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(Compiled by *National Diet Library*)

Excerpt from "The Bulletin of the National Association of Secondary-School Principals", October 1949.

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Imperative Need Number 1

All youth need to develop saleable skills and those understandings and attitudes that make the worker an intelligent and productive participant in economic life.

1. The school seeks to develop in all students an understanding of the interdependence of workers and the contributions of all workers to the social and economic welfare of the nation.
2. The school has a plan by which students, employers, parents, and community agencies work together in developing the student work program.
3. The school stresses the dignity of both essential and creative labor, giving equal recognition to all work which is well done.
4. The school strives to develop in pupils an adaptive attitude toward technological developments and the occupational changes which are brought about by new inventions.
5. The school provides for all students who plan to go to work before completing high school, or immediately after graduation, instruction in such pertinent areas as the channels through which jobs may be secured and the techniques of applying and being interviewed as an applicant.
6. The school provides for experiences through which students may develop understandings of the individual's role, responsibilities, and methods of functioning in labor and management organizations: talks by employers and employees, study of community groups, motion pictures, etc.
7. The school gathers information about each individual student's interests, abilities, aptitudes, and personal characteristics for use in helping the student determine a field of work in which he may be successfully employed: diversified occupations program, tests, observation, etc.
8. The school provides opportunity for students to evaluate critically, in terms of their purposes, interests, and capabilities, employment opportunities and requirements of many occupations through study, field trips, job surveys, discussions with labor and management personnel, etc.

- 9. The school emphasizes the development of abilities in basic occupational processes and with basic tools and machines.
- 10. The school maintains contact with major occupational fields to keep its vocational program up-to-date in regard to new methods and procedures and technological developments.
- 11. The school enlists employer and parent co-operation in evaluation of pupils' work experiences in terms of student growth in attitudes toward work and fellow workers and quality of work.
- 12. The school helps to arrange for supervised work experience, in terms of individual purposes, interests, and capabilities, for an increasing number of youth regardless of academic, economic, or social status.
- 13. The school bases its program of vocational education on continuing studies of present and probable future types of work available to youth in the local and regional community.
- 14. Space and equipment are available in school and/or community for an increasing number of youth to receive training in work for the production and distribution of goods and as a civic service.
- 15. The school uses the work experiences of its students to enrich the instructional programs of both employed and unemployed youth in school.
- 16. The school evaluates its program for developing saleable skills in terms of pupil ability to find and hold jobs suited to individual interests and abilities.

Additional characteristics, if any suggested by local evaluation committees:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below. (For example, if there is a vocational high school in a city, its other high schools may not rate as well on this need as they otherwise would.)

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Imperative Need Number 2

All youth need to develop and maintain good health and physical fitness.

1. The school provides for varied physical activities and encourages students to participate, not only for the physical exercise but also to provide for active social life and satisfying leisure-time activities.
2. The school provides for periodic physical examinations covering all students and leading to corrective action as needed.
3. Health records of individuals are complete and up-to-date, and pertinent facts are made known to those responsible for any pupil's guidance.
4. The school approaches the problem of the unadjusted youth as it does the physically ill, seeking causes and making provisions leading to satisfactory adjustments.
5. The school designs its health program to stimulate and supplement home health care--not to supplant in.
6. Courses entitled "Health" may be offered for all, but health instruction pervades the school program and is continuous, directly or indirectly, throughout the pupil's school life.
7. The school, recognizing the importance of mental health, supports student activities of a nonphysical recreation type if they answer social and/or emotional needs of pupils.
8. The school provides physical education, recreational, health service, and instructional areas which are designed and equipped to stimulate good health practices.
9. The school provides ample and equipped playground space.
10. The school provides suitable health activities for all physically handicapped pupils under its jurisdiction.
11. The school evaluates its health program in terms of better health among its pupils as indicated by means of periodic physical examinations.
12. The school bases its health program on continuing studies of the physical and emotional needs of pupils and adults in the community it serves.
13. The school works with private health organizations and public health agencies in planning and carrying out its health program.

- 14. The school plans and conducts its health activities in a manner designed to educate pupil, parent, and community to assume individual and group responsibility for personal and community health.
- 15. The school offers students experiences to learn about and/or practice safety, child-care, first-aid, personal hygiene and health, the work of the local, state and Federal services, group health plans, hospitalization insurance, etc.
- 16. The school's lunch period is planned to provide favorable conditions for putting into practice whatever pupils have been taught concerning foods and food habits.
- 17. The school provides nutritious lunches for needy pupils at minimum or no cost and without embarrassment to them.
- 18. The school emphasizes use of health-service staff resources to help build good health as well as to repair broken health.
- 19. The school works to remove its own blocks to good mental health by providing a curriculum appropriate for each youth, seeking to develop self and group discipline, measuring pupil progress in terms of self-growth, etc.
- 20. The school, by general design of the building, contributes to the health and safety of students through proper lighting, building materials which facilitate cleanliness, varied color schemes, etc.
- 21. School and community facilities for physical education and/or recreation are in operation throughout the entire year.
- 22. The school arranges for medical treatment, when necessary, through inter-action among school, community health agencies, and professional groups.
- 23. The school evaluates its health program in terms of broadness of youth participation in health-building activities.

Additional characteristics, if any, suggested by local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 3

All youth need to understand the rights and duties of the citizen of a democratic society and be diligent and competent in the performance of their obligations as members of the community and citizens of the state and nation.

1. The school bases its program of citizenship education on the values to which American democracy is committed and on a continuing study of civic, social, and economic problems in our society.
2. The school and community provides for equal educational opportunity for all young people as one practical demonstration of the rights and duties of citizens in a democratic society.
3. The school provides opportunities for pupils to practice with the tools of citizenship: group discussion, the ballot, representative government, techniques of inquiry, group action, etc.
4. The school provides opportunities for pupils to develop skills in defining issues, in gathering and sifting information, in appraising possible solutions, and in proposing plans of action.
5. The school provides opportunities for pupils, appropriate to their maturity and experience, to observe, study, and evaluate the political, social, and economic conditions of their own community and the larger social scene.
6. The school interrelates the study and the active experiences of its pupils in civic enterprises.
7. The school provides opportunities for students to assume responsibility in executing group plans and in evaluating group action.
8. Through counseling, the school helps each pupil to achieve understanding of his aptitudes and capabilities in order that he may contribute most fully to his own development and the welfare of others.
9. The school supports the development of organizations which promote the exercise of student responsibility through democratic procedures.
10. The school program provides opportunities for pupils and teachers to plan together units of work and phases of school life.
11. The school offers students opportunities to select leaders on the basis of their qualifications for the work they are to do.
12. The school gives recognition to the competence and personal worth of pupils regardless of their social, economic, and academic status.

- 13. The school offers pupils help in interpreting their experiences and their organizations in the larger setting of community, state, national, and world citizenship.
- 14. The school seeks the co-operation of parent, interested citizens, and community groups, as well as pupils, in planning and developing the citizenship program.
- 15. The school conceives of democratic education as a life-long process and its facilities, therefore, are made available to groups and individuals beyond school age.
- 16. The school uses all activities to help build the attitudes, skills, and understandings needed by the citizens.
- 17. The school encourages students to initiate school and community projects, plan for them, seek adult counsel as needed, and bear the responsibility for carrying out the projects.
- 18. The school delegates an increasing number of areas of school life to the student body for management and control--areas in which pupils have real responsibility.
- 19. The school evaluates its citizenship program largely in terms of student action, evidence being sought in class activities, extra-class activities, and in out-of-school situations.
- 20. The school deals realistically with controversial issues that are of concern to students.
- 21. The school provides the instructional aids and facilities which are needed in informing young people concerning civic problems, and stimulating personal concern for the solution of these problems as well as for the proper functioning of the school as a democratic community.
- 22. The school provides systematic teaching of the principles of democratic citizenship and opportunities for pupils to study reflectively the success with which they are conducting their group activities according to these principles.

Additional characteristics, if any, suggested by local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 4

All youth need to understand the significance of the family for the individual and society and the conditions conducive to successful family life.

1. The school provides situations designed to develop wholesome boy and girl friendships not only in the classroom but also in after-school activities.
2. The school provides guidance services designed to help shy boys and girls learn the skills of participation in mixed social activities.
3. The school seeks close co-operation with all homes in order that school and home may work toward mutually approved goals of family living.
4. The school makes its facilities available to older youth and adults for group activities designed to improve family relationships.
5. The school encourages students to investigate, under guidance, those personal problems which to them are of immediate concern.
6. The school bases its program of education for family living on continuing studies of the home life needs and aspirations of pupils and parents in the community.
7. The school's program is developed in such a manner that teachers become increasingly alert to seize opportunities to improve pupils' understandings of the responsibilities of family members.
8. The school provides simple and practical homemaking experiences for both girls and boys.
9. The school makes systematic provisions for boys and girls both to play and to work together.
10. The school evaluates its program for improved family living in terms of pupil projects designed to improve home and community living.
11. The school evaluates its program in family living in terms of pupil's attitudes toward factors which strengthen or weaken the family unit.
12. The school evaluates its program for improved family living in terms of pupils' use of well-thoughtout standards for the selection of both necessities and luxuries which may improve family living.

- 13. In developing and evaluating the program for family living, the school co-operates with the more effective community agencies concerned with improving family life.
- 14. The school devotes a portion of its program in family living to helping pupils become aware of the interacting influences of home and community.
- 15. The school requires that all pupils experience at varying maturity levels until concerned with the over-all development of the individual.
- 16. The school evaluates its program for improved family living in terms of pupils' assumption of actual responsibilities in the home and community.
- 17. The school provides a continuous in-service education program which will enable teachers to help pupils individually and through classroom procedure to discover answers to questions concerning the development of their own bodies and the physiology of reproduction.
- 18. The school provides ample opportunity for all teachers to understand the social and economic structure of the community with special reference to family life.
- 19. The school evaluates its program for improved family living in terms of evidence shown by students of a more reflective and better informed approach to problems of courtship and marriage.

Additional characteristics:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 5

All youth need to know to purchase and use goods and services intelligently, understanding both the values received by the consumer and the economic consequences of their acts.

1. The school bases its program of consumer education on continuing analyses of the immediate and practical consumer problems of pupils and the social-economic implications of such problems.
2. The school uses several areas of the curriculum and a diversity of means to help pupils become alert and responsible consumers.
3. The school provides experiences through which pupils may develop a consumer's concern and a sense of responsibility for wise spending of tax dollars and use of the services they buy.
4. The school provides opportunities for each pupil to check his specific consumer actions against his maturing philosophy of values.
5. The school makes systematic effort to stimulate pupils to want what is best for the individual and society in every phase of living: material (means considered), cultural (available budget considered), moral, etc.
6. The school makes systematic effort to develop consumers who can protect their own interests firmly, yet retain pleasant relationships with those who provide goods and services.
7. The school seeks to develop in pupils an appreciation of the interdependence of people in providing and obtaining goods and services.
8. The school provides opportunities for students to become acquainted with private and public agencies designed to help the consumer make better use of existing resources.
9. The school provides opportunities for students to engage in budgeting and managing their individual and group funds.
10. The school provides opportunities for students to develop a sense of relative values through real experiences in making selections.
11. The school provides experiences by which students may become aware of the abuses practiced by both producers and consumers and methods of eliminating such abuses.
12. The school promotes group projects designed to acquaint pupils with an appreciation of their personal influence and the potentialities of group action in raising standards of living in their community.

- 13. The school evaluates pupil growth in consumer activities in terms of pupil ability to find sound consumer information when they need it.
- 14. The school tries to determine whether or not students are growing in their ability to view their economic activities of social consequences as well as individual gain.
- 15. The school provides opportunities for pupils to become acquainted with goods and services through contact with the real thing.
- 16. The school places emphasis on the development and use of guides for shopping: reading labels, buying only what is needed, etc.
- 17. The school provides opportunities for students to appraise goods in terms of their actual performance.
- 18. The school demonstrates, both materially and culturally, what is best in various areas of modern life.

Additional characteristics suggested by local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 6

All youth need to understand the method of science, the influence of science on human life, and the main scientific facts, concerning the nature of the world and of men.

- 1. The school provides experiences for all students designed to help them develop the habit of searching for reasonable explanations to natural phenomena rather than blindly relying upon superstition and pseudo-science.

2. The school makes provisions for interested students to go deeper into the implications of science; science clubs, competent help in individual experimentation, etc.
3. The school provides space and facilities within its plant for pupils to work with scientific equipment and display science materials for the use of other interested persons.
4. The school provides for experimental work through which pupils can observe and determine principles of science by their own efforts.
5. In so far as possible, the school provides for pupil experience with actual scientific equipment rather than relying only upon study of pictures and reading materials.
6. The school provides time in the science program for the appreciative study of the contributions of great scientists to human welfare.
7. The school bases much of its science program upon activities of living which reveal the relationships of science to life and offer practice in applying the methods of science.
8. The school offers science experiences on the senior high-school level designed to serve both the immediate and anticipated future needs of interested students.
9. The school provides for science study related to problems of mental and physical development of the individual and the maintenance of sound mental and bodily health.
10. The school carries on its science program through field trips, shop and laboratory activities, and discussion--not alone through lectures and the use of laboratory manuals.
11. The school provides opportunities for pupils to practice the use of scientific methods and attitudes in attacking economic, political, and social problems.
12. The school provides opportunities for students to study directly the physical resources of their community.
13. The school promotes throughout the curriculum the use of materials and methods of science as they affect problems studied by the pupils.
14. The school provides opportunities for students to examine at first hand the effects of science upon occupations in the community, resulting increases in leisure time, and changed standards of living.
15. The school makes its science experiences practical in order that pupils may see the need of scientific knowledges and practices.

- 16. The school evaluates its science program partially in terms of able students who are stimulated to continue work in science beyond high school.
- 17. The school stresses science teaching which will help each pupil understand science as a factor in his daily life--not a magical something only for his mystification.

Additional characteristics, if any, suggested by local evaluation committee.

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 7

All youth need opportunities to develop their capacities to appreciate beauty in literature, art, music, and nature.

- 1 The school looks at itself constantly for possibilities to improve and beautify plant and site as the setting in which the staff has to work to cultivate appreciation of beauty.
- 2. The school provides opportunities for pupils to utilize their talents at varying levels of competence both in the classroom and before other student groups and the public.
- 3. The school places emphasis in these areas upon social and functional use of aesthetic materials rather than upon aesthetic perfection in these fields, but talented pupils receive encouragement toward perfectionism.
- 4. The school insures that pupils are kept aware of community activities in these areas and that the community is aware of school activities designed to develop beauty appreciation.
- 5. The school program draws on literature, art, music, and nature to make experiences of school life and daily living more meaningful, enjoyable, and emotionally satisfying to pupils.

6. The school accepts the aesthetic judgements of students as starting points for the development of higher levels of appreciation, but fosters growth in these judgments through exploratory opportunities.
7. The school provides opportunities for pupils to increase their appreciations through creative work in such areas as landscaping, poetry, the drama, music, etc.
8. The school provides opportunities for all pupils to participate to some degree in various musical activities.
9. The school provides extra-class activities to supplement regular classroom work wherever interest and enthusiasm warrant additional opportunities to those provided in regular class activities.
10. The school constantly studies the reactions of students to the materials in these areas to determine more adequate and appropriate choice of materials.
11. The school makes use of varied means--observation of emotional responses, comparative group studies, apparent taste changes, etc.--to evaluate the growth of the capacity of students to appreciate beauty in literature, art, music, and nature.
12. The school provides opportunities for the informal use of materials in these areas to develop in pupils the courage to try new things.
13. The school bases its program of beauty appreciation in literature, art, music, and nature largely upon community resources in these areas and the stimulation of opportunities for youth and adults to participate in aesthetic experiences within the community.
14. The school's program in these areas is designed primarily to develop competence for personal, home, and community use.
15. In the study of literature the school stresses the human qualities of literary characters through the use of audio-visual aids, comparisons with local and prominent persons in current affairs, historical heroes, etc.
16. The school uses varied means--orientation courses, aptitude tests, observation of student interests, examination of earlier records, etc.--to discover, assist, and encourage the development of special aptitudes of pupils in these fields.

