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Techniques and materials for individualizing instruction at the sixth grade level.

BOSTON UNIVERSITY

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Thesis

TECHNIQUES AND MATERIALS FOR INDIVIDUALIZING INSTRUCTION AT THE SIXTH GRADE LEVEL

Submitted by

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the Degree of Master of Education

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CHAPTER I

STATEMENT AND JUSTIFICATION OF THE PROBLEM

The purpose of this thesis is to record techniques and materials for use at the sixth grade level in order to individualize instruction. Materials were prepared for children working as a whole class; groups of three, four, and five; pairs; and individuals in the areas of spelling, arithmetic, and social studies.

Boyer[1] says:

> If we can endorse a philosophy of education that is dynamic in its recognition of individual and social progress, we shall reduce emphasis on standardized subject matter as such; emphasize the discovery and development of individual potentialities, foster individual and social adaptability and responsibility, and promote in both the pupil and teacher greater initiative and freedom of choice.

The problem as defined by the contract between the Office of Education, the United States Government, and Boston University is sixfold:

To initiate among intermediate grade teachers methods for providing for adapting instruction according to children's requirements for levels, progress rates, and special needs in skills subjects.

Adjustment of instruction to learning abilities. Textbooks and instructional materials will be fitted to the abilities of pupils; pupil team instruction will be used; work in content subjects will be on

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[1]Phillip A. Boyer, "The Administration of Learning Groups in Elementary Schools," Ability Grouping, Thirty-fifth Yearbook of the National Society for the Study of Education, Part I (Bloomington, Illinois: Public School Publishing Company, 1936).

a unified central theme; and different levels of study guides will be provided.

Adaptation of learning rates. In skills, children will progress at different rates; they may work in pairs, teams, or alone; self-checking records of progress will be used. In content areas, learning rates will be cared for by curriculum-related specialties.

Provision for special practice at points of weakness. Analysis of difficulties will discover needs; intensive practice materials will be provided to overcome troubles; grouping of pupils will be adjusted to need.

Enriching learning and making it significant. Whole-class instruction will be utilized when suitable as in appreciations, new knowledge, oral and visual presentations. Skills instruction will be closely related to meanings, application, and evaluation. Organizational, elaborative, and critical thinking will be stressed.

Encouraging group and individual initiative and self-direction. All children will have constant experiences in individual or team specialties in content learning; these will be generally curriculum-related, but some may be individual long-term projects. Individual or team progress will stimulate initiative in skills learning.

In essence, this paper attempts to record the provisions at the sixth grade level in the fields of arithmetic, spelling, and social studies made by one teacher participating in the Dedham Study.

CHAPTER II

SUMMARY OF THE LITERATURE

I. Individual Differences and School Practices

Leading educators in the United States have, since the end of World War I, become increasingly aware of individual differences among school children. Indicating the increasing concern being evidenced, Lawson[1] writes:

> A tabulation of all statements dealing with the aims of changes in the curriculum showed that, prior to the Civil War, only about 6% of the statements dealt with the problem of meeting individual needs. But during the 25 years prior to 1936 the percentage was about 36.

Durrell[2] affirms the importance of individual differences, asserting: "Probably the greatest contribution of modern psychology to education is the recognition and measurement of individual differences."

Further comments on the value of these differences and their implications in the classroom are made by Betts:[3]

> Individual differences in a classroom provide opportunities for rich living. In a democratic society, these differences are regarded as assets. Frustration rears its ugly head in the classroom when these differences are disregarded.

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[1]Douglas E. Lawson, "The Growth of Individualization," Journal of Education (November, 1959), 122:266-268.

[2]Donald D. Durrell, "Individual Differences and Language Learning Objectives," Childhood Education (January, 1936), 12:149-151.

[3]Emmett A. Betts, "Levels of Professional Competency in Differentiated Reading Instruction," Elementary English Review (November, 1945), 22:261-270.

Sutherland[4] feels that in attempting to regiment school children into a uniform pattern regardless of their individual characteristics, educators have failed in their duty to our democratic way of life. He observes:

> Schools heretofore have to a large extent ignored these differences, in an attempt to get simple, uniform organization, courses of study, and textbooks. The schools have therefore failed to exert the influence that they should toward developing good citizenship.

Sutherland[5] contends also that individual differences are the means to progress. He states that:

> Individual differences among children, while disturbing to a system of education which tries to ignore them, are potentially the means by which human society may progress.

II. Learning Differences within a Classroom

In discussing individual differences among children in the elementary schools, Cook[6] says:

> When a random group of six-year-olds enters the first grade, two per cent of them will be below the average four-year-olds in general mental development and two per cent will be above the average eight-year-olds. Disregarding the extreme two per cent at either end, there is a four-year range in general intelligence. By the time this group has reached the age of twelve (sixth grade level), the range will have increased to almost eight years.

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[4]A. A. Sutherland, "Factors Causing Maladjustment of Schools to Individuals," Adapting the Schools to Individual Differences, Twenty-fourth Yearbook of the National Society for the Study of Education, Part II (Bloomington, Illinois: Public School Publishing Company, 1925), pp. 29-30.

[5]Ibid., p. 30.

[6]Walter W. Cook, "Individual Differences and Curriculum Practice," Journal of Educational Psychology (March, 1948), 39:141-148.

He[7] further emphasizes the extent of differences in ability by pointing out that:

> In almost any sixth-grade class will be found a pupil with second grade reading ability and another with tenth-grade reading ability. In any grade above the primary level will be found the complete range of elementary school ability.

According to Durrell,[8] "The most fundamental difference among school children as far as education is concerned is the difference in rate of learning of pupils."

Problems in Individualized Instruction

In discussing differences among children in schools, Sutherland[9] refers to eight particular areas of marked difference as:

> (1) Varying intelligence quotients, (2) varying achievement quotients, (3) efficiency quotients, (4) difference in time need to master any given topic, (5) varying rates of progress exhibited by the same pupil at different times, (6) varying amounts of drill needed, (7) different methods necessary for different pupils, and (8) different interest reactions.

