to the selection of even the "safest" additions to the audio-visual library."
>
> Probably the wisest policy of film acquisition for the school beginning or building an audio-visual program is to rent films until school needs are apparent and purchases are justified in terms of use."

It will thus be seen that for a small school system, characteristic of Weston, it is wholly impractical to attempt building amotion picture library and that the only practical means of procuring motion pictures is on a rental basis from film libraries. This develops certain difficulties, the elimination of which are necessary if the program of educational motion pictures is to be successful.

In order to secure films on the dates desired it is necessary to place orders with film libraries approximately one year in advance. This necessitates on the part of each teacher the planning of a time schedule for each area of study and from this time schedule plan an order for related motion pictures. Many teachers find it very difficult and next to impossible to know exactly when in the next school year a certain film is to be desired. Even if this the prints and how "dated" the film may be before it is in unsatisfactory screening condition. Many films produced shortly before or during World War II are now so dated as to be valuable only as a historical collection. Changing customs in attire materially affect the usefulness of many otherwise excellent films. Recent world political changes have outmoded previously valuable footage, and the rapidity of scientific development provides hazards to the selection of even the "safest" additions to the audio-visual library."

Probably the wisest policy of film acquisition for the school beginning or building an audio-visual program is to rent films until school needs are apparent and purchases are justified in terms of use."

It will thus be seen that for a small school system, characteristic of Weston, it is wholly impractical to attempt building a motion picture library and that the only practical means of procuring motion pictures is on a rental basis from film libraries. This develops certain difficulties, the elimination of which are necessary if the program of educational motion pictures is to be successful.

In order to secure films on the dates desired it is necessary to place orders with film libraries approximately one year in advance. This necessitates on the part of each teacher the planning of a time schedule for each area of study and from this time schedule plan an order for selected motion pictures. Many teachers find it very difficult and next to impossible to know exactly when in the next school year a certain film is to be desired. Even if this can be done, frequently some interruption in the school calendar will completely throw off the carefully planned teaching schedule thus making necessary the cancellation of the film on order or showing it at a time when it does not integrate with the unit under study.

When films are rented for only one day's use there is little or no opportunity for the teacher to preview the film and work out learning guides with directing questions. This too hurried use of the film seriously reduces the effectiveness of the picture.

Films procured on a rental basis frequently are received in very poor physical condition with cuts, breaks, and numerous splices. This results in great disruption and confusion to the class viewing the film and consequently brings discouragement to the teacher and what is more important little contribution to the learning situation.

Transportation of motion pictures from the film library to Weston and return is often unreliable and very expensive. Frequently transportation costs exceed the rental cost of the film. Strikes, embargoes, and overloaded conditions are the cause of films not arriving on schedule.

All of the above-mentioned difficulties combined constitute a major factor contributing to inefficiency in the program of educational motion pictures.

Summary

Limiting Factors.- The major causes of ineffectiveness in the present program of audio-visual education are (1) lack of a director to administer the program (2) lack of properly trained teachers, (3) unsatisfactory classrooms, (4) insufficient equipment, and (5) problems involved through the rental of motion pictures. To increase effectiveness and further expand the audio-visual educational program in the public schools of Weston it is necessary to carefully work out plans for the elimination of these factors contributing to non-success.

Recommendations for Improvement

Administering the Audio-visual Program.- In large school systems the duties of director of audio-visual education constitute a full-time position often supplemented with numerous assistants. In a school system, characteristic of Weston (somewhat over seven hundred pupils) the task of administering the program of audio-visual education would require approximately half of a qualified person's time. These audio-visual administrative duties could be efficiently combined with some other half-time administrative position such as the director of guidance, or the vice-principal of the high school, thus making a full-time administrative position. In addition to the

appointment of a half-time director of audio-visual education it would require the services of a paid student assistant working approximately two hours each day.

To achieve success in his duties the director of audio-visual education should be granted by the school committee a budget with which to expand and improve the program. During this expansion period it is recommended that this budget amount to fifteen hundred dollars per year and that this money be used for purchase of new equipment, rental of materials, and alterations in classrooms. Payment of salaries to administrators would not come out of this proposed budget. After three or four years it would seem probable that the program of audio-visual education could be effectively carried on a budgetary appropriation of one percent of the annual per pupil cost.

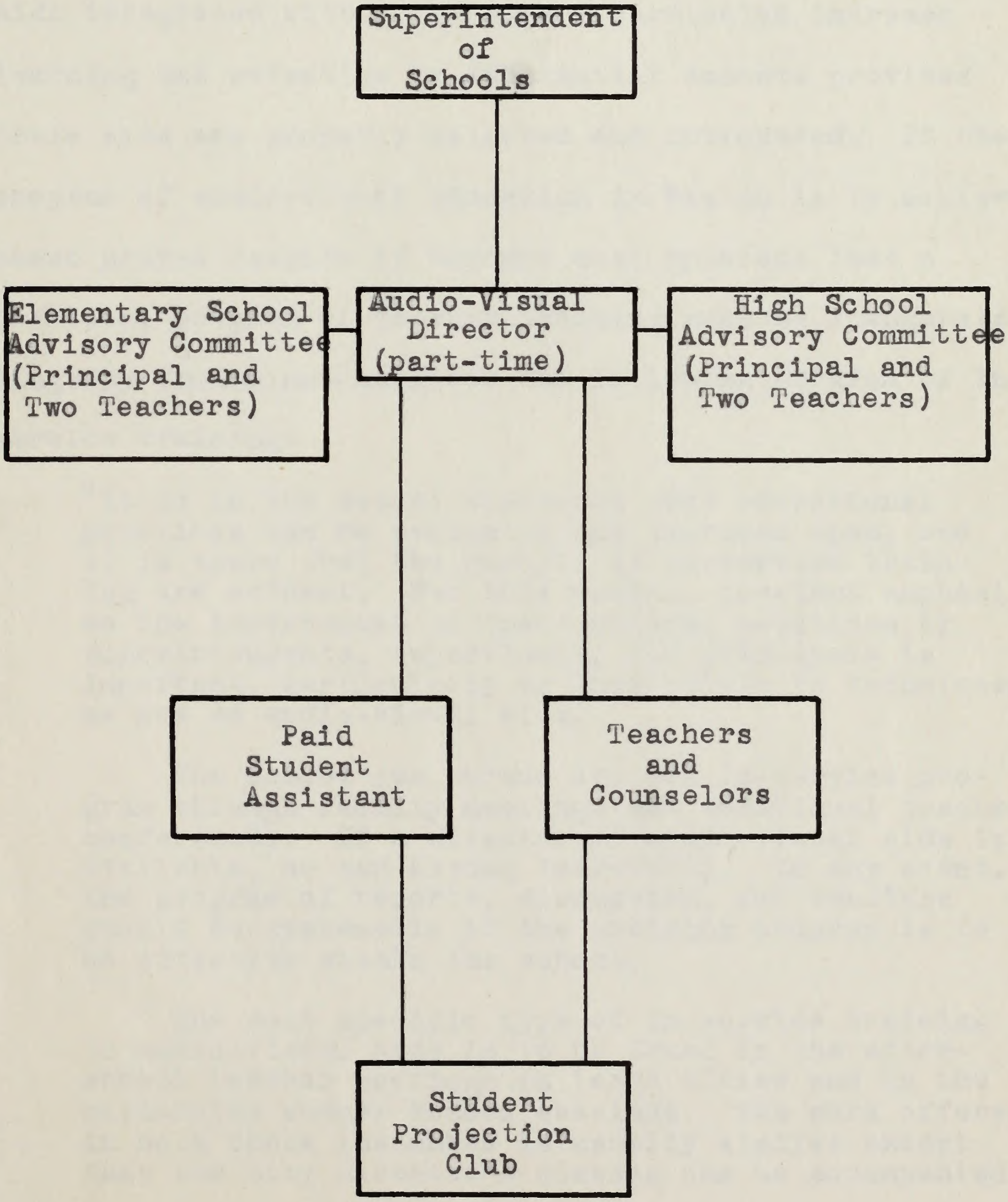
Although it is agreed by all authorities in the field of audio-visual education that the major responsibility for the success in audio-visual education is that of the director, it is also agreed that the integration of the various related aids should come from representatives of all grades and departments within the school system. Therefore, it is recommended that the director of audio-visual education work with principals and committees of teachers from each school (elementary and high school) in the

building of an integrated program of audio-visual aids.

It is also recommended that a projection club be organized within the high school for the purpose of training interested pupils to become qualified operators of projection equipment. This club will have the job of operating all audio-visual aids equipment thereby allowing teachers to devote their full time to teaching techniques.

The following page shows by block diagram the proposed administrative organization.

Administrative Organization



<u>A Program of Teacher Training</u>.- As previously discussed all research studies indicate that audio-visual aids integrated within the school curriculum increase learning and retention by substantial amounts provided these aids are properly selected and introduced. If the program of audio-visual education in Weston is to achieve these proven results it becomes most apparent that a practical program of teacher training must be inaugurated. Kingsley Trenholme[1] suggests the following program of in-service training:

> "It is in the actual classroom that educational practices can be evaluated and improved upon, and it is there that the results of in-service training are evident. For this reason, constant emphasis on the improvement of instructional practices by superintendents, supervisors, and principals is important, particularly as they relate to techniques as new as audio-visual aids.
>
> The school can pursue its own in-service program through faculty meetings and individual teacher conferences. If a director of audio-visual aids is available, he can assume leadership. In any event, the program of reports, discussion, and readings should be systematic if the training program is to be effective within the school.
>
> The most specific type of in-service training in audio-visual aids is to be found in the after-school teacher meetings in large cities and in the university summer school sessions. The work offered in both these instances is usually similar except that the city director's classes can be accompanied

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[1] Kingsley Trenholme, "In-Service Training", <u>See and Hear</u> March, 1946, 1:33-39.

by more opportunity for daily practice. Sometimes the two institutions combine forces. The city system's classes may be directly under the school district's control or may be sponsored by the university extension system. The latter plan has the merit of carrying college credit, a tangible proof of training in case of the teacher's transfer to another system.

Regular classes in audio-visual aids have a number of advantages over the more informal types of training. The cumulative effect of a series of meetings, the enthusiasm of the leader, and the laboratory practice which follows or is part of each meeting, tend to form a lasting impression. A suggested group of readings, bolstered by class discussions and demonstrations, is an added factor in improving the teacher's understanding of audio-visual aids.

A number of school systems have established such regular in-service training classes, in some cases making salary increments dependent upon completion of a certain number of credits.

In Portland, Oregon, the in-service training course comprises 12 two-hour sessions, one each week. It is offered twice a year, and has been well attended. Apparently the teachers are interested in this teaching technique and are willing to spend extra time in mastering it. The two hours are divided into a 60-minute period on materials and utilization, a ten-minute intermission, and a 50-minute laboratory period. In the latter period, assistance from the department's technicians have been necessary, as 40 pupils are far too many for one instructor in an audio-visual aids laboratory.

The methods used consist of discussions, panels, and demonstrations. Use of materials in class demonstrations is a regular feature and any visiting audio-visual luminaries are invited to meet with the class.

The topical outline for the current course is as follows:

Overview		
Meeting	1	The Present Status of Audio-Visual Aids
"	2	The Principles of Good Utilization
"	3	The Proper Choice of Audio-Visual Aids to Fit the Class and Subject
Utilization		
Meeting	4	Exhibits, Models, and Charts
"	5	Study Pictures
"	6	Slides
"	7	Filmstrips
"	8	Recordings
"	9	Radio
"	10	Silent Movies
"	11	Sound Movies
"	12	Production of Audio-Visual Aids

> The course outline presented here is still in the experimental stage. It is the collaborative result of three years' efforts with the Portland teachers supported by the critical efforts of a class committee which functions during each course. The topics and methods are subject to constant revision of many minds and will probably change each time the course is given."

