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APPLICATION OF CERTAIN SEASHORE MEASURES OF MUSICAL TALENT
AND THE KUDER PREFERENCE RECORD TO THE BUILDING OF A
MUSIC PROGRAM IN BORGER HIGH SCHOOL

THESIS

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CHAPTER I

INTRODUCTION

The concept that musical aptitude or talent is subject to scientific measurement is a concept quite recently developed in the field of psychology. The devices for such measurement have been inadequate and subject to valid criticism, yet they have been used with practical success and are being accepted by music educators as instruments of value. William S. Larson quotes Howard Hansen, Director of the Eastman School of Music, who speaks from practical experience with the Seashore Measures of Musical Talent:

In attempting to work out accurately the various tests in determining the students ability and rate of speed at which his education is likely to progress, the Seashore tests have been an invaluable part of this general program and have consistently demonstrated their worth.¹

Tests for determining interest in various activities or vocations have been developed very recently in the field of guidance. These tests are not without fault but are valuable aids in determining interest and possible prediction of success in the preferred field as indicated on the tests.

Joseph C. Heston of Depauw University says that the Kuder vocational preference tests have been receiving deservedly wide usage in college counseling bureaus and veteran guidance centers as an instrument for the assessment of vocational interest patterns.²

¹William S. Larsen, "Practical Experience with Music Tests," Music Educator's Journal, XXIV (March, 1938), 74.

²Joseph C. Heston, "College Freshman Norms for the Kuder Preference Record," Occupations, XXVI (November, 1947), 92.

However, few high schools, if any at all, have applied a combination of systematic measures of interest with scientific measures of ability in the planning of a program of music for all persons in school. R. C. Crosby expressed the need for such a combination:

It may be well that a combination of measures of motivation with measures of ability will provide us with a more adequate means for predicting scholastic achievement.³

The present **research** attempts to contribute evidence to this problem.

The Problem

One of the aims of modern education is to help pupils develop emotional stability, desirable attitudes, and worthy ideals. In other words, the purpose is to teach pupils to feel, as well as to know and do. Music can be a powerful force in fulfilling this aim.

In this research, an attempt is made to evaluate the music program of a typical high school in terms of its contribution to the development of pupils who show evidence of possessing musical talent.

The purpose of this report is to apply the results of the Pitch and Tonal Memory tests of the Seashore Measures of Musical Talent and the results of the Kuder Preference Record to the building of a Program of Music in Berger High School.

Limitations of the Problem

This study is confined to the pupils enrolled in ninth, tenth, and eleventh grades of Berger High School. The data were collected from a testing program that was conducted during one school year (1948-1949).

³R. C. Crosby, "Vocational Interest as Measured by the Kuder Preference Record," School and Society, XXV (1942), p. 455.

Sources of Data

Since this is a study of musical talent and interest in music, such factors as age, intelligence, and training were not taken into consideration. All students in the ninth, tenth, and eleventh grades of Borger High School were given the tests.

The present Seashore records represent the 1939 revision made in the RCA laboratories. The original records were made in 1919 by the Columbia Phonograph Company and were in use for twenty years without change. The Pitch and Tonal Memory records used were series A, which were designed for use with unselected groups. Each test is recorded on one side of a twelve inch Victor record.

The Kuder Preference Record test was standardized in 1935. The 1946 revision of the test, form BB, was used for this study.

Accuracy of Data

Precaution has been taken to keep an accurate record of each individual on both tests. The tests were properly given and carefully scored. The tables shown are tabulations made from accurately checked records and tests.

Both tests were given in rooms as free from disturbance as possible. Explanations of each test were clearly made and care was taken to see that all understood before the testing began. Nervousness was eliminated by knowledge that the results of the tests were to be used for guidance and did not count a grade for any subject. To encourage the students to do their best, they were told that the scores would be recorded on the student's permanent record card.

The Seashore records were played with medium loudness. The standard forms of test blanks were used on both tests.

Definations

Musical aptitude is defined as a psychological phenomenon, possessed in varying degrees by every normal person, which makes it possible for that person to respond to musical stimuli, the response to be in proportion to the degree of talent possessed by the individual. Aptitude tests are tests of native talent. In the case of music,

They attempt to evaluate the musical heritage of an individual. They measure **many** specific musical capacities, which when combined with many other factors, constitute musicianship.⁴

According to Walter Bingham

Interest is the satisfaction which comes from engaging in a certain activity, accompanied by the pepsistence of the activity and the heightening of attention to it.⁵

⁴Jacob Kwalwasser, Tests and Measurements in Music, p. 1.

⁵Walter Bingham, Aptitude and Aptitude Testing, p. 60.

CHAPTER II

BASIS OF SELECTING AND ORGANIZING MATERIAL

Description of the Tests

The Seashore Measures of Musical Talent

The tests are called measures to distinguish them from the ordinary paper and pencil tests and because they are patterned on principles of accurate measurement with scientific instruments in the laboratory.¹ The measures consist of six tests, each testing a different phase of musical ability. Only the Pitch Discrimination and the Tonal Memory tests are chosen for this study.

Pitch Discrimination.--The Pitch Determination test consists of one hundred trials which range from thirty vibrations to one half vibration. The larger vibration frequency difference represents an interval of greater than one half step. The smaller vibration frequency difference represents an interval smaller than one one-hundredth of a tone.

Tonal Memory.--The Tonal Memory test is constructed to indicate one's memory span for a succession of non-melodically related tones. The shortest span is three tones and the longest span is five tones. In each span there are ten trials, making thirty trials in the test.

¹Carl E. Seashore, Manual of Instructions and Interpretations, p. 3.

The norms published with the tests make it possible to convert the number of right answers into ranking order. The highest rank, 1, represents the scores of the highest ten per cent in a normal unselected group. The next highest, 2, includes the scores made by the next ten per cent, and so on to the rank of 10, which includes scores made by the lowest ten per cent of a normal population. In other words, rank 1 is superior, rank 2 is excellent, ranks 3 and 4 are good, ranks 5 and 6 are average, ranks 7 and 8 are low average, and ranks 9 and 10 are poor.

The Kuder Preference Record

The Kuder Preference Record is an inventory designed to point out vocations which involve activities for which the student has expressed preference, to confirm his vocational choice, and to check against claimed occupational interests formed upon superficial basis.

The test is designed to measure the extent of preference in the following nine general classifications: mechanical, computational, scientific, persuasive, artistic, literary, musical, social service, and clerical. Five hundred and four activities are listed in groups of three. (See Appendix B.) A person is asked to decide which of the three activities he likes most and which he likes least. A profile sheet is used to record scores and a graph drawn so that a person may see by the marked percentiles whether his interest is high or low in each of the nine classifications of activities.

Reliability of the Tests

The Seashore Measures of Musical Talent

The coefficients of reliability for the revised edition of the Seashore Measures of Musical Talent as given by Seashore are: for adults, Series A, the reliability of the Pitch test is .88, and for the Tonal Memory the reliability is .88.²

The Kuder Preference Record

The reliabilities obtained for the Kuder Preference Record scales are listed in Table 5 of the Revised Manual for the Kuder Preference Record. The reliabilities of the music scales in eight different tests range from .85 to .95. Kuder reports that Hickman retested 125 high school seniors, applied the formula for Case IV as developed by Kuder and Richardson,³ and found the reliability of the music scale to be .91. Prosser used the same formula, retested 100 eighth grade students, and found the reliability of the music scale to be .93. Kuder in the same manner, with 300 men in occupations, found the music scale reliability to be .94.⁴

² Jarl E. Seashore, Manual of Instructions and Interpretations for the Seashore Measures of Musical Talents, Table I (Insert).