On the basis of these eight factors above, the unlimited possibilities for combinations of their variations within even the smallest group greatly emphasize the importance of Sutherland's[10] statement that:

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[7]Cook, op. cit., p. 141.

[8]Durrell, op. cit., p. 151.

[9]Sutherland, op. cit., pp. 9-16.

[10]Ibid., p. 6.

1. No group has yet been found in which the individuals composing it possess equal amounts of any one ability.
2. Performances vary so greatly as to indicate that no single requirement is adequate as to the stimulus to a majority of the group.
3. To study the development of a learning process it is absurd to set up as a standard a definite quantity of performance and expect each member of the group to accomplish just that amount and no other.

Zirbes[11] feels that: "Too often classification schemes divide children into three levels of capacity and then do next to nothing to differentiate the work of the three levels."

Of ability grouping she[12] says: "By presuming to reduce the range or scope of individual differences in every group to a minimum we really are only setting the situation for more effective mass teaching of each so-called homogeneous group."

In criticizing ability grouping, Washburne[13] observes:

> Practically all ignored individual differences in the maturity and readiness of the children about as completely as these had been ignored before; and most continued to give the grade assignments in arithmetic, spelling, reading, etc., on a class basis, aimed at the 'average child.'

Washburne[14] adds that "Ability grouping is a misnomer and is no solution to our problem."

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[11]Laura Zirbes, "The Real Significance of Provision for Individual Differences," Education (April, 1932), 52:441-443.

[12]Ibid., p. 441.

[13]Carleton W. Washburne, "Adjusting the Program to the Child," Educational Leadership (December, 1953), 11:138-147.

[14]Ibid.

The chief deterrents to good adjustment of class organization to differences in individual pupils are, according to Sutherland:[15]

1. Administrative Organization in Class Promotion
2. Uniform Course of Study
3. Textbooks Not Adapted to Individual Differences
4. Teachers Not Adequately Trained to See and Allow for Individual Differences
5. Class Size Often So Large as to Make Diagnosis and Help Difficult.

Individualized instruction has many advantages over whole-class instruction. According to Jones:[16]

1. Children taught on their individual levels, regardless of grade placement make a greater amount of growth than comparable pupils taught as a group to the curriculum prescribed for their grade with only minor and incidental provisions for individual differences.
2. That this difference in amount of growth between the two groups is consistently true in reading, arithmetic, and spelling and consequently in total average.
3. That the difference in growth is consistently true for superior, normal, and dull children.
4. That in reading, arithmetic, and spelling, the difference in amount of growth between the two groups is in inverse ratio to the level of ability of the pupils.
5. That differences in growth as a result of individualization of instruction are more significant for normal and dull children than for superior children.
6. Children tend to make greater gains when they are aware of their own needs and abilities.
7. That superior children are less dependent on individualization of instruction and guidance from the teacher than are the less capable students.
8. That average and dull children benefit more adaptation to their levels of ability and guidance from the teacher than their more capable classmates.
9. That grouping and adaptation to individual differences in a classroom are a matter of management of time and facilities

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[15]Sutherland, op. cit., pp. 9-16.

[16]Daisy M. Jones, "An Experiment in Adaptation to Individual Differences," Journal of Educational Psychology (May, 1948), 39:257-272.

rather than one of class size and administrative planning.

10. That challenging to growth commensurate with their abilities tends to increase rather than decrease the spread of levels of achievement within a single classroom.

III. Grouping

Although this technique embraces other practices performed in latter years, it is nevertheless an invaluable practice in providing for individual differences. First, it allows the children to work in small groups, pairs, threes, and still larger groups, depending on the job to be done. Second, it allows for maximum variety in instruction according to the levels of the individuals involved.

All work need not be limited to individual activity. McDade[17] says:

> In small group and in individual work the pupil has the opportunity for maximum activity. The small-group situation is social, for the pupil is actively dealing with personalities, ideas, and things. In individual work the social element is absent, and he learns to deal with ideas and things consecutively and independently. Each of these two 'active pupil' techniques has inestimable values for education.

Durrell[18] says:

> There are a great many situations where interest is heightened, comprehension is increased, and general achievement improved through pupils working in pairs or in teams of threes.

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[17]James E. McDade, "Individual Learning in an Integrated School Program," Chicago Schools Journal (January-June, 1933), 15:61-62.

[18]Donald D. Durrell, Improving Reading Instruction (New York: World Book Company, 1956), p. 129.

According to Thelan's[19] principle of group size:

> The size of the group should be the smallest group in which it is possible to have represented at a functional level all the socialization and achievement skills required for the particular learning activities at hand.

The advantages of team learning for better adjustment to individual differences are defined by Durrell and Palos:[20]

> Team study seems to offer many advantages to learning, especially in view of the wide differences in ability among pupils in any classroom. It permits adjustment to individual differences in level and learning rates; rapid learners may advance faster or use more difficult material; slow learners may use easier material or more detailed study guides and progress at a suitable pace.

Research indicates some general characteristics of pupils with high and low ability which have implications for teaching and classroom organization. For example, children with high ability can engage in independent activities and respond well to long assignments that require a high degree of mental organization. Children with low ability, on the other hand, learn best when supervised with short-term units and specific assignments. This is further stated by Wrightstone:[21]

> An effective class organization, according to research, is characterized by flexibility, independence, and control.
> Flexibility
> Permits change as conditions in the classroom and purposes of

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[19]Herbert A. Thelan, "Group Dynamics in Instruction: Principle of Least Group Size," School Review (March, 1959), 57:142.

[20]Donald D. Durrell, and Viola A. Palos, "Pupil Study Teams in Reading," Education (May, 1956), 76:553.