Although the above-described program of in-service training of teachers is not wholly applicable to the schools of Weston, it is, however, believed and herewith recommended that a course in audio-visual education be offered to all teachers in the school system. Content of this course to follow an outline similar in scope to that used in the public schools of Portland, Oregon. The teaching of this course could well be the duty of the director of audio-visual education. Great emphasis should be placed upon the proper choice of visual aids to fit the class and subject.

Improvements in the School Plant.- Little success can be achieved through the use of audio-visual aids unless these are administered within the classroom itself. In Weston there is little or no opportunity for this type of situation due to the fact that only one classroom in the entire school plant is adequately provided with the necessary facilities for use of audio-visual aids equipment.

As described in Chapter II, the high school (grades VII through XII) is housed in a modern building constructed in 1932. Classrooms within this building are suitably adapted for audio-visual aids equipment except for the lack of opaque shades on the windows. It is therefore recommended that before the opening of school in September of 1947 that satisfactory opaque shades be installed in the following classrooms:

Floor	Number	Use Made of Room
Basement	1	English
First	14	Social Studies
First	17	Social Studies
Second	25	Social Studies

It is further proposed in each successive year that opaque shades be added to other classrooms in the high school until all classrooms are adapted for the use of projection equipment. This should be accomplished within the next three years.

Due to the fact that the two buildings now housing the elementary school (Grades I through VI) will be used only one or possibly two more years, it is recommended that no money be expended toward making the classrooms located within these buildings adaptable for the use of audio-visual equipment and that motion pictures and other related aids continue to be projected in the assembly hall. This is far from ideal but seems the only practical solution.

As previously stated, plans are already being made for the erection of a new elementary school building in Weston. A matter of major importance is that this building be constructed in such manner as to include all the necessary facilities to make possible the functioning of a modern program of audio-visual education. In discussing the requirements for the new elementary building the report of the school survey of 1944-1945[1] states:

> "Audio-visual education has requirements which must be met in the development of a school building. Both the auditorium and the classrooms must be properly designed to accomodate this phase of the school program."

Walter Wittich[2] makes the following note regarding

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[1] Weston Studies Its Schools, 1946. A Co-operative Study of the Public Schools of Weston, Massachusetts. Page 224.

[2] Walter Wittich, "Editor's Note", See and Hear (February, 1946) 1: 56-60.

the construction of school buildings.

> "The physical school in which learning is accomplished should offer assistance and never barriers to the fulfillment of teaching objectives. School houses are built in anticipation of 50 years of use. It is highly important, then, that we look ahead as far as possible in an attempt to anticipate that physical environment which will allow great future flexibility and complete usefulness to the teaching job that must be done."

It is the duty of the director of audio-visual education to work with the superintendent of schools, principal, school committee, building committee, and architect toward seeing that the above recommendations are fulfilled. Upon the director falls the important task of giving competent advice as to what audio-visual facilities are necessary for a modern school plant. E. DeAlton Partridge[1] in discussing audio-visual requirements states:

> "The classroom that is well planned for teacher and pupil efficiency, would include such features as follows: lighting that would avoid glare; including the light that falls on bulletin boards, exhibits, sand tables, etc: ventilation and darkening; flexible seating; good acoustics for hearing radio, sound films, etc; each classroom should be equipped for projection, with outlets on all sides, screen, storage cabinets and movable tables.
>
> To encourage the use of all kinds of teaching aids, the classroom should have large tack-up areas, drawers, or files for a picture collection, maps and charts accessible, and some basic tools."

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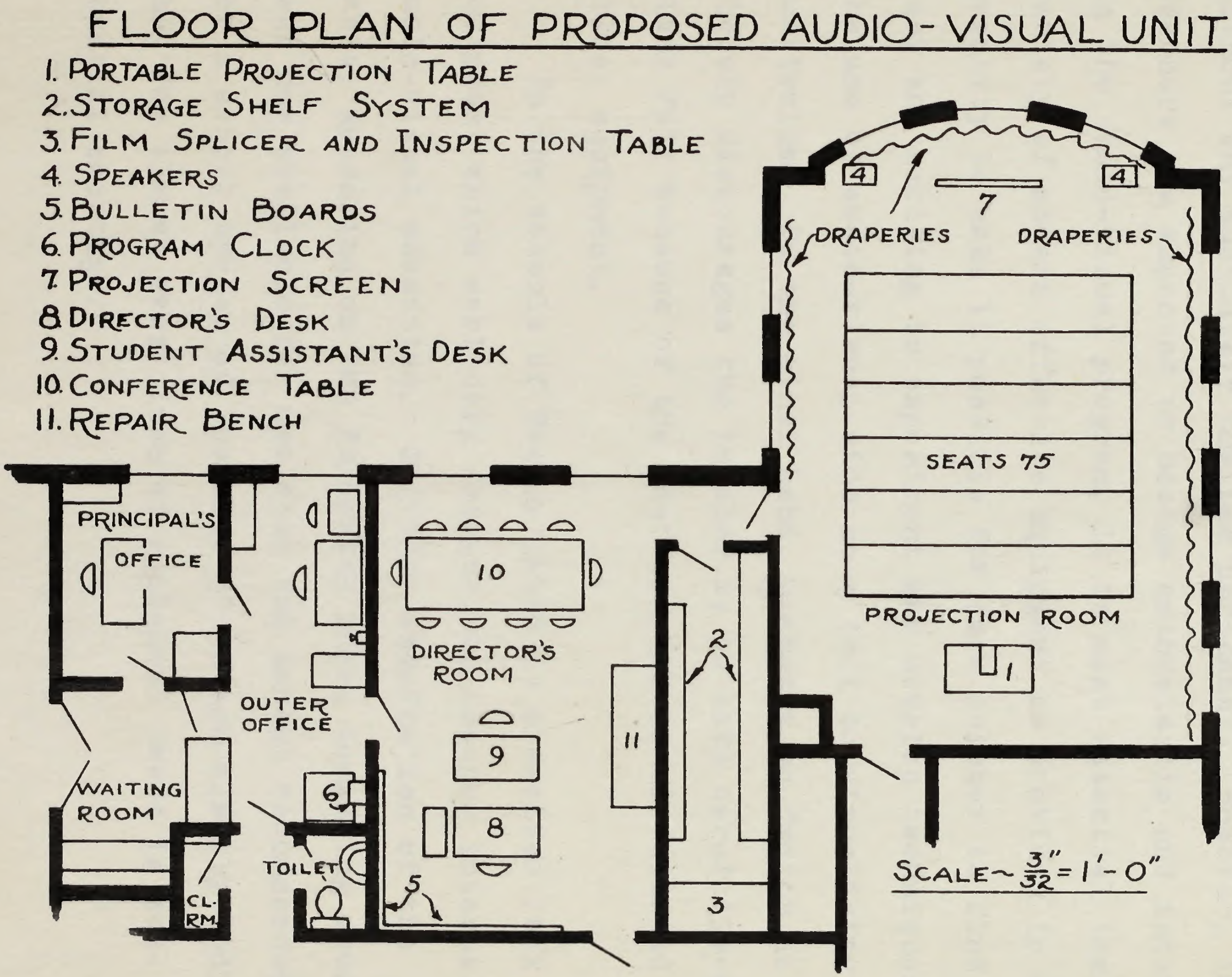
[1] E. DeAlton Partridge, Visual Education Consultants, Inc., N. Y. - School Executive, 66:65, November, 1946.

It is therefore specifically recommended that the new elementary school building being planned be so constructed so as to include the following features so vital to a successful program of audio-visual education.

1. Electrical outlets on all sides of each classroom.
2. Opaque curtains in every classroom.
3. Opaque curtains in the auditorium.
4. Adequate area of blackboards.
5. Adequate area of tack boards.
6. Display windows in corridors adjacent to classrooms.
7. Adequate ventilation when rooms are darkened.
8. Public address system.
9. Speaker cord laid in conduit in the auditorium.
10. Storage cabinets and movable tables.

In the Weston school survey of 1945-1946 it was recommended that a substantial enlargement be added to the present high school in the years just ahead. In connection with this proposed addition it is recommended that the director of audio-visual education carefully study and work out specific proposals as to the audio-visual requirements ofthe enlarged high school. Located within the remodeled high school should be an audio-visual unit including preview rooms, storage room, inspection and repair benches, and a projection room capable of accommodating not more than one hundred pupils. It is generally agreed that such an audio-visual unit should be located near the administrative office of the school, so therefore it is tentatively proposed that when the high

school is remodeled the present science laboratory and lecture rooms be converted into such an audio-visual aids unit. A floor plan of this area showing how it would function in this capacity appears on the following page.



FLOOR PLAN OF PROPOSED AUDIO-VISUAL UNIT

1. Portable Projection Table
2. Storage Shelf System
3. Film Splicer and Inspection Table
4. Speakers
5. Bulletin Boards
6. Program Clock
7. Projection Screen
8. Director's Desk
9. Student Assistant's Desk
10. Conference Table
11. Repair Bench

Equipment Proposals.- No audio-visual aids program can be successfully instituted and conducted in a school without any adequately trained personnel. However, if teachers are expected to become enthusiastic and interested in the audio-visual program, it is most essential that a variety of modern effective equipment be provided in such quantity to make it possible for each teacher to find it easy and exciting to experiment and develop techniques in the use of audio-visual aids as a tool to visualizing the curriculum. On the other hand, probably no factor so completely discourages the teacher as to have carefully-worked plans fail because of the ineffectiveness of outdated audio-visual equipment.

In the schools of Weston there is a decided lack of equipment which seriously deadens the teacher interest in audio-visual education. Critical examination of the table, appearing on the following page, comparing equipment now available for use with the amount recommended for a school system of the size of Weston clearly indicates that for almost every item of equipment there is substantial shortage.

Analysis of Equipment Needs

	*Equipment Needed			Equipment On Hand			New Equipment Needed
Type of Equipment	Elem. Schl.	High Schl.	Total	Elem. Schl.	High Schl.	Total	
16 m.m Sound Motion Picture Projector	1	1	2	0	1	1	1
Combination 2"x2" and 35 m.m. film strip projector	2	1	3	0	1	1	2
Opaque Projector	1	1	2	1	0	1	2
Glass Beaded Screen	3	3	6	1	1	2	4
Stereoscopes	35	0	35	0	0	0	35
Portable Radios	2	2	4	2	2	4	0
Two-speed (28 x 33 1/3) r.p.m. portable combination record and transcription player.	1	1	2	0	1	1	1
Record Recording Machine (Disc or Wire)	1	1	2	0	1	1	1
Public Address System	1	1	2	0	0	0	2
Glass Slide Projector	1	1	2	0	1	1	1
Microprojectors	0	1	1	0	0	0	1

*Determined on the basis of criteria as set forward by Schreiber and Calvert[1]/.

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[1]/Robert E. Schreiber, and Leonard Calvert, Building an Audio-Visual Program. Science Research Associates. Chicago, 1946, pages 40 and 41.

To improve this situation it is herewith recommended that the new equipment needed as indicated in the preceeding table be gradually purchased over the next three years. The following schedule of purchases is herewith proposed.

For School Year 1947-1948

1 Combination 2"x2" slide and 35 m.m. film strip projector.
1 Opaque Projector.
2 Glass Beaded Screens.
1 Glass Slide Projector.
1 Microprojector.

For School Year 1948-1949

1 16 m.m. sound motion picture projector.
1 Opaque Projector.
1 Screen in each room of new elementary building.
35 Stereoscopes.