³ G. Frederic Kuder and M. W. Richardson, "The Theory of the Estimation of Test Reliability," Psychometrika, II (1937), 151-160.

⁴ G. Frederic Kuder, Revised Manual for the Kuder Preference Record, p. 19.

Traxler repeated the test after a three-day interval with forty-one graduate students and found the reliability of the music scale to be .95.⁵

Triggs used the formula for Case IV for computing reliability of the music scale with 166 college students and found the music scale reliability to be .90. By the same method, Triggs tested the reliability of the scales with another group of 101 college students and the music scale reliability was found to be .84.⁶

Validity of the Tests

The Seashore Measures of Musical Talent

A test is said to be valid when it measures what it purports to measure. On the basis of many years of experience in the scientific measurement of tone relationships in musical ability, Joseph G. Saitveit, Don Lewis, and Carl Seashore gave the following as an attempt to validate the revised Seashore Measures of Musical Talent:

- (1) The test measures what it purports to measure.
- (2) Individual differences in these capacities are large enough to be significant.
- (3) Small differences in pitch do function significantly in music, especially in the psychological and artistic deviations from the true pitch which are a medium of artistry.
- (4) There is a correlation between the standard measure of the sense of pitch, and the ability to hear pitch and intone pitch with precision.
- (5) The features involved in the validation of the sense of pitch applies in principle to the validation of the sense of Tonal Memory.
- (6) A fine sense of

⁵ Arthur E. Traxler and William C. McCall, "Some Data on the Kuder Preference Record," Educational and Psychological Measurements, I (1941), 253-268.

⁶ Francis O. Triggs, "A Study of the Relation of Kuder Preference Record Scores to Various Other Measures," Educational and Psychological Measurement, III (1943), 341-354.

pitch operates in other fields than music. (7) There is a significant predictive value in the measures to the extent that they are basic, sufficient in number, fair samples, and the factors predicted are the factors measured.⁷

James J. Mursell, psychologist, concludes:

The reliabilities of the tests (Seashore) for Pitch and Tonal Memory are decidedly the most satisfactory. Tests whose reliability is from seventy per cent to eighty per cent (which seems to be true of the Pitch and Tonal Memory tests) are fairly satisfactory for rough group differentiation.⁸

Max Schoen gives as his estimate of the tests: "The Pitch and Tonal Memory tests would appear to possess sufficient reliability for certain diagnostic purposes."⁹

Hazel Martha Stanton, of the Eastman School of Music, has validated the tests as one of the most useful tools which may be employed in scientific music guidance.¹⁰

Seashore first gave a personal appraisal of the Eastman experiment as a whole which was made by Hazel Martha Stanton:

Stanton took five of these measures (from the old Seashore test: Pitch, Intensity, Time, Consonance, and Tonal Memory), together with one brief intelligence test. These were supplemented by a case history. The battery was kept constant throughout ten years. The tests were always given at the entrance of the students, the classification was usually entered as the first record in the procedure toward admission and the prediction made in terms of these objective data, but that record was not given out to the teaching staff. The grading of the students by their instructors, therefore, was independent of these classifications.

⁷Joseph G. Saetveit, Don Lewis, and Carl E. Seashore, Revision of the Seashore Measures of Musical Talent, p. 49.

⁸James J. Mursell, The Psychology of Music, p. 293.

⁹Max Schoen, The Psychology of Music, p. 184.

¹⁰Hazel Martha Stanton, "Measuring Musical Talent, Seashore Tests As Administrative Aids," Personnel Journal, VII (1928), 299.

At the time of the examination, Stanton classified the candidates into five groups, discourage, doubtful, possible, probable, and safe. After graduation a tabulation was made showing to what extent these predictions were validated. They show that of those that she would have discouraged on the basis of these objective records alone, only 17% of the discourage succeeded in graduating, 25% of the doubtful, 33% of the possible, 42% of probable, and 60% of the safe.

While I am not committed to these particular measures as they are, I predict on the evidence here cited, that measures of specific musical talents, adopted and improved from time to time, will be a permanent tool in the kit of the progressive minded educator and guide.¹¹

Jacob Kwalwasser said that the Seashore Measures of Musical Talent are the best of their type.¹² He evaluates the Measures:

The great value of the Seashore test is two fold. First, they are analytic. What he (Seashore) attempts to do, is deal with the elemental sensory and motor abilities on which the power to deal with musical materials depends. And this, of course, is a valid and essential aim in any program of measuring. Second, Seashore has been able to standardize his material and he has been in a position to try his tests on a large number of school children. These tests are the only work in the field that have been adequately standardized, that is to say the only tests that have been used enough so that we can predict just how well the normal child ought to do.¹³

Of the old Seashore series, Odell says that it is the earliest and best known series of standardized tests in music, and

. . . is prognostic and not for measurement of actual accomplishment or appreciation. More particularly its function is to determine whether individuals possess sufficient possibility of success as musicians to warrant giving them advanced musical training.¹⁴

¹¹Carl E. Seashore, "The Psychology of Music," Music Educator's Journal, XXIII (1936), 24-25.

¹²Kwalwasser, Tests and Measurements in Music, p. 18.

¹³Jacob Kwalwasser, "From the Realm of Guess Into the Realm of Reasonable Certainty," Music Educator's Journal, XXIV (1938), 16-17.

¹⁴C. W. Odell, Educational Measurement in High School, pp. 319-320.

From practical experience with the Seashore tests in the Rochester Public Schools, W. S. Larson says:

Whether secured through keen observation, by the use of the Seashore or other tests, or by any other methods, the acquiring of a clear insight into the musical nature of the child is highly desirable.

Statement by Alfred Spouse, Assistant Director of Music in charge of High School Vocal Music, Rochester Public Schools: 'The Inter-High School Choir is composed of selected singers from each of our ten senior high schools. It plans to perform only exceptional choral music, and to perform it exceptionally well, but may rehearse only once each week on Saturday mornings. After seven years of carefully checked admissions by the Seashore tests, we have come to rely on them with increasing confidence. It is our proven experience that a choir with a high Seashore rating is an expert choir of which we may make the highest demands, and that the reverse is painfully true.¹⁵

The Kuder Preference Record

Edwin Peters, Director of Personnel Guidance of William Woods College at Fulton, Missouri says:

The scores are not measures of ability but are meant to give some index of the extent to which an individual will be motivated in various areas to use the abilities he possesses. The test provides significant and reliable data.¹⁶

The results of a national survey made by Harold Edgerton and Ohio State University are evidence of the extent to which the Kuder Preference Record is used. Returns from 290 guidance centers on a check list of 152 vocational interest tests, show that a majority of the centers use the Kuder Preference Record.¹⁷

¹⁵ Larsen, op. cit., p. 74.

¹⁶ Edwin F. Peters, "Vocational Interest as Measured by the Strong and Kuder Preference Record," School and Society, LV (1942), 453-455.

¹⁷ Jr. Berkshire, J. E. T. Bugental, and F. P. Cassens, "Test Preference in Guidance Centers," Occupations, XXVI (1948), 337-343.

Relation of Preference Record Scores to Choice of Occupations and Curricula.--Reports on an earlier edition of the Preference Record of the median scores obtained by groups of students who had entered various college curricula were given in the 1939-40 report of the University of Chicago Board of Examinations. These profiles were consistent with the choice of curricula. Students choosing the medical course were high on the scientific scale; those selecting the humanities curriculum were high in the artistic, literary, and music scales, and so on.¹⁸

Yum, studying University of Chicago students who took an earlier form of the Kuder Preference Record, found significant differences among groups of students enrolled in different divisions of the University. Those in the divisions of sciences were significantly higher on the scientific scale than social science students, who were higher on the literary scale.¹⁹

Following Kuder's nine general classifications, Mangold found that of 110 college students, only fifteen planned a vocation which did not fall under the three groupings in which the student's interest was highest.²⁰

A comprehensive study of the profiles of women students preparing for various occupations was started by Barry and completed by Kuder. The

¹⁸Board of Examinations, Staff Report of Examinations Given by the Board of Examinations, 1939-40, University of Chicago.