[21]J. W. Wrightstone, "What Research Says About Classroom Organization for Instruction," National Education Association Journal (April, 1957), 12:255-258.

instruction demand.

Independence

Provides for individual initiative and action on the part of the teacher and pupil.

Control

Is essential for the smooth and orderly functioning of and plan of grouping.

Real adaptation of schools to individual children, however, means more than merely allowing each child to progress at his own natural gait through school subjects. It means developing the child's originality, his creative impulses, his initiative; it means helping him to inner emotional adjustment; and it means making him into a social individual with a genuine sense of responsibility. Washburne[22] says:

> It is right to adjust our school work to the individual differences of children. It is right to bring out each child's interests and abilities. It is right to help children to inner emotional adjustment. It is right to develop children's social mindedness. Our means to this end are imperfect. But if the parents see clearly our goals and are convinced of our open-minded earnestness of effort to perfect our ways of reaching them, we can count on a reasonable degree of tolerance to help us toward ever-increasing success.

Team learning, as opposed to whole-class instruction, allows for self-reliance and independence. Its basic qualities make the classroom not only a place to learn, but also a haven for knowledge and social relationships. It is by no means the utopia of elementary education, but rather a combination of techniques and experiences which lend themselves to making the whole child.

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[22]Washburne, op. cit., pp. 148-149.

CHAPTER III

DESCRIPTION OF TEAM LEARNING

I. Introduction

Varied team practices. Although this paper deals with spelling, arithmetic, and social studies specifically, the following suggestions may be applied to team learning in general.

Team learning has high possibilities for adapting to levels of ability, progress rates, special skills needs, self-direction, and enrichment. There is no one best way to conduct team learning. New methods will need to be developed and exchanged with the ones which work best.

Whole Class as a Team

Audience situations: story hours, plays, impromptu dramatizations, reports of specialties, recordings, motion pictures, slides, ratio, television, current events, directions for all.

Group participation: choral reading, community singing, sports, games, social activities.

Discussions: opening discussions, plans, problems. (Development of discussion is often better done in teams of two to five.)

Half, Third, Quarter of Class as Team

Preparatory instruction to study or reading: vocabulary, study suggestions.

Special skills needs common to group: language skills, diction-

ary skills, composition skills, enunciation or speech habits, beginning phonics, advanced skills for rapid learners.

Preparation of plays or group presentations to class.

Temporary adjustments to levels of ability in reading, spelling, arithmetic.

Separate textbooks for instruction in reading, history, science.

Groups of Three to Five

Children of equal ability: For different progress rates in spelling, arithmetic; for group specialties related to history, science, literature; study guides--in uniform texts, or in different texts; for special skills instruction, either advanced or review.

Children of unequal ability: For group special assignments, tasks, or varied difficulty; for discussion of problems, planning, listing of ideas; for "teams-of-three" recitation or review; for brainstorming in creative writing.

Pairs (of equal ability): Review practice on arithmetic combinations, vocabulary, and concept review; word analysis practice, word classification exercises; study guides in content subjects; progress rates in spelling, arithmetic; certain pupil specialties.

Individual learning: Independent reading; pupil specialties; personal records of achievements--independent reading, new vocabulary, progress records in skills, specialties; personal lists of difficulties --spelling, grammar, speech; individual study and testing.

Pupils as teachers: Supplementary skills practice with slow groups.

II. Arithmetic

Preliminary Procedures

The textbook used in Arithmetic in the Dedham Public Schools was Growth in Arithmetic Series, by John R. Clark, et al., World Book Company, 1957.

To accommodate for differences in arithmetic, the following adjustments had to be made:

1. To serve all levels of arithmetic ability present in the class
2. For children to acquire concepts and understandings at different rates so that all children would progress at their individual rates of mastery
3. To overcome difficulties through analysis, remedial instruction, and intensive teaching at points of weakness.
4. To allow pupils to give mutual help in solving problems, reviewing facts, and to allow immediate correction of work
5. To allow for self-directing and self-correcting tasks in the interests of economy of time
6. Providing initiative, incentive, and motivation for self-discipline through individual progress methods.

Possibilities for Team Learning

Pupils were grouped according to achievement test results, past performances, and teacher observations.

High Achievers

1. Teams of two or three move rapidly through text of the grade. When this is satisfactorily completed, students move to advanced texts.
2. Avoid unnecessary practice; if children can master skills on fewer problems, omit some.
3. Provide review practice on any weak skills; emphasize speed as well as accuracy.
4. Teams of three employ methods of solving written problems.

Average Achievers

1. Pairs or teams of three, following five- or ten-day assignments.
2. Provide review practice on weak combinations.
3. Allow faster progress, if text allows and provides adequate presentation.

Low Achievers

1. Systematic review practice, teacher-led, on weak combinations.
2. Master earlier learnings before starting work of grade.
3. Pairs or teams of three; on five- or ten-day assignments.

Whole-class activities are at an absolute minimum. Among skills for whole-class instruction are graphs, Roman numerals, measurements, area and perimeter.

Most of the teacher-led activities would be provided for the low achievers. However, the teacher should supervise each group at least once during the period.

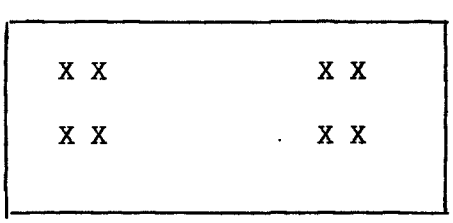
Materials

High achievers in arithmetic. It was necessary to allow high achievers to progress at their own individual rates. In order to do this with assurance that they would achieve these goals with high mastery, rules and standards for high levels of discipline had to be maintained. The arithmetic had to be adjusted to allow for self-direction, self-correction, and individual progress. It was decided that job sheets must be built (see samples) and rules administered for their use.

Thorough investigation of the text showed that completed listings of concepts, skills, and fundamentals were to be introduced for grade six. It was necessary to determine the amount of practice the high achiever must do in order to master and go ahead.