For School Year 1949-1950

2 Combination 2"x2" slide and 35 m.m. film strip projector.
1 Two-speed portable combination record and transcription player.
1 Recording machine (either wire or disc, whichever at this time seems most desirable)

Improving the Motion Picture Program.- As stated by Walter A. Gaw[1]:

> "If correctly used, the motion picture and filmstrip are perhaps a teacher's greatest single aid in conveying information to the student and in developing a self-confidence akin to that derived by actual experience. The motion picture and filmstrip awaken and maintain interest of students because these teaching aids contain all of the force and persuasive power of the spoken word, plus all of the attention-getting, attention-holding and instructional value of the picture. The motion picture overcomes the handicaps of time and space. The clock of history is turned back and characters of an age gone by live and speak again. Distances are compressed and the student travels across three continents during a single period of geography. The student does not read how the blood circulates, he is not told how steel is made -- he sees, and seeing he remembers. The United States Navy has proved by tests that students learn up to 35 percent more in given time and retain knowledge 55 percent longer when audio-visual aids are used in teaching.
>
> Yet, improperly used, the motion picture and filmstrip are in large measure a waste of time. A holiday spirit pervades the class, interest ebbs, objectives become dimmed and the showing is worthless from an educational point of view.
>
> Correct use, among other things, involves the following steps:
>
> 1. Careful selection of pictures.
> 2. Preview of each film by the teacher prior to classroom showing.
> 3. Attendence of the teacher during all showings.
> 4. Co-ordination of the film with the subject matter being studied by the class.

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[1] Walter A. Gaw, "How is Your Audio-Visual Aids Department Developing?" Ediphone Educator (January, 1947) pp. 5-7.

5. Avoidance of combination of classes for the purpose of viewing films.
6. The preparation and use of film guides.
7. Proper introduction of a picture prior to its showing.
8. Opportunity for classroom discussion of the picture following the showing.

When commercially sponsored pictures are used rather than films produced by or for the schools themselves, it is necessary to consider each picture in terms of the following questions:

1. Is the picture suitable as a teaching device? That is, does it tie-in readily with the subject matter of the course?
2. Is the picture suitable for the age group to which it will be shown?
3. Is the picture "dated" as a result of styles, remarks, or in other ways to an extent which might impair its value?
4. Is the subject matter honestly portrayed?
5. Is the quality of the sound reproduction satisfactory?
6. Is the photography of satisfactory quality?
7. Is the picture of suitable length for the purpose for which it will be used? In some cases, the time required to complete the showing may be too great.

Obviously, one very important consideration is to obtain pictures that cover as closely as possible the material included in the outline or syllabus of the course in which the films will be used. It is also apparent that a teacher cannot preview all of the pictures which might bear some relationship to the subject she is teaching. Fortunately, there is in existence a number of catalogs that will prove helpful in selecting from the large number of available films those which give the most promise of possessing sufficient value to warrant the time for previews."

From the above discussion, it seems most evident if motion pictures and filmstrip are to effectively contribute to the learning situation, great care must be used

to select the right film at such a time that it will definitely correlate with the unit being studied. In Weston, under the present plan of building a program of motion pictures, too frequently films arrive at the wrong time and often the film requested is not suitable for the particular subject or grade level for which it was intended. All this results in a great loss in expense and teaching time. Under present conditions there certainly is a great need for better selection and better timing of motion pictures.

Great improvement can be accomplished through careful study and long range planning. This of course means extra work for the teacher but will if successfully carried through produce substantial rewards to the pupil in a more realistic learning situation. Acquainting the conscientious teacher with this proven fact can only result in the conclusion that the extra work is worthwhile.

To develop a schedule of integrated motion pictures and film strip it is necessary that from the syllabus or course of study, a monthly time schedule be constructed for each subject or grade. Using this monthly course of study as the guide, next carefully select films to integrate with the subject matter of the particular month. Idealistically, the way to select these suitable films

would be to preview all likely films and select those which seem most fitted to the material being taught. Actually this procedure is so time-consuming it is for the most part utterly impractical. A more efficient method of selecting proper films is to gain information and ratings of films from descriptions appearing in various educational film guides, catalogues, and professional magazines. Probably the best of these is the Educational Film Guide published by the H. S. Wilson Company, which in addition to an alphabetical listing of all educational films gives a content classification systemized under the Dewey Decimal system used in all libraries. Thus it is possible to look up the content, grade level, and rating of a film whose title is known or find the title of some film containing the desired content at a particular grade level. This book is published annually, and each month, a supplement is sent covering the new films produced. Content descriptions, grade level assignments, and ratings are based upon the combined opinions of teachers widely known for their success in using audio-visual aids.

From such sources very reliable data can be obtained as to what films are best fitted to the needs of a

particular course or grade. Films thus selected are then requested on dates coinciding with the course of study monthly time schedule. In order to insure bookings on desired dates it is very necessary that all of the above-described procedures be accomplished not later than May first of the preceding school year. Placing orders with film libraries early assures bookings on the dates desired which in turn means better integration.

As previously stated, to get the full value of a film necessitates previewing the film before showing it to the class, in order that the teacher can become familiar enough with the content to properly introduce and discuss with the class the things to look for in viewing the film. Usually one showing of the film is not sufficient and frequently it is necessary to show the film as many as three times. All this requires time which certainly is not available if the films are rented for only a twenty-four hour period. In nearly all cases, bookings for classroom films should be made for a period of one week. This will add to the expense of the audio-visual program, but the increase in contribution to the learning situation will justify the increased cost.

The success of the educational motion picture depends to a considerable extent on the physical condition of the print. Film libraries vary greatly in the amount

of inspection and service they give to prints. In placing orders for films, bookings should be made only with those film libraries having a reputation of renting only first quality prints.

This system of integrating the motion picture and filmstrip to the course of study has been carefully worked out in many areas of the curriculum of the schools of Weston and is shown in considerable detail in the supplementary pages following this chapter.

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This system of integrating the motion picture and filmstrip to the course of study has been carefully worked out in many areas of the curriculum of the schools of Weston and is shown in considerable detail in the supplementary pages following this chapter.

Summary of Recommendations

In this chapter, the program of audio-visual education now existing in the schools of Weston has been critically examined and numerous detailed suggestions have been made for its improvement and expansion. A summary of these specific recommendations follows:

1. That some well-qualified member of the school staff be appointed by the school committee to serve as a half-time director of audio-visual education.

2. That a yearly budget of not less than fifteen hundred dollars be provided for the improvement and expansion of the audio-visual program.

3. That committees of elementary and high school teachers be organized to serve as an advisory staff to the director of audio-visual education.

4. That in the high school (Grades VII thru XII) a student projection club be organized to take over the job of operating projection equipment.

5. That some deserving and well-qualified student be appointed to serve as a paid assistant to the director of audio-visual education.

6. That the director of audio-visual education inaugurate a program of in-service training to members of the school staff. This to consist of a course of instruction on the values and techniques in using audio-visual equipment.

7. That all rooms in the high school be equipped with opaque shades as soon as possible.

8. That the director of audio-visual education work with the building committee of the new elementary school in seeing that all necessary audio-visual facilities are provided in the construction of this building.

9. That careful study be made of the audio-visual requirements for the proposed addition to the high school and that plans be carefully worked out for an audio-visual unit in this remodeled building.

10. That new audio-visual equipment be purchased each year until necessary requirements are fulfilled.

11. That in the rental of motion picture films great thought and care be given to integration with the school curriculum.

12. That orders for motion pictures be placed approximately one year in advance.

13. That classroom films be booked for a period of one week instead of the usual one-day period.

14. The orders for motion pictures be placed with libraries, giving careful inspection and repair to all prints.

Supplement

Originally it has been the intention of the author to submit this supplementary material in such a manner that every area of the curriculum (Grades I thru XII) would have carefully selected films and filmstrip fitted to the course of study. This plan, however, had to be modified as some of the teachers in the various subject areas (especially in social studies, music, and art) were not sufficiently interested in visualizing their courses of study to devote the time necessary to select and integrate films with their various units of work. Other teachers attempted to explore their field for useful motion pictures and filmstrip but found little worthwhile material available. This was especially true in foreign languages, mathematics, and English. Results of their investigation clearly indicates need for more and better visual aids in these subjects.

A majority of the teachers in the school system were intensely interested in creating a more realistic situation in their classes, and gave generously of their time toward selecting films to fit their various areas of

study. It is the results of their investigation that makes possible the material submitted in the supplement of this service paper. In submitting this material the author fully realizes that there is much overlapping and many gaps in the curriculum of the schools of Weston, and that there is great need for curriculum revision. Adoption of the recommendations made in this service paper together with a complete curriculum reorganization will, it is believed, lead to a school program visualized in all areas.

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
GRADE I

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Getting Acquainted	Sept.	MP - Tommy's Day -- Young America Films 18 min. Sd. VES - $3.00 MP - Safety to and from School -- Young America Films 18 min. Sd. VES - $1.50 MP - Getting Along -- Young America Films 18 min. Sd. VES - $3.00
Pets	Oct.	MP - Three Little Kittens -- E.B.S. 10 min. Sd. BU - $1.00 MP - Care of Pets - E.B.F. 11 min. Sd. BU - $1.00 MP - Three Little Bruins Make Mischief - Castle Films 16 min. Sd. VES MP - Busy Little Bears - Paramount Films 10 min. Sd. no nearby distr. MP - Fluffy the Kitten - Foster Films 14 min. Si. BU - $1.00
Community Helpers	Nov.	MP - The Fireman - EBF 11 min. Sd. BU - $1.00 MP - Letter to Grandmother Coronet 16 min. Sd. Penn State $3.50 MP - The Policeman - EBF 11 min. Sd. BU - $1.00 MP - A Boat Trip - EBF 10 min. Sd. BU - $1.00
Christmas	Dec.	

Grade I - continued

Health	Jan.	The Story of Milk - Bray 30 min. Si. VES - $1.00 MP - What is Four - YAF 12 min. SD. VES - $1.50
Farm	Feb.	MP - Farm Animals - EBF 12 min. SD. BU - $1.00 MP - The Farm - Eastman Kodak 15 min. Si. Penn Col. Women $1.00
	Mar.	MP - Poultry on the Farm - EBF 12 min. Sd. BU - $1.00
Birds	Apr.	MP - How Birds Feed Their Young EBF 6 min. Sd. BU $1.00 MP - Birds of the Dooryard Coronet Films 10 min. Sd. VES - $1.50 MP - Robin Redbreast - EBF 11 min. Sd. BU $1.00
The Zoo	May and June	MP - Shep the Farm Dog - EBF 11 min. Sd. BU - $1.00 MP - Animals of the Zoo - EBF 11 min. Sd. BU $1.00

RELATED MOTION PICTURES AND FILM STRIP

FOR THE TEACHING OF

GRADE II

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Animals	Sept.	MP - Black Bear Twins - EBF 11 min. Sd. BU - $1.00 MP - Adventures of Bunny Rabbit - EBF 11 min. Sd. BU - $1.00 MP - Gay Squirrel - EBF 11 min. Sd. BU - $1.00
	Oct.	MP - Poultry on the Farm - EBF 11 min. Sd. BU - $1.00 MP - Farm Animals - EBF 11 min. Sd. BU - $1.00 MP - Common Animals of the Woods - EBF 11 min. Sd. BU - $1.00
Safety		MP - Safety To and From School Young America Film 10 min. Sd. VES - $1.50
People of other lands	Nov.	MP - Colonial Children - EBF 11 min. Sd. BU - $1.00
Christmas	Dec.	MP - Christmas Cartoon - Castle 12 min. Sd. VES - $1.50 MP - Merry Christmas - Castle 10 min. Sd. VES - $1.50
Transportation	Jan.	MP - Passenger Train - EBF 11 min. Sd. BU - $1.00 MP - An Airplane Trip - EBF 11 min. Sd. BU - $1.00 MP - Boat Trip - EBF 11 min. Sd. BU - $1.00 MP - The Bus Driver - EBF 11 min. Sd. BU - $1.00

Grade II - continued

Character Training	Feb.	
Food Store	March	MP - The Food Store - EBF 11 min. Sd. BU - $1.00 MP - Milk - Bell & Howell 12 min. Sd. VES - $1.00 MP - Bread - EBF 11 min. Sd. BU - $1.00
Birds	April	MP - Robin Redbreast - EBF 11 min. Sd. BU - $1.00 MP - How birds feed their young - EBF 6 min. Sd. BU - $1.00
Weather andSeasons	May	Nothing available at this grade level.