¹⁹K. S. Yum, "Student Preference in Divisional Studies and Their Preferential Activities," The Journal of Psychology, XII (1942), 193-200.

²⁰Betty Jane Mangold, "An Analysis of the Kuder Preference Record," Masters thesis, MacMurray College, Jacksonville, Illinois, p. 16.

students studied were selected from the upper half of their classes and were in the latter part of the courses. Of forty-five students preparing for music careers, the average percentile on the music scale was .92.²¹

Relation of Preference Scores to Achievement.--A study in the relationship between interest as measured by the Kuder Preference Record and achievement in various fields of college work was made by R. C. Crosby at Cornell University. He summarizes his investigation:

These results confirm Kuder's studies in that they show a positive relationship between interest in certain scales of Preference Record and achievement in some school subjects. Some measures of motivating factors such as interest is most essential to adequate prediction of achievement in academic work.²²

Yum found low but significant correlations with average college grades of University of Chicago students with the literary scale for men ($r=.335$) and with the computational scale for women ($r=.295$).²³

Mean Profiles of Occupational Groups.--Mean profiles for the occupational groups studied to date are given in Tables two and three on pages 10-13 in the Revised Manual. The results indicate in general that the names assigned to the various scales are appropriate in terms of the type of occupation entered as well as in terms of the activities scored. Chemists are found to be particularly high on the scientific scale, writers on the literary scale, musicians on the music scale, and so on.⁴

²¹Cora Miner Barry, "Kuder Preference Norms," Occupations, XXII (1944), 487.

²²R. C. Crosby, "Scholastic Achievement and Measured Interests," Journal of Applied Psychology, XXVII (1943), 101-104.

²³Yum, op. cit., pp. 193-200.

²⁴G. Frederic Kuder, Revised Manual for the Kuder Preference Record, pp. 9-13.

Relation of Scores to Students' Estimate of Their Interest.---Rose made an investigation of the comparison between scores on the Kuder interest fields and stated interests of 60 veterans. A correlation of 0.61 was found between the ranked order of strength of the nine interest areas on the Kuder and the veterans' ranking of lists of occupations corresponding to these nine areas.²⁵

Similar results were obtained by Crosby and Winsor. Instead of using occupations as categories, they used descriptions of the nine occupational fields in an effort to determine the validity of a group of college students' estimates of their interests. They found a correlation of 0.54 between the Kuder percentile scores and the students' own estimate of their interest percentiles.²⁶

In a more recent study by Kopp and Tussing a correlation of 0.59 was found between Kuder interest ranks and high school boys' ranking of occupational lists of their preference.²⁷

²⁵Wallace Rose, "A Comparison of Relative Interest in Occupational Groupings and Activity Interests as Measured by the Kuder Preference Record," Occupations, XXVI (1948), 85.

²⁶R. C. Crosby and A. L. Winsor, "The Validity of Student Estimates of Their Interests," Journal of Applied Psychology, XXV (1941), 408-414.

²⁷T. Kopp and L. Tussing, "The Vocational Choices of High School Students as Related to Scores on Vocational Interest Inventories," Occupations, XXV (1947), 334-339.

CHAPTER III

RESULTS OF INVESTIGATION

Method of Procedure

The Pitch Discrimination and Tonal Memory tests of the Seashore Measures of Musical Talent were administered to 521 pupils in the ninth, tenth, and eleventh grades of Borger High School. The research is limited to these grades since the eighth and twelfth grades will not be in High School next year. Ranks were determined by the method suggested by Seashore in the Manual of Instructions, Series A, for Adults: Rank 1 - the highest 10 per cent, Rank 2 - the next highest 10 per cent, and so on to Rank 10 - the lowest 10 per cent. Ranks on both scores were averaged for a Musical Aptitude grade. However, since 521 pupils took the tests and 293 grades fell in Ranks 1-8, and 228 grades fell in Ranks 9-10, it is assumed that pupils with ranks 1-8 would have more than average amount of talent. Table 1 shows the scores earned by the 293 students in Borger High School who have enough musical talent to profit by further musical training. Scores were tabulated thus: Ranks 1-3, Excellent; Ranks 4-5, Good; and Ranks 7-8, Average.

The Kuder Preference Record was administered to 521 pupils of Borger High School in the ninth, tenth, and eleventh grades. Activities in which a student scored the two highest percentiles were considered to be the preferred activities or the ones in which the student is most

interested. If music preference was shown in either the first or second percentile, it is assumed that the person is interested in music. Results of the test, as shown in Table 3, indicate that 131 pupils in Borger High School show sufficient interest in music to profit by further musical training.

The activities in music now offered by Borger High School are chorus, band, and a course in general music called Music I. Table 3 shows that 249 students in Borger High School participated in at least one of the three musical activities since their enrollment in high school.

Result of the Survey

Results of the Pitch and Tonal Memory tests of the Seashore Measures of Musical Talent indicate that 56 per cent of the students in Borger High School have talent in music. Table 1 shows that the Musical Aptitude grades of 13 per cent of the students are Excellent (Ranks 1-3), 22 per cent are Good (Ranks 4-6), and 21 per cent are Average (Ranks 7-8).

TABLE 1

SCORES EARNED BY 293 STUDENTS IN BORGER HIGH SCHOOL ON
TWO ITEMS OF SEASHORE MEASURES OF MUSICAL TALENT

Score (1)	Number (2)				Percentage of Enrollment (3)
	Grade 9	Grade 10	Grade 11	Total	
Excellent.....	23	25	18	66	13
Good.....	49	28	37	114	22
Average.....	51	33	29	113	21
Total	123	86	84	293	56

Observation of the work done in choral music by the three groups as classified shows that the grade of work generally is in direct proportion to the musical ability of the student. However, willingness to work, training, intelligence, and interest are contributing factors in achievement. It is the opinion of the writer, based on observation, that other things being equal, the "Excellent" in musicianship are the most valuable members of a high school choral organization. Pupils of "Good" ability contribute next and the "Average" and "Poor" contribute least.

Table 2 shows that 46 per cent of the 521 students in Berger High School have participated in musical activities since their enrollment in high school. The survey shows that 34 per cent of the students have participated in chorus, 12 per cent in band, and less than 1 per cent, or only eight students have participated in Music I.

TABLE 2
MUSICAL ACTIVITY PARTICIPATED IN DURING SCHOOL
LIFE OF 521 BERGER HIGH SCHOOL STUDENTS

Activity (1)	Number (2)				Percentage of Enrollment (3)
	Grade 9	Grade 10	Grade 11	Total	
Chorus.....	56	67	55	178	34
Band.....	19	23	22	64	12
Music I.....	00	2	6	8	-1
Total	75	92	83	250	46

Results of the Kuder Preference Record are shown in Table 3. The Music Preference percentiles indicate that 25 per cent or 131 of the 521 pupils in Borger High School have an interest in music. Experience does not prove that pupils who show music preference are the strongest in chorus work. However, the students with both ability and interest are the best musicians and are the leaders in all choral organizations. Table 3 shows also that only 64 per cent of the pupils who show music preference on the Kuder Preference Record have participated in any musical activity since they have been in high school. Of the assumed interested, 36 per cent have not participated at all.