Additional characteristics suggested by local evaluation committees:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 8

All youth need to be able to use their leisure time well and budget it wisely, balancing activities that yield satisfaction to the individual with those that are socially useful.

1. The school bases its program of training for the use of leisure time upon continuing studies of existing facilities for recreation in the community and the constantly emerging leisure-time needs and interests of youth and adults in the community.
2. The school provides opportunities for every student to participate in some form of leisure-time group activity such as singing, dramatics, dancing, etc.
3. The school, in selecting teachers, gives consideration to their competence in promoting and guiding leisure time pursuits.
4. The school provides space and special equipment for developing its leisure-time training program on an equal footing with other school activities.
5. The school recognizes the extent to which commercial entertainment makes demands upon pupils' leisure hours and helps pupils develop criteria for selecting from the abundance of entertainment available.
6. The school provides for student instruction and practice in the active duties of citizenship which are normally discharged in leisure time, such as voting, clean-up campaigns, attendance at civic meetings, etc.
7. The school delegates to student groups much of the responsibility for the planning and conduct of leisure-time activities.
8. The school plans its leisure-time program carefully in order that pupils may come to recognize the leisure time is not just time to be passed but that it is time to be planned for and used.
9. The school seeks close co-operation with recreational agencies in the community in order that facilities may be broadened rather than unnecessarily duplicated.
10. The school provides opportunities for students to participate in some form of sport or other physical activity.

- 11. The school is concerned with the retiring pupil and, through guidance, undertakes to help him find his interests.
- 12. The school provides instruction in and time for practice and learning of socially useful leisure-time habits which perforce may not be given in the home.
- 13. The school maintains developmental reading programs in order that pupils' increased ability to read may also bring satisfaction and enjoyment in this method of using leisure time.
- 14. The school tries to help each student develop such skill in one or more leisure-time pursuits that it will bring him a sense of achievement and recognition.
- 15. The school analyzes annually with each pupil his periodic in-school and out-of-school activities as an aid to personal achievement of balanced living.

Additional characteristics, if any, suggested by the local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 9

All youth need to develop respect for other persons, to grow in their insight into ethical values and principles, and to be able to live and work co-operatively with others.

- 1. The school is organized and administered to stimulate co-operative endeavor on the part of both students and staff.
- 2. The school exemplifies co-operative action for its students through staff action characterized by joint consideration, group decision, and collective evaluation.

3. The school provides for pupil experiences to supplement book materials, such as committee investigations, excursions into the community, audio-visual experience, group work projects, etc.
4. The school offers a program of student activities which provide pupils opportunities to achieve status with age-mates.
5. The school provides opportunities, wherever possible and expedient, for students to bring individual and group action into line with the results of study.
6. The school provides guidance services designed to help pupils into activities on the basis of observed or objectively determined need.
7. The school provides for experiences designed to help pupils and adhere to value system consistent with the tenets of our continuously developing democratic way of life.
8. The school provides opportunities for each pupil to examine himself critically and objectively to promote respect both for self and for others.
9. The school promotes the use of student-developed, understood, and approved values in solving problems in daily living.
10. The school promotes favorable school-home-community relationships in order that all may work with the students toward mutually approved goals.
11. The school's program provides for teacher-pupil planning and study of problems which grow out of daily living at school and in out-of-school life.
12. The school encourages pupil freedom of choice of a course of action on a given problem after pupil-parent-teacher conferences point out the implications of various choices open to the pupil.
13. The school evaluates pupils' respect for others in terms of pupils' ability to resolve issues to find what is sound or what is for the common good.
14. The school extends the use of the method of cooperative thinking and action to an increasing number of problems and issues that lend themselves to such treatment, no area being tabooed.
15. The school program provides for the development of youth councils or parent-teacher-pupil groups in which pupils have the opportunity for participation and leadership in the co-operative solution of problems that are important to youth.

- 16. The school adopts into its regular class program activities which contribute to the solution of life problems.
- 17. The school emphasizes in all guidance and instructional activities the need for determining what the pupil can do well rather than what he cannot do well or at all.
- 18. The school emphasizes in instruction and guidance the ethical standards necessary for full personal success and makes the standards desired by the pupil through the personal example of the teachers, recognition of good conduct, and other means.
- 19. The school elicits the unique contributions of individuals with differing backgrounds to the enhancement of group living.
- 20. The school provides for direct and/or indirect instruction in morals and ethics through literature, history, biography, etc.
- 21. The school provides for the critical examination and evaluation of differing and conflicting value systems.

Additional characteristics suggested by local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

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Imperative Need Number 10

All youth need to grow in their ability to express their thoughts clearly and to read and listen with understanding.

- 1. The school states its goals in these areas in terms of behavior which the school desires all pupils to develop to the best of their abilities.
- 2. The school places emphasis upon ordinary daily expression throughout its entire program.

3. The school provides for every pupil help and practice in the intelligent reading of newspapers, magazines, reference books, etc.
4. The school broadens the ordinary work in written expression by providing opportunities for various kinds of writing including creative writing.
5. The school seeks to discover and correct individual reading difficulties.
6. The school offers experiences designed to help pupils become increasingly adept at distinguishing fact from fiction, truth from propaganda.
7. The school uses varied techniques and materials to help develop reading abilities.
8. The school uses both formal and informal discussion techniques as means for developing free expression.
9. The school provides sense aids for use as basic sources of information: still pictures, motion pictures, radios, field trips, charts, globes, maps, film strips, slides, objects, models, etc.
10. The school provides for developmental activities and discussions in which pupils are led to define problems for themselves; then to suggest and test methods of solution.
11. The school provides opportunities for pupils to practice listening as a phase of active participation in an experience.
12. The school gives attention to the development of skills necessary for intelligent and discriminating listening.
13. The school provides opportunities for pupils to express themselves before groups in the school and community: individual talks, group discussions, radio work, newspaper writing, etc.
14. The school gives attention to the peculiarities of reading in different areas of study.
15. The school gives special attention to bashful and timid pupils, to pupils with speech defects and undesirable dialects, to help them become more adept at expressing themselves orally.
16. The school places the task of training in rational thinking and clear expression upon all classroom teachers including special interest teachers.
17. The school has ample recreational reading materials for both classroom and central library.

- 18. The school seeks to develop in pupils the ability to look at subject matter objectively, present facts which support all points of view, treat events apart from feelings and prejudices, and make decisions from careful weighing of evidence as to what is for the common good.
- 19. The school selects developmental and recreational reading materials for both classroom and central library on the bases of difficulty, worth-while content, and appeal to varied interests of pupils.
- 20. The school places major emphasis upon developing the ability to read with understanding the useful sources of information about problems of living.
- 21. The school helps the pupil to appraise his own thought processes and modes of expression.

Additional characteristics, if any, suggested by local evaluation committee:

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Are there local school or community situations which ought to be taken into account in connection with the above ratings? If so, comment below.

Do You Want to Know--

- 1. Whether curriculum content tends to meet the ten needs?
- 2. Whether community relationships tend to be good?
- 3. Whether students have opportunity to "attain status" and practice getting along with age-mates?
- 4. Whether school tends to know its students?
- 5. Whether school tends to rate well in its efforts to evaluate its activities?
- 6. Whether its organized guidance and special services tend to be adequate?

Then use the following forms where the characteristics under each need which have a bearing on the answer to each of the above six questions have been listed. Copy in the score on each characteristic called for. If you find many fours and fives, then the school tends to be strong in this particular aspect of its work. If ones and twos predominate, then you have located a phase of the school's organization which needs to be strengthened.

Meeting the Imperative Needs of Youth in Terms of Curricular Content

Need	Item	N	1	2	3	4	5	Need	Item	N	1	2	3	4	5
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Note: *An evaluation committee in an individual school may wish to add other items which members of the committee feel are pertinent to the area being appraised.

Meeting the Imperative Needs of Youth in Terms of Community Relationships

		N	1	2	3	4	5			N	1	2	3	4	5
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Note: *Items added by individual school.

Meeting the Imperative Needs of Youth in Terms of Attaining Status and Getting Along With Age-Mates

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Note: *Items added by individual school.

Meeting the Imperative Needs of Youth Terms of Knowledge Concerning Youth

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 Note: *Items added by individual school.

Meeting the Imperative Needs of Youth in Terms of Evaluative Activities

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Note: *Items added by individual school.

Meeting the Imperative Needs of Youth in Terms of Organized Guidance and Special Services

Need	Item	N	1	2	3	4	5
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Note: *Items added by individual school.

Shikoku Lower Secondary School Principal's
Convention in Kagawa

November 16, 1950
by S. Matsuura

*Print
copy
D*

Date: November 13-14, 1950

Place: Utsumi Lower Secondary School, Shozu-gun, Kagawa

Sponsorship: Kagawa Prefectural Lower Secondary School
Principal's Association

Attendants: A. Regular members - 214 (Only men)

Kagawa	-	151
Kochi	-	17
Tokushima	-	32
Ehime	-	14

B. Hearers - 50

Tokushima	-	40 including 1 woman
Kochi	-	10 men

C. Guests - 38

Mr. Kubota, Superintendent, Kagawa
Mr. Sakaguchi, Chief of Administration Section.,
Kagawa

Schedule:

The first day - November 13, 1950

0930 - 1030	Reception
1040 - 1130	Demonstration of all classes of Utsumi Lower Secondary School
1150 - 1210	Principal of Utsumi Lower Secondary School made an announcement of school administration.
	1. This school is an consolidated school of Kusakabe-cho, Nishi Village, Yasuda Village, Noma Village, and Sakaide Village.
	2. Number of pupils - 1299

3. Number of classes -	25
4. <u>Number of school staff:</u>	
Number of teachers -	39
" clerk -	1
" Lecturer	1
" Librarian	1
" Janitor	2

Most of the teachers are young, age 29 in average.
 Working years - 5 years in average
 Working years at this school - 1.5 years in average

5. School-house - The construction was started in November 1947 and completed in October, 1950
6. Important points of education in 1950
 - a. The school-house has just constructed, so the playground and other facilities should be well arranged in 1950.
 - b. Compilation of curriculum
 - c. Well arrangement of library and facilities for health and sanitation.

1318 - 1400

Opening ceremony of Shikoku Lower Secondary School Principal's Association

1. Election of chairman
2. Appointment of officers
3. Address by Mr. Ukita, President of Kagawa Prefectural Lower Secondary School Principal's Association

1406 - 1625

Conference

1. They discussed the constitution of Shikoku Lower Secondary School Principal's Association.

Submitted by Kagawa

It was left to the committee.

2. They discussed how to make positive campaigns for increasing teachers in number.

Submitted by Tokushima

3. They conferred to appeal to the prefectural Board of Education, universities and the Ministry of Education to let them make definite plans in training teachers. Because the plans is changeable according to the financial changes.
Submitted by Tokushima
4. They discussed the basic facilities of lower secondary school
Submitted by Kagawa

Lower secondary school has poor facilities now. The minimum standard should be settled as soon as possible to make every lower secondary school equal.

The budget should be secured in accordance with The Standard Educational Expenditure Law and by consolidating schools.

5. Decision of Constitution of Shikoku Lower Secondary School Principal's Association.

The draft constitution, made by the committee was read over, amended and decided, unanimously.

It was decided to hold the next meeting in Tokushima Prefecture.

1640 - 1800 Dinner
1830 - 1930 Recreation at Yasuda Village CPH

The second day, November 14, 1950

0800 - 1200 Picnic to Kankakei
1300 - 1330 Visit Noma Village CPH
Mr. Kawanishi, chief librarian explained it.
1340 - 1410 Visit the Marukin Soy Col., Noma
1440 - 1510 Visit the Olive field in the laboratory in Ikeda-cho.
1510 - 1530 Visit the Ikeda Lower Secondary School
1700 Left Tonosho port to return home

Comments:

1. Utsumi Lower Secondary School is well furnished and a model school in Shikoku.
2. Demonstration of Utsumi Lower Secondary School seemed very good but on the surface.
3. With lack of time, they could not discuss their problems satisfactorily. The subject "How to enhance the morals of lower secondary school students" submitted by Kagawa was not discussed at all.
4. They enjoyed recreation very much. Young people danced famous Yasuda dance and lower secondary school pupils sang songs and orchestra was played.
5. They had a picnic to Kankakei, and it was very useful to them to understand culture and industry.

CURRICULUM GUIDE

The Secondary Program

San Diego City Schools

SCIENCEPoint of View

Junior High School

The pupil entering junior high school faces problems of orientation to an entirely new situation. His science course along with all other experiences at this level should be geared to meet this need.

The junior high school science program attempts to develop such fundamental attitudes as open-mindedness, curiosity, perseverance, tolerance of the opinions of others, suspended judgment, and intellectual honesty.

General science given boys and girls experience in using the scientific method of solving problems.

Recognition of the relationship between cause and effect is stressed.

Fears, prejudices, and superstitions are replaced by accurate, practical, useful facts.

The science program covers a wide range of biological and physical sciences. Encouragement is given the students to apply this material to problems of personal and community living.

Science contributes to general education in the atomic age.

Science education helps to establish the concept that all races and nationalities have contributed to the inventions and discoveries of our modern world.

Science courses bring about a realization that there is much truth yet to be discovered, and stimulate a desire to search for this truth.

Expected Outcomes

Grade Seven

The pupil who has successfully participated in seventh grade science is able to--

Appreciate the value of science and its contributions to modern living.

Understand the methods used by scientists in solving problems.
Recognize the importance of scientific knowledge in explaining common superstitions.
Apply the training received in his science classes to his everyday problems of personal living.
Acquire a practical knowledge of the part that weather and climate play in his daily life and in the development of communities.
Recognize the relationships among plants, animals, and human beings and their importance to each other.
Identify common plants and animals found near his home.
Recognize many of the poisonous and semi-poisonous species of plants and animals.
Familiarize himself with the needs of plants and animals and the reasons for these needs in relation to life functions.
Understand the functions of the various system of the body and his personal responsibility in contributing to their proper development.
Develop physical and mental habits of health that lead to a happy life.
Realize how alcohol and tobacco affect the growing organism.
Understand the importance of, and need for, safety in the daily life of everyone.

Learning Experiences

The pupil who is acquiring a knowledge of seventh grade science--

What Science Is and What It Does

Explores scientific explanations of some common superstitions.
Learns the importance of the scientific method and its application in solving problems.
Studies characteristics of important scientists.
Investigates some of the contributions that science has made to our culture.

Air and Weather

Studies the composition of air and its relationship to weather.
Learns how man uses air and air pressure.
Investigates methods of measuring temperature and pressure.
Observes cloud types and learns of their relationship to the weather.
Learns about weather forecasting and its importance to us.
Studies the relationship of weather and climate to population problems.

Local Plants and Animals

Studies the conditions necessary for the existence of plant and animal life.