In the building of the job sheets for the high achiever, several objectives were set up:

1. Word problem practices would not be reduced.
2. Maintenance tests would be spaced at intervals so that no child would be advancing without complete understanding and mastery.
3. There would be no dropping of concepts, skills, or understandings once they had been mastered. Rather, systematic reviews would be held to insure retention.
4. Children were allowed to work in pairs and opportunities for mutual aid were provided. In working out examples, each



child worked alone, then was allowed to check with his partner, compare answers, and correct if necessary. Problem solving had a slightly different approach. One student would read orally, both would decide on the process involved, and one member would do the actual computation. After each problem, partners would exchange functions. This would allow for both partners to employ dual functions.

5. New concepts were taught in either of two ways: The text made adequate presentation of new concepts. It was usually self-explanatory, using visual illustrations and examples, and, in large measure, self-teaching. Students were encouraged to investigate and decide the new concepts for themselves.

   The second method would be for the teacher to introduce the new concept when the need arose. When several people were approaching a particular concept, the teacher would then take the group as a whole and introduce it.

6. Ninety per cent mastery was the figure set up as the standard. A child was never to advance without meeting this standard. Incorrect examples had to be repeated. High standards of neatness and legibility also were maintained.

7. Each student was to keep his own progress chart for teacher reference. Maintenance and qualifying text results were kept by the teacher for future use in regard to report cards and parent interviews.

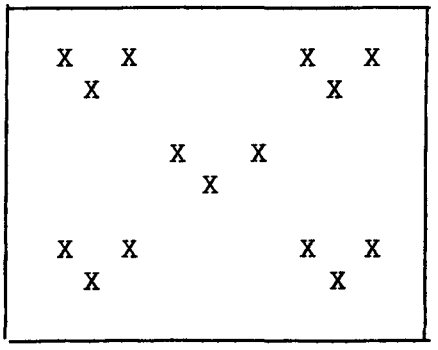
8. Along with the job sheet was an answer book. The child could then correct his own work rather than waiting as interest lessened. Correction booklets were not kept in the child's possession; they were kept at the teacher's desk.
9. It should be pointed out, however, that arithmetic was the only subject where students were allowed to work at materials above their grade level. Seventh and eighth grade books were provided along with correcting booklets for these rapid achievers.

Average achievers in arithmetic. It is safely assumed that all texts are aimed primarily at the average student. This series was no exception and thus made individualizing instructions for the average group much easier.

Rules and standards were set up to allow average achievers to work at their own individual levels and progress rates. These rules and standards were very similar to those of the high achievers. The major differences were:

1. All new understandings, skills, and concepts were introduced by the teacher.
2. Very close check of pupil progress was kept by the teacher and high standards of workmanship had to be maintained.

3. Progress was controlled in that children were allowed to advance at spaced intervals. Assignments were made to provide material for approximately ten days. Tests were given at the completion of each assignment.



4. Grouping was done according to ability. Students were allowed to compare answers, correct, and help each other if necessary. Correcting booklets were provided so that immediate correction was possible.
5. It was found that due to absences or one student progressing more rapidly than another, regrouping was necessary.

Low achievers in arithmetic. This group was teacher-directed most of the day. Team learning techniques were used during computations.

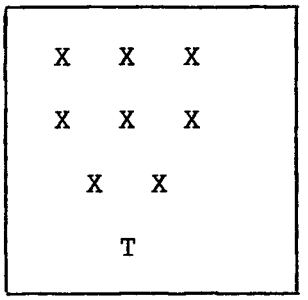
To group them homogeneously, these students were tested to discover their specific weaknesses and then were grouped accordingly. Obviously, this method of grouping led to several levels of instruction within the major group. Job sheets were minimized in the instruction of this group.

To allow for this multilevel of instruction, the following pattern was used:

1. When available, multisensory aids were used.
2. Children were taught concepts, understanding, and skills

directly by the teacher.

3. Each child made a set of flash cards for weak combination drills. Here team learning was utilized with students testing each other. This technique guaranteed systematic review of specific weaknesses.
4. Teams of two and three plus teacher instruction provided maximum utilization of practice to points of weakness.
5. Every-pupil response techniques were utilized in the interest of economy of time. Each student made up a set of cards with numbers 0 through 9 written on them. The problem was then dictated by the teacher and each pupil responded by holding up the card with the correct answer. This technique allowed for all students to answer at the same time and also for the teacher to correct misconceptions immediately. This technique replaced the standard take-your-turn recitation and allowed each student to absorb maximum number of practices in drill situations.



6. Mental arithmetic problems were also solved in this manner. Multiple response techniques were utilized at every opportunity.

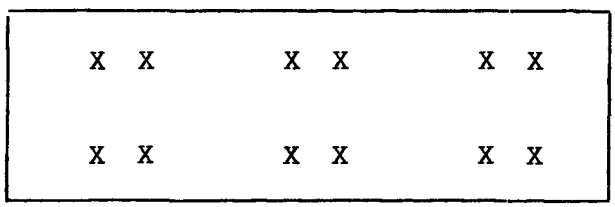
Once again, the major safeguard to this type of instruction was for the teacher to roam about checking on all groups. This was especially necessary to safeguard any "holding back" of one student by another. The group was never completely isolated from the teacher.

Disciplinary standards were adhered to at all times. Any individual not doing so was to work by himself for the day.

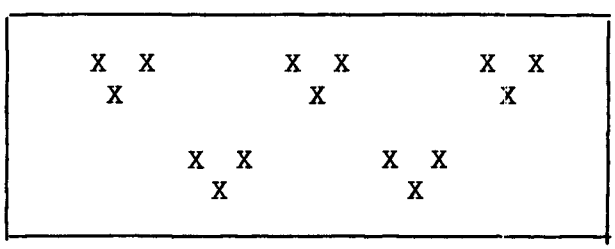
As in all subjects, regrouping was necessary throughout the year. Many average achievers moved up to the high achievers. Many low achievers moved up to the average level.