TABLE 3

PARTICIPATION IN MUSICAL ACTIVITIES OF 131 INTERESTED STUDENTS IN BORGER HIGH SCHOOL

Music Preference (1)	Number (2)				Percentage of Interested (3)
	Grade 9	Grade 10	Grade 11	Total	
Pupils Participating	24	26	34	84	64
Pupils not Participating	24	8	15	47	36
Total	48	34	49	131	...

Table 4 shows that of 293 talented students, 57 per cent did participate in musical activities and 43 per cent did not participate since their enrollment in high school.

TABLE 4

PARTICIPATION IN MUSICAL ACTIVITIES OF 293 TALENTED
STUDENTS IN BORGER HIGH SCHOOL

Talented (1)	Number (2)				Percentage of Talented (3)
	Grade 9	Grade 10	Grade 11	Total	
Pupils Participating	58	62	49	169	57
Pupils not Participating	65	24	35	124	43
Total	123	86	84	293	...

Ninety-three students in Borger High School show both talent and interest in music as indicated by the Seashore Measures of Musical Talent and the Kuder Preference Record. Of these ninety-three students, 27 per cent have not taken part in any musical activity since their enrollment in high school. 73 per cent have participated in either chorus, band or Music I.

TABLE 5

PARTICIPATION IN BORGER HIGH SCHOOL MUSICAL ACTIVITIES OF
NINETY-THREE STUDENTS WHO HAVE BOTH TALENT AND INTEREST

Talented and Interested (1)	Number (2)				Percentage of Talented & Interested (3)
	Grade 9	Grade 10	Grade 11	Total	
Pupils Participating	20	21	27	68	73
Pupils not Participating	12	3	10	25	27
Total	32	24	37	93	...

There seems to be a positive relationship between the scores on the Pitch and Tonal Memory tests and the Kuder Preference Record as shown by the results of the tests given to 521 Borger High School students. Of the 131 students who show music preference, 70 per cent have better than average amount of musical talent.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Facts uncovered in this survey indicate the following conclusions:

1. Fifty-six per cent of the student body are talented enough to profit from a well balanced music program.
2. Forty-three per cent of those talented did not participate in school music activities.
3. Twenty-five per cent of the students enrolled in high school express an interest in music.
4. Thirty-six per cent of those interested did not participate in musical activities.
5. Twenty-seven per cent of the students who show both talent and interest have not participated in musical activities.
6. Music I reached less than 1 per cent of the students; band reached only 12 per cent, and chorus only 34 per cent of the enrollment.
7. The scores on the two tests indicate that the majority of students who show music preference have better than average talent in music.

Specific recommendations include:

1. A conscientious attempt (with the use of the Seashore Measures of Musical Talent and the Kuder Preference Record) to discover pupils who have talent or interest in music.

2. A well balanced curricula in music which provides for both aptitude and interest of the pupils. Pupils who have talent in music should be encouraged to take part in select performing groups such as chorus and band. Pupils who show interest but little talent would profit from a course in music appreciation. However, there should be singing and playing groups in which all who have a desire might participate regardless of talent.
3. Before schedules of classes are made for the coming year, copies of scores made on both the Seashore and Kuder Preference tests should be given to each student's advisory teacher to be used for guidance. The teachers should be advised of their interpretation and use.
4. An adequate staff to carry out this program.
5. Increased opportunity for work in instrumental music.
6. Recommendation that Music I be required of all pupils who enroll in chorus and band.
7. Offer inducements for participation in music activities, such as: scholastic credit, concert trips, contests and festivals, sweaters or school letters, and social activities.
8. A party given in honor of the students who show high talent scores or music preference and who are not enrolled in musical activities. Participating members be individual hosts.

APPENDIX A

SCORES MADE BY 293 BORGER HIGH SCHOOL STUDENTS ON THE PITCH
AND TONAL MEMORY TESTS OF THE SEASHORE MEASURES OF
MUSICAL TALENT AND THE KUDER PREFERENCE RECORD
AND PARTICIPATION IN MUSICAL ACTIVITIES
SINCE ENROLLMENT IN HIGH SCHOOL

Seashore Rank - Excellent
Grade 9

Pupil	Pitch,	Tonal Memory	Kuder Preference	Choir	Band	Music I
B.B.	2	4	Scientific, Musical	1		
D.D.	1	3	Persuasive, Literary	1		
L.D.	4	3	Scientific, Social Science			
P.H.	1	1	Musical, Artistic	1		
K.H.	2	4	Musical, Social Science	1		
R.H.	1	4	Musical, Artistic	1		
J.K.	4	1	Scientific, Mechanical			
M.F.	2	1	Persuasive, Clerical-		1	
J.F.	1	1	Social Science, Scientific	1		
J.N.	2	1	Musical, Clerical	1		
C.P.	2	1	Social Science, Mechanical	1		
J.R.	2	5	Persuasive, Clerical	1		
J.S.	2	2	Artistic, Computational	1		
C.S.	2	1	Mechanical, Clerical	1		
D.S.	2	2	Mechanical, Musical	1		
V.T.	5	2	Musical, Artistic	$\frac{1}{2}$		

Excellent, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
P.T.	3	3	Musical, Artistic	$\frac{1}{2}$		
L.T.	3	4	Persuasive, Social Science	1		
J.T.	5	1	Artistic, Musical			
D.W.	1	3	Social Science, Scientific	1		
T.W.	4	2	Clerical, Computational	1		
G.W.	1	2	Musical, Computational	1		
E.W.	1	3	Mechanical, Scientific			

Seashore Rank - Good
Grade 9

A.B.	10	2	Musical, Persuasive	1		
B.	8	4	Artistic, Persuasive			
R.B.	2	10	Artistic, Mechanical			
M.B.	3	9	Mechanical, Social Science		1	
C.C.	3	10	Computational, Clerical		1	
B.C.	6	3	Musical, Social Science			
L.C.	7	4	Literary, Social Science			
E.D.	6	2	Social Science, Persuasive			
L.H.	22	10	Musical, Computational			
B.D.	4	7	Persuasive, Mechanical	1		
C.F.	8	4	Scientific, Artistic	1		
J.F.	2	8	Artistic, Social Science			
B.G.	22	7	Mechanical, Scientific			

Good, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
L.H.	10	2	Artistic, Persuasive			
B.H.	7	2	Social Science, Persuasive			
J.H.	6	10	Mechanical, Computational			
D.K.	4	7	Computational, Artistic	1		
J.K.	4	6	Mechanical, Artistic			
D.L.	10	1	Clerical, Literary	1		
C.L.	6	6	Artistic, Mechanical			
B.L.	5	3	Social Science, Clerical			
A.L.	2	9	Social Science, Musical			
J.M.	5	3	Musical, Scientific		1	
M.M.	10	2	Artistic, Social Science			
P.M.	7	6	Persuasive, Clerical	$\frac{1}{2}$		
E.M.	6	3	Musical, Artistic			
C.M.	4	8	Persuasive, Clerical			
J.M.	9	3	Artistic, Persuasive	1		
F.P.	6	6	Artistic, Persuasive	1		
M.P.	6	9	Persuasive, Artistic	1		
M.P.	4	8	Artistic, Persuasive	1		
W.P.	4	9	Scientific, Computational	1		
J.P.	2	7	Mechanical, Social Science			
C.R.	6	7	Computational, Literary	1		
C.R.	6	6	Social Science, Scientific		$\frac{1}{2}$	

Good, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
J.R.	1	7	Social Science, Scientific		1	
C.R.	6	7	Clerical, Persuasive			
S.S.	6	7	Artistic, Social Science			
C.S.	8	4	Artistic, Musical			
J.S.	2	10	Social Science, Computational			
E.T.	5	7	Artistic, Social Science	1		
W.T.	2	10	Social Science, Literary			
D.W.	9	4	Mechanical, Musical		1	
J.W.	2	10	Artistic, Clerical			
L.W.	6	3	Artistic, Mechanical			
D.W.	6	4	Musical, Social Science		1	
C.W.	6	3	Literary, Artistic			
R.W.	3	7	Mechanical, Scientific			
J.W.	2	6	Clerical, Scientific	1		