Investigates types of plants and animals found in the San Diego area.

Explores the uses of different forms of plant and animal life.

Learns to identify poisonous and semi-poisonous plants and animals.

Health

Discovers how the systems of our bodies function.

Makes a comparison of our bodies with machines.

Studies the relationship between a healthy body and successful living.

Learns how we build strong, healthy bodies.

Observes visual aids in the study of safety in our daily lives.

Studies the effects of alcohol and particularly tobacco on the growing organism.

Expected Outcomes

Grade Eight

The pupil who has successfully participated in the learning experiences of eighth grade science is able to--

Appreciate the importance of the contributions of the various science to daily living.

Understand the ways and importance of obtaining reliable scientific information.

Understand the relationship of the earth to other heavenly bodies.

Understand the changes that have taken place and are taking place on the earth's surface.

Understand the sources and value of the world's natural resources and the necessity for their conservation.

Understand the underlying causes of the distribution of plants and animals on the earth.

Understand how plants and animals adapt themselves to their environments.

Appreciate the necessity and importance of wild life conservation, and recognize his personal responsibility in bringing about better attitudes and conditions.

Appreciate the importance of green plants as a source of food.

Understand the meaning and importance of adequate nutrition, and begin to apply his knowledge to his own needs.

Understand the effects of alcohol and tobacco on the human body.

Appreciate the many possibilities for occupations and hobbies in scientific fields.

Learning Experiences

The pupil who is acquiring a knowledge of eighth grade general science--

Science and the Scientific Method

Learns how science is used in our community.
Studies the relationship of various physical, biological, and applied sciences.
Investigates the procedures used by scientists to obtain the evidence used in solving problems.
Learns how scientific research helps disprove superstitions, half-truths, and false information.
Acquires a knowledge of the sources of reliable scientific information in our community.

Planets and Stars

Studies the relationships of the earth, sun, and moon to the other heavenly bodies.
Learns how some celestial bodies and phenomena such as the moon and sun spots affect conditions and life on earth.
Investigates the ways by which man learns about the planets and other bodies in the universe.
Locates the principal constellations, stars, and planets in the night sky.
Learns how astronomy has aided navigators explorers, and others.

Rocks and Minerals

Acquires information concerning the formation and age of the earth.
Studies about the external and internal forces that have changed the earth's surface.
Participates in field trips to observe the work of the ocean.
Learns of the mineral resources of the earth.
Recognizes common types of rocks and learns of their development.
Recognizes common minerals and studies their uses and value.
Studies fuels and their sources.
Studies the problem of conservation of natural resources.
Investigates the field of geology as a profession or as a hobby.

Plants and Animals

Learns how plants and animals adapt themselves to their environment.
Investigates the effect of altitude and temperature on plant and animal life in the various life zones.
Learns of the kinds of plants and animals found in the life zones on land, in the zones of the oceans, and in fresh-water streams and lakes.

Learns why certain animals have become extinct.
 Studies the ways by which man is attempting to conserve plant and animal life.

Nutrition

Investigates the factors that contribute to healthful living.
 Studies the process of photosynthesis.
 Determines the foods that contribute to a balanced or adequate diet.
 Discovers how food requirements are determined.
 Learns how the body uses food as a source of energy and material for growth.
 Studies the effects of alcohol and tobacco on the body.

Expected Outcomes

Grade Nine

The pupil who has successfully participated in ninth grade science is able to

Distinguish between fact and opinion through an understanding of the scientific method.
 Make use of the principles of personal and public health.
 Understand that all materials consist of some of the chemical elements.
 Appreciate the importance of synthetic materials.
 Understand that plants are reproduced by asexual methods as well as by a sexual process.
 Understand that the genes carry the inheritable factors.
 Appreciate the importance of Mendel's laws in the production and improvement of plants and animals.
 Realize how he can help in the conservation of our natural resources.
 Understand the use of the six types of simple machines and recognize their presence in complex machines.
 Understand the meanings of the term "work" and "power" and their measurement.
 Understand Archimedes' principle and the buoyant forces on ships and lighter-than-air craft.
 Understand Bernoulli's principle as applied to the flight to heavier-than-air craft.
 Understand the importance of sound, electricity, and light in communication.
 Appreciate the fact that scientific inventions and discoveries have contributed to our high standard of living.

Learning Experiences

The pupil who is acquiring a knowledge of ninth grade science--

Uses of Scientific Knowledge Today

Learns to use the metric system--meter, liter, and gram.
Studies centigrade and Fahrenheit thermometer scales.
Learns to use scientific instruments--barometer, anemometer, and so forth.
Learns the value of scientific attitudes as protection for the consumer.
Studies the work of agencies that protect the buyer.
Performs simple chemical tests to determine the nature of fibers in cloth.
Explores the need for trained technicians as well as trained scientists.

Improvement and Conservation of Plant and Animal Life

Learns to differentiate between purebreds and hybrids, and studies Mendel's laws.
Studies the relationship of environment and heredity as factors in the development of plants and animals.
Observes how controlled experiments help determine the best food for plants and animals.
Studies the problems of conservation of plant and animal life.
Investigates the activities of agencies that protect wild life.

Improvement and Observation of Human Life

Studies the interdependence of the systems of the human body.
Learns how the life span has been lengthened through the applications of modern science.
Learns how infectious diseases can be prevented and controlled.
Studies "health heroes" such as Louis Pasteur, Robert Koch, Edward Jenner, Joseph Lister, Edward L. Trudeau, Walter Reed, and others.
Studies means of recognizing organic diseases.
Investigates the part taken by federal, state, and local health departments in the promotion of health.
Studies methods used in accident prevention and procedures used in first aid.
Studies the effects of alcohol and tobacco on the human organism.

Chemical Processes

Learns how compounds and mixtures differ.
Learns how chemical compounds can be formed from, or broken down into, their constituents.

Studies the properties and uses of some of the more common elements and compounds.
Investigates methods used by synthesize such material as bakelite, nylon, rayon, aralac, and rubber.

Transportation and Communication

Learns of the various types of energy.
Studies the uses of the six kinds of simple machines.
Learns the meaning of the terms "work" and "power" and how they are measured.
Compares primitive forms of transportation with modern forms.
Studies the problem of safety in transportation.
Studies the principles of telegraph, telephone, radio, radar, and television.
Studies Archimedes' principle and its application to water transportation and lighter-than-air transportation.
Investigates Bernoulli's principle and its applications.
Explores vocational and avocational possibilities in transportation and communication.

Point of View

Senior High School

Science courses at the senior high school level attempt to integrate a growing knowledge of the external world with better understanding of the problems of our dynamic society.

Science courses promote the development of habits of careful observation, critical analysis, and suspended judgment which assist in banishing prejudice and contribute to more effective citizenship.

Study of the lives of men credited with scientific discovery or development and a study of the time during which they lived motivate science learning and contribute to an understanding of history.

Active participation by students in individual and group experiments not only motivates and vitalizes the science learnings but develops important skills in group relationships.

Science courses are made more meaningful through special projects, field trips, and the use of current materials and audio-visual aids.

It is not a primary purpose of high school science courses to train scientists. All students, however, are encouraged to explore their interests, and those who show special talents are stimulated to pursue careers in science.

Expected Outcomes

The students who is growing in science understandings--

- Makes unbiased decisions after critically observing and evaluating all pertinent evidence.
- Is aware of the role of science in economic and social progress.
- Distinguishes between science and superstition or pseudo-science and between facts and propaganda.
- Reads and critically evaluates articles and news items of scientific interest.
- Takes an active part in the conservation of natural resources.
- Improves his health habits by applying his knowledge of science.
- Makes use of his fund of scientific facts and the habit of critical judgment to improve his consumer practices.
- Spends leisure time more effectively because of broadened interests or science-related hobbies.
- Considers the opportunities offered in the field of science when choosing his vocation.
- Acquires, through experience in a laboratory, habits of neatness and accuracy, resourcefulness in the use of equipment, and skill in manipulation and coordination.
- Learns to seek by himself and discover for himself the answers to his problems.

Area

Grades Ten, Eleven,
and Twelve
Biology

Biology is a laboratory course designed to give students a knowledge of plant and animal life.

The content of the course in Biology is sufficiently broad to meet the needs of students for whom it will be the terminal science course and of those planning later to specialize in science.

Expected Outcomes

The student who has participated successfully in the learning experiences of Biology--

- Knows the fundamental structures of plants and animals.
- Understands personal hygiene and the improvement of health.
- Understands all important life processes.
- Appreciates the need for conserving natural resources.
- Knows the causes, prevention, and control of disease.
- Understands the process of reproduction and inheritance.
- Is able to identify many local plants and animals.

Learning Experiences

Learning experiences are centered in the following areas:

Biology and Progress

The part biology has played in the progress of civilization

- A brief history of biology
- Important biological contributions to modern life
- Methods used in studying biological material
- Use of modern science and ancient sciences
- Vocational opportunities in biological science

Green Plants

Dependence of living things on green plants

- How green plants use light in the manufacture of food
- How special plant structures manufacture, distribute, and store energy in the form of food
- The importance of farming to the nation and to the individual
- Considerations in the choice of plants for home and garden

Variety and Complexity of Living Things

The variety and complexity of living things

- The important kinds of plants and animals
- The major plant phyla and their characteristics
- The major animal phyla and their characteristics
- The interrelationships of all living things
- The evidence for the gradual evolution of species.

Use of Food

Use of food by living things and how it is obtained

- How food supplies energy for movement and materials for growth
- Kinds of food
- Transformation of food for plant or animal use
- Transformation of food energy in plants and animals
- Assimilation and effect of various chemicals and hormones
- Removal of wastes
- Improvement of health through correct diet habits

Behavior of Living Things

Behavior of living things

Unlearned responses of living things
 Learned responses of living things
 Special sense organs
 Formation of habits
 Effect of narcotics
 Behavior as basis for educational and vocational choices

Improvement of Health

Control of disease and improvement of health

Causes of diseases
 Transmission, cure, and prevention of disease
 Personal hygiene
 Community controls for better health

Conservation of Natural Resources

Conservation of natural resources

How all life is sustained by light and soil
 Interdependence of all organisms
 The control of certain plants and animals to increase yields of certain other plants and animals
 Importance of ground cover and forests in preventing erosion
 The problem of water, a vital resource in the Southwest
 The problem of wild life and conservation

Reproduction and Inheritance

Reproduction and inheritance

Reproduction in lower animals and plants
 Reproduction in higher animals and plants
 Variation as a result of sexual reproduction
 Characteristics which are changed by variation
 The Mendelian laws of inheritance
 The effect of radiation

Area

Grades Eleven and Twelve
Chemistry

The course in Chemistry is designed to familizrize the student with the nature of the earth's materials and the ways in which man has put them to use in the building of our civilization.

Expected Outcomes

The student who is growing in knowledge of chemistry increasingly--

Appreciates the influence of chemistry on modern civilization and the role chemistry will play in shaping the future.

Understands the structure of matter--electrons, atoms, and molecules.

Knows how man produces and controls many chemical changes.

Uses the correct symbols to designate elements and knows how to write formulas for compounds.

Understands general chemical actions and principles and some of the specific processes used in production of manufactured goods.

Knows the properties of elements and compounds which have direct and indirect importance as the materials of modern civilization.

Learning Experiences

Learning experiences are centered in the following areas:

Role of Chemistry

The role of chemistry in the progress of civilization

A brief history of chemistry

Its contributions to modern life

Occupational opportunities in chemistry

Chemistry's part in shaping the future

Matter

Matter, the primary consideration of chemistry

The basic chemical classes of matter: elements, compounds, and mixtures

Atoms and their structure--electrons, protons, neutrons

Larger units of matter: ions, molecules, and crystals

The periodic classification of the elements

Chemical Changes

The chemical changes that materials undergo

The basic types of chemical changes and their characteristics

How energy transfers accompanying chemical changes

The necessity for conformance with the laws of conservation of matter and energy

How man produces and controls chemical changes to his advantage

Symbols

The written language of chemistry

The designation of elements by symbols
The use of symbols to write formulas for compounds
The representation of chemical changes by equations

Mathematics

The mathematics essential to chemistry

The use of atomic weights to determine the quantitative aspects of matter and chemical changes
Methods of expressing and determining concentrations
How to find the percentage composition of a compound
The determination of the weight and volume relationships between elements and compounds participating in chemical changes
Further calculations for selected students

Chemical Actions

Chemical actions and processes of importance to the study and practice of chemistry

General actions and principles basic to an understanding of elementary chemistry: oxidation and reduction, solution and ionization, hydrolysis, mass action, methods of separation, and others
Specific processes important to the production of the world's manufactured goods: hydrogenation of oils; nitrogen fixation; the Contact, Solvay, and Castner processes; electrolysis of water; saponification; hydrolysis of starch; and others

Elements and Compounds

Elements and compounds of direct and indirect importance as the materials of modern civilization; emphasis generally placed on natural occurrence, preparation, properties, and uses

Oxygen--supporter of life and destroyer of goods
Hydrogen--fills balloons and is used in making shortening
Water--most abundant and important compound
The atmosphere--vital to life and industry
Acids, bases, and salts--the "big three" of chemistry

Carbon and its compounds--from fuels to fire extinguishers
 Nitrogen and its compounds--fertilizers and explosives
 Sulphur and its compounds--basis of sulphuric acid
 Sodium, potassium, and calcium--their compounds are of wide
 and great importance
 The halogens--a model family of non-metals
 Colloids--their formation, special properties and uses
 Organic compounds--carbon compounds including such important
 groups as:

hydrocarbons	carbohydrates	soap
alcohols	esters	organic acids
textiles, both natural and synthetic		
foods and nutrition		
plastics, their composition, types, and uses		

The fissionable elements--nuclear fission and atomic energy
 Metals of importance to industry

iron	copper	aluminum
lead	tin	zinc
silver	gold	platinum
mercury	magnesium	nickel

Area

Grades Ten, Eleven,
 and Twelve
 Photography

The course in photography is offered as a laboratory course in applied chemistry and physics.

It is presented in such a manner as to satisfy a wide range of student interests. Students with special interest and ability are encouraged to consider photography as a vocation.

Although this course affords better opportunities for artistic expression and the development of avocational interest than most science courses, it also serves as a functional basis for scientific learning.

Expected Outcomes

The student who participates successfully in photography achieves an understanding of--

The avocational and vocational opportunities in the various fields of photography.
 The operation of various types of cameras.

Certain physical aspects of photography, such as the nature of light and the formation of images:
 The use of filters and the operation of exposure meters.
 Types of lenses and the purposes for which they are best adapted.
 Types of shutters and synchronization, developing and printing processes, types of film and paper emulsions, reduction and intensification processes, and special methods of color film development.
 Various types of pictures and the most effective composition for each.

Learning Experiences

Learning experiences are centered in the following areas:

Role of Photography

The role of photography in the progress of civilization

A brief history of photography with emphasis upon its advancement
 The place of photography in modern life and the reasons for its popularity
 Occupational and avocational possibilities of photography

Types of Cameras

Types and styles of cameras

Fixed focus types of camera, such as box, folding, and motion picture
 Focusing types of camera, such as single lens reflex, double lens reflex, view-back or press, folding, and motion picture

Photographic Physics

The camera and its function--the physics of photography

The nature and properties of light
 Conditions necessary for formation of images
 Function and characteristics of filters and exposure meters
 Lenses in common use--meniscus, rectilinear, and anastigmatic
 Lenses classed as to purpose--normal, wide angle, telephoto, and supplementary
 Types of diaphragms, their function, and the designation of apertures by various systems
 Types of shutters and flash synchronization

Photographic Chemistry

How to develop and make the print--the chemistry of photography

The photographic process and common chemical terminology
 Photographic terminology and chemicals
 Preparation and storage of solutions

Materials and Processes

Photographic materials

Films and paper emulsions
 Intensifiers and reducers
 Toning and tinting
 Retouching and mounting
 Color film and special methods of development
 Black and white film types, orthochromatic, panchromatic,
 roll, sheet, and pack.