Group Organizations for Team Learning in Arithmetic

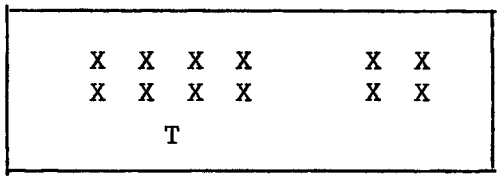
High achievers. These children advance through the text using job sheets. They get help from their partner, utilize mutual assistance, and ask the teacher for assistance if necessary.



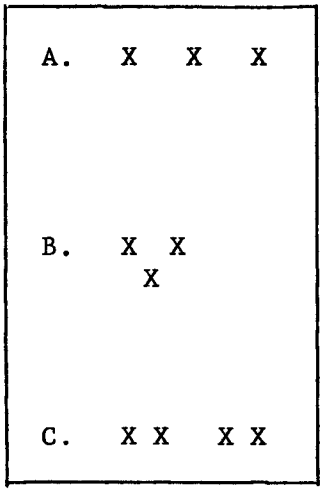
Average achievers. Usually set up in teams of three, these pupils work on problem solving examples. Their job sheets or work pages are not as long as those of the high achievers. However, mutual assistance and immediate correction are utilized.



Low achievers. Teacher introduces skill to entire group, using multisensory aids. Utilization of every-pupil response technique is required. Those members not ready for this particular skill are assigned practice work.



High achievers.

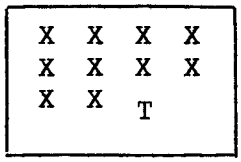


A. These children are taking tests. This is one activity where the students do not give or receive help.

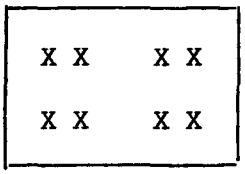
B. This team is solving written problems. It may be comprised of either two or three.

C. These teams are working on their job sheets.

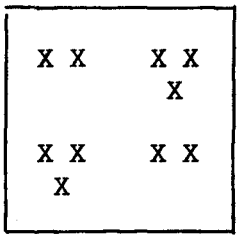
Average achievers. Utilization of every-pupil response is urged with these students. Here a new skill is being introduced by the teacher.



Low achievers.

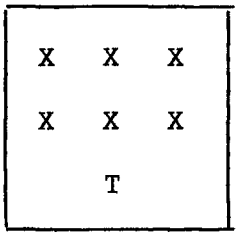


Practice in pairs in review of multiplication and division facts. Pairs test each other with flash cards.

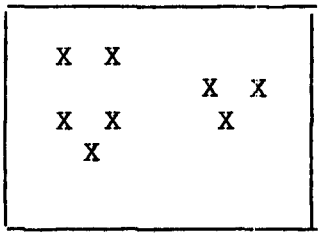


Teacher assigns written work for the day. Children are encouraged to seek assistance from their partners and may check answers with each other.

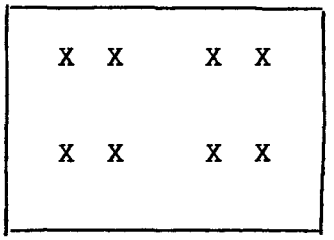
Paired practice in multiple response.



I. Oral Review



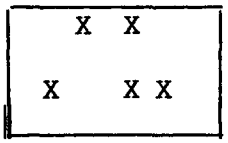
II. Division Facts Review



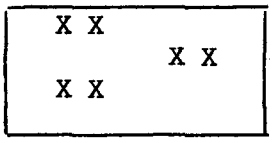
III. Multiplication Review

Team learning in arithmetic computation.

Rapid

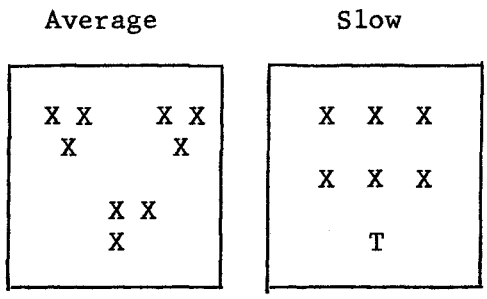


Fast



Rapid--Move ahead.

Fast --On job sheet. Move ahead at own rate. Mutually assist one another.



Average--Written work on fraction concepts.

Slow -- Fraction drill and teacher assistance. After teaching the skill, teacher goes from group to group. All groups compare answers and correct immediately.

Implementation of Initial Procedures

Instructions to high achievers in using job sheets. Here are some rules for going ahead in arithmetic: Some of the problems can be answered out loud. Some of the problems need to be done on paper. When the job sheets call for Read, Discuss and Answer, or (RDA), it means for you and your partner to do these problems together. Only one set of answers are necessary for RDA problems. Important--Make sure that you share the work. Take turns answering the problems. First you do a problem, then your partner should do the second problem. Take turns doing them. Remember, that you are on your own when you take the qualifying test for each job sheet.

The directions for some pages read "Write Answers" or (WA). This means that you each must do the problems. It is necessary that you each do a paper for the WA problems. However, you may check your answers with your partner after you have done a problem, or if you don't know how to do it, your partner is allowed to help you.

Any problems you get wrong, you must correct immediately. You are not allowed to go on until you understand and can get every problem correct.

After you finish each job sheet, you must then tell your teacher you are ready to take a qualifying test. This you must do by yourself. Each qualifying test will cover the work you have completed on the job sheet. If you fail the qualifying test, then you cannot go on to the next job sheet. You must repeat the entire job sheet, then take the test again. Do each page of the job sheet, one at a time. After you finish each page, check the answer sheet and correct any problems that you have wrong.

When you are working in pairs on arithmetic, remember that when you are discussing your work, you should never talk above a whisper. If you cannot work together quietly, then you must work all by yourself.