Seashore Rank - Average
Grade 9

D.A.	10	7	Social Science, Musical	1		
R.J.A.	6	10	Scientific, Musical			
F.A.	7	10	Mechanical, Persuasive			
L.B.	7	10	Computational, Persuasive	1		
F.B.	6	10	Artistic, Computational			

Average, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
J.B.	7	10	Social Science, Artistic			
J.B.	8	9	Artistic, Musical	$\frac{1}{2}$		
T.C.	9	8	Persuasive, Computational			
G.C.	7	8	Artistic, Mechanical			
M.C.	7	10	Social Science, Literary			
C.C.	7	10	Social Science, Persuasive			
C.P.C.	7	8	Artistic, Mechanical			
G.C.	10	7	Clerical, Computational			
J.D.	9	8	Social Science, Scientific	1		
E.D.	10	4	Clerical, Computational			
J.D.	8	4	Artistic, Social Science			
R.F.	10	4	Musical, Mechanical	1		
S.H.	8	8	Social Science, Clerical			
J.H.	7	10	Artistic, Mechanical			
H.H.	6	10	Musical, Social Science		1	
D.H.	8	8	Social Science, Mechanical	1		
C.L.	7	10	Musical, Persuasive			
A.L.	7	7	Artistic, Mechanical			
H.M.	6	10	Musical, Scientific			
J.M.	8	9	Social Science, Persuasive			
B.M.	10	4	Musical, Social Science	1		
B.M.	10	6	Persuasive, Musical			

Average, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
C.M.	7	10	Social Science, Scientific	1		
D.M.	7	10	Scientific, Social Science	1		
J.P.	6	8	Social Science, Musical			
D.P.	7	10	Persuasive, Clerical		1	
R.P.	7	8	Persuasive, Social Science	$\frac{1}{2}$		
F.R.	7	10	Social Science, Mechanical			
B.R.	4	10	Mechanical, Scientific			
B.R.	6	10	Literary, Persuasive		1	
B.S.	5	10	Social Science, Literary			
A.S.	7	10	Social Science, Literary			
B.S.	5	8	Musical, Clerical	1		
C.S.	8	7	Artistic, Computational	1		
C.S.	5	10	Clerical, Musical			
V.S.	8	8	Computational, Literary			
G.S.	8	8	Persuasive, Social Science			
T.S.	5	9	Mechanical, Social Science			
J.T.S.	5	8	Persuasive, Social Science			
D.S.	8	6	Persuasive, Clerical			
S.W.	8	6	Clerical, Musical		1	
D.W.	5	10	Social Science, Literary			
M.W.	6	8	Persuasive, Mechanical	1		
M.W.	8	9	Artistic, Mechanical			

Average, Grade 9--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
Q.W.	6	8	Scientific, Computational		1	
B.W.	6	8	Literary, Clerical			

Seashore Rank - Excellent
Grade 10

G.B.	3	3	Mechanical, Clerical			
J.B.	2	1	Mechanical, Artistic	1½		
J.D.	3	1	Social Science, Computational		1	
P.D.	2	1	Musical, Mechanical		2	
B.D.	5	2	Artistic, Persuasive	½		
G.G.	2	1	Artistic, Literary	1		
M.G.	2	1	Musical, Persuasive	2		
W.H.	1	1	Musical, Clerical			
J.H.	4	2	Scientific, Literary	2		
B.H.	2	4	Musical, Social Science	2		
R.E.H.	1	4	Musical, Literary		2	
B.H.	5	1	Artistic, Social Science			
B.J.	1	2	Computational, Clerical		2	
B.K.	3	1	Musical, Mechanical	1		
N.M.	2	1	Musical, Artistic		2	
J.M.	2	2	Clerical, Artistic		1½	
B.P.	4	2	Artistic, Social Science			
J.R.	1	1	Musical, Persuasive		2	

Excellent, Grade 10--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
J.R.	1	3	Musical, Mechanical	2		
W.R.	2	2	Mechanical, Clerical	1		
L.S.	2	4	Artistic, Mechanical	$\frac{1}{2}$		
T.S.	1	3	Scientific, Computational			
M.V.	2	3	Musical, Social Science	2		1
J.W.	2	1	Artistic, Literary	2		
L.W.	2	2	Clerical, Computational			

Seashore Rank - Good
Grade 10

B.B.	1	5	Musical, Clerical			
B.B.	10	3	Clerical, Scientific	2		
W.C.	7	4	Artistic, Clerical	1		
G.C.	3	4	Social Science, Persuasive	2		
J.C.	2	9	Social Science, Mechanical	2		
H.C.	4	7	Clerical, Persuasive	1		$\frac{1}{2}$
C.C.	2	6	Computational, Mechanical	1		
K.C.	7	6	Computational, Social Science	$1\frac{1}{2}$	1	
M.D.	7	4	Computational, Scientific	1		
P.D.	3	7	Literary, Clerical	1		
C.F.	10	2	Social Science, Artistic	2		
C.H.	6	10	Scientific, Musical			$\frac{1}{2}$
D.H.	5	3	Artistic, Mechanical	1		$\frac{1}{2}$

Good, Grade 10--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
G.J.	4	9	Mechanical, Artistic	1½		
B.J.	5	4	Musical, Artistic	2		
M.M.	5	8	Musical, Literary		2	
B.M.	4	7	Scientific, Mechanical	½		
E.M.	2	10	Clerical, Computational			
E.M.	6	7	Clerical, Computational			
E.M.	2	10	Musical, Social Science	1		
J.A.M.	3	8	Clerical, Artistic			
G.O.	1	6	Artistic, Musical	1½	1	
J.P.	6	3	Musical, Literary	1½		
G.R.	5	6	Musical, Literary	2		
J.S.	10	1	Clerical, Persuasive	2		
B.T.	1	10	Scientific, Literary	½		
B.T.	7	4	Clerical, Computational	2		
A.W.	5	9	Clerical, Computational	2		

Seashore Rank - Average
Grade 10

T.A.	6	10	Persuasive, Clerical		1½	
J.B.	9	5	Artistic, Social Science	½		
P.B.	6	9	Literary, Clerical	2		
C.B.	6	9	Computational, Mechanical			
C.B.	6	10	Artistic, Social Science			

Average, Grade 10--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
H.B.	6	9	Musical, Social Science		2	
J.B.	6	8	Mechanical, Artistic			
L.C.	6	10	Persuasive, Clerical			
B.C.	7	8	Clerical, Computational	1		
H.C.	6	8	Social Science, Musical			
P.C.	5	9	Artistic, Musical		2	
N.L.C.	7	10	Literary, Clerical			
J.A.C.	9	6	Literary, Musical	2		
D.D.	6	10	Social Science, Musical	$\frac{1}{2}$		
B.D.	6	10	Clerical, Mechanical			
M.D.	7	8	Scientific, Persuasive	$\frac{1}{2}$	1	
B.H.	7	8	Mechanical, Persuasive	1		
J.M.	6	10	Artistic, Literary			
T.M.	4	10	Literary, Mechanical	$\frac{1}{2}$		
K.M.	6	8	Clerical, Artistic	$\frac{1}{2}$		
W.M.	7	10	Clerical, Literary	1		
J.P.	7	9	Literary, Persuasive	$\frac{1}{2}$		
H.P.	8	8	Computational, Clerical			
H.P.	5	10	Mechanical, Scientific			
J.R.	7	10	Clerical, Computational			
J.R.	6	10	Social Science, Mechanical			
P.S.	8	7	Computational, Literary	2		