Exposure

Taking the picture

Portrait types, lighting, and posing
 Landscapes, seascapes, still life
 Sports pictures and action pictures

Area

Grades Eleven and Twelve
 Physics

Physics is a laboratory course designed to provide students with an understanding of natural laws and processes.

Physics familiarizes the student with the inter-relationships between matter and energy in mechanics, heat, sound, light, electricity, and atomic structure.

This course requires competence in mathematics because of the stress placed upon the quantitative aspects.

Expected Outcomes

The student who is growing in knowledge of physics--

Understands the relationship of physics to other sciences and to scientific vocations.
 Uses precision instruments in measurement.

Uses and applies the metric and English systems in measurement.
 Understands the physical properties of solids, liquids, and gases.
 Understands natural laws which govern forces and motion.
 Knows the basic types of energy and how they are controlled.
 Understands the nature and control of sound.
 Appreciates the various theories of the nature of light and the control and use of light.
 Knows the basic principles of radio, television, and radar.
 Appreciates the social implications of military and civilian use of atomic energy.

Learning Experiences

Learning experiences are centered in the following areas:

Role of Physics

Role of physics in the progress of civilization

A brief history of physics and a study of the lives of physicists
 The relationship of physics to the other sciences, to mathematics, and to various occupations.

Measurements and Mathematics

Physical measurements and mathematical calculations

Use of precision instruments for measurement
 Measurement of length, volume, and mass in the metric system
 Conversion from metric to English units and vice-versa
 Uses of significant figures and percentage error
 Solution of simple algebraic equations and geometric construction
 Graphical methods of presenting data and solving problems

Physical Properties

The physical properties of solids, liquids, and gases

The kinetic molecular theory as an explanation of the physical properties of matter
 The physical properties of substances which make them adaptable for particular uses
 Determination of the density and specific gravity of substances by various methods
 The importance of the phenomena of surface tension, capillarity, and osmosis in liquids
 The measurement of pressures in fluids
 Laws of pressure in liquids applied to water systems

Archimedes' law applied to submarine, surface, and aircraft
 Pascal's law applied to hydraulic and pneumatic devices
 Boyle's law and the air pump
 Hooke's law and the relation of strain to stress in elastic materials
 Bernoulli's principle applied to baseballs, spray guns, and airfoils
 The work done by atmospheric pressure

Forces and Motion

Forces and motion

Gravitation as a universal law
 Conditions necessary for equilibrium of a body
 Measurement and representation of forces, their composition and resolution
 Inertia and friction, how they help and how they hinder
 Acceleration of a body and the factor upon which it depends
 Important applications of "action-reaction"
 The gyroscope and its applications

Energy

Energy and its control

The basic types of energy and their transformations
 The use of machines to control energy
 The conservation of energy as applied to machines
 The study of mechanical advantage, work, power, and efficiency of simple machines

Heat

Heat--a form of energy necessary for life and comfort

The nature, sources, transfer, and control of heat
 Heat units and their definitions
 Temperature scales and the determination of temperature
 Applications of linear and volume variations due to temperature change
 Effects of heat exchanges accompanying change of state, especially as they affect weather conditions and body comfort
 Energy transformations in heat engines

Sound

Sound--an important means of communication

The nature of sound from the physical and physiological points of view
The transmission of sound and velocity in common media
Relationship of velocity, frequency, and wave length
Sound phenomena and their practical applications
Ultra-sonics and their applications
Sound control and problems of acoustics
Musical sounds, musical scales, and musical instruments
Physiology of the ear--how we hear

Light

Light--necessary for seeing

Theories of the nature of light and its velocity
Light phenomena and their practical applications
Light control and problems of illumination
Uses of mirrors, lenses, and prisms
Types of simple optical instruments and their uses
The electromagnetic spectrum
Practical uses of infrared and ultraviolet
Production of color
Physiology of the eye--how we see

Electricity

Electricity--a versatile form of energy

The atomic theory and the electrical nature of matter
Magnetic phenomena and their applications
Electrostatic phenomena and their applications
Production of electric current by chemical action of cells
Useful application of chemical changes produced by electric current
Measurement of e.m.f., resistance, current strength, and power in series and parallel circuits
Methods of control of electrical energy and safety practices
Production of current by electromagnetic induction
A.C. and D.C. circuits--a comparison of their characteristics and uses
Common devices for production, control, and transformation of electrical energy

Electronics

Electronics--an expanding field

The theory of vacuum tubes and photocells and their use in electronic circuits
Basic principles of radio, television, and radar
Future possible developments in electronics

Nuclear Physics

Nuclear physics--the key to a vast storehouse of energy

Brief history of developments from the Alchemists to the atomic bomb

Nuclear reactions and atomic energy

Social implications of present and potential military and peacetime uses of atomic energy

AreaPhysiology

Physiology is a laboratory course designed to provide understandings of the functions of living organisms.

The study of physiology provides not only a background for further study but a basis for better adjustment to the many practical problems of everyday living.

Expected Outcomes

The student who has successfully participated in the learning experiences of physiology--

Improves his health habits as he acquires and applies new knowledge. Recognizes that good health is a matter of concern to the community as well as to the individual.

Becomes a better-adjusted person through an understanding of many problems involved in courtship, marriage, parenthood, and family living.

Learning Experiences

Learning experiences are centered in the following areas:

Cells and Tissues

The general organization of the human body--how we are put together

Interrelationship of cells, tissues, organs and the body systems

Cells--the smallest and basic unit of living matter

Tissues--groups of cells arranged to perform a particular function in some part of the body.

Main Body Systems

The main body systems and their functions--their parts and what they do

Skeleton and muscles--aid in bodily movement and give shape, support, and protection to the body and vital organs
 Digestive system--prepares foods so they may be used by the individual cells
 Circulatory system--transports needed materials such as food, water and oxygen to all parts of the body and takes waste products to the organs of excretion
 Respiratory system--provides the exchange of oxygen and carbon dioxide within the body
 Reproductive system--provides the male sperm cells and the female ova (eggs); also aids in forming the secondary sex characteristics
 Nervous system--the telephone and telegraph system of the body--helps in co-ordinating and regulating the other systems of the body
 Others--endocrine glands, sense organs, eyes, ears, skin, kidneys, and so forth

Disease, Alcohol, and Tobacco

Outside factors, agents, and diseases that may affect the proper functioning of the body

Contagious and non-contagious diseases: cause, effect, prevention, and cure

Effects of alcohol, tobacco, and narcotics on the body
 Proper first-aid procedures

Human Needs

The biological needs of the adolescent and other adult; growing into maturity and adjusting to life's many problems

Primary needs--air, sunshine, food, water, and shelter
 Secondary needs--desire for approval from peers and others; a reasonable chance for success; the ability to get along well with others; and so forth
 Understanding the relationship between mental and emotional health and personality
 Planning for adult responsibilities in courtship, marriage, and parenthood

Area

Science Problems

Science Problems is a general science course which is geared to the layman's needs and interests. It provides opportunity for understanding broad life science and physical science on the level of practical, everyday experience.

Because this course will be the only senior high school science course for most of the students, a conscious effort is made to eliminate unnecessary technical terminology.

The course encourages student initiative and has flexibility to meet student interests.

Expected Outcomes

The student who has participated successfully in the learning experiences of Science Problems is able to--

- Understand the function and growth of living things.
- Appreciate the need for conservation of natural resources.
- Understand the various theories concerning the formation of the earth.
- Recognize geological formations and appreciate their significance.
- Understand the behavior of the atmosphere and its relation to weather and climate.
- Appreciate the properties, structure, and use of matter.
- Recognize elementary physical principles and understand their application.

Learning Experiences

Learning experiences are centered in the following areas:

Living Things

Living things--how and why they grow

- The general structure of plants and animals
- Functions and life processes
- Different kinds of living things, with emphasis upon local forms
- How the systems of the human body work
- Everyday techniques for good health
- Principles of first aid to injuries
- The various ways by which living things reproduce
- The laws which govern heredity
- How heredity influences and improves living things
- The way in which all living things contribute to the balance of nature
- The practice of conservation of natural resources

The Earth

The earth and its atmosphere

Theory of the earth's formation
 Identification of common geological formations
 Geological history of San Diego
 Causes and effects of seasons and tides on the earth
 The behavior of the atmosphere--climate and weather

Matter

Matter--its structure and how we use it

The properties and structure of matter
 Methods used in analyzing the composition of common materials
 How chemistry is used in industry and in the home
 The chemical properties and uses of coal, iron, petroleum,
 water, and wood pulp
 The manufacture of commercial fertilizers, cosmetics, medicines,
 and so forth

Physical Principles

Physical principles and their applications

Practice in the use of scientific measuring devices
 The types of simple machines and their application in daily
 life
 The properties and uses of heat, light, and electricity
 How physical laws are applied in flying
 The historical background of flying
 Various recent developments in aircraft construction
 Occupational opportunities in aviation

Resource References

Junior and Senior
 High School

San Diego City Schools Publications

The Air and the Weather It Causes. A Tentative Unit for Seventh
 Grade Science. 1944

Plan for Teaching a Unit on Alcohol, Tobacco, and Narcotics in
 the Junior High School, Grades, 7, 8, 9. 1948

A Plan for Teaching a Unit on Driver Education, Grade 9. 1949

Plan for Teaching a Unit on Alcohol, Tobacco, and Narcotics in
 the Senior High School. 1948

Plan for An Experimental Course in Science Problems. 1949
Chaparral and Desert Shrubs of San Diego County. 1939
Trees of San Diego County. 1939
On the Chaparral Trail. 1941
American Way. 1948
Spiritual Values. 1948
We the People. 1949
Catalogue of Educational Films and supplements. Latest issues.
Suggestions for Planning and Conducting School Excursion and
Field Trips. 1946

CURRICULUM GUIDE

The Secondary Program

San Diego City Schools

INDUSTRIAL ARTSPoint of View

Junior High School

Pupils in the junior high school industrial arts program are guided through a series of exploratory experiences in electricity, general metal, mechanical drawing, graphic arts, and woodwork. When the pupil has completed these exploratory experiences, and develops a special interest in one field, he may elect a program similar to that given in the beginning courses in senior high school.

The junior high school industrial arts program develops manual skills and provides creative activities that are universally enjoyed. It also develops an understanding of the mechanical and industrial world. It seeks to build some degree of proficiency in a wide variety of basic mechanical skills, and provides constructive guidance in appraisal of personal and vocational abilities.

Students in industrial arts classes construct useful and interesting projects, receive related information, hold class discussions, observe demonstrations, and conduct experiments.

The learning experiences of pupils in the school shop relate directly to the highly mechanized and industrialized outside world, and create an opportunity to acquire vocational information.

Experiences gained in shop activities are easily applied to the common mechanical problems with which home owners are faced.

Industrial arts provides for individual differences through a guided choice of projects based on the pupil's interests and aptitudes.

Student participation in the control and management of a school shop provides for practice in democratic processes.

Pupils whose interests and abilities lie in the field of practical mechanics may experience, as a result of their participation in an industrial arts program, the morale-building stimulus that comes with successful accomplishment.

Expected OutcomesGrades Seven Through
Twelve

The pupil who has participated successfully in industrial arts courses is able to--

- Plan and work in co-operation with others toward the orderly, efficient, and complete performance of assignments.
- Read a simple working drawing.
- Use and care for basic tools and machines.
- Construct projects and make repairs that enrich personal and group living.
- Make practical application of such fundamentals as mathematics, science, social studies, and English.
- Understand some of the industrial processes by which man changes materials to increase his health, comfort, and enjoyment.
- Appreciate and respect the importance and dignity of work.
- Appreciate good design and workmanship.
- Select wisely, care for, and use industrial projects.
- Develop desirable attitudes and habits with respect to health and safety.
- Feel pride in his ability to do useful things and has an interest in developing worthy leisure-time activities.
- Relate to his future life and work the knowledge he has gained of his abilities.
- Help create a democratic working situation.
- Accept responsibility for assisting in the training of other students.

AreaGrade Seven
Mechanical Drawing

Mechanical Drawing provides an introduction to the universal language of industry and an opportunity for manipulative practice in the use of the accepted drawing instruments and drafting materials. Students do freehand sketching. They make, understand, and read a simple working drawing of an object.

Expected Outcomes

The pupil who has participated successfully in Mechanical Drawing--

- Can prepare simple freehand sketches of objects in pictorial form.
- Can use the architect's scale for accurate measurement.
- Can use and care for drawing instruments such as drawing board, T square, triangles, architect's scale, pencils, erasers, compass, and divider.
- Can draw the alphabet of lines, including hidden lines, extension line, outline, dimension line, center line, cutting plane.

Can read a blueprint.
 Can make simple working drawings using orthographic projection.
 Can letter and dimension in a neat and legible manner.
 Can draw to scale a simple floor plan.
 Can transfer measurements to scale.
 Can make a rough preliminary working sketch.
 Can plan a drawing and make a layout.
 Can check a drawing.
 Can make a front, top, and side view drawing.
 Can draw horizontal and vertical lines, arcs and circles, inclined lines of various angles, and views with hidden edges.
 Can make a tracing.
 Understands the importance of drawing as a universal language of industry.
 Has some knowledge of the various drafting occupations.
 Understands the importance of neat and accurate workmanship.
 Understands the importance of providing a set of working drawings before an object can be constructed.

Learning Experiences

In order to acquire an understanding of Mechanical Drawing the pupil--

Makes sketches for working drawings; for example, machine parts, furniture, geometric solids.
 Makes pictorial sketches of furniture, machine parts, tools, and equipment.
 Uses mechanical drawing instruments to make line drawings. These drawings include: horizontal and vertical lines, inclined lines, and curved lines (arcs and circles).
 Uses mechanical drawing instruments to make working drawings. These drawings include: hidden lines, section lines, tracings, and scale drawings.
 Draws simple floor plans.
 Practices lettering.
 May make drawings of projects to be used in his other shop classes.
 Uses visual aids to develop an appreciation of drawing in industry.
 Observes how drawings are duplicated.

Area

Woodwork

Elementary Woodwork provides an opportunity for students to become acquainted with the processes used in the construction of products made from wood. Students develop skill in the use of basic hand tools and simple power machines, and learn the correct method of finishing while constructing useful wooden articles. Occupational opportunities in the woodworking industry are studied. An appreciation for good wood construction in the home and in home furnishings is developed.