When you come to a page that has a little star like this * on it, it means that you might need some help from your teacher on this page. This is new work. Raise your hand and your teacher will come over to help you if he is not too busy. Sometimes there might be another person in your group who can explain this new work to you if he has already done it. Ask your group first.

III. Spelling

The spelling series used in the Dedham Public Schools was Using Words Series, by Lillian E. Bilington, Silver Burdett Company, 1945.

Before the initiation of the Dedham Study, the main objective

of the teacher was to take the students through the book, usually all working on the same lesson at the same time. To replace this uniform instruction, certain objectives were set up, using the text and adapting it to these objectives:

1. To provide intensive instruction to points of difficulty, helping children overcome their weaknesses
2. To provide for various levels of spelling ability
3. To accommodate for different rates of progress
4. To enhance social aims through mutual helpfulness in learning
5. To utilize self-direction and self-correction in the interest of economy of time for both teacher and pupil
6. To improve the transfer of spelling words to written vocabulary.

Basis for Grouping

It is as necessary to group children in spelling as it is in reading. This grouping may be done on several bases. The most obvious method is to group children according to achievement test results. The weakness of this method is that individual difficulties have not been determined.

In the Dedham Study, children were tested in learning rate, visual memory, phonetic spelling, and recognition of homophones. On the basis of these test results, children were grouped.

To meet these individual needs, the spelling program had to be adapted, and transfer from uniform to individual instruction had to be

made. The following steps were taken to meet these objectives:

1. Adapt the text to low, average, and high achievers.
2. Keep all activities in small teams and independent.
3. Progress charts were kept to record pupil progress.
4. Provide spelling exercises to correct spelling difficulties.
5. Provide systematic review to safeguard retention.
6. Build personal spelling lists for each child in the class.

Since the spelling book alone constitutes a small division of spelling power and growth and provides for few opportunities for transfer, several adjustments had to be made:

1. Spelling book exercises failed to provide challenge or appeared to be of little value for high achievers and were therefore omitted.
2. Many spelling text exercises seemed to have little or no relation to improving spelling.
3. Oral spelling was discontinued as an accepted practice.

To meet these adjustments, the spelling period for all groups was reduced to three days a week. On these days (Monday, Wednesday, and Friday) were scheduled introduction, word usage, and tests. The other two days of the week were devoted to work classification, applied phonics, and response-to-meaning exercises.

Procedures for Team Learning in Spelling

The following is an attempt to generalize several steps that should be applied to the three major groups. More detailed explana-

tions will follow for grouping within the major groups. It should be emphasized, however, that there are no whole-class activities in spelling.

High achievers.

1. Teams of two or three (depending on need) progress through the speller as quickly as possible.
2. All exercises in the speller should be omitted except for the stories using the spelling words.
3. When words are spelled correctly by both members twice, move on to the next lesson.
4. Insert word usage practice after 60 to 80 words are spelled.
5. When the spelling book is successfully completed, emphasize personal spelling lists.

Average achievers.

1. Teams of two or three as required.
2. Use speller exercises which require response to meaning.
3. Omit phonetic analysis. It will be better developed in the word classification or direct phonics in reading.
4. Keep personal spelling list of difficult words.
5. Provide systematic review.

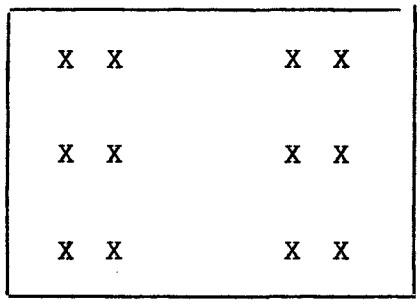
Low achievers.

1. Keep together as group; teacher-directed learning.
2. Apply visual memory methods with meaning.
3. Use review lists instead of words for grade if necessary.

4. Provide basic phonics instruction (if needed).
5. Rely on word classification skills for advanced phonics.
6. Never give more words than the child can digest.

Group Organizations for Team Learning

High achievers. High achievers usually were grouped in teams of two. Partners were initially assigned whose rates of progress were comparable. Teacher-led instruction was omitted, since students could read well.



Procedure.

1. Teams work together on each spelling list. They read the words to each other, then student 1 reads the short story which precedes each spelling list. Student 2 will do the reading in the next lesson.
2. Student 2 then takes a written test on these words from student 1.
3. Student 1 then corrects the test, using the spelling text as his guide.
4. All misspelled words are studied and then retested.
5. Student 1 follows this same procedure.
6. More than one word misspelled by either pupil necessitates his taking the complete text over again.
7. After every six lessons, the teacher gives both partners a

review test, using words which have been supposedly mastered thus far.

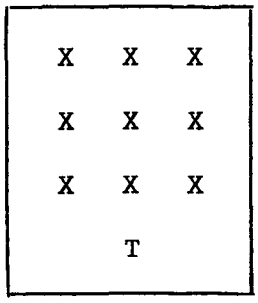
8. A personal spelling list is kept by each student. All misspelled words in spelling and other language arts activities are listed on it.
9. Standards for neatness and legibility are subjective and are left up to the discretion of the teacher. Any papers not meeting these standards must be recopied.
10. A chart is kept on the bulletin board with the child's name on it. He goes to it and checks the appropriate column after he has successfully completed each spelling list. In this way, the student keeps a progress report available to the teacher at all times.

It should be pointed out that after the spelling program is underway, it may be found necessary to move partners from one pair to another. It is highly unlikely that two students end the year with the partner with whom they originally started.

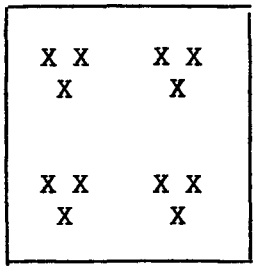
For those children who find it difficult to get along with their partners or who are discipline problems, it is suggested that they be required to work alone.