Average, Grade 10--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
G.T.	8	8	Musical, Clerical	1		
C.T.	7	10	Computational, Clerical	$\frac{1}{2}$		
G.W.	7	7	Literary, Scientific			
J.W.	5	10	Artistic, Mechanical	2		
M.W.	8	7	Artistic, Literary	$\frac{1}{2}$		
H.D.W.	9	7	Artistic, Mechanical			

Seashore Rank - Excellent
Grade 11

R.A.B.	1	2	Musical, Social Science	$1\frac{1}{2}$	$2\frac{1}{2}$	1
R.B.	2	1	Artistic, Literary	1		
H.B.	2	3	Musical, Persuasive	$1\frac{1}{2}$	2	
R.B.	2	2	Mechanical, Computational			
C.D.	2	3	Mechanical, Social Science			
R.E.	2	4	Musical, Social Science	1		
K.G.	3	3	Musical, Literary		3	
L.G.	2	3	Musical, Artistic	2		
N.H.	2	1	Artistic, Persuasive	2		
L.K.	2	2	Social Science, Literary	3	1	
E.L.	1	2	Artistic, Musical	2	1	
D.L.	2	2	Musical, Clerical	3		
N.M.	4	2	Persuasive, Artistic	$2\frac{1}{2}$		1
P.M.	1	1	Musical, Mechanical			

Excellent, Grade 11--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
V.M.	2	1	Artistic, Musical			
B.M.	2	3	Musical, Persuasive	1½	1½	
N.S.	2	1	Musical, Artistic	3		
N.W.	2	2	Artistic, Social Science			

Seashore Rank - Good
Grade 11

J.C.B.	6	3	Literary, Musical	3		
S.B.	6	3	Musical, Literary		1	
J.B.	9	1	Artistic, Literary	1	1½	
G.B.	2	10	Mechanical, Artistic			
B.L.B.	2	9	Social Science, Literary	½		
J.C.	7	3	Mechanical, Persuasive			
W.C.	2	7	Musical, Clerical			
C.C.	6	2	Musical, Artistic	2		
J.C.	7	5	Artistic, Clerical	2		
M.C.	3	6	Computational, Clerical	3		
G.D.	3	5	Persuasive, Literary	3		
D.D.	5	5	Musical, Social Science	½	3	
J.D.	9	2	Scientific, Mechanical			
L.E.	2	9	Social Science, Persuasive			
L.F.	2	6	Musical, Clerical	1		
E.F.	4	8	Musical, Persuasive	3		

Good, Grade 11--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
S.N.G.	6	3	Musical, Mechanical	3		
H.H.	7	4	Artistic, Clerical			
J.H.	4	7	Artistic, Musical	2		
J.H.	7	5	Social Science, Artistic	3		
J.H.	1	7	Clerical, Musical	3		
M.J.	4	7	Clerical, Artistic	1	1	
J.K.	6	4	Mechanical, Musical			
E.M.	1	7	Computational, Clerical			
S.N.	5	8	Artistic, Literary	1	1½	
B.N.	4	6	Musical, Artistic			
M.O.	4	8	Clerical, Musical			
V.P.	2	10	Social Science, Computational			
B.P.	5	2	Computational, Scientific	1	2	
B.R.	2	7	Musical, Mechanical	2		
R.R.	3	4	Mechanical, Persuasive	2		
L.R.	5	4	Mechanical, Musical	2		
N.S.	7	4	Mechanical, Artistic			
P.S.	6	3	Mechanical, Persuasive		1½	
D.S.	2	10	Musical, Scientific		3	
J.W.	5	7	Scientific, Mechanical			
M.W.	6	1	Social Science, Musical	3		

Seashore Rank - Average
Grade 11

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
B.A.	6	10	Social Science, Persuasive	3		
L.A.	6	10	Literary, Clerical			
J.E.B.	5	10	Mechanical, Social Science			
A.B.	8	6	Musical, Artistic			
B.C.	7	9	Artistic, Mechanical			
I.V.D.	5	9	Musical, Literary	2		
C.D.	6	10	Mechanical, Artistic	1		
C.F.	10	6	Artistic, Computational			
D.J.F.	6	10	Social Science, Artistic			
A.C.	6	10	Social Science, Artistic			
R.G.	5	9	Musical, Social Science	1		
J.H.	5	10	Clerical, Scientific		1½	
H.H.	4	10	Artistic, Musical	3		
W.H.	4	10	Scientific, Musical		3	½
M.H.	6	10	Clerical, Artistic			
C.J.	10	6	Musical, Social Science			
F.L.	7	10	Artistic, Literary	½		
C.M.	7	8	Artistic, Scientific			
E.M.	8	9	Musical, Scientific	3		
A.M.	7	8	Social Science, Artistic			
F.N.	8	9	Literary, Musical			
C.F.	6	8	Artistic, Mechanical			

Average, Grade 11--Continued

Pupil	Pitch	Tonal Memory	Kuder Preference	Choir	Band	Music I
B.P.	6	10	Mechanical, Persuasive	$1\frac{1}{2}$		
O.R.	7	10	Artistic, Clerical			
J.S.	5	9	Clerical, Computational			
L.W.	7	10	Social Science, Scientific			
P.W.	5	10	Mechanical, Artistic			
R.W.	6	10	Persuasive, Literary	$\frac{1}{2}$		
B.W.	7	10	Literary, Persuasive		1	

- A. Operate an adding machine.
- B. Keep correspondence in alphabetical order for a large business . . .
- C. Sell brushes from door to door
- D. Interview people over the telephone in a survey of public opinion . . .
- E. Look up the telephone numbers of people to be called in a survey
of public opinion.
- F. Compute the proportion of people who give the various replies in
a survey of public opinion.
- G. Help young people select vocations.
- H. Design new fabrics
- J. Make estimates on the cost of printing books and circulars.
- K. Assemble a good assortment of woodworking tools
- L. Make a scrapbook of pictures of paintings you like
- M. Get together a first-aid kit for use in an emergency.
- N. Spend a summer cataloguing a fine collection of rare books.
- P. Spend a summer hunting art objects at excavations of ancient cities.
- Q. Spend a summer as a counselor in a summer camp.
- R. Design the scenery for a play
- S. Make a chemical analysis of a new toothpaste
- T. Write an article for housewives on how to repair
- U. Write a newspaper column of advice on personal problems.
- V. Raise fine dogs
- W. Conduct studies on the effectiveness of different types of
sales letters
- X. Weigh packages and look up how much postage they should have
- Y. Read manuscripts submitted for publication
- Z. Try out new automobiles to find out how they can be improved
- a. Read about the history of the drama
- b. Read about early musical forms
- c. Read about experiments on the effect of language on behavior
- d. Work at a telephone switchboard.
- e. Make linoleum block bookplates
- f. Teach games to children
- g. Write a history of the Red Cross
- h. Search for information which would shed new light on a famous
historical event
- j. Write a musical comedy.
- k. Conduct research on the effectiveness of various types of
selling methods
- l. Sort mail in a post office
- m. Raise chickens
- n. Earn part of your expenses in college by helping in a laboratory.
- p. Earn part of your expenses in college by scoring examination
papers
- q. Earn part of your expenses in college by playing in an orchestra.
- r. Make a study of flower arrangement.
- s. Make a study of mental ills
- t. Make a study of propaganda methods.