Expected Outcomes

The pupil who has successfully participated in elementary Woodwork--

- Can use and care for essential hand tools, such as the block and jack plane, hack saw, rip saw, crosscut saw, wood chisel, brace and bit, marking gauge, file, square, hammer, paint brush, hand screws, and clamps.
- Can fasten with glue, nails, or screws.
- Can measure and divide with a rule.
- Can lay out and trace from a pattern.
- Can operate an oil grinder, a jig saw, and drill press.
- Can apply stain, shellac, varnish, and enamel.
- Can select and use the proper grade of sandpaper.
- Can use simple arithmetic as it is related to his project.
- Can hold stock in a bench vise.
- Can plane and edge straight and square with the adjacent surface.
- Can measure and mark stock to width, thickness, and length with a bench rule, try square, and pencil.
- Can saw ends square in a miter box.
- Can recognize and use a crosscut saw and rip saw.
- Can use a hack saw with the bench hook for accurate cutting.
- Can make nailed butt joints.
- Can drill holes with the use of a hand drill.
- Can drive and countersink screws.
- Can saw a scroll in thin wood with a coping saw.
- Can glue up with cold glue using C clamps or hand screws.
- Can sand surface, ends, and edges of material.
- Can recognize the following lumbers: mahogany, pine, redwood.
- Understands the place and importance of wood and woodworking in industry.
- Understands the method of figuring board feet and costs for each project.
- Understands the composition of shellac, varnish, and paints.
- Understands the methods of drying lumber.
- Understands how veneer and plywood are made.
- Knows how to select the proper type of glue for the job to be done.
- Identifies nails, screws, sandpapers and knows their uses.
- Understands how to care for paint brushes.

Learning Experiences

In Woodwork the student--

- Constructs a number of useful wooden articles using common hand tools, and finishing with simple finishes.
- Constructs one or more projects from a selected group which might include a serving tray, jewel box, lamp sailboat, book ends, and games.
- Observes demonstrations on the correct use of tools and equipment.
- Observes examples of the use of different woods and different finishes.
- Uses audio-visual materials regarding woodwork and the woodworking industry.

AreaGrade Eight or Nine
Electricity

Elementary Electricity provides students with an appreciation and an understanding of the part that electricity plays in everyday living. It develops skill in using tools for simple electrical construction, safe work habits, and the ability to make elementary electrical repairs required around the home.

Expected Outcomes

The pupil who has successfully participated in elementary Electricity--

- Can use and care for common hand tools, such as electrician's pliers, diagonal pliers, screw drivers, hand drills, hammers, saws, soldering irons.
- Can make simple splices including a Western Union splice and a tap splice.
- Can connect batteries or devices in series and in parallel.
- Can test for short and open circuits.
- Can test fuses, replace them, and check overload devices.
- Can do simple soldering jobs.
- Can attach a cord to plugs and sockets.
- Can connect and read a voltmeter and ammeter.
- Can draw and read a simple wiring diagram.
- Can use resistance to generate heat.
- Can tin a soldering iron.
- Can bend wires and metals.
- Can use power tools such as a grinder and drill press.
- Can administer first aid in event of shock.
- Can replace a wall switch or outlet.
- Understands safety practices in electricity.
- Understands properties of magnets.
- Understands the operation of simple motors, transformers, and bells and buzzers.
- Understands elementary electrical terms and symbols.
- Understands the difference between insulators and conductors.
- Understands the sources of electricity.
- Understands the sizes and use of wire.
- Understands sources of raw materials such as asbestos, wire, rubber, copper.
- Understands the distribution of electricity in the home, the city, state, and nation.
- Understands the difference between AC and DC.
- Is aware of some of the occupational opportunities in electrical industries.

Learning Experiences

In elementary Electricity the pupil--

- Constructs projects using electricity to produce light; for example, flashlight, bicycle headlight, night light, and table lamp.
- Constructs projects using electricity to generate heat; for example, an electric stove, a soldering iron, an electric heater, and a pyrograph pencil.
- Constructs projects using simple radio circuits; for example, crystal set, one- or two-tube receiver, simple amplifier, audio oscillator.
- Constructs projects using the magnetic effect of electricity; for example, a simple motor, a four-pole motor, a door chime, an arcing pencil, and a buzzer or sounder.
- Conducts experiments and demonstrations which illustrate fundamentals of electrical principles.
- Makes simple repairs on home appliances and home circuits; for example, toaster, waffle iron, lamp, vacuum cleaner, and wall outlets and switches.
- Observes demonstrations, sees films explaining electrical principles, and gathers information on the occupations in the electrical industry.

Area

General Metal

General Metal Shop in the junior high school curriculum provides the pupils with exploratory experiences in sheet metal, bench metal, foundry, and forging.

Pupils obtain elementary industrial skills in the use of tools and simple machines by the construction of useful and well-designed projects. Pupils are provided with useful information pertaining to the buying and selecting of metal products.

Expected Outcomes

The Pupil who has participated successfully in the learning activities of General Metal--

Sheet Metal

- Can transfer patterns to sheet metal and cut metal with tinner's snips.
- Can light and operate a gas furnace.
- Can solder tin and galvanized iron.
- Can form metal by hand.
- Can bend metal with a bar folder and with a brake.
- Can form hems and simple seams.
- Can rivet joints.
- Can punch holes with a solid or hollow punch.

Can roll sheet metal on the forming rolls.
Knows the kinds of solder and their uses.
Knows the names of sheet metal tools, machines, and operations.
Knows how to identify the various kinds of sheet metal.
Appreciates tools and equipment and works safely with them.
Works co-operatively with others.

Bench Metal

Can make out a bill of material.
Can plan a procedure for doing a job.
Can read a simple working drawing.
Can drill holes in metal.
Can cut metal with a cold chisel.
Can raise or bump sheet metal.
Can planish copper, aluminum, or iron.
Can use a hack saw and a file.
Can use taps and dies in cutting inside and outside threads.
Can bent, twist, and form strap iron.
Can use a grinder and a buffing wheel.
Knows how to lacquer and enamel metal.
Knows the names of tools, equipment, and operations used in bench metal.
Knows the sources and how to identify the various kinds of common metals.
Knows how to use tools and equipment safely.
Knows the kinds and sizes of twist drills.
Knows how to use the common abrasives.

Foundry

Can make a simple aluminum casting.
Can clean, finish, and polish a casting.
Can take care of molding equipment.
Can work safely around molten metal.
Knows the properties of aluminum.
Knows the relationship of foundries to other industries.

Forging

Can hold work with tongs.
Can heat work in a forge.
Can measure and cut stock.
Can anneal tool steel.
Can forge, harden, and temper tool steel.
Can work safely with hot metal.
Knows how to use the anvil and its various parts.
Knows the characteristics of mild steel and tool steel.
Knows how steel is manufactured.

Learning Experiences

In General Metal the pupil completes in each of the following areas of learning one or more projects from a selected group which might include:

Sheet metal--a rowboat, 18-inch sailboat, sprinkling can, sugar scoop, funnel, and coal scuttle ash tray.

Bench metal--a riveting hammer, garden spade, identification bracelet, pancake turner, outside calipers, putty knife, wall lamp, and hack saw.

Foundry--a handle for hack saw, handle for screw driver, ash tray, pair of dogs for book ends, Lincoln's profile, and door knocker.

Forging--a center punch, nail set, solid punch, cold chisel, letter opener, and screw driver.

Area

Graphic Arts

Graphic Arts in the junior high school provides pupils with an opportunity to explore one of the major industries of the nation, and gives pupils an understanding of the part it plays in our everyday life. Graphic Arts develops simple hand skills in the use of graphic art tools and equipment, and students print many of the programs and announcements used in the school.

Expected Outcomes

The pupil who has participated successfully in the learning experiences of Graphic Arts--

Hand Composition

- Can locate from memory and letter or character in the type case.
- Can properly use a composing stick.
- Can pick up type from case and place in stick correctly.
- Can set simple straight matter.
- Can justify a line of type.
- Can take a proof in a stick.
- Can dump a stick of type.
- Can tie a type form.
- Can make corrections.
- Can clean a type form.
- Can distribute type back into type case.
- Can put away leads and slugs.
- Can space out a type form.
- Can use proofreader's marks.
- Can set a line of type flush, left, right, centered.

Understands the importance of correct grammatical structure, proper punctuation, and syllabication of words.
Understands the component parts of a piece of type and what type is made of.
Understands how to recognize the difficult letters--b, d, p, q, n, u--and the numbers 6 and 9.
Understands the use of ligatures.
Understands the names and proper uses of the various tools, machines, and materials used in the graphic arts.
Understands the printer's system of measurement.
Understands the quad system.

Press Room

Can ink, wash, and operate a proof press.
Can properly lubricate a platen press.
Can wash and ink a platen press.
Can start and stop a platen Press.
Can place a type form on a platen press and remove form.
Can put on a new tympan sheet.
Can set the counter.
Can feed the press.
Understands the parts of a platen press and the safety factors.
Understands how impression is regulated.
Understands the composition of printing inks.
Understands the composition of press rollers.
Understands the use of color in printing.

Imposition

Can put away furniture and galleys.
Can make a dry stone proof and a wet stone proof.
Can unite a type form.
Can transfer job from galley to stone, from stone to galley.
Can store a galley of type.
Can locate a stored type form.

Bindery and Stock Room

Can figure stock, count stock, jog stock, and pad stock.
Can saddle-stitch a cover.
Can use simple arithmetic to figure quantity of stock required.
Understands how paper is made.
Understands the need for caution in handling paper.
Realizes the need for caution when using the paper cutter.

Silk Screen and Linoleum Block Printing

Can make simply designed stencils for silk screen printing.
Can operate a silk screen press.
Can wash and clean silk screen.
Can make simple designs for linoleum block printing.
Can make a linoleum block cut.

Learning Experiences

In Graphic Arts the pupil--

- Sets type for a name card, the school newspaper, various school programs, office forms and personal stationery.
- Sets type commemorating Washington's Birthday, Lincoln's Birthday, Valentine's Day, Mother's Day, and Thanksgiving Day, and sets type for American Education Week Programs and for printed matter concerning California Public School Education Week.
- Locks up type forms for printing.
- Runs the press for many printing jobs.
- Binds simple programs and other jobs which are made into book form.
- Produces simple silk screen prints.

Point of View

Senior High School

The senior high school industrial arts program gives the student an opportunity for specialized and pre-vocational experience which may help establish vocational goals. It also provides opportunity to further develop individual interests in a particular area.

Industrial arts develops an intelligent understanding of our modern industrial civilization and the problems which have resulted from it.

Students in senior high industrial arts classes develop additional skill in the use of tools and materials and learn to operate power machines.

Construction work on industrial arts projects develops an interest in, and a need for, applied mathematics, design, reading, and the natural sciences. It provides a practical approach to economic and social problems.

The industrial arts program does not train for specific trades but attempts to develop some degree of proficiency in a wide variety of basic skills that are required in home maintenance and in industry.

The senior high school industrial arts program provides for individual differences by permitting students to discover their aptitude in a particular field of interest.

Students participate in shop organization and management, which gives them an opportunity to work together co-operatively and to understand the organization and operation of American industry.

Students whose interests and abilities lie in the field of practical mechanics may experience, as a result of their participation in an industrial arts program, the morale-building stimulus that comes with successful accomplishment.

Expected Outcomes

Outcomes expected of students who have successfully participated in the industrial arts program are listed immediately following the Point of View for grades seven, eight, and nine at the beginning of this section.

Area

Grades Ten, Eleven,
and Twelve
Beginning Auto Mechanics

Beginning Auto Mechanics is designed for the automobile owner-driver. He learns what minor adjustments to the car he can make himself, and recognizes a job that requires an expert mechanic. The student acquires a basic knowledge of the California Vehicle Code and develops an appreciation of the importance of driving safely at all times. He learns to identify and understand the function of the various mechanical units in the automobile and develops basic skills required in automotive repair work. He gains a knowledge of the requirements and opportunities in the automobile manufacturing and service industry.

Expected Outcomes

The student who has participated successfully in Beginning Auto Mechanics--

Highway Safety

- Understands the principles of correct driving and the need for courtesy on the highway.
- Understands the basic requirements of the Automobile Vehicle Code.

Engines

- Understands the principle of the internal combustion engine.
- Can make minor adjustments and repairs on the electrical system, including spark plugs, ignition, generator, battery, and starter.
- Can check and adjust engine bearings.
- Can make minor adjustments and repairs on cooling system, including water pump, radiator hose, fan belt.
- Can make minor adjustments and repairs on fuel system.
- Can check for compression loss.
- Can adjust valve tappets.
- Knows the names and function of principal parts of an automobile engine.
- Understands function of engine lubrication.

Transmission

- Understands the function and purpose of the transmission.
- Can inspect and make minor repairs on slide gear transmissions.
- Can adjust a clutch pedal.
- Can lubricate a transmission.

Rear Axle Assembly

Understands the importance of lubrication and the types of lubrication used on the rear axle assembly.
Understands the function and purpose of the rear axle assembly.

Drive Shaft

Understands the purpose and function of the drive shaft.
Can lubricate and replace faulty parts of the universal joint.

Suspension System

Understands the purpose and function of the suspension system.
Can lubricate and make minor repairs on the suspension system.

Lights and Wiring

Understands simple wiring circuits and related parts of the electrical system.
Can make minor adjustments and repairs on the electrical system, such as replace light bulbs, fuses, and switches; solder wires; and install accessories.
Understands the requirements of proper lighting for safe driving.

Brakes, Wheels, and Tires

Understands the importance of safe brakes and the common cause for brake failure.
Understands the different types of brakes, including mechanical, hydraulic, booster.
Makes minor repairs and adjustments, such as replace broken line, fill master cylinder, bleed brakes.
Can work around an automobile safely.
Can remove brake drums and wheels and inspect for brake trouble.
Can pack and adjust wheel bearings.
Can change a tire and patch a tube.

Body and Fender

Can remove minor dents and do minor paint refinishing.
Can wash and polish an automobile.
Can make minor door repairs.

Learning Experiences

In order to acquire an understanding of Auto Mechanics, the student--

Works on laboratory units such as: engines, front axles, rear axles, transmissions, and drive shaft.

Makes minor repairs on automobiles.

Observes filmstrips, mock-ups, models, charts, and other audio-visual aids which play an important part in the instructional program.

Observes student and teacher demonstrations of repair and operations and the correct use of tools.

Area

Grades Eleven and Twelve
Advanced Auto Mechanics

The advanced course in Auto Mechanics is designed for the student who wants more information than does the automobile owner-driver. He learns how to make major repairs and specializes in various phases of the auto, such as carburetion, ignition, trouble shooting, and so forth. The advanced course offers the student excellent opportunities for prevocational training and related information. It is possible for him to learn to make certain major repairs that can be done in the home shop.

Expected Outcomes

The student who has participated successfully in the learning activities of Advanced Auto Mechanics--

Engine

- Can tune an ignition, replace the points and condensers.
- Can install new brushes and clean commutator on starter and generator.
- Can do electrical trouble shooting.
- Can adjust or replace engine bearings.
- Can grind and time valves, and adjust tappets.
- Can install a set of piston rings.
- Can make minor diagnosis of engine troubles.

Transmission

- Can overhaul a slide gear transmission.
- Can make necessary repairs on a plate type clutch.

Rear Axle Assembly

- Understands the fundamental principles of gear ratio.
- Can overhaul a rear axle assembly.

Drive Shaft

- Can replace drive shaft and universal joints.

Suspension System

- Can install king pins, and replace shock absorbers.
- Can check toe-in.
- Can replace spring shackle and springs.

Lights and Wiring

- Can install or replace lights and lighting accessories.
- Can replace defective electrical parts, such as relays, fuses, ammeters.

Brakers, Wheels, and Tires

- Can replace and adjust brake shoes.
- Can replace wheel cylinders, bleed brakes, and replace master cylinders.
- Can pack and replace wheel bearings.

Body and Fender

- Can make minor fender welds.
- Can paint an automobile.
- Can replace window glass and door hardware.
- Understands the characteristics of automotive finishes.