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
GRADE III

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Health Unit (a) food (b) rest (c) good health habits	Sept.	FS - A Day with Bobby and Ellen - Teach O Filmstrips 5 strips VES - $15.00
Citizenship Unit (a) fair play (b) working with others	Sept.	Nothing available at this grade level
Indian Unit (a) Tribes of North America (b) Indian Clothing (c) Indian Homes (d) Indian customs (e) Indian and Pilgrim Thanksgiving	Oct. and Nov.	MP - Navajo Children - EBF 11 min. Sd. BU - $1.00 MP - Navajo Indan - EBF 11 min. Sd. BU - $1.00 MP - Colonial Children - EBF 11 min. Sd. BU - $1.00
Christmas	Dec.	Nothing available at this grade level.
Transportation (a) Different ways of travel (b) How mail travels (c) Importance of transportation to us	Jan. and Feb.	MP - Airplane Trip - EBF 11 min. Sd. BU - $1.00 MP - Passenger Train - EBF 11 min. Sd. BU - $1.00 MP - The Bus Driver - EBF 11 min. Sd. BU - $1.00 MP - Letter to Grandmother - Coronet 19 min. Sd. VES - $3.00 MP - A Boat Trip - EBF 11 min. Sd. BU - $1.00

Grade III - continued

Birds (a) Life of Birds (b) Bird migration (c) Kinds of birds common to our locality	March and April	MP - Birds of the Countryside Coronet 10 min. Sd. VES - $2.50 MP - Birds of the Cooryard - Coronet 10 min. Sd. VES - $2.50 MP - Robin Redbreast - EBF 11 min. Sd. BU - $1.00
Farm Unit (a) Life on a farm (b) How we use products from the farm (c) Work done on the farm	May	MP - The Wheat Farmer - EBF 11 min. Sd. BU - $1.00 MP - The Corn Farmer - EBF 11 min. Sd. BU - $1.00 MP - The Truck Farmer - EBF 11 min. Sd. BU - $1.00
	June	MP - Farm Animals - EBF 11 min. Sd. BU - $1.00 MP - Poultry on the Farm - EBF 11 min. Sd. BU - $1.00 MP - Shep the Farm Dog - EBF 11 min. Sd. BU - $1.00

RELATED MOTION PICTURES AND FILM STRIP

FOR THE TEACHING OF

SOCIAL STUDIES - GEOGRAPHY

GRADE IV

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Introductory Movie New York	Early Sept.	MP - New York - ITTCO 22 min. Si - VES - $1.25
Living in Hot Wet Lands Amazon	Last of Sept.	MP - Brazil - Amazonian Lowlands - EBF 15 min. Si. BU - $ MP - Amazon Awakens - OIAA 16 min. Sd.
Living in Hot Dry Lands Northern Africa	Third week of Nov.	MP - People of the Congo - EBF 11 min. Sd. BU - $1.00 MP - Mystic Land of Egypt - B & H 15 min. Si -VES - $1.00 MP - Sahara - EBF 15 min. Si - BU - $1.00
Living in Mediterranean Lands - Greece	First week of Jan.	Nothing suitable for this unit
Living in Temperate Lands France	First week of Feb.	MP - Byways of France - TFC 12 min. Sd. BU - $1.00 MP - Workaday France - B & H 15 min. Si. VES - $1.00
Living in Mountain Lands Switzerland	First week of March	MP - Beautiful Switzerland - TFC 10 min. Sd. YMCA - $1.50 MP - Children of Switzerland - EBF 11 min. Sd. BU - $1.00
Land of Midnight Sun Norway	Last week of March	MP - Norway - Land of Midnight Sun - TFC 10 min. Sd. VES - $1.50

Grade IV - continued

On the Other Side of World - China	Third week of April	MP - Children of China - EBF 11 min. Sd. BU - $1.00
Australia	Second week of May	MP - Australian Cities and Industries - B & H 11 min. Sd. VES - $1.00
A Look at the United States	First week Of June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
SOCIAL SCIENCE
GRADE V

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
The United States		
A. New England States	Sept. and Oct.	MP - Colonial Children - EBF 11 min. Sd. BU - $1.00 MP - Early Settlers of New England - EBF 11 min. Sd. BU - $1.00 MP - Three Centuries of Mass. B & H 30 min. Sd. VES - $4.50 MP - New England Fishermen - EBF 11 min. Sd. BU - $1.00 MP - Shell Fishing - EBF 11 min. Sd. BU - $1.00
B. Middle Atlantic and Southern States	Nov. and Dec.	MP - Planter of Colonial Virginia - EBF 11 min. Sd. BU - $1.00 MP - Kentucky Pioneers - EBF 11 min. Sd. BU - $1.00
C. Middle Western States	Jan. and Feb.	MP - Colonial Expansion - EBF 11 min. Sd. BU - $1.00 MP - Life in Old Louisiana - EBF 11 min. Sd. BU - $1.00 MP - Frontier Women - EBF 11 min. Sd. BU - $1.00 MP - Flatboat Pioneers - EBF 11 min. Sd. BU - $1.00
D. Extreme West Overview of the United States	Mar. and April	MP - Overland to Cal. - EBF 11 min. Sd. BU - $1.00 MP - Wheat Farmer - EBF 11 min. Sd. BU - $1.00 MP - Territorial Expansion of the United States from 1783 to 1853 - 22 min. Sd. Int. Geo. - $4.00

Grade V - continued

Territories and Neighbors	May and June	MP - Territorial Possessions of the U. S. - 22 min. Sd. Int. Geo. - $4.00 MP - Portage - B & H
		MP - People of Hawaii - EBF 11 min. Sd. BU - $1.00 MP - Alaska - EBF 11 min. Sd. BU - $1.00

NOTE: - You will notice these films are mostly historical. We want it that way. We have no History books.

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
SOCIAL STUDIES
GRADE VI

OUTLINE OF COURSE OF STUDY (units ofWork)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
The United Kingdom Angles and Saxons	Sept.	MP - Rural England - TFC 12 min. Sd. BU - $1.00 MP - Canals of England - EBF 22 min. Sd. BU - $2.00 MP - Land of the Maple Leaf - TFC 12 min. Sd. BU - $1.00 MP - Shelter - EBF 11 min. Sd. BU - $1.00 MP - City Town - B & H 12 min. Sd. VES - $1.00
Africa Egyptians	Oct.	MP - Backward Civilization - EBF 11 min. Sd. BU - $1.00 MP - Egypt- Kingdom of the Nile EBF 11 min. Sd. BU - $1.00 MP - Children of Africa - B & H 30 min. Si. VES - $5.00
The Scandinavians and Their Countries The Vikings	Nov.	MP - Viking Trail - TFC 12 min. Sd. BU - $1.00 MP - Clothing - EBF 18 min. BU - MP - Scenic Sweden - FNI 22 min. Si. VES - $1.00 MP - Norway - Land of the Midnight Sun - TFC 12 min. Sd. BU - $1.00
The Soviet Union How Europe Found America	Dec.	MP - Leningrad - Gateway to Soviet Russia - TFC 12 min. Sd - BU - $1.00 MP - Children of Russia - B & H 12 min. Sd - VES - $1.00 MP - Conservation of Natural Resources - EBF 19 min.

Grade VI - Continued

Highland Countries of Western Europe The Middle Ages	Jan.	MP - Beautiful Switzerland -TFC 10 min. YMCA - $1.50 MP - Rhineland Memories - TFC 12 min. Sd. BU - $1.00 MP - Glimpses of French Country Life - B & H 12 min. Sd. VES - $1.00
Mediterranean Peninsulas of Europe The Romans and the Greeks	Feb.	MP - Glimpses of Greece - TFC 12 min. Sd. BU - $1.00 MP - Italy, Land of Inspiration- TFC 12 min. Sd. BU - $1.00 MP - Memories of Spain - TFC 12 min. Sd. BU - $1.00 MP - Picturesque Portugal - TFC 12 min. Sd.BU - $1.00
Oriental Countries Marco Polo	Mar.	MP - People of Western China - EBF 11 min. Sd. BU - $1.00 MP - Irrigation Farming - EBF 11 min. Sd. BU - $1.00
Western Countries of the Lowland Plains How the French Nation Began	Apr.	MP - Holland and the Zuyder Zee - TFC 12 min. Sd. BU - $1.00 MP - Roaming the Netherlands - TFC 12 min. Sd. BU - $1.00
Countries of Southwestern Asia European Explorers	May	MP
Social Studies Review and Testing Program	June	No movies requested.
EXTRAS REQUESTED		
Sports	April	MP - Inside Baseball Sp. 12 BU
Recognition of Flag Day	June	MP - The Story of Our Flag - Knowledge Builders 10 min. Sd. VES - $2.00

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE VII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Laying out and shaping stock (wood, wrought and sheet iron) A. Planning. B. Use of hand tools. C. Laying out, cutting,	Sept.	FS - Jam Handy Safe Practices in Woodworking B. Woodworking Tools and Machines 1. Hand Tools - Hammers - Saws
and shaping stock. D. Squaring up stock. E. Boring operations. 1. Hand methods. 2. Drill press. II. Assembling methods A. Fasteners 1. Nails	Oct.	2. Planes - Bits - Knives - Chisels - 3. Screwdrivers - Files 4. Drill press
2. Screws 3. Rivets 4. Soldering III. Finishing A. Stains - outside B. Flat paint C. Care of brushes	Nov. Dec.	
IV. Materials A. Wrought iron B. Sheet iron C. Wood used V. Ceramics A. Study of 1. Keene's	Jan.	FS - Jam Handy Safe Practices in Woodworking Basic Shop Safety 1. Play safely and work safely
2. Portland B. Fabrication	Feb.	

Grade VII - continued

VI. Review A. Tools, processes, materials.	Mar. Apr.	
VII. Mechanical Drawing A. Explore tools B. Horizontal and vertical lines C. Isometric D. Dimensioning study	May June	FS - Jam Handy Mechanical Drawing and Drafting 8. "T" squares andTriangles Part 1

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE VIII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Laying out and shaping stock (wood and general metal) A. Planning	Sept.	FS - Jam Handy Safe Practices in Wood Working Woodworking tools and machines 5. Jig saw
B. Use of hand tools C. Use of machines 1. Band saw 2. Jig saw 3. Wood lathe 4. Sheet metal	Oct.	6. Band saw Bench work 1. Hand tools
II. Assembling A. Glue B. Solder C. Rivets	Nov.	
III. Printing A. Silk screen	Nov.	
IV. Finishing A. Stains B. Fillers C. Shellac V. Review shop safety	Dec.	FS - Jam Handy
VI. Electricity 1. Simple appliance wiring VII. Metal fabrication	Jan.	Safe Practices in Woodworking Basic shop safety 2. Maintaining a safe shop. MP - 669.7 Aluminum: Fabrication Processes - Loan USBM
A. Art metals B. Foundry	Feb.	
VIII. Plastics A. Fabrication B. Study of	Mar.	