- A. Take charge of the arrangements of a big wedding
- B. Address the invitations to a big wedding.
- C. Write a news article about a big wedding.
- D. Take a written examination in physiology.
- E. Take an oral examination in physiology
- F. Perform a laboratory demonstration as an examination in physiology .
- G. Test various brands of products for a cooperative store to see
which are best.
- H. Take care of the bulletin boards in a large business organization .
- J. Keep accounting machines in good order
- K. Solicit money for a community chest
- L. Write daily reports of the progress of a community chest drive . .
- M. Make a record of the community chest pledges as they come in . . .
- N. Handle the strings of marionettes in a marionette show
- P. Be the voice for marionettes in a marionette show.
- Q. Make marionettes.
- R. Do chemical research
- S. Interview applicants for employment
- T. Write feature stories for a newspaper.
- U. Make chemical analyses of new commercial products.
- V. Work on developing an artificial lung which will allow the wearer
to move about freely.
- W. Construct charts to show business conditions
- X. Write a book on modern art
- Y. Experiment on the development of improved methods of reproducing
pictures in color.
- Z. Draw the plans for a large bridge
- a. Draw the pictures for a history of the world
- b. Develop a variety of pitless cherry
- c. Coach a group that wins first place in a national dramatic contest .
- d. Interview applicants for relief.
- e. Try out different sales letters to see which type works best . . .
- f. Work on the development of more efficient methods of handling
office work.
- g. Write novels
- h. Conduct research on the psychology of music.
- j. Make pottery
- k. Plan furnishings and decorations for rooms
- l. Check over copies of manuscripts to make sure they are correct . .
- m. Tune pianos
- n. Be a psychologist
- p. Supervise the erection of bridges
- q. Be a landscape architect
- r. Have your picture in the paper with a well-known civil engineer . .
- s. Have your picture in the paper with a famous scientist
- t. Have your picture in the paper with a famous scoutmaster

- A. Sort and catalogue a valuable stamp collection.
- B. Write a popular article on how a Diesel engine works.
- C. Determine the cost of manufacturing a new soap.
- D. Build a hand loom
- E. Derive mathematical formulas for predicting trends in business
- F. Make a survey to discover youths' attitudes on attending church
- G. Write articles on hobbies.
- H. Construct tables of figures on costs of living.
- J. Repair and refinish old furniture
- K. Teach English.
- L. Take orders for merchandise over the telephone.
- M. Ask people's opinion over the telephone for a survey of public opinion
- N. Experiment with making some candy for which you don't know the recipe
- P. Tell stories to children
- Q. Paint water colors
- R. Be in charge of a government housing project
- S. Be an aeronautical engineer
- T. Be a sculptor.
- U. Be well known as a director of scientific research
- V. Be well known as a social worker
- W. Be well known as a literary critic.
- X. Sketch an interesting scene
- Y. Try out various types of sails on a toy sailboat to see which works best
- Z. Write an essay in the style of a certain author
- a. Edit the financial news for a newspaper
- b. Work on the development of a lighter and stronger metal.
- c. Manage a model village for factory workers
- d. Wait on table in a restaurant
- e. Look up addresses of lists of people in a city directory
- f. Take care of sick people
- g. Read an article about opera singers
- h. Read about how an airplane is assembled
- j. Read about how experiments to improve airplane design are made
- k. Supervise a large department in a store
- l. Conduct research on television
- m. Be the director of recreation for a welfare organization
- n. Be an expert on cutting jewels
- p. Conduct research on developing a substitute for rubber
- q. Be a radio music commentator.
- r. Develop new varieties of flowers
- s. Conduct advertising campaigns for florists
- t. Take telephone orders in a florist's shop

- A. Prepare the advertising copy for a new dishwasher.
- B. Determine the cost of producing the dishwasher.
- C. Sell dishwashers.
- D. Allot and collect the expenses for a club picnic
- E. Purchase supplies for the picnic
- F. Get people to come to the picnic
- G. Write a political campaign song.
- H. Write an article on how machine tools are made.
- J. Design a computing machine
- K. Read about trends in business
- L. Read reviews of recent books.
- M. Read about social customs in different countries.
- N. Take apart a new mechanical toy to see how it works
- P. Play checkers.
- Q. Play chess.
- R. Be the director of a group conducting research on propaganda
methods
- S. Be a dean in a university.
- T. Be an expert on color photography
- U. Visit a fine art museum
- V. Visit a recreation center for people in the slums.
- W. Visit a famous medical research laboratory
- X. Belong to a group for the discussion of problems of modern
life
- Y. Belong to a literary discussion club
- Z. Belong to an amateur astronomy club
- a. Compile a dictionary of slang
- b. Discover a cure for hay fever
- c. Install improved office procedures in a big business.
- d. Repair a broken connection on an electric iron.
- e. Build a fire in a fireplace
- f. Type a letter for a friend
- g. Be a music teacher
- h. Be an artist for an advertising agency
- j. Conduct research on what makes jokes funny
- k. Direct a playground for underprivileged children
- l. Be a cook in a restaurant.
- m. Sell chemical supplies.
- n. Manage a music store
- p. Draw plans for buildings
- q. Investigate social conditions in various communities.
- r. Award scholastic honors at a school assembly
- s. Give a pep talk to a school assembly
- t. Play a cornet solo at a school assembly

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| A. | Be an office manager |
| B. | Be an authority on the development of language. |
| C. | Be a statistician |
| D. | Be a professor of mathematics |
| E. | Be a publicity director for a big university |
| F. | Be a professor of a foreign language |
| G. | Answer letters of inquiry about a new make of typewriter |
| H. | Compile data on the sales of the typewriter. |
| J. | Keep the typewriters in order for customers. |
| K. | Model in clay. |
| L. | Write an article on the psychology of convincing people. |
| M. | Be the prompter for an amateur play |
| N. | Go on expeditions to find rare animals |
| P. | Go on expeditions to fight native epidemics. |
| Q. | Do social welfare work. |
| R. | Read about the causes of various diseases |
| S. | Read about how leaders of industry achieved success |
| T. | Read about how to raise livestock |
| U. | Write a newspaper column on current events |
| V. | Give popular lectures on chemistry. |
| W. | Help young people select their vocations. |
| X. | Conduct a radio program helping people find jobs |
| Y. | Be a weather forecaster |
| Z. | Conduct research on improving the design of airplanes |
| a. | Take a course in modern music |
| b. | Take a course in the modern novel |
| c. | Take a course in modern painting |
| d. | Be an authority on contract bridge. |
| e. | Be an authority on soil erosion. |
| f. | Be an authority on billboard advertising. |
| g. | Compute customers' bills in a cafeteria |
| h. | Teach children to make model airplanes |
| j. | Keep the records of a scientist conducting medical research |
| k. | Make violins |
| l. | Develop improved varieties of grains |
| m. | Plan the decorations and furnishings of rooms |
| n. | Teach architecture |
| p. | Solicit advertisements for a magazine. |
| q. | Repair watches |
| r. | Make observations of stars with a telescope. |
| s. | Market the produce from a truck farm |
| t. | Be a forest ranger |

- A. Sell tickets for an amateur play
- B. Prepare the copy for the programs and tickets for the play.
- C. Be the treasurer for the play
- D. Organize results from surveys of public opinion
- E. Write editorials for a newspaper
- F. Teach handicraft in a camp for children from the slums
- G. Conduct studies of the causes of crime
- H. Gather statistics on business conditions.
- J. Sell calculating machines.
- K. Teach classes in English to applicants for citizenship
- L. Sell stocks and bonds
- M. Be the chief cook in a fine restaurant
- N. Design flower pots
- P. Supervise the manufacture of flower pots.
- Q. Work out a more efficient method of making flower pots
- R. Take a course in public speaking
- S. Study sociology
- T. Study story writing.
- U. Write up statistical studies of old age pensions
- V. Write up new developments in the design of small houses.
- W. Write up a study of the effect of posture upon health
- X. Be a physician
- Y. Be a sculptor.
- Z. Be a journalist
- a. Write the scripts for radio programs
- b. Be a sound engineer for a broadcasting company.
- c. Plan the music for radio programs
- d. Go shopping for a sick person
- e. Make a jigsaw puzzle for a sick person
- f. Read to a sick person
- g. Guide visitors in a national park
- h. Make fine jewelry
- j. Arrange music for an orchestra
- k. Be a court stenographer
- l. Be the business manager for a famous pianist
- m. Be a vocational counselor.
- n. Be a portrait painter
- p. Conduct research on the causes of earthquakes
- q. Be a mechanical engineer
- r. Sell artists' supplies.
- s. Grow seed for florists.
- t. Raise white mice for scientists.