Average achievers. Spelling for average achievers follows a pattern similar to that used for high achievers.

1. The spelling list is introduced to the entire average group by the teacher. Words are put on the board and meanings given,



using the words in sentences and utilizing all techniques for word recognition. After this introduction is completed by the teacher, team learning is put into practice.



2. Teams of three are generally used with average achievers. If the team is not moving along satisfactorily, the team number may be increased. This would insure each student taking the same test an additional time. Children of like ability and progress in these teams of three pretest each other. If students spell all the assigned words correctly, they are free to engage in any other language art activity for the rest of the week.
3. Students read the short story preceding the spelling list. Any mispronounced words are corrected by the other members of the team.
4. Every member of the team studies the lesson.
5. Student 1 then gives a written test to students 2 and 3. Students 2 and 3 then exchange papers and correct, using the spelling book as their guide. Then each student studies his corrections.
6. Student 1 then retests students 2 and 3.

7. Student 2 then tests students 1 and 3. This gives student 3 double practice in the list. Students 1 and 2 then take double practice in successive lessons.
8. Correctional procedure as given in item 4 is repeated.
9. This progress is controlled in that children are allowed to go on in spaced intervals, hence the grouping of children in teams of three and sometimes four.
10. Once again, personal spelling lists are kept as well as progress charts and high standards of neatness and legibility.
11. All teams are tested by the teacher on spelling lists mastered once a week (usually on Friday).

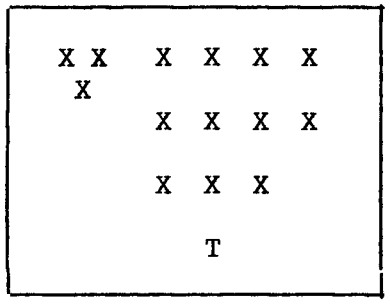
Low achievers. Since the low achievers needed the most drill, the teacher spent most of his time with this group.

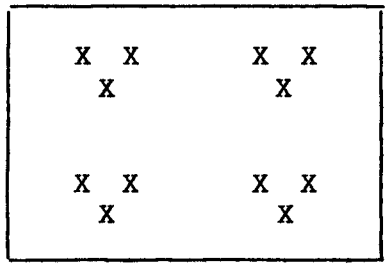
The primary obstacle to overcome was adjustment of the number of words to be spelled to the learning rate of the individual. This led to even smaller groups within the major group.

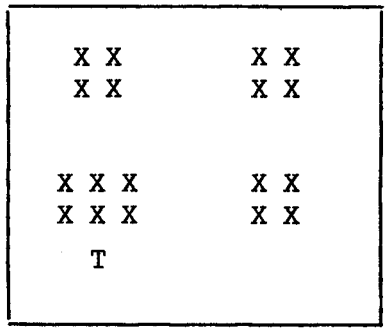
Some children could master only seven words per week from the grade speller. Others were so poor that they did not use the spelling text at all. Remedial spelling lists were devised from second and third grade spelling lists.

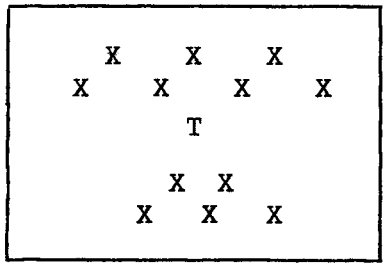
The following steps were taken in the program for low achievers:

1. Introduction of the spelling list to the entire group, as explained in step 1 with average achievers.









2. The low achievers were never pretested. The words were written on the board by the teacher and the students copied them on paper. This was supervised by the teacher by circulating among the group and making sure the words were copied correctly. Those pupils working on remedial lists were not given these words.
3. Children were given intensive instruction according to their weaknesses. Direct teaching was employed to overcome:
   a. lack of auditory perception of word elements
   b. faulty word pronunciation
   c. overapplication of phonics
   d. low relationship of spelling to meaning
   e. slow and/or careless handwriting
   f. word recognition practice
   g. poor visual perception.

4. Techniques employed to overcome these weaknesses were: response to meaning, every-pupil response, ear-for-sound training, visual memory lessons, word recognition practice, flash card drills, and applied phonics.
5. Teacher-led systematic review helped maintain retention.
6. Team learning practices were used when needed. However, most of the spelling lesson was teacher-led.

Progress in Spelling

High motivation was the outcome when children were allowed to progress at their own speeds. High achievers completed the grade speller in approximately six weeks. Using uniform instruction, this could only have been accomplished in thirty-six weeks. Average achievers completed the speller in approximately twenty weeks. Low achievers who were able to master only six words per week were now mastering fifteen at the end of the year.

Many average achievers moved up to become high achievers during the year. Frequent regrouping was necessary.

An important key to the program was the personal spelling list. High achievers centered their attention on these lists when they successfully completed the speller in less time than they had anticipated. High achievers tested each other on these personal lists. These lists were also inspected and tested by the teacher at his discretion. Incorrectly spelled words were never discarded but were carried over to new lists.

Close, constant supervision was necessary. Moving in and out of groups, checking progress, maintaining high standards while circulating were the prime safeguards of the program.

Variations of the steps mentioned were encouraged to fit the various situations. The teacher was free to teach any individual or group, and no children were ever completely isolated from the teacher.

IV. Social Studies

Preliminary Procedures

Basis for grouping. Students were grouped according to achievement tests, pupil's past performance, teacher interviews, and teacher observation. A definite factor which takes on paramount performance in grouping for social studies is the student's reading ability. Pupils with low comprehension skills more often than not are placed in the teacher-led group.

Possibilities for Team Learning in Social Studies

Whole-class activities: Introductory discussion and planning, motion pictures and slides, exhibits, field trips, classroom visitors, listening to specialty reports, dramatization, and recordings.