Grade VIII - continued

IX. Review		
A. Tools, processes, materials	Apr.	
X. Mechanical drawing		
A. Review exploration	May	
B. Working drawing		
C. Pictorial	June	
D. Architectural		

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
U. S. HISTORY
GRADE VIII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Exploration and Colonization A. Search for new trade routes. B. Discovery of new world. C. European claims in North America D. Establishment of English on Atlantic coast. E. Events leading to Colonial Rebellion. II. Revolution and Confederation A. Rebellion between	Sept.	MP - Colonial Expansion - EBF 11 min. Sd. BU - $1.00 MP - Early Settlers of New England - EBF 11 min. Sd. BU - $1.00 MP MP - Boy Who Saved a Nation - TFC 12 min. Sd. BU - $1.00
Colonial Empire and Mother Country. B. American Independence won by Revolution. C. Organization of government. D. Foreign relations. E. Leaders of the new government and their policies.	Oct.	MP - Our Declaration of Independence - 20 min. Sd. $3.00 (no nearby film library) MP - Servant of the People -TFC 22 min. Sd. BU - $2.00 MP - Song of a Nation - TFC 22 min. Sd. BU - $6.00
III. Territorial Expansion A. Westward movement. B. Exploration movement. C. Gold Rush. D. Demand for improved means of travel. E. Struggle with Indians F. Louisiana Purchase	Dec.	MP - Territorial Expansion of the U.S. from 1783-1853 - Int. Geo. 22 min. Sd. $4.00 -- available most film libraries. MP - Apache Indians - Coronet 10 min. Sd. VES - $3.00 MP - Navajo Indians - EBF (Human Geog. Ser.) 10 min. Sd. BU - $1.00

Grade VIII - History - continued

IV. Inventions and Industrial Revolution		Development of Transportation- EBF
A. Development of Industries. B. Inventors then and now. C. Transportation. D. Beginnings of factory system.	Jan. Feb.	11 min. Sd. BU - $1.00 MP - Pony Express - B & H 12 min. Sd. VES - $1.50 MP - Life of Thomas A. Edison G.E. 12 min. Sd. Free MP -Freight Yard - 385 - N. Y. Central 20 min. Sd. BU - Free
V. Civil War Period A. Growth of Sectional feeding. B. History of slavery in the U. S. C. War to preserve Union. D. Results of War.	Feb.	MP - Perfect Tribute - TFC 25 min. Sd. BU - $2.00 MP - Under Southern Stars - TFC 25 min. Sd. BU - $3.00 MP - Story of Dr. Carver -TFC 12 min. Sd. BU - $1.00
VI. Development of the Re-united Nation.		Looking for films on: Industrial Problems
A. Development of Industry. B. Political parties and administrations. C. Development of natural resources. D. Immigration.	Mar. Apr.	Natural Resources Immigration
VII. The U. S. - A World Power A. Our possessions.		MP - Inside the White House- TFC
B. Our treatment of possessions. C. Our part in World War I. D. Our part in World War II. E. Our part in making peace.	May June	10 min. Sd. YMCA - $1.00 MP - Yanks are Coming - TFC 12 min. Sd. BU - $1.00 MP - Territorial Possessions of the U. S. - Int. Geo. 22 min. Sd. $4.00 Available any film library
Review or Summary Films	June	MP - Land of Liberty -TFC 80 min. Sd. YMCA - $7.50

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE IX

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Laying out and shaping wood. A. Review hand tools B. Woodworking machines 1. Circular saw 2. Jointer 3. Band saw 4. Jig saw II. Metals fabrication A. General to fit project fabrication.	Sept. Oct.	FS - Jam Handy - Jointing edges and end grain (Have it)
III. Abrasives A. Types B. Manufacture of C. Uses IV. Related finishes	Nov. Dec.	MP - Manufactured Abrasives - U.S.B.M. 45 min. Sd. BU - $.50
V. Leathercraft VI. Wood lathe A. Between centers B. Face plate	Jan.	MP - 675 Leatherwork - Handicraft Instru. Film Service. 10 min. Sd. VES - $2.00
VII. Soldering VIII. Electricity A. Simple wiring	Feb.	FS - Hand soldering - Jam Handy MP - Shape of Things to come - (Plastics) - 33 min. Sd. - Boonton - Free
IX. Craft work A. Silk screen B. Leather C. Ceramics	Mar. Apr. May	MP - Glass, Servant of Man - Owens Illinois Glass 56 min. Si. Free
1. Plastics 2. Keene's cement 3. Portland cement 4. Glass X. Consumer education XI. Review and test	June	

RELATED MOTION PICTURE AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE X

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Furniture fabrication A. Planning B. Review squaring up process C. Accurate methods with hand tools D. Review use of machinery 1. Circular saw 2. Jointer 3. Band saw 4. Jig saw E. Lumber preparation 1. Sawing 2. Milling	Sept. Oct.	FS - Jam Handy - Safe Practices in Woodworking. Woodworking tools and machinery 5. Jig saw 6. Band saw 12. Jointer 13. Circular saw; setting up; operating MP - 674 Trees and Homes - Weyerhauser 33 min. Sd. Free
II. Assembling A. Types of joints B. Glues C. Clamping D. Nails E. Screws	Nov.	
III. Furniture styles A. Period B. Modern C. Design D. Consumer information	Dec.	MP - Masterpieces in Mahogany Central Washington College of Education 30 min. Si. $.50
IV. Finishing operations A. Stains B. Fillers C. Varnishes D. Lacquers E. Paints F. Others G. Brushes H. Refinishing	Jan. Feb. Mar.	MP - Repainting a Frame Building - Castle Farm Work Series 18 min. Sd. VES - $1.00

Industrial Arts - Grade X - continued

V. Carpentry A. Foundations B. Frames	April	MP - Plywood - The Miracle Wood - Douglas Fir 35 min. Sd. YMCA - $.50
C. Roof types D. Wall coverings E. Doors and windows F. Fixtures G. Repair andmaintenance H. Materials	May	
VI. Review and test	June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE XI

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
I. Machine lathe A. The lathe B. Lathe tools C. Plain turning	Sept. Oct.	MP - Metalworking Lathe - loan - South Bend Lathe Works 20 min. Sd. Devry - $2.00 MP - Plain turning - South Bend
D. Thread cutting E. Taper turning, knurling F. Drilling and boring II. Art Metals Fabrication III. Hand metal tools		Lathe Works 20 min. Sd. Devry - $2.00 FS - Jam Handy - Introduction to Machining Kit A 1. The machinist 3. Machine techniques (part 1) Kit C 4. Lathes (part 1) 5. Lathes (part 2) FS - Jam Handy Bench work
IV. Sheet metal A. Handtools B. Machine tools C. Assembly 1. Solder 2. Rivets V. Industrial uses of metals VI. Making Iron and Steel	Nov. Dec.	1. Hand tools 7. Rivets and riveting 9. Layout work (part 1) Introduction to Machining Kit C 2. Drill presses (part 2)
A. Pig Iron B. Steel	Jan.	
VII. Shaping iron and steel A. Industrial Processes	Feb.	MP - Steel - Man's Servant - loan U.S. Steel Corp. of Del. 38 min. Sd. N.J.S.M FS - Jam Handy Aviation Metalsmiths 6. Properties of metals (part 1)

Industrial Arts - Grade XI - continued

VIII - Molding and patternmaking	Mar. Apr.	FS - Molding with a loose pattern (have it) Jam Handy Bench work 5. Finishing rough castings
IX. Spinning X. Plating	May	
XI. Review and test	June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
INDUSTRIAL ARTS
GRADE XII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
This course is in the process of being developed. It is contemplated that it will contain the following two large units.		Jam Handy slide films seem to cover these fields rather thoroughly in the following:
I. Electricity A. Elementary theory B. Practical wiring for 1. Heat 2. Light 3. Sound	1/2 yr.	FS - Jam Handy - Fundamentals of electricity What is electricity - Westinghouse 20 min. Sd. V.E.Pictures, Westport, Conn.
II. Auto mechanics A. Internal Combustion Engine B. Principles of power transmission C. Mobility factors D. Electrical system E. General service	1/2 yr.	FS - Jam Handy Automotive mechanical training kit - set No. 1 MP - Know Your Car - Castle 15 min. Sd. VES - $2.00

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
MECHANICAL DRAWING

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM SERVICE
Mechanical Drawing I.		
A. Draftsman's language and tools	Sept.	
B. Lettering and techniques	Oct.	
C. Geometrical constructions	Nov.	
D. Reading drawings	Dec.	FS - Jam Handy
E. Working drawings	Jan.	Mechanical drawing and drafting. 12. Drawing an anchor plate 3. Scales and models
F. Pictorial drawing	Feb.	
G. Free hand sketching	Mar.	
H. Graphs and maps	Apr.	
I. Aircraft drafting	May	
J. Tracing K. Duplicating processes	June	
Mechanical drawing II		MP - Drafting Tips - Penn Stat
A. Sheetmetal drafting	Sept.-Oct.	28 min. Sd. Ohio - $2.00
B. Surface development	Nov.-Dec.	
C. Auxiliary views	Jan.-Feb.	
D. Revolutions	Mar.	
E. Machine drafting	Apr.-May	
F. Sections	June	
Mechanical Drawing III		MP - The Draftsman- Mahnke
A. Architectural drawing	½ yr.	11 min. Sd. BU - $1.00
B. Pictorial representations 1. Mechanical 2. Free hand	½ yr.	

Mechanical Drawing - continued

Mechanical drawing IV
A. Type selected by pupils

The mechanical drawing field needs to be covered more thoroughly in fundamental types of drawings.

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
ENGLISH
GRADE XII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Saturday Evening Post Unit or study of modern article	Sept.	Desired: vocabulary building filmstrip Desired: film on magazine development
American Novel Unit (4B) English Novel Unit (4A)	Oct.	Desired: filmstrip on outlining
Hamlet (4A) Newspaper Unit (4B)	Nov.	Maurice Evans recording of Hamlet Desired: good film on newspaper preparation
Adventures in English literature	Dec.	MP - Shakespeare (Gaumont-British) 10 min. Sd. Syracuse - $1.50 MP - Romeo and Juliet - TFC 40 min. Sd. BU - $4.00 MP - Pride and Prejudice - TFC 40 min. Sd. BU - $4.00
Sears Essay (Research and writing)	Jan. Feb.	Desired: filmstrip on steps in preparation of research paper.
English Literature and composition	Mar.	Nothing available
English Literature and composition	Apr.	Nothing available
Motion Picture Appreciation Unit (4B) English Literature (4A) Composition	May	Films booked for motion picture unit. History of Motion Picture $3 Hits of Past - VE - $3.00 Revenge on Range - VE - $2.00 Just Another Murder - VE - $2 The River - BU - $2.00

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
ENGLISH
GRADE XI

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Emperior Jones and Macbeth Review of Composition	Sept.	Studidisc recording of "Macbeth" Effective motion pictures not as yet. Current pictures poor stuff.
Short Stories and Composition	Oct.	"Lady or the Tiger" - TFC 10 min. Sd. Syracuse - $1.50
Off to Arcady (poetry Unit)	Nov.	Recordings (Studidisc Co.) of Poetry
Essays andEssay Writing Spoken English	Dec.	No material available "Gettysburg Address" recording
American Literature (Colonial Period)	Jan.	Not interested in old history movies.
Vocational Paper (research)	Feb.	Desired a filmstrip on outlining.
American Literature and Themes and book reports	Mar.	Desired: filmstrip on functional grammar.
American Literature	Apr.	Desired: filmstrip on American Literature.
Unit on Detective Novel	May	Nothing available
Review and examination	June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
PHYSICAL EDUCATION AND SPORTS