Learning Experiences

In order to acquire the understandings of Advanced Auto Shop, the student--

- Works on his own car or on "live jobs" brought into the shop by students.
- Learns technical information through visual aids, informal lectures, literature, books, and films.
- Works on laboratory units.
- Assists the instructor in developing instructional laboratory units.

Area

Grades Ten, Eleven, and
Twelve
Beginning Electronics

Beginning Electronics provides students with continued exploratory experiences in the fields of electricity. The senior high school emphasis is on radio. Practical experience is provided in wiring electrical and radio circuits and in the use of hand tools. Students learn to make minor electrical repairs and develop an interest and understanding in the basic electrical principles and theory.

Expected Outcomes

The student who has participated successfully in the learning activities of Beginning Electronics--

- Can use and care for common hand tools.
- Can use power tools: grinder, drill press.
- Can solder and tin a soldering copper.
- Understands safety practices and can administer first aid in event of electrical shock.
- Understands wire sizes and their uses.
- Understands the sources of electricity.
- Understands some of the occupational opportunities in the radio industry.
- Understands the metric system as applied to radio.
- Understands the use, operation, and construction of transformers.
- Understands the use of resistors in fundamental circuits.
- Can wind coils.
- Understands the principles of electron flow.
- Understands the elementary principles of inductance and capacitance as they are used in radio circuits.

Circuits

- Can read radio and electrical symbols and draw and read simple radio diagrams.
- Can wire series and parallel circuits and understands their principles.
- Understands simple application of Ohm's law.
- Understands the use of AC and DC current.

Testing

- Can test for shorts and open circuits.
- Can use a multimeter to read volts, milliamperes, and ohms.
- Can use a signal generator to align a superhetrodyne receiver.
- Can test tubes with a tube tester.

Vacuum Tubes

- Understands the general functions of vacuum tubes in detector, oscillator, rectifier, and amplifier circuits.
- Understands the mechanical structure of a vacuum tube and is able to identify the more common tubes by their trade numbers.

Receivers

- Understands the function of the following parts of a simple receiver: antenna, tuner, detector, and reproducer.
- Understands the operation of RF and audio amplifies.

Understands the principle of a superhetrodyne receiver.
 Understands the circuit difference between AC and AC-DC receivers.
 Can trace and wire simple radio receiver circuits.

Learning Experiences

In order to acquire an understanding of Beginning Electronics the student--

Constructs and wires the following circuits:

- A non-regenerative receiver.
- A regenerative receiver with one stage of audio amplification.
- A tuned RF amplifier with a detector and stage of audio.
- A superhetrodyne receiver of simple design.
- A power supply capable of furnishing high and low voltage.

Visits local electrical and radio industries.

Observes and performs demonstrations involving electrical and radio fundamentals.

Area

Grades Eleven and Twelve
 Advanced Electronics

Advanced Electronics provides students with an opportunity to further their avocational or vocational interests in radio and electricity. The study of fundamental electronic theory and the practical application of the transmission and reception of radio signals are stressed. Students acquire the ability to trace circuits and to use test equipment.

Expected Outcomes

The student who has participated successfully in Advanced Electronics--

Radio Receiver Construction and Repair

- Can use test equipment, such as tube test or multimeter and signal generator.
- Can use basic hand tools used in radio repair and construction.
- Can construct a metal chassis and mount radio components.
- Can trace and wire radio circuits, including high frequency receivers and power supplies.
- Can test and replace radio components, such as filter condensers, by-pass condensers, resistors, transformers, chokes, coils, potentiometers.
- Can align circuits, such as radio frequency and intermediate frequency circuits.

- Understands the principles of direct and alternating current and their use in radio circuits.
- Understands the principles of inductance, reactance, and impedance.
- Understands simple vacuum tube characteristics.
- Understands the principles of radio circuits, including detectors oscillators, radio frequency amplifiers, intermediate frequency amplifiers, and rectifiers.

Transmitter Construction and Operation

- Can construct and operate a simple oscillator, such as Hartley, electron coupled, crystal.
- Can connect and use milliammeters and voltmeters to test transmitter circuits.
- Can construct a simple neutralized radio frequency amplifier.
- Can load a transmitter to a dummy antenna.
- Can use a frequency meter to check transmitters.
- Can key a transmitter.
- Can construct a simple transmitting antenna.
- Understands the theory of radio oscillators and amplifiers.
- Understands radio wave theory and propagation.
- Understands the theory of neutralization.
- Understands the principles of the piezo-electric crystal.
- Understands the principles of amplitude and frequency modulation.

Learning Experiences

In order to acquire an understanding of Advanced Electronics the student--

- Constructs oscillators: Hartley oscillator, tuned grid-tuned plate oscillator, electron coupled oscillator, crystal oscillator.
- Constructs a transmitter with one stage of amplification.
- Operates a transmitter.
- Builds a short wave receiver.
- Builds a power supply.
- Constructs antennas: Zepp, doublet, beam.
- Studies to obtain an amateur operator's license.

Area

Grades Ten, Eleven, and Twelve
Beginning General Metal

General Metal Shop in the high school curriculum provides students with board exploratory experiences similar to those offered in the junior high school. Students have the opportunity to obtain fundamental industrial skills in sheet metal, bench metal, foundry, forging, welding, and machine whop. Students develop an appreciation for good design, sound construction, and fine workmanship and an understanding of the vocational opportunities in the metal trades.

Expected Outcomes

The student who has participated successfully in Beginning General Metal--

Sheet Metal

Improves the basic skills and understandings concerning sheet metal which he acquired in junior high school: cutting, soldering, forming, shaping, bending, riveting and punching.
Can make out a bill of material and follow the procedure for doing a job.
Can trim with squaring shears and wire edges on a wiring machine.
Can turn a lock seam.
Can groove with a hand groover.
Can anneal copper, brass, or aluminum.
Can clean and color copper or brass.
Can cut with a jeweler's saw.
Can bend, twist, and form wire.
Can sweat a joint.
Can wire edges with a bar folder and a hammer.
Can form with a cornice brake.
Can give hammer finish to copper, brass, iron or aluminum.
Knows the success factors and opportunities in the metal industry.

Bench Metal

Improves the basic skills and understandings regarding bench metal which he acquired in junior high school: using cold chisel, hack saw, file, grinder, buffer, taps and dies; bending, twisting, and forming strap iron; and finishing metals.
Can check material when received.
Can lay out work using steel scale, combination square, and dividers.
Can read working drawings.
Knows the sources of, and how to identify, the various kinds of common metals.
Knows the common abrasives and how to use them.

Forging and Foundry

Improves the basic skills and understandings of forging and foundry which he acquired in junior high school: annealing, forging, hardening, and tempering tool steel; casting, cleaning, finishing and polishing aluminum. He can work safely around molten and hot metal.
Can hold work with tongs and heat work in furnace.
Can bend round and rectangular stock and twist square or rectangular stock.
Can draw out stock.
Can caseharden.
Knows how the many steel types are manufactured.

Can cut and temper sand.
Knows the different kinds of patterns.
Knows the relationship of foundries to other industries and the vocational opportunities in foundry work.

Welding

Can work safely with welding equipment.
Can adjust the regulators for the proper pressures and install the proper tip needed for a job.
Can light and adjust the torch for the required flame.
Can scarf metal for welding and weld or braze a butt joint.
Can turn off the torch and regulators and secure the tanks.
Knows the principal parts of the welding equipment.

Machine Shop

Can measure with inside and outside calipers.
Can grind and set the tools for roughing and finish cutting.
Can grind chisels.
Can fit and assemble parts.
Can mark with steep stamps.
Can start, stop, and reverse, clean, oil, and care for the lathe.
Can set cut-off and facing tools and cut square shoulders.
Can mount work between centers.
Can put on and remove chuck.
Can use compound rest for cutting taper.
Can drill, file, and polish work in the lathe.
Knows the safety rules with respect to the lathe.
Knows the name and function of the principal parts of the lathe.

Learning Experiences

In Beginning General Metal the student--

Observes teacher demonstrations and audio-visual aids on metal construction and tool techniques.
Constructs in each of the following areas of learning one or more projects from a group which might include:

Sheet metal--24- or 30-inch model sailboat, model power boat, match holder, dust pan, funnel, quart measuring can, wax paper holder, and spice rack.

Bench metal--aluminum bowl, hack saw, outside or inside calipers, weather vane, candlestick holder, name plate, model maker's vise, and machinists' clamps.

Foundry--handle for hack saw, book ends, trays, wall plaque, door knocker, miniature anvil.

Forging--cold chisel, center punch, nail set, letter opener, hunting knife, barbecue set, table lamp, ash tray and stand, flower pot holder, magazine rack.

Welding--butt weld, butt braze, barbecue set, name plate, flower pot holder, table lamp.

Machine shop--machinists' clamps, ball peen hammer, tinner's hammer, paper weight, model maker's vise, tap wrench.

Area

Advanced General Metal

Advanced General Metal Shop in the high school curriculum provides students with an opportunity to learn new skills and at the same time improve the skills already acquired in Beginning General Metal Shop. The advanced course encourages pupils to construct projects of their own design and for their own needs. Students are permitted to specialize in an area of the metal trade for which they have developed a definite interest.

Expected Outcomes

The student who has participated successfully in Advanced General Metal--

Sheet Metal

- Can use the hatchet stake in forming
- Can prepare cut acid flux.
- Can etch on copper or aluminum.
- Can make a double seam on a stake and can double seam corners.
- Can develop patterns for objects rectangular in section.
- Can lay out and form hinges.
- Knows how to identify the various kinds of sheet metal.
- Knows the gages of sheet metal and kinds and sizes of rivets.

Bench Metal

- Can read a working drawing and plan a procedure in doing a job.
- Can twist iron bars for ornamental effect.
- Knows where ores are mined and how to identify the various kinds of common metals.
- Knows the principal kinds of steel.

Forging

- Can measure and cut stock.
- Can bend eyes.
- Can upset stock.
- Can bend pipe.

Knows the characteristics of mild steel and tool steel.
Knows how steel is manufactured.
Knows the anvil and the uses of its various parts.
Knows the names and uses of blacksmith tools.
Knows the emery wheel test for determining kinds of materials.

Foundry

Can construct and repair flasks.
Can make a simple pattern for casting.
Can make a brass casting.

Welding

Can install regulators on oxygen and acetylene tanks.
Can prepare metals and do simple welding, brazing, or silver soldering.
Knows the types of rods and fluxes to use.
Can set up, adjust, and use a cutting torch.

Machine Shop

Can lay out work using steel scale, combination square, and dividers.
Can measure with micrometer calipers.
Can use hermaphrodite calipers for locating centers.
Can ream with hand reamers.
Can dress emery wheels.
Can grind and set cutoff tools, threading tools to centergange, facing tools, and boring tools.
Can determine cutting speeds required for effective work.
Can mount work between centers and on a face plate.
Can put on and remove chuck.
Can center irregularly shaped work in the chuck.
Can cut external threads on a lathe.
Can set over tail-stock for taper, and knurl work in the lathe.
Knows the different working speeds of the machines and how speeds are obtained.
Knows the success factors and opportunities of a machinist in industry.

Learning Experiences

In Advanced General Metal the student--

Observes teacher demonstrations and audio-visual aids.
Selects projects according to his own interest. Examples: 30-inch sailboat, tool box, tackle box, photographic trays, cigarette or jewel box, etched dish or tray, small wheelbarrow, trailer, wheel for wheelbarrow, stand for grinder or buffer, stand for water sprinkler, fire place set, camp fire grill, bench vise, and lawn sprinkler.

Area

Beginning Graphic Arts

Beginning Graphic Arts builds on the junior high program. It provides a broader experience in the use of tools, equipment, and processes employed by industry. Through this experience the student develops an intelligent understanding of the practical application of graphic arts in daily living. Students are provided with an opportunity to use the letter press process in the production of printed materials, and to do simple stock cutting, and silk screen printing.

Expected Outcomes

The student who has participated successfully in the learning experiences of Beginning Graphic Arts--

Hand Composition

Improves the basic skills and understandings of hand composition acquired in junior high school: locating letters using a composing stick; setting and justifying straight composition; taking a proof in a stick; typing a type form; changing a form of type; and distributing type, leads, and slugs.

Can cut leads and slugs.

Can pull a proof on a proof press or a stone proof.

Understands the history, development, and importance of the graphic arts industries.

Understands some of the vocational opportunities of the printing trades.

Press Room

Improves the skills and understandings acquired in junior high school press work; lubricating, inking, washing, and operating the proof and platen press.

Understands the correct use of sandpaper finger and glycerine in feeding a press.

Can properly set grippers on a press.

Can remove and replace rollers.

Understands the reason for placing "quoins up."

Can slip-sheet a job and fan stock.

Imposition

Can properly lock a form using "square lock up" or "run-around."

Can place a form in a chase.

Can place quoins in the proper position.

Understands names and uses of various types of furniture.

Bindery and Stock Room

- Improves the skills and understandings pertaining to bindery and stock room which he acquired in junior high school: figuring, counting, jogging, and padding stock.
- Can figure combination cuts.
- Can trim pads, punch stock, and side-stitch.
- Can fold paper by hand and gather inserts by hand.
- Can use a hand numbering machine.

Silk Screen and Linoleum Block Printing

- Improves the skills and understandings of silk screen and linoleum block printing which he acquired in junior high school: cutting stencils, operating a silk screen press, washing and cleaning screen, and designing and cutting blocks.

Learning Experiences

In Beginning Graphic Arts the student--

- Prints items for personal use: personal cards, Christmas cards, booklets, and stationery.
- Prints items for school use: school programs, book covers, posters, and office forms.
- Cuts linoleum blocks for printing.
- Binds memo pads, booklets, and programs.

Area

Advanced Graphic Arts

Advanced Graphic Arts includes more advanced application of previously acquired skills and increases the ability to do more difficult printing jobs. Students develop appreciation of good design, workmanship, and finish and acquire specific knowledge of the requirements for employment in the various crafts and technical positions in Graphic Arts. Emphasis is placed upon printing design, layout, color jobs, and production methods.

Expected Outcomes

The student who has participated successfully in Advanced Graphic Arts--

Hand Composition

- Can use the correct spacing between words.
- Can prepare a simple layout with specifications.
- Can use a line gauge.
- Can use ornaments, leads and slugs, borders, and rules.

Can use a miter machine.
Can set display matter, combination of sizes of type, tabular matter, and ruled forms.
Understands the proper balance and design of printed matter.

Press Room

Understands kinds and uses of ink.
Can combine inks for producing variable shades.
Can run two-color jobs in register.
Can set and use the ink fountain.
Understands the use of frisket.
Can make ready for perforating rule.

Imposition

Can break type form down for color.
Can make correct margins between pages.
Can lock a form for work and turn.
Can set correct margins for multiple form.
Can lock up a mitered corner job and a perforation job.
Can correctly position pages for lock-up from a dummy.
Understands the care of furniture.
Understands how to eliminate spring from form.

Bindery and Stock

Is more skillful in all phases of bindery and stock room work than in Beginning Graphic Arts.

Silk Screen and Linoleum Block Printing

Is more skillful in all phases of silk screen and linoleum block printing than in the Beginning Graphic Arts class.

Learning Experiences

In Advanced Graphic Arts the student--

Prints two-color jobs for personal and school use: posters, stationery, announcements, programs, Christmas cards, and placards.

Binds magazines and books.

Designs cards for special occasions using combination of linoleum block and silk screen: Washington's Birthday, open house, Christmas, and Mother's Day.

Makes calendars.