- A. Be the most successful tractor salesman in the country
- B. Be a certified public accountant
- C. Be an authority on taxation
- D. Read about expected changes in automobile design
- E. Read about how detectives catch criminals
- F. Read about how rates for health insurance are determined
- G. Develop more efficient office methods for business concerns
- H. Be a practical nurse
- J. Develop improved recipes for baked goods.
- K. Study propaganda methods used in war
- L. Make a study of office-efficiency systems
- M. Make a study of immigration into the United States
- N. Be a social service visitor
- P. Be the social secretary of a famous person
- Q. Prepare the advertising for a publishing house.
- R. Teach people on relief how to keep in good health.
- S. Write feature articles for a newspaper
- T. Be an art dealer.
- U. Be the secretary of a famous artist
- V. Be a writer
- W. Be a lawyer
- X. Sell life insurance.
- Y. Write stories for magazines
- Z. Be a landscape gardener
- a. Start a newspaper
- b. Start an art school.
- c. Start an orchestra
- d. Look for errors in the draft of a report.
- e. Wash dishes
- f. Cook a meal
- g. Investigate the causes of mental ills.
- h. Study music arrangement
- j. Study shorthand
- k. Teach arithmetic.
- l. Train dogs to lead blind people.
- m. Be the secretary of a famous scientist
- n. Decipher messages written in code
- p. Make linoleum block bookplates
- q. Guide visitors in a national park
- r. Help in giving first aid at a hospital
- s. Sell flowers in a florist's shop
- t. Be a private secretary.

A.	Take a broken lock apart to see what is wrong with it
B.	Check for errors in the copy of a report.
C.	Add columns of figures.
D.	Draw plans for bridges.
E.	Do work which requires a lot of mental arithmetic.
F.	Do clerical work.
G.	Read lessons to a blind student.
H.	Keep a record of traffic past a certain point
J.	Interview people in a survey of public opinion.
K.	Make half quantity of a given recipe
L.	Hang a pair of curtains
M.	Show children how to play a new game
N.	Supervise the manufacture of greeting cards.
P.	Determine the cost of producing the greeting cards
Q.	Design the greeting cards.
R.	Determine the cost of producing a newly-developed dishwasher
S.	Convince financiers to back a company to make the dishwasher
T.	Teach people to use the dishwasher.
U.	Operate a calculating machine
V.	Put together the parts of calculating machines.
W.	Sell calculating machines.
X.	Write a play
Y.	Be in charge of selling tickets for a play
Z.	Be the property manager for a play.
a.	Make a life mask of a famous person
b.	Write an article on how dealers determine what prices to charge
c.	Compose a theme song for a radio program.
d.	Be an authority on etiquette.
e.	Be an authority on public health
f.	Be a famous radio commentator
g.	Discover a cure for cancer
h.	Compose a symphony
j.	Write a best seller.
k.	Study the mathematics of astronomy.
l.	Study sociology
m.	Study hospital construction
n.	Visit a museum of natural history
p.	Visit an airplane factory.
q.	Visit the slums of a city.
r.	Be a prosecuting attorney.
s.	Be the director of an old folks' home.
t.	Be a radio singer

A.	Read printer's proof of books for children
B.	Tell stories to children
C.	Make children's toys
D.	Take a course in cost accounting
E.	Take a course in salesmanship.
F.	Take a course in business English
G.	Draw a comic strip
H.	Write advertising for electrical appliances.
J.	Operate a truck farm
K.	Teach people how to use a new vacuum cleaner
L.	Determine the cost of producing a new vacuum cleaner.
M.	Invest a new vacuum cleaner
N.	Direct an amateur play.
P.	Get the programs and tickets printed for the play.
Q.	Write the play
R.	Make inventories of merchandise on hand in a big store
S.	Compute customers' bills for a store
T.	Sell hardware in a store
U.	Be the secretary of a Congressman
V.	Teach children to model and paint
W.	Write articles for an art magazine.
X.	Edit financial pages of a newspaper
Y.	Farm a large tract of land
Z.	Sell real estate.
a.	Help people on relief plan their budgets.
b.	Put the proper labels on library books
c.	Be an expert on the care of trees
d.	Press a suit
e.	Put a new shelf in a pantry
f.	Chop wood
g.	Interview applicants for employment
h.	Write stories for magazines
j.	Be a concert pianist
k.	Repair a broken ironing board
l.	Wash dishes
m.	Put a room in order.
n.	Be an orchestra conductor.
p.	Be the manager of a large office
q.	Direct slum clearance projects
r.	Help in a sickroom
s.	Sell musical instruments
t.	Repair household appliances

A.	Take care of deaf people
B.	Draw graphs based on statistical tables
C.	Clerk in a store.
D.	Take a course in physical education
E.	Take a course in shop work
F.	Take a course in mathematics
G.	Take a course in business-letter writing.
H.	Take a course in printing.
J.	Take a course in selling
K.	Direct an amateur play.
L.	Construct the stage settings for the play
M.	Sell tickets for the play.
N.	Work at an information desk
P.	Work at a machine
Q.	Read manuscripts submitted for publication
R.	Be a writer
S.	Be an authority on billboard advertising.
T.	Be a religious leader
U.	Supervise play at a public play-ground
V.	Collect bills.
W.	Prepare the bills for a small business
X.	Draw illustrations for magazines
Y.	Write articles for magazines.
Z.	Be the sales manager of a magazine.
a.	Live with a famous dramatic critic.
b.	Live with a famous social worker
c.	Live with a famous artist.
d.	Teach cabinet making
e.	Read proof for a newspaper
f.	Import oriental rugs
g.	Keep the books for a business concern.
h.	Develop new flowers.
j.	Consult with people on personal problems.
k.	Wait on table.
l.	Sweep floors
m.	Weave on a hand loom
n.	Write a musical comedy.
p.	Paint a mural in a big building.
q.	Design an airplane
r.	Be a machinist
s.	Be a architect
t.	Be a chemist

A.	Study accounting.
B.	Study irrigation methods
C.	Study stenography
D.	Use a slide rule.
E.	Take dictation in shorthand
F.	Catalogue books
G.	Be a poet
H.	Be an artist
J.	Be a social worker
K.	Sell in a store
L.	Work on a ranch
M.	Work in a publishing house
N.	Bind books.
P.	Look after sick children
Q.	Type letters
R.	Do clerical work.
S.	Teach English literature
T.	Sell art supplies
U.	Be a private secretary.
V.	Be a bookkeeper
W.	Be a salesman.
X.	Grow flowers
Y.	Operate a mimeograph
Z.	Compute bills for a store.
a.	Cook a meal
b.	Mend a broken toy
c.	Give someone a shampoo.
d.	Work at a desk
e.	Work on a ranch
f.	Do house-to-house selling.
g.	Work a jigsaw puzzle
h.	Play a piano
j.	Play with a dog
k.	Sell vegetables
l.	Be an organist
m.	Raise vegetables.
n.	Build boats
p.	Settle labor disputes
q.	Compose music.
r.	Perform laboratory experiments
s.	Make furniture
t.	Sell insurance

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