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Fall Term		
Football and Sportsmanship	Sept.	MP - Football Giants - TFC 10 min. Sd. Ohio - $1.00 MP - Blocking in Football-EBF 11 min. Sd. BU - $1.00
	Oct.	MP - Tackling in Football - EBF 11 min. Sd. BU - $1.00
	Nov.	MP - Ball Handling in Football - EBF 11 min. Sd. BU - $1.00 MP - All American Way - Chicago Tribune 30 min. Sd. Syracuse - $.75 MP - Pig Skin Champions - TFC 1 reel Sd. Wis. $1.25
Winter Term		
Basketball	Dec.	MP - Ball Handling in Basketball - EBF 11 min. Sd. BU - $1.00
	thru	MP - Shooting in Basketball - EBF 11 min. Sd. BU - $1.00
	Feb.	MP - Defensive footwork in basketball - EBF 11 min. Sd. BU - $1.00
Posture		MP - Posture and Exercise -EBF 11 min. Sd. BU - $1.00 MP - Beginning Tumbling - Coronet
Tumbling		11 min. Sd. BU - $1.00 MP - Intermediate Tumbling - Coronet 11 min. Sd. BU - $1.00 MP - Advanced Tumbling - Coronet 11 min. Sd. BU - $1.00

Physical Education and Sports - continued

Spring Term		
Track	March	MP - Spring Training - Art 10 min. Sd. VES - $1.25 MP - Distance Races - EBF 11 min. Sd. BU - $1.00
Swimming		MP - Dashes, Hurdles and Relays - EBF 20 min. Sd. BU - $2.00 MP - Matt Mann's Swimming Techniques - Coronet 20 min. Sd. BU - $2.00
Baseball		MP - Inside Baseball- TFC 1 reel - Sd. VES - $1.50 MP - World Series of 1946 - Boston Red Sox
Tennis		MP - Techniques in Tennis -TFC 10 min. Sd. Ohio - $1.50

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
GEOGRAPHY
GRADE VII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Introduction to South America	Sept.	MP - Continent of So. America EBF 15 min. Si. BU - $1.00
The West Indies		MP - Islands of the West-TFC 11 min. Sd. YMCA - $1.50 MP - Cuba - OIAA 11 min. Sd. VES- $.50 MP - Magical Havana - OIAA 12 min. Sd. VES- $.50 MP - Introduction to Haiti - OIAA 10 min. Sd. VES - $.50 MP - Haiti's Black Napoleon-TFC 15 min. Sd. BU - $1.00
	Oct.	MP - Paradise of the Caribbean - OIAA 10 min. Sd. VES - $.50 MP - Puerto Rico - OIAA 10 min. Sd. VES - $.50 MP - To theWindwards - OIAA 10 min. Sd. VES - $.50 MP - Trinidad - OIAA 10 min. Sd. VES - $.50
Surinam	Nov.	MP - Dutch Next Door - FON 10 min. Sd. U.of N.H. -$.50
Venezuela	Nov.	MP - Venezuela Moves Ahead - OIAA 40 min. Sd. -VES- $.50
Columbia	Dec.	MP - Columbia, Cross Roads of the Americas - OIAA 27 min. Sd. YMCA - $.50 MP - Coffee, the Pride of Columbia - OIAA 20 min. Sd. YMCA - $.50 MP - Down where the North Begins - OIAA 21 min. Sd. VES - $.50

GEOGRAPHY - GRADE VII - continued

Equador	Dec.	MP - This is Equador - OIAA 20 min. Sd. YMCA - $.50
Peru	Jan.	MP - Heart of the Inca Empire 20 min. Sd. VES - $.50 MP - Wealth of the Andes -OIAA 20 min. Sd. YMCA - $.50
Bolivia		MP - LaPaz - OIAA 20 min. Sd. VES - $.50 MP - High Plain 20 min. Sd. VES - $.50
Chile	Feb.	MP - Valparaiso - Santiago - OIAA 20 min. Sd. VES - $.50 MP - Funds in Chile - OIAA 20 min. Sd. VES - $.50
Argentina	Mar.	MP - Argentina Primer - OIAA 23 min. Sd. VES - $.50
Brazil		MP - Amazon Awakens - 35 min. Sd. VES - $.50 MP - Coffee from Brazil to you BU - $1.00
Central America	Apr.	MP - Central America - EBF 11 min. Sd. BU - $1.00
Panama		MP - Panama Canal - EBF 15 min. Si. BU - $1.00
Guatemala	May	MP - High Spots of a High Country - OIAA 20 min. Sd. YMCA - $.50
Mexico - Yucatan		MP - Mayaland Today - OIAA 10 min. Sd. VES - $.50 MP - Mexico City - OIAA 11 min. Sd. VES - $.50

RELATED MOTION PICTURES AND FILM STRIP

FOR THE TEACHING OF

U. S. HISTORY

GRADE XI

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Introduction through current problems	Sept.	MP - India - MOT Series K. Sd. BU - $3.50 MP - Palestine - MOT SeriesM. Sd. BU - $3.50 MP - Philippine Republic - MOT Series M. Sd. BU - $3.50 MP - UnitedStates - BIF 25 min. Sd. VES - $2.00 MP - Britain & Her Empire-MOT Series M. BU - $3.50
Discovery, Settlement, Foundations of National Government	Oct.	MP - Our National Government - U.S. Govt. 12 min. Sd. YMCA - $1.50 MP - Servant of the People-TFC 25 min. Sd. BU - $2.00
Sectionalism and Civil War 1800-1865	Nov.	MP - Three Centuries of Mass.- B & H 30 min. Sd. VES - $4.50
Reconstruction and Growth ofUnited States	Dec.	MP - Three To Be Served -NAM 27 min. Sd. NAM - Free MP - The Story of Money - BIF Sd. VES - $1.50
Extension in Pacific & Caribbean Progressive Movement 1896-1914	Jan.	
World War I 1914-1920	Feb.	MP - Prelude to War - OWI 5 reels Sd. YMCA - $2.00

U. S. History - Grade XI - continued

Between Two Wars and UnitedNations	March	FS - United Nations - World of Plenty - BIF $4\frac{1}{2}$ reels Sd. VES - $5.00
World War II	April	MP - One Day in Soviet Russia - United Nations 55 min. Sd. BraF - $15.00
Review Through Current Problems	May	MP - A Defeated People - BIF 20 min. Sd. VES MP - VenezuelaMoves Ahead-OIAA 40 min. Sd. VES - $.50
Review and Examination	June	FS - on U. S. S. R. FS - on International Trade

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
MODERN PROBLEMS
GRADE XII

OUTLINE OF COURSE OF STUDY (Units ofWork)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Introduction: Current Problems and American Culture	Sept.	MP - Man, One Family - BIF 17 min. Sd. VES MP - Here is China - United China Relief 26 min. Sd. UCF - $.75 MP - Youth in Crisis - MOT BU - $3.50
Government: Weston, Democracy, Facism, Communism, and Socialism	Oct.	MP - Democracy - EBF 11 min. Sd. BU - $1.00 MP - Despotism - EBF 11 min. Sd. BU - $1.00 MP - Mexico Builds a Democracy - OIAA 12 min. Sd. YMCA - $.50
Economic Problems: Conservation, Transportation, the City.	Nov.	MP - The Home Place - U. S. Dept. Agri. 32 min. Sd. Castle - $.50 MP - Heritage for Victory - Western Elec. 2 reels Sd. YMCA - Free MP - The River - U.S. Govt. 30 min. Sd. BU - $2.00 MP - Growth of Cities - EBF 12 min. Sd. BU - $1.00
Intercultural Relations: Race, Immigration, Population, Prejudice, Public Opinion,	Dec.	MP - Black Legion 15 min. Sd. NYU - $3.00 MP - George Washington Carver TFC 12 min. Sd. BU - $1.00 MP - World We Want to live in EBF 12 min. Sd. BU - $1.00 MP - Public Opinion - EBF 12 min. Sd. BU - $1.00

Modern Problems - Grade XII - continued

Problems of Poverty, Health and Crime	Jan.	MP - Children of theCity - BIF 30 min. Sd. VES MP - New Prisons -- New Men Pictorial 20 min. Sd. YMCA - $3.00 MP - A Criminal is Born - TFC 2 reels Sd. YMCA - $3.00
Labor Relations (Sears Essay)	Feb.	MP - The new pattern - BraF 14 min. Sd. BraF - $2.50 MP - Post War Jobs - MOT 2 reels - Sd. YMCA - $2.00
United Nations and International Problems	Mar.	MP - Age of Flight - U.S. Govt. 2 reels - Sd. YMCA - $3.00 MP - Peace Builders - U.S.Govt. 1 reel - Sd. YMCA - $1.25 FS - on United Nations FS - on U. S. S. R.
Social Psychology, Family relations	Apr.	MP - You and Your Family 10 min. Sd. YMCA - $1.50 MP - You and Your Friends 10 min. Sd. YMCA - $1.50
Special Topics and Review	May June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
FOODS
GRADE IX

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Preparation for Cooking Equipment Method Measurements Reasons for Ways of Principles Involved Marketing	Sept.	MP - Principles of Cooking - EBF 11 min. Sd. BU - $1.00 MP - Principles of Home Canning - EBF 11 min. Sd. BU - $1.00
Canning Cold pack Open kettle Jam and jellies Commercial Canned Foods	Oct.	MP-- Fundamentals of Diet 11 min. Sd. BU - $1.00
Breakfast Fruit Cereal Quick Breads Milk	Nov.	MP - Citrus in Nutrition - MTPS MP - Story of Wheat - Knowledge Build)
Breakfast Eggs Table Manners Candy	Dec.	MP - Dinner Party (Simmel-Meservey) 20 min. Sd. - no nearby dist.
Luncheon Soup Vegetables White sauce Deep Fat Frying	Jan.	MP - Good Foods, Fruit and Vegetables - EBF 11 min. Sd. BU - $1.00

Food - Grade IX - continued

Luncheon Meat Substitutes Use of Left overs Raised Bread Sample Deserts	Feb.	
Luncheon Cake Cookies Dinner Fruit and vegetable cooking Canapes	Mar.	MP - Principles of Baking -EBF 11 min. Sd. BU - $1.00
Dinner Meat Poultry Fish	Apr.	MP - Meat and Romance - Castle 40 min. Sd. VES - Free
Salads Frozen Deserts Pastry	May	
Picnics Parties	June	

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF

CLOTHING
(Home Economics)

Grade X

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Textiles	Sept.	MP - What Shall I Wear - MTPS 18 min. Sd.
Fibres	Oct.	
Spinning Weaving Dyeing Finishing Laundering	Nov.	MP - Fashion Favorites -YMCA 3½ reels - Sd. YMCA - free MP - Art of Spinning and Weaving 20 min. BU
Design Line Effect on Figure Deception of line Balance and proportion	Dec.	MP - Threads of Fashion - Castle 30 min. Sd. VES - $3.00
Color Hue	Jan.	MP - Personal Investment - Caravel Films - (Hart, Schaffner & Marx) 30 min. Sd. H.S. & M. - free
Value; Intensity Effect on Figure Combination Harmony Effect on Complexion Psychology of Indiv. Color Study	Feb.	
Designing and Designers Why fashions change Fashion centers Dressmaking houses Paris designers American Designers	Mar.	