Area

Drafting

Drafting builds on the mechanical drawing experiences of the junior high school program. It provides students with an opportunity to use accepted drawing equipment and drafting materials and to develop an understanding of the language of industry. Students make functional drawings for several of the fields in the area of drafting and acquire some degree of proficiency in solving problems of design.

Expected Outcomes

The student who has participated successfully in Drafting--

- Can use and care for basic drafting equipment.
- Can use the complete alphabet of lines.
- Can use Gothic lettering.
- Can draw and apply geometrical constructions.
- Can make sketches of many types of mechanical objects.
- Can make orthographic projections of objects.
- Can make working drawings.
- Can draw intersections and developments.
- Can make auxiliary views and sectional views.
- Can represent screw threads.
- Can make pictorial drawings.
- Can use drawing inks.
- Can make tracings and prints.
- Can make floor plans.

Learning Experiences

In Drafting, the student--

- Makes sketches of many types of practical drafting problems.
- Uses drawing instruments to draw: layout plates, geometrical problems, orthographic projections, working drawings, sections, auxiliary views, pictorial drawings, developments, and intersections.
- Makes tracings and prints of drawings.

AreaGrades Eleven and Twelve
Architectural Drafting

Architectural Drafting develops in students an interest in home planning and the ability to present ideas in graphic form. Students study the San Diego Building Code and the construction of small homes, and make working drawings of small residences.

Expected Outcomes

The student who has participated successfully in Architectural Drafting--

- Can use lettering.
- Can make a sketch of a small residence.
- Can draw a floor plan.
- Can draw a foundation plan.
- Can draw a roof plan.
- Can draw sections and detail plates of house construction.
- Can draw elevations.
- Can draw a garage plan.
- Can draw a plot plan.
- Can draw a perspective.
- Can do simple rendering.
- Understands architectural symbols.
- Understands how to estimate construction costs.
- Understands how to make out a bill of materials.
- Has a knowledge of the types and use of building materials.
- Understands some of the occupational opportunities for architectural draftsmen.

Learning Experiences

In Architectural Drafting the student--

- Makes sketches of many types of house plans.
- Makes a full set of tracings of a small residence including: floor plan, foundation plan, roof plan, elevation, garage, plot plan, drawings, and perspective drawings.
- Reviews and discusses professional architects' plans.
- Uses visual aids in the study of home construction and building materials.

Area

Machine Drafting

Machine Drafting give students an opportunity to understand the drafting requirements of many of the machine industries. Accepted drafting room procedures are followed in the use of materials and instruments. This level of work emphasizes, to a considerable extent, an engineering approach to the problems presented.

Expected Outcomes

The student who has participated successfully in Machine Drafting--

Can use and recognize the symbols used in Machine Drafting.
 Can find and use tables of standard materials in textbooks and handbooks.
 Knows how to represent bolts, nuts, threads, springs, and fastenings.
 Knows how to draw pipe assemblies.
 Can make simple drawings of gears.
 Knows how to generate curves made by moving parts.
 Can make detail and assembly drawings.
 Knows how to make a tracing and to make a blueprint.
 Can make a simple model of machine parts.
 Can make a pictorial drawing of machine parts.
 Can make simple renderings of machine parts.
 Understands some of the drafting opportunities in the machine industries.

Learning Experiences

In order to acquire an understanding of Machine Drafting the student--

Makes sketches of machine parts.
 Uses instruments to draw machine parts.
 Makes models of machine parts.
 Uses visual aids in the study of machines and machine parts used in industry.

Area

Grades Ten, Eleven, and
 Twelve
 Beginning Woodwork

Beginning Woodwork provides students with basic information and improves fundamental skills included in the junior high school program. It develops skill in the use of woodworking machinery and hand tools. Workmanship, construction, design, finishing, co-operation, resourcefulness, and the economical use of time and materials are emphasized. Students develop the ability to use care in the selection, purchase, and use of wood and wood products.

Expected Outcomes

The student who has participated successfully in Beginning Woodwork--

Can make simple working drawings of a project.
 Can make a bill of material and estimate cost.

- Can safely use and care for the basic hand tools, such as block and jack plane, hack saw, rip saw, crosscut saw, coping saw, wood chisel, brace and bit, marking guage, file, try square, hammer, T bevel square, framing square, spoke shave, cabinet scraper, carving tools, and hand drill.
- Can safely operate power machines, such as bandsaw, jig saw, drill press, circular saw, jointer, disc and portable sander, mortiser, planer, grinder, lathe, and portable router.
- Can lay out and construct simple woodworking joints, including rabbet, dado, dowel, lap, spline, mortise and tenon, and miter.
- Can use standard wood fasteners, including wood screws, nails, corrugated fasteners, and dowels.
- Can glue up and clamp projects using the proper procedure.
- Can select and use the various kinds and grades of abrasive materials.
- Understands the correct procedure in assembling a project.
- Can select and install standard cabinet hardware, such as surface hinges, butt hinges, drawer knobs and pulls, catches, hasps and table top fasteners.
- Can apply finishing materials, including shellac, varnish, enamel, stain, fillers, lacquers, rubbing oils, and wax.
- Understands the different characteristics of finishing materials.
- Can clean and care for painting equipment, including paint brushes and spray guns.
- Can identify and use the following woods: white pine, Douglas fir, redwood, mahogany, oak, maple, walnut, cedar.
- Understands modern methods of lumber production, such as the manufacture of plywood, veneer, seasoning, and milling.
- Understands some of the occupational opportunities in the wood-working trades.

Learning Experiences

In Beginning Woodwork the student--

- Constructs projects such as: end tables, coffee tables, lamps, paddle boards, turned bowls, gavels, sewing cabinets, wall shelves, shadow boxes, bookcases, and gun cabinets.
- Observes demonstrations of tool techniques and machine operations.
- Repairs projects for the home, school, and community.
- Uses finishing materials to finish projects.
- Uses visual aids in the study of wood products, production techniques, and the lumber industry.

Area

Advanced Woodwork

Advanced Woodwork enables students to review skills, processes, and related information previously acquired. Students develop a high degree of skill in the use of hand tools and woodwork machinery. They acquire the ability to apply mathematics, science, and drawing to practical problems. Emphasis is placed on the ability to carry a project through to successful completion.

Expected Outcomes

The student who has participated successfully in Advanced Woodwork--

- Can make a working drawing a project, select the material, estimate the cost, plan a procedure, and carry out the project on his own initiative.
- Can use with increased skill and accuracy the standard woodworking hand tools.
- Can use with a high degree of skill the standard power machines involving the more complex machine setups, such as construction of moldings, reeding, fluting, compound miter, and spline.
- Can lay out and construct projects which involve the more complex woodworking practices, including veneering, inlay, wood carving, upholstering, and pattern making.
- Can construct projects using standard practices of production mill work, including templates, jigs, and fixtures.
- Can use finishing materials with increased skill.
- Understands the occupational opportunities of the woodworking industry.

Learning Experiences

In Advanced Woodwork the student--

- Constructs projects, such as: radio cabinets, kitchen cabinets, boats, paddle boards, end tables, bookcases, garden furniture, sewing cabinets, chairs, tables, cedar chests, desks, chest of drawers, and lamps.
- Does production work and repair jobs for the home, school, and community.
- Assists beginning students with projects and machine operations.
- Visits local woodworking industries.

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CURRICULUM GUIDE

The Secondary Program

San Diego City Schools

Business Education

Point of View

Business education is that part of the total program of education which develops understandings, attitudes, and skills used in conducting business affairs, improving business relationships, and working effectively in the business world.

Every individual needs some knowledge of the fundamental skills of business. He buys merchandise, insurance, and services; he contributes to social security; he pays taxes; and he votes on issues that have to do with his economic life.

The worker in industry, business, or the professions needs an understanding of our economic system and its relationship to the American standard of living.

In the junior high school, business education emphasizes an exploratory program which includes an investigation into the nature of business, its purpose, its scope, its organization, its opportunities, its requirements, and its place in our free enterprise system.

Students are helped to recognize more clearly their own interests, aptitudes, and abilities so that they will be able to make a more intelligent selection of achievable occupational goals. Those interested in pursuing business careers are given information concerning further opportunities available for business training in the senior high school.

The business education courses in the junior high school provide basic training in skills such as typing, penmanship, spelling, arithmetic, budgeting, and buying. It also provides training in the efficient use of business services such as communication, transportation, insurance, and banking. These skills and knowledges are essential in business occupations and in personal business affairs.

Area

Junior Business Training

Junior Business Training introduces pupils to the functions of business and the problems and occupational opportunities in the business world.

The principal emphasis is exploratory in character. Through exploratory experiences, commercial and economic understandings are developed which are important to consumers in our democratic society.

Some basic business skills are presented which are valuable to the individual in his daily life.

Arithmetic, penmanship, spelling, and reading are taught functionally. As the need arises, these subjects are correlated with each unit of instruction.

Expected Outcomes

Grade Nine

When a pupil has participated successfully in the learning experiences for Junior Business Training he--

- Knows what personal attributes are important in the various field of business.
- Recognizes the various employment opportunities in the field of business and knows the educational requirements for entry into these jobs.
- Recognizes more fully his own aptitudes, abilities, skills, and interests, especially in terms of the occupational opportunities in the field of business.
- Appreciates the importance of business in our democratic society.
- Understands that in business one must be able to get along with people.
- Understands business standards and ethics.
- Knows some of the techniques of applying for a job.
- Understands that budgeting and thrift are essential in satisfactory home and family life as well as in business.
- Understands some of the different systems of filing and indexing.
- Can efficiently use business services such as transportation, communication, and banking.
- Understands the general principles of insurance and its importance in business and personal life.
- Is careful and accurate in spelling and arithmetic.

Learning Experiences

In Junior Business Training the pupil--

- Prepares reports, compositions, and business letters.
- Assists in filing, library work, and general office work.
- Makes and keeps a budget and opens and maintains a savings account.
- Plans insurance programs.
- Plans trips and figures expense accounts.
- Assists in making up advertisements for merchandise and participates in class demonstrations such as selling merchandise and applying for a position.

Participates in field visits to a variety of business establishments and listens to talks by local business leaders.
Evaluates his own interests and aptitudes as he studies the characteristics and requirements of business occupations.

Area

Typewriting

The approach to typewriting in the junior high school is chiefly avocational in nature. The standards required are those which satisfy personal needs while in school and later in adult life. Students learn the value of typewriting in everyday life.

Students are also shown the vocational possibilities of typewriting, but classroom work does not stress the vocational aspects since the primary aim of the junior high school is typing for personal use.

However, students with special talent are encouraged to enroll in Advanced Typewriting in high school where typewriting for vocational purposes is emphasized.

Expected Outcomes

When a pupil has participated successfully in Typewriting he--

Is able to type by touch control with sufficient accuracy and speed to satisfy personal needs.

Is able to write simple letters, outlines, manuscripts, telegrams, menus, postcards, and other items which pertain to everyday living while in school and later in adult life.

Learning Experiences

In Typewriting, the pupil--

Practices the various letter-writing forms and punctuation styles.
Practices proper syllabication.

Practices proper erasing techniques, inserts missing letters, spreads or crowds letters for corrections, and writes on lined paper.

Writes drills in unison, takes dictation, and composes at the typewriter.

Writes timed tests stressing speed and accuracy for a length of time that is suitable to the maturity of the student.

Uses a variety of audio-visual aids in the typing field.

Arranges material attractively, utilizing knowledge of vertical and horizontal centering on the various sizes of paper.

Cleans and cares for the typewriter properly.
 Proofreads, rearranges, and types from rough drafts.
 Types post cards, file cards, telegrams, menus, programs, labels,
 and manuscripts.
 Addresses envelopes and folds and inserts letters.
 Makes clean-cut carbon copies.

Point of View

Senior High School

The business education program in the senior high school offers, for those students who are definitely pursuing business careers, a specialized curriculum which will prepare them to enter business employment upon graduation, or which will provide a foundation for advanced business training. Senior high schools offer such courses as: Bookkeeping, Business Arithmetic, Business English, Business Law, Job Preparation, Office Machines, Office Practice, Salesmanship, Shorthand, and Typewriting.

For students who are interested in some other field or who have not made an occupational choice, business education offers training in basic business skills and understandings which are useful to every individual in conducting his business affairs as a citizen and consumer.

Business education provides students with an understanding of the requirements and opportunities in various business occupations. It aids in the selection of an occupational goal with due regard to the individual's aptitudes, abilities, and interests.

Business education also acquaints students with the advantages and opportunities in our free enterprise system. It helps students to understand the place of business in our national economic structure and helps them to realize the interdependence of all factors of production.

Business education develops an understanding of business laws and customs, business forms and procedures, and the code of business ethics. It provides an opportunity for the origin and practice of desirable habits, attitudes, and appreciations essential for effective group relations and individual relations.

Business education promotes the concept that effective citizenship requires the acceptance of civic responsibilities and participation in the affairs of the community.

Area

Grades Ten, Eleven, and
Twelve

Bookkeeping

Bookkeeping provides the fundamental skills and knowledge required for entering employment as a bookkeeper and for studying advanced accounting.

It also contributes to the general education of students who may not choose to follow record-keeping as a vocation. Some knowledge of bookkeeping and accounting is essential to an understanding of our modern economic system and to the effective handling of personal business affairs.

Expected Outcomes

The student who is acquiring a knowledge of Bookkeeping--

Has a better understanding of how a business enterprise functions-- how the various departments work together and depend on each other.

Has self-confidence and respect for honest effort, and realizes that nothing is accomplished without work.

Recognizes the importance of systematic and precise work habits in bookkeeping.

The first year student--

Can prepare balance sheet and profit and loss statements for small business enterprise and for the individual. He can close the books at the end of the fiscal period.

Recognizes the purpose and use of the more common business papers or vouchers: sales tickets and sales invoices, purchase invoices, and credit memorandums.

Is able to record withholding taxes and social security taxes as encountered in ordinary business activities.

Understands the relationship between the customer and the bank and understands the use of checks and deposit tickets.

The second year student--

Can set up books; prepare balance sheets and profit and loss statements; and close books for larger business units--the partnership, the corporation, and specialized business.

Learning Experiences

The first year Bookkeeping student--

Works carefully organized bookkeeping problems and exercises on business operations such as are carried out by small retail merchants, physicians, dentists, attorneys, and clubs.

Prepares vouchers and statements, makes journal entries, and posts to a ledger.

Opens a set of books, analyzes and records the current daily business transactions, and closes the books at the end of a fiscal period.

Takes a trial balance, prepares a balance sheet, and prepares a profit and loss statement.

Analyzes cost and income ratios and makes out tax returns.

The second year student--

Practices these skills on increasingly complex problems for specialized businesses, partnerships, and corporations.

May keep books for student organizations and activities.

Area

Business Arithmetic

This course is designed to develop the arithmetic skills needed by junior office and mercantile employees and by adults generally in their day-to-day business affairs.

Expected Outcomes

The student who has successfully participated in the learning activities of Business Arithmetic--

Can work with the four fundamental processes of arithmetic.

Understands the necessity of arithmetic in business employment.

Recognizes the need of arithmetical knowledge in the home and in everyday transactions.

Works with neatness and writes legibly.

Can use and understand common business papers.

Has some knowledge of procedures in common business transactions.

Can set up and operate a family budget or personal budget.

Can compute income or costs on investments, home buying, and installment purchases.

Understands the general principles of taxes such as income, luxury, withholding, general property, social security, and sales.