Clothing - Grade X - continued

History of Costume Egyptian, Greek, Roman, etc.	Apr.	
Grooming Phy. Dev. External Care Costume for Occasion	May	MP - Good Grooming - Castle 30 min. Sd. VES
Economics ofClothing Advertising Types of Stores Grade Labeling Installment buying Charge Accounts Do's and Don't's for Shoppers	June	

RELATED MOTION PICTURES AND FILM STRIP

FOR THE TEACHING OF

EDUCATION FOR FAMILY LIFE
(Home Economics)

GRADE XII

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILM STRIP
Family and Social Relationships 1. Manage 2. Home 3. Ideal Family 4. Characteristics of a Happy Home 5. Factors that promote successful family life. 6. What does the Comm. offer you? 7. What do you owe the community?	Sept. Oct.	MP - Happily Ever After 15 min. Sd. MTPS - Free MP - Wrong Way Out - TFC (Crime Does Not Pay Series) 2 reels - Sd. YMCA - $3.00
Budgeting 1. Sources of Income 2. Methods of rec. money 3. Methods of paying money 4. Cost of operating 5. Costs involved in establishing a home 6. Other expenses involved 7. Budgets	Nov. Dec.	MP - Managing the Family (Household Finance) 38 min. Sd. MTPS - Free MP - Hot Money - Pictorial (American Lines) 20 min. Sd. YMCA - $3.00
Home Planning 1. Choice of Community 2. Choosing a House 3. Points to consider when looking for a home 4. House Furnishings	Jan. Feb.	MP - Housing in America - EBF 11 min. Sd. BU - $1.00 MP - Problems in Housing - EBF 11 min. Sd. BU - $1.00

Education for Family Life - Grade XII - continued

Housekeeping 1. Nutrition a. needs of body b. basic foods c. food habits d. meal planning and preparation	March	MP - Something you didn't eat-OWI 12 min. Sd. YMCA - $.50 MP - Food and Nutrition - EBF 11 min. Sd. BU - $1.00 MP - Safety in the Home - EBF 11 min. Sd. BU - $1.00
2. Purchasing and care of household equipment 3. Housekeeping duties 4. Safety in the home.		
Child Care and Training 1. Physical growth 2. Mental growth 3. Character growth 4. Educational growth	April May	MP - Passport to Health - USPH Svc. 20 min. Sd. YMCA - Free MP - Care of Newborn Baby - Castle 20 min. Sd. Free MP - Few Tests of Child Intelligence - EBF 11 min. Sd. BU - $1.00 MP - Early Social Behavior - EBF 11 min. Sd. BU - $1.00
Personality Grooming Manners Character Charm	June	MP - Dinner Party - Simmel-Meservey Not avail. at nearby film lib. MP - Let's Give a Tea - Simmel Meservey MP - Junior Prom - Simmel-Meservey

RELATED MOTION PICTURES AND FILMSTRIP

FOR THE TEACHING OF

SPANISH
(Grade XI)

OUTLINE OF COURSE OF STUDY (Units of Work)	MONTH Taught	RECOMMENDED FILMS AND FILMSTRIP
Pronunciation Introduction to Spanish Speaking Countries Introductory Grammar	SEPT & OCT.	MP An Introductory Lesson In Spanish 15 min. Sd. $3.00 Audiovision Language Teaching Service 74 Trinity Pl. NYC MP The Spanish Speaking World - BH 10 min. VES $1.50
Continuation of Grammar Conversations & Verb Forms Cultural Material on Mexico	NOV. & DEC.	MP Cuionavaca - OIAA 10 min. Sd. VES 50¢ MP Mexico City - OIAA 11 min. Sd. VES 50¢
Continuation of Grammar Cultural Material on Peru	JAN. & FEB.	MP Lima - OIAA 17 min. Sd. VES 50¢
Continuation of Grammar Study Cultural Matter on Fiestas of Mexico	MAR. & APR.	MP Bountious Earth - OIAA 9 min. Sd. VES 50¢ MP Sky Dancers of Papantla OIAA 10 min. Sd. VES 50¢
Grammar Continued Towns of Mexico	MAY & JUNE	MP Guadalajsa - OIAA 18 min. Sd. VES 50¢ MP Town in Old Mexico - OIAA 10 min. Sd. VES 50¢

RELATED MOTION PICTURES AND FILMSTRIP

FOR THE TEACHING OF

SPANISH
(Grade XII)

OUTLINE OF COURSE OF STUDY (Units of Work	MONTH Taught	RECOMMENDED FILMS AND FILMSTRIP
Review of Pronumciation, grammar, and verb forms. Readings on Pan-American highway.	SEPT & OCT.	MP BUENOS DIAS, CARMELITA (Am. Classroom Series) 15 min. Sd. VES $3.00 MP Pan-Americana 10 min. Sd. VES $1.50 MP Our Neighbors Down the Road. - OIAA 43 min. Sd. VES 50¢ MP By Highway to the Canal Pan. Am. Union. 22 min. Sd. Ohio Free
Grammar and Verb Study Readings in Spanish American History and Exploration	NOV. & DEC.	MP Down Where the North Begins. - OIAA 21 min. Sd. VES 50¢
Continuation of grammar and Verb Study. Reading of One Act Plays laid in Spain.	JAN. & FEB & MAR	
Reading of La Histeria Comiea de Espana Review of Grammar and Vocabulary	APR. MAY & JUN.	MP FEATURE FILM "Picaflor" -ECA $15.00

RELATED MOTION PICTURES AND FILMSTRIP
FOR THE TEACHING OF
SCIENCE
(Grade Seven)

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILMSTRIP
Fall Flower Study	Sept.	Seed Dispersal - EBF 10 min. Sd. BU $1.00 Spiders - EBF 10 min. Sd. BU $1.00
Bird Migration	Oct.	High Over the Borders - OIAA 20 min. Sd. YMCA free
Fall Tree Study		Trees and Men - Weyerhaeuser 44 min. Sd. YMCA free Trees and Homes - Weyerhaeuser 33 min. Sd. YMCA free
Star Study	Nov.	The Solar Family - EBF 10 min. Sd. BU $1.00 The Moon - EBF 10 min. Sd. BU $1.00
Earth Distances, Movements and Atmospheric Conditions	Jan.	Weather (Univ.of Chicago) EBF 10 min. Sd. BU $1.00 Prophet Without Honor - TFC 10 min. Sd. BU $1.00
Winter Birds	Feb.	Birds of Prey - EBF 11 min. Sd. BU $1.00
Insects Helpful to Man		The Honeybee - EBF 11 min. Sd. BU $1.00
Shell Life	Mar.	Sea - TFC 15 min. Sd. Not available at nearby film lib. Strange Sea Shells - Post 1945 10 min. Sd. VES $1.50
Spring Bird Study		Song Birds of the North Skibo 9½ min. Sd. BU $1.00 Nature's Songsters - Skibo 15 min. Sd. BU $1.00
	Apr.	Thrushes & Their Relatives EBF 11 min. Sd. BU $1.00

RELATED MOTION PICTURES AND FILM STRIP
FOR THE TEACHING OF
SCIENCE
(Eighth Grade)

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILMSTRIP
Science in Our Lives	Sept.	Men of Science 4 reels; Dept. of Educ. Am.Museum of Natural Hist. White Sands National Park 1 reel; BU
The World of Water (a) Is Water Necessary to Life?		Desert in Bloom 10 min. Sd. B&H VE $1.50 Swampland 10 min. Sd. YMCA $1.50
(b) Creatures that Live in Water	Oct.	Beach & Sea Animals - EBF 10 min. Sd. BU $1.00 Pond Insects - EBF 10 min. Sd. BU $1.00 Tiny Water Animals - EBF 10 min. Sd. BU $1.00
(c) Water is a Solid		Geological Work of Ice 11 min. Sd. BU $1.00
	Nov.	Along Our Shores 15½ min. Sd. US Coast Guard free Coast Guard Academy 22 min. US Coast Guard, free
(d) Water in Your Community		Water, Friend or Enemy (CIAA) 1 reel Sd. YMCA 50¢ City Water Supply - EBF 11 min. Sd. BU $1.00
(e) Water for Power	Dec.	Water Power - EBF 11 min. Sd. BU $1.00 Romance of a River 20 min. Sd., Ontario hydroelectric, free
(f) The Water Harvest		Alaska's Silver Millions 34 min. Sd. American Can free
(g) Conservation of Water		Work of Running Water - EBF 11 min. Sd. BU $1.00

Science (Grade eight) - Continued

		Work of Rivers - EBF 11 min. Sd. BU $1.00 Ground Water - EBF 11 min. Sd. BU $1.00
The World of Air (a) Dust in The Air (b) Uses	Jan.	Work of the Atmosphere -EBF 11 min. Sd. BU $1.00 Krakaton - TFC 25 min. Sd. BU $2.00 Compressed Air - EBF 11 min. Silent BU $1.00
The World of Rock	Mar.	Crystallization - B&H 20 min. Sil. VES $1.50 The Earth's Rocky Crust-EBF 11 min. Sd. BU $1.00 Limestone and Marble - EBF 11 min. Sil. BU $1.00 Limestone Caverns (Coronet) 11 min. Sd. VES $2.00 Volcanoes in Action (Univ. of Chicago) 10 min. Sd. BU $1.00
(a) How Soil is Made	Apr.	Wearing Away of the Land-EBF 10 min. Sd. BU $1.00 Sand and Clay - EBF 15 min. Sil. BU $1.00 Sculpture in Stone - B&H 15 min. Sil. BU $1.00
The World of Living Creatures	May	Flowers at Work - EBF 10 min. Sd. BU $1.00 Dodder - EBF 10 min. Sd. BU $1.00

RELATED MOTION PICTURES AND FILMSTRIP

FOR THE TEACHING OF

BIOLOGY
(Grade Ten)

OUTLINE OF COURSE OF STUDY (Units of Work)	Month Taught	RECOMMENDED FILMS AND FILMSTRIP
General Introduction (a) Divisions of science (b) Organic and Inorganic (c) living vs. non living (d) Functions of life (e) Cells, tissues & Organs	Sept.	MP Reactions in Plants & Animals EBF 11 min. Sd. BU $1.00 MP How Nature Protects Animals EBF 11 min. Sd. BU $1.00
Preview of Animal Kingdom (a) classification Arthropods (a) Insects (b) Crustacaens	Oct.	MP Animal Life - EBF 11 min. Sd. BU $1.00 MP Butterflies - EBF 11 min. Sd. BU $1.00 MP The Housefly - EBF
(c) Spiders Protozoans (a) Amoeba (b) Paramecium Metazoans (a) Sponges, jellyfish etc. (b) Annelids (worms) (1) earthworm (2) parasitic worms (c) Molluscs (d) Fish (e) Frogs and Toads (f) Reptiles	Nov.	11 min. Sd. BU $1.00 MP Killers - TFC 12 min. Sd. BU $1.00 MP City of Wax - TFC 12 min. Sd. BU $1.00 MP Tiny Water Animals - EBF 11 min. Sd. BU $1.00 MP Beech and Sea Animals - EBF 11 min. Sd. BU $1.00 MP The Frog - EBF 11 min. Sd. BU $1.00
(g) Birds (h) Mammals	Dec.	MP Birds of Prey - EBF 11 min. Sd. BU $1.00 MP Reproduction among Mammals EBF 11 min. Sd. BU $1.00
Human Biology (a) Skeleton (b) Posture (c) Joints & Muscles (d) Foods & Nutrition (e) Digestion	Jan.	MP Posture & Exercise - EBF 11 min. Sd. BU $1.00 MP Foods & Nutrition - EBF 11 min. Sd. BU $1.00 MP Digestion of Food - EBF 11 min. Sd. BU $1.00