Learning Experiences

In Business Arithmetic the student--

Solves carefully selected problems which emphasize the business principles encountered by workers in junior office or sales employment and by adults generally in their day-to-day business affairs. These problems provide practice which leads to proficiency in the four fundamental processes and in percentage, fractions, decimals, ratio, and proportion.

Sets up and operates a family budget or personal budget.
 Prepares simple business forms and does the necessary arithmetical computations involved in simple taxation, investments, installment buying, personal loans, insurance, discounts, mark-ups and mark-downs, and elementary bookkeeping.

Area

Business Law

Business law provides an understanding of the legal problems which are most frequently encountered in general business operations and in personal business affairs.

Expected Outcomes

The student who has participated successfully in Business Law--

- Recognizes the value of, and need for, competent legal advice and assistance.
- Has an elementary knowledge of the laws governing property, insurance, banking, contracts, sales, leases, rentals, loans, buying and selling, and installment buying.
- Understands the important features of certain state laws, such as child labor laws, unemployment compensation insurance, workman's compensation insurance, and statutes of limitation.
- Understands some of the common legal terms.
- Can make lay use of the county law library.

Learning Experiences

In Business Law the student--

- Studies the important features of law encountered in daily business affairs.
- Uses court decisions in the study of the nature of contracts.
- Solves case problems in the study of employer-employee relationships.
- Examines legal procedure and studies problems involved in installment buying.
- Investigates the legal aspects of life insurance, fire insurance, and automobile insurance.
- Studies the nature and relationships of such business organizations as partnerships and corporations.
- Examines court decisions in the study of the legal aspects of property ownership.
- Studies legal regulations which are of especial importance to consumers.

Hears well-qualified professional and business men and women as guest speakers, and participates in class discussion following these talks.
Attends court session to observe legal procedure.

Area

Business English

Business English provides students with the opportunity to practice the use of language and communication skills in common business activities and in daily life.

Language principles are emphasized only as they occur and are important in practical activities related to communication in the business world.

Expected Outcomes

The student who participates successfully in the learning activities of Business English--

Improves his reading, writing, and speaking as applied to typical business activities and daily living.

Better understands vocational opportunities and requirements in relation to his own vocational interests, abilities, and aptitudes.

Can write a business letter.

Can make an oral report with confidence before a group.

Learning Experiences

Students of Business English apply the principles of correct grammar usage, accurate and effective speech, and clear and legible writing in carrying out activities which are common to the business world, such as:

Writing business letters, preparing reports, writing checks and money orders, writing telegrams, filling out business forms and blanks, giving directions properly, and practicing telephone usage.

Evaluating and reporting on advertisements; analyzing labels; planning a job-hunting campaign; and evaluating books, magazines, newspapers, movies, and radio programs.

Using the dictionary, proper syllabication, and library and reference materials.

Area

Job Preparation

Job Preparation provides vocational guidance and aids in personality development for seniors whose vocational interests are in clerical, secretarial, bookkeeping, or other business occupations.

In some of the senior high schools these experiences are provided, not as a separate course, but as a unit in another course such as Business English.

Expected Outcomes

The student who has successfully participated in the learning experiences of Job Preparation--

Understands the value of a good business personality and how to acquire it.

He recognizes his own personality assets and liabilities.

Has some knowledge of occupational fields that are of interest.

Has gained detailed knowledge concerning one particular type of work.

Knows effective techniques of hunting for a job and making an interview.

Develops desirable attitudes and habits with respect to future work.

Can prepare and use common business forms according to accepted business standards.

Learning Experiences

In Job Preparation the student--

Makes a general study of the business occupations and compares the requirements of specific jobs with his own interests and aptitudes.

Makes a detailed study of one particular job after which he interviews a person actually on the job.

Practices interview techniques.

Discusses and analyzes employee relationships and problems and responsibilities of workers and employer.

Types practice office forms and checks them for neatness and accuracy according to accepted business standards.

Area

Office Machines

The Office Machines course provides basic training in the operation of the more commonly used office computing machines. All prospective office workers need this type of training.

Expected Outcomes

The student who has participated successfully in the learning activities of the course in Office Machines--

- Can use the four types of adding and calculating machines: full keyboard listing machine, ten-key listing machines, crank-driven calculators, and key-driven calculators.
- Can meet the accuracy requirements and the minimum speed requirements needed for ordinary office use.

Learning Experiences

In the course in Office Machines the student--

- Multiplies, subtracts, and adds on full keyboard listing machines and multiplies, subtracts, adds, and divides on ten-key, crank-driven, and key-driven calculators, using problems similar to those encountered in typical office situations.
- Improves his skill and accuracy through timed tests.
- Works in a school office for six weeks to gain knowledge of actual office procedures and practices.

Office Practice

Office Practice in the senior high school is a terminal course for those students with a major interest in commercial education.

The purpose of the course is to enable the student, through work experience, to acquire skills, aptitudes, and a pleasant personality so that he can adjust himself more quickly to the realities and standards of a business office.

Expected Outcomes

The student who has participated successfully in Office Practice--

- Can transcribe letters and articles from shorthand notes into mailable copies--including neat carbons.
- Can cut stencils and duplicator master sheets, and can operate the mimeograph and other duplicating machines.
- Can perform general clerical duties in an office, such as sorting mail and filing.
- Can work under pressure and can complete jobs in the time allotted.
- Develops a correct telephone technique and acquires poise in meeting the public.
- Develops the ability to recognize good workmanship, to co-operate with others, and to assume responsibility.

Learning Experiences

The Office Practice student works in the school office and participates in the following activities:

- Operating mimeograph and other office machines.
- Taking dictation and transcribing letters, reports, and other correspondence.
- Filing and using office reference materials.
- Cutting stencils and working on mimeoscope.
- Meeting public and handling callers.
- Handling confidential materials.

Salesmanship

Area

Over one-half of the workers in San Diego are employed in distributive or sales occupations. Moreover, salesmanship is a skill which is important to everyone regardless of his occupation.

Salesmanship training in the senior high school is a vocational course for those students who plan to enter the field of direct selling upon graduation from high school.

For the majority of students, it provides experiences of an exploratory and guidance nature and develops attitudes and skills which are valuable to everyone in working with people.

Expected Outcomes

The student who has participated successfully in the learning experiences for Salesmanship--

- Understands local employment opportunities and requirements in the sales and distributive fields and evaluates his own interests and aptitudes against these standards.
- Appreciates the importance of a good personality, of good personal grooming, and of getting along well with others as a part of job success.
- Understands the economic importance of selling in our free enterprise system.
- Has developed some specific selling skills which will be useful in employment involving direct selling. As a consumer he recognizes good and bad salesmanship and interprets sales information.

Learning Experiences

In Salesmanship the student--

Prepares lists of sales and distributive occupations in San Diego and analyzes the employment requirements for these occupations. Makes sales analysis charts and makes plans for self improvement. Observes and practices demonstration sales. Rates himself and others on selling techniques, voice, posture, and personal grooming and develops a plan of improvement for himself. Shops in a store and reports good and bad sales practices encountered. Practices applying for a job and prepares letters of application. Listens to talks by sales executives on the economic significance of selling, and participates in group discussions following these talks.

Area

Shorthand

Shorthand is a vocational skill which is required for employment in many secretarial and office occupations. Typewriting is a prerequisite.

Expected Outcomes

When a student has participated successfully in Shorthand he--

Can take dictation in shorthand at 80 to 100 words per minute and can transcribe this dictation orally or in writing with reasonable speed and accuracy.
Can transcribe and setup letters and reports in proper business form.
Understands the importance of personal characteristics as well as skill to business success.
Is qualified for entering employment in business or for further instruction in advanced business or secretarial training.

Learning Experience

In Shorthand the student--

Observes teacher demonstrations and explanations.
Practices writing shorthand at an increasing speed of dictation and practices reading his own shorthand and shorthand plates.
Takes frequent tests and drills to increase speed and accuracy and competes for achievement awards at various levels.

Area

Typewriting

Beginning typewriting in the senior high school has the same purposes and methods as in the junior high school where the emphasis is placed upon typing for avocational purposes.

The advanced courses in typewriting are vocational in nature and emphasize meeting the standards of the business world in accuracy, speed, attitudes, and habits.

Expected Outcomes

The student who successfully participates in Typewriting--

- Is able to type with sufficient accuracy, speed, good workmanship, and self-reliance to meet the beginning employment standards of business.
- Can perform the duties of a typist-clerk which includes stencil cutting; writing carbon copies; properly organizing business letters; proofreading; addressing envelopes; and typing outlines, bibliographies, manuscripts, tables of contents, footnotes, various legal forms, and tabulation and statistical problems.
- Practices good posture and proper use of hands and fingers in his typewriting.

Learning Experiences

In Typewriting the student--

- Practices syllabication and uses the various letter-writing forms and punctuation styles.
- Erases properly, inserts missing letters, spreads or crowds letters for corrections, and writes on lined paper.
- Writes drills in unison, takes dictation, and composes at the typewriter.
- Writes timed tests, stressing speed and accuracy.
- Makes clean-cut carbon copies.
- Arranges material attractively, utilizing knowledge of vertical and horizontal centering on various sizes of paper.
- Cleans and cares for typewriter properly.
- Proofreads, rearranges, and types from rough drafts.
- Types post cards, file cards, telegrams, menus, programs, labels, outlines, manuscripts, bibliographies, tables of contents, title pages, footnotes, stencils, and various legal forms.

Addresses envelopes and folds and inserts letters.
Computes and sets up difficult tabulation problems from arranged
and unarranged material.
Types an application letter and data sheet.

Resource References

Grades seven through
twelve

San Diego City Schools publications

Catalogue of Education Films and supplements. Latest issues.

Suggestions for Planning and Conducting School Excursions and Field
Trips. 1946.

CURRICULUM GUIDE

The Secondary Program

San Diego City Schools

This We BelieveWe Believe

That the San Diego City Schools must provide the best possible educational opportunities for all the children and youth of our community and for adults who wish further opportunities for self-improvement.

That this can be achieved only through well-equipped schools staffed by teachers professionally trained to utilize sound procedures and instructional materials.

That appropriate educational experience for our children and youth can be realized only through a carefully planned program designed to meet the needs of our children and our society.

That the purpose of our public schools is to help our children, youth, and adults to become well-adjusted, self-supporting, and actively participating citizens of the community.

That every child and every youth should, to the maximum of his capacity, achieve competency in effective living.

That the educated person in accordance with his ability and experience*--

ACHIEVES FULL REALIZATION OF HIS INDIVIDUAL CAPACITIES when he

Desires to improve himself.

Speaks English clearly.

Reads English efficiently.

Writes English effectively.

Uses skills of counting and calculating successfully.

Listens attentively and observes accurately.

Understands the more essential facts concerning health and disease.

Protects his own health and that of others.

Works to improve the health of the community.

* Adapted from A Framework for Public Education in California, Working Draft Number Five, 1949, and based upon The Purposes of Education in American Democracy. Washington: Educational Policies Commission, N.E.A. 1938.

Participates in a range of leisure time activities--physical, intellectual, and creative.
 Develops a sense of humor.
 Seeks and enjoys beauty.
 Understands and feels the contributions of art, literature, and music.
 Develops a set of sound moral and spiritual values and uses these in making choices.
 Makes appropriate decisions in specific situations as a result of critical thinking.
 Formulates purposes for effective living.

ASSUMES CIVIC RESPONSIBILITY when he

Is loyal to American democratic ideals and acts accordingly.
 Understands and appreciates the positive advantages of American institutions.
 Respects the law.
 Meets his civic obligations.
 Acts with others to correct unsatisfactory conditions.
 Is sensitive to disparities of human circumstances.
 Understands local, state, national, and international social structures and social processes.
 Achieves skill with democratic processes of group action.
 Knows the achievements of the people who have made the United States a great nation.
 Recognizes and develops defenses against destructive propaganda.
 Accepts honest differences of opinion.
 Realizes the importance of wise use of human and natural resources.
 Evaluates scientific advances by their contributions to the general welfare.
 Is an active co-operating member of the world community, working to achieve and maintain peace in the world.

PRACTICES GOOD HUMAN RELATIONSHIPS when he

Places human values first.
 Bases his human relations on a set of sound moral and spiritual values which are in line with American ideals.
 Recognizes the family as a basic social institution.
 Conserves family ideals.
 Is skilled in homemaking.
 Develops a rich sincere, and varied social life.
 Works and plays congenially with others.
 Observes the amenities of social behavior.
 Maintains democratic relationships in the family and all other group situations.
 Strives to improve intergroup relationships.

ATTAINS ECONOMIC EFFICIENCY when he

Knows the nature of the interdependency of our economic structure and procedures.
 Understands the satisfaction of good workmanship.
 Recognizes the obligations to perform an honest day's work.
 Understands the requirements and opportunities for various jobs.
 Appreciates the unique economic opportunities this country offers.
 Selects his occupation and prepares for it.
 Maintains and improves his efficiency.
 Realizes the social value of his work.
 Plans the economics of his own life.
 Develops standards for guiding his expenditures.
 Becomes an informed and skillful buyer.
 Takes ethical measures to safeguard his interests.

That every teacher in every classroom is responsible for effectively teaching the values, concepts, and skills that are basic to the preservation and improvement of our American democracy.

Guideposts for effective democratic citizenship are suggested in three basic monographs. These are:

The American Way

Respect for the concept of constitutional processes
 Understanding of, and belief in, our basic freedoms
 Belief in the dignity of every individual
 Comprehension of the obligations and responsibilities of every American citizen
 Realization of the dynamic nature of democracy
 Belief in the right of organized groups to work by democratic means for the acceptance of new ideas
 Faith in the American dream of liberty and justice for all

Spiritual Values

Reverence
 Respect for personality
 Loyalty to ideals of American group life
 Strengthening of character
 Responsibility for self-direction
 Perseverance in pursuit of worthy goals
 Sensitivity
 Creative ability

We The People

Recognition of the oneness of mankind
 Respect for the variety in the way people live
 Provision for equality of opportunity
 Appreciation of the contributions of all people
 Responsibility for the welfare of all

That an effective school program is achieved through:

A PLANNED CURRICULUM

The most effective learning results for each individual pupil only when the curriculum has been carefully planned to meet his needs and those of society. Effective curriculum planning is achieved through the co-operative efforts of elementary and secondary teachers, principals, and members of the Instructional Division working together in curriculum steering committees.

The San Diego City Schools Curriculum Guide provides a broad, flexible framework which should insure a well-balanced educational program for all the children and youth in the community.

The resource units referred to in the Curriculum Guide provide a wealth of suggestions from which teachers may select appropriate experiences for children of varying abilities.

The Curriculum Guide and the various resource units provide many opportunities for teacher-pupil planning so that each pupil shares in the planning and will develop a keen interest in the program.

PROFESSIONALLY TRAINED TEACHERS

Curriculum materials come to life only when children are working under the stimulation and guidance of professionally trained teachers who understand the characteristics of a democratic society, the nature and needs of children and young people, the learning process, and the types of learning experiences most appropriate for different age levels.

The most efficient learning takes place under the guidance of teachers when it is recognized that:

Individuals have varying needs and interests depending upon whether they are children, adolescents, or young adults.

Individuals at the same age level differ physically, mentally, and emotionally--differences which may be due to inherited characteristics or to differences in home, community, and cultural opportunities.

Learning experiences must make sense to the child and challenge his interest. Interest and understanding create a desire to learn which in turn leads to efficient learning.

Efficient learning takes place through active participation rather than passive absorption.

Many different learnings occur at the same time.