Biology - continued

(f) Respiration	Feb.	MP Mechanisms of Breathing - EBF 11 min. Sd. BU $1.00
(g) Excretion		MP Control of Body Temperature - EBF 11 min. Sd. BU $1.00
(h) Circulation		MP Heart & Circulation - EBF 11 min. Sd. BU $1.00
(i) The Nervous System		MP The Nervous System - EBF 11 min. Sd. BU $1.00
(j) Public Health & Immunization	March	
(k) Common Diseases		MP Tuberculosis - EBF 11 min. Sd. BU $1.00 MP Pneumonia - EBF 11 min. Sd. BU $1.00 MP Body Defenses Against Disease EBF 11 min. Sd. BU $1.00
Simple Plants	April	
(a) Bacteria (b) Algae (c) Yeast, Molds, etd.,		MP Fungus Plants - EBF 11 min. Sd. BU $1.00
Mosses and Ferns		MP Plant Growth - EBF 11 min. Sd. BU $1.00
Seed Plants	May	
(a) Roots (b) Stems		MP Roots of Plants - EBF 11 min. Sd. BU $1.00
(c) Leaves		MP Leaves - EBF 11 min. Sd. BU $1.00
(d) Flowers (e) Fruit		MP Flowers at Work - EBF 11 min. Sd. BU $1.00
(f) Seeds	June	MP Seed Dispersal - EBF 11 min. Sd. BU $1.00
Heredity and Eugenics		MP Heredity - EBF 11 min. Sd. BU $1.00
Review and Examination		

RELATED MOTION PICTURES AND FILMSTRIP

FOR THE TEACHING OF

CHEMISTRY
(Grade XI)

OUTLINE OF COURSE OF STUDY (Units of Work)	MONTH Taught	RECOMMENDED FILMS AND FILMSTRIP
I Introduction A. Changes in Matter B. Alchemy C. Scientific Method D. Elements, Compounds & Mixtures. II Some Common Nonmetals A. Oxygen B. Hydrogen	SEPT.	MP Molecular Theory of Matter - EBF 11 min. SD. BU $1.00 MP C hemistry of a Changing World - EBF 11 min. Sd. BU $1.00
C. Water (1) Comp., by weight (2) Comp., by volume (3) Purification (4) Solutions III Atoms, Formulas & Equations A. Dalton's Theory B. Symbols C. Valence D. Formula Writing E. Chemical Equations F. Types of Reactions G. Problems (1) Percentage Comp., (2) Weight & Weight (3) Gas Laws (4) Weight & Volume IV Other Non-Metals A. Halogen Family	OCT.	MP Properties of Water-Coronet 12 min. Sd. BU $1.00
B. Acids, Bases & Salts (1) Neutralization (2) Normal Solutions C. Sulfur (1) Hydrogen Sulfide (2) Sulfur Dioxide (3) Sulfuric Acid	NOV.	MP Sulfur and Its Compounds Coronet 12 min, Sd. BU $1.00
V Theory of Atomic Structure	DEC.	

Chemistry - continued

A. Modern Atomic Theory 1.Units of Structure 2.Atomic Number 3.Periodic Law 4.Ionic Valence 5.Chemical Combination 6.Transmutation of metals 7.Radioactivity B. Ionization Theory 1. Electrolysis 2. Hydrolysis 3. Reversible Reactions 4. Factors affecting Equilibrium. 5. Completion Reactions	DEC.	MP Velocity of Chem. Reactions EBF 11 min. Sd. BU $1.00 MP Catalyis 11 min. Sd. BU $1.00 MP Electro-Chemistry - EBF
VII Nitrogen Compounds A. The Atmosphere 1. Air as a Mixture 2. Nitrogen & Rare Gases B. Nitrogen Compounds 1. Ammonia 2. Oxides of Nitrogen 3. Nitric Acid VIII Carbon (AllOtropes) A. Carbon Dioxide B. Carbon Monoxide C. Fuels 1. Coal Gas, Producer gas, Water gas, & Acetylene	JAN.	
IX Metals & Their Relative Activity 1. Metallurgy Methods 2. Replacement Series 3. Spectrum Analysis A. Aluminum 1. Hall's Success with Electrolysis 2. Theremit 3. Uses B. Iron & Steel 1. Special Steels 2. Wrought Iron 3. Cast Iron	FEB.	MP Unfinished Rainbows - ACOA 30 min. Sd. MTPS Free MP Steel, M ans Servant - USBM 40 min, Sd. Free MP ElectroChemistry - EBF 11 min. Sd. $1.00
4. Important Compounds (a) oxidation (b) reduction	MAR.	MP Oxidation & Reduction - EBF 11 min. Sd. $1.00

Chemistry - continued

C. Copper	MAR.	
D. Nickel		
E. Zinc		
F. Gold		
G. Mercury		
H. Rare Metals	APRIL	MP Tin from Bolivia USBM
I. Active Metals		21 min. Free.
(1) Sodium & Potassium		
(2) Calcium & Magnesium		
(a) Hard Water		MP Magnesium - Atlas
X Glass & Abrasives		40 min. BU $1.00
XI Organic Chemistry		
A. Hydrocarbons		
B. Derivatives	MAY	
C. Petroleum		MP Oil from the Earth -Shell
D. Soap		20 Min Sd. Free
XII Colloids		MP Colloids EBF
		11 min. Sd. BU $1.00
		MP Soap - EBF
XIII Review & Examination		11 min. Sd. BU $1.00

RELATED MOTION PICTURES AND FILMSTRIP FOR THE TEACING OF PHYSICS

(Grade XII)

OUTLINE OF COURSE OF STUDY (Units of Work)	MONTH Taught	RECOMMENDED FILMS AND FILMSTRIP
I MECHANICS		
A. Matter	SEPT.	
1. Properties		FS Matter -J&H
2. Measurement		
(a) English		MP Molecular Theory of Matter
(b) Metric		EBF
3. Density		11 min. Sd. BU $1.00
B. Liquids		FS Density & Sp. Gravity -J &H
1. Pressure		FS Liquid Pressure - J&H
2. Pascal's Principle		FS Transmitting Pressure thru
3. Archimedes Laws		Liquids - J&H
4. Specific Gravity		FS Buoyance & Archimedes
C. Gases		Principle - J&H
1. Atmosphere		FS Sp. Gr. of Solids &
(a) Barometers	OCT.	Liquids - J&H
(b) Weather Forecasting		FS Atmospheric Pressure - J &H
2. Boyle's Law		FS Barometers & Weather - J&H
3. Pneumatic Appliances		FS Gas Pressure - J&H
4. Balloons		
D. Molecular Physics		
1. Molecular Motion		
2. Elasticity		
3. Hooke's Law		
4. Cohesion & Adhesion		
5. Capilliarity		
6. Adsorption		FS Gravitation - J&H
E. Gravitation & Weight & Forces		FS Force - J&H
1. Angular Forces		FS Force and Velocity as
(a) Composition		Vectors - J&H
(b) Resolution		MP Theory of Flight - EBF
(c) Sailboat		11 min. Sd. BU $1.00
(d) Airplane		FS Bernauli's Principle - J&H
2. Bernauli's Principle		
3. Parallel Forces	Nov.	
4. Center of Gravity & Equilibrium		

Physics - continued

F. Types of Motion	NOV.	FS Uniform Motion - J&H
1. Uniform velocity		FS Uniform Accelerated
2. Accelerated Motion		Motion - J&H
3. Rectilinear Motion		
4. Curvilinear Motion		FS Newton's Laws of Motion
5. Projectiles		J&H
6. Newton's Lawa of Motion		
G. Simple Machines		MP Simple Machines - EBF
1. Levers & Wheel Axle		11 min. Sd. BU $1.00
2. Inclined Plane & Screw	Dec.	
3. Pulleys		
4. Mechanical Advantage		
5. Work Principle		
H. Friction		
1. Coefficient		
2. Efficiency		
I. Energy & Power		MP Energy and its Transform-
1. Kinetic & Potential		ations - EBF
2. Conservation of energy		11 min. Sd. BU $1.00
II HEAT		
A. Expansions	JAN.	
1. Thermometers		
2. Coefficient of expansion		MP Fuels & Heat - EBF
3. Unequal expansion		11 min. Sd. BU $1.00
(a) Thermostat		
4. Abnormal exp. of water		
5. Gasses		
6. Charles' Law		
7. Theory of Heat		
B. Transmission of Heat		
1. Conduction		MP Distributing Heat - EBF
2. Convection		11 min. Sd. BU $1.00
3. Radiation		
C. Measurement of Heat		
1. Heat Units		
2. Specific Heat		
3. Method of Mixtures		
4. Heat of Fusion	FEB.	
5. Heat of Vaporization		
6. Mechanical Equiv., of Heat		MP Thermodynamics - EBF
7. Gas & Steam Engines		11 min. Sd. BU $1.00
8. Forms of Weather		
III MAGNETISM & ELECTRICITY		
A. Magnets		
1. Laws of Magnets		

Physics - continued

2. Declination	FEB.	
3. Fields		
4. Induced Magnetism		
5. Earth's "		
B. Static Electricity	MAR.	
1. Electron Theory		MP Electrostatics - EBF
2. Laws		11 min. Sd. BU $1.00
3. Induction		
4. Condensers		MP Electrons - EBF
C. Electric Currents		11 min. Sd. BU $1.00
1. Water Analogy		
2. Electrical Units		
3. Ohm's Law		MP Electrodynamics - EBF
4. Measurement of Resistance		11 min. Sd. BU $1.00
D. Electric Circuits		MP El., of Elec. Circuits - E BF
1. Parallel Circuits		11 min. Sd. BU $1.00
2. Series Circuits		MP Series & Parallel Circuits
3. Batteries		EBF
4. Dry and Storage Cells		11 min. Sd. BU $1.00
E. Magnetic and Chemical Effects		
1. Electro magnet		MP Primary Cell - EBF
2. Telegraph	APR.	11 min. Sd. BU $1.00
3. Electric Bell		
4. Ammeter & Voltmeter		
5. Electrolysis		
6. Electroplating		
F. Power, Heating & Lighting		MP Electrochemistry - EBF
1. Problems		11 min. Sd. BU $1.00
2. Heating		
3. Lighting		
4. Electric Arc		
G. Generators & Motors		
1. Principle of Farady		
2. Cycle		
3. D.C. & A.C. Generators		
4. Principle of Motor		MP What is Electricity - West .,
5. Back E.M.F.		20 min. Sd. VES $1.50
6. Starting of lg. motors.		
H. Induction coils & transformers		
1. Spark Coil		
2. Telephone		
3. Transmission of Electricity		
IV SOUND	MAY	MP Sound Waves & Sources -EBF
A. Nature of Sound		11 min. Sd. BU $1.00
1. Transmission		

Physics - continued

2.Cause	May	
3. Wave Motion		MP Fundamental of Acoustics - EBF
4.Echoes & Acoustics		11 min. Sd. BU $1.00
B. Musical Scales & Instruments		
1. Music vs. noise		
2. Resonance		
3. Beats		
4. Organ Pipes		
5. Strings		
V LIGHT		
A. Nature of Light		
1. Transmission		
2. Shadows		
3. Intensity		
4. Plane Mirrors		
5. Curved Mirrors		
B. Refraction of Light		
1. Speed of Light		
2. Index of refraction		
3. Critical Angle		
4. Concave Images		
5. Convex Images		
6. Defects of Lenses		MP Light Waves & Their Sources
7. Human Eye		EBF
8. Real & Virtual Images		11 min. Sd. BU $1.00
C. Dispersion of Light		
1. Theory of dispersion		
2. Color --Wavelength		MP Curves of Color - GE
3. Spectroscope		10 min. Sd. GE Free
4. Kinds of Spectrum		
(a) Solar	June	MP Polarized Light - Polariod
(b) Continous		20 min. Sd. Polaroid Free
(c) Bright Line		
5. Frauenhofer Lines		
6. Theory of Light		

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