High achievers: Teams of two-three use advanced study guides with text, or use advanced text or specialized reading on topics covered by class; classroom participation in discussion, planning, criticism, with groups of three-five children of unequal ability; specialties reports, individual or team, assigned far in advance; systematic fact or

concept review, in teams of two, when available; special instruction in use of references, note taking, report making, library usage.

Average achievers: Teams of two-three use study guide with text; classroom discussion in groups of three-five, pupils of unequal ability; systematic fact or concept review in teams of two, when available; specialties reports, individually or in teams of two, assigned far in advance; special instruction in use of references, report making, note taking, library usage.

Low achievers: If reading ability is very low, oral presentation by teacher or superior pupil; use study guides to check comprehension; if reading ability is fair, provide preliminary vocabulary practice, glossaries, questions to guide reading; study in pairs; specialty reports require careful choice and planning.

The Textbook and Its Adaptations

High achievers. The textbook used in the Dedham Schools in Geography was Geography of World People, by W. R. McConnell, Rand McNally Series, 1952.

Since geography is a content subject, accommodations for acceleration and rapid progress (as allowed in skills subjects) were not as easily made.

Though skills learning is necessary in this area, many other enrichment activities require all children to study the same subject matter. It was necessary, then, to allow bright children to cover the assigned material, and yet allow maximum opportunity for self-direction

and initiative. Thus the advanced study guide came into being (see example).

The advanced study guides were characterized by many different activities and learning experiences.

1. "How" and "why" discussion questions
2. Encyclopedia and reference reports (oral and written)
3. Project assignments in map making, charts, etc.
4. Outlining of textbook fact content
5. Written summary reports.

Teams of three to five high achievers were the best pattern for this activity. They worked on the study guide, group leaders utilized, reports assigned, and discussions held.

The entire guide program was directed toward more independent work on the part of the high achievers. The teacher, however, could at any time interrupt the independent activity to discuss a common problem, share ideas, or present an enrichment activity. There were occasions for heterogeneous grouping. This was usually done during review periods immediately preceding the unit test.

Another characteristic of the study guide was the use of reference materials. Library resources, encyclopedias, and outside materials were utilized to add greater scope.

Audio-visual reports (see pupil specialties) were also an integral part of the guide program.

Since many other social learnings were necessary for an adequate program, acceleration was not permitted. The scope and depth of the

assigned subject became the measure for high achievers.

In summarizing the responsibilities for high achievers in the guide program, the following are submitted:

1. Most review practices were accomplished in teams of two.
2. High achievers participated in most classroom discussions.
3. Specialty reports, either individual or team, assigned in advance so that they could be presented during the actual study of the subject matter.
4. Study guides used in small groups were supplemented with the basal text and supported by reference materials.
5. Teacher instruction in special skills, i.e., map reading, graphs, time and distance skills.

Average achievers. Though some average achievers (under favorable conditions) might be able to use the advanced study guide, it was decided to prepare an entirely new one. This guide covered the same material but in a more simple and informal nature. They were less abstract and were used as an adjunct to the main program. The study guide for average and high achievers (see sample) was characterized by the use of the following activities:

1. Multiple choice questions
2. Matching exercises
3. Fill in correct endings
4. Word classification exercises
5. Small group discussions
6. True-false exercises

7. Dictionary assignments
8. Reference book assignments*
9. Outlining*
10. Small group debates*
11. Dramatization
12. Summaries*
13. Map exercises
14. Construction of time lines
15. Picking the main thought
16. Arranging facts in sequence
17. Poems of historical or geographical nature.

The main emphasis with the average group was for the student to acquire greater skill in the intake of ideas and subsequent recall skills. Take-your-turn recital practices were discontinued.

Specialty reports (much smaller in scope than those of the high achievers) were used effectively. Vocabulary aids, word classification cards, and multiple response techniques were often utilized.

The following are general characteristics of activities of the average achievers:

1. Teams of two or three use study guide with basic text.
2. Specialty reports in teams assigned in advance.
3. Greater emphasis on skills learning and greater teacher direction.

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*Items with an asterisk were usually regarded as activities for high achievers only.

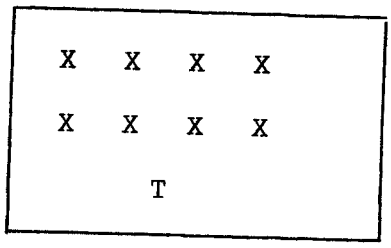
4. Participation in discussion with pupils of equal or unequal ability.
5. Systematic fact and concept review in teams of two or three.

Low achievers. The social studies materials mentioned were entirely too difficult for the low achiever. The material had to be adapted to meet his need and level. This was accomplished by:

1. Increased emphasis on vocabulary development
2. Increased direction in discussion periods
3. Maximum use of activity work such as map making, model building, assisting in specialty presentations
4. Oral presentation by the teacher.

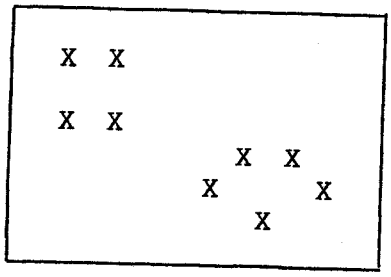
These adaptations did not make for less participation of the low achievers. Rather, they provided materials and content at their own level.

Organizational Patterns for Team Learning in Social Studies



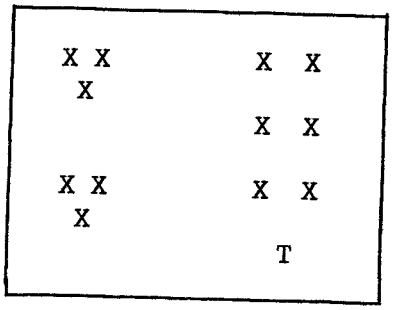
A. Whole Class Activities

1. Introductory discussion
2. Motion pictures, slides
3. Specialty reports, plays
4. All enrichment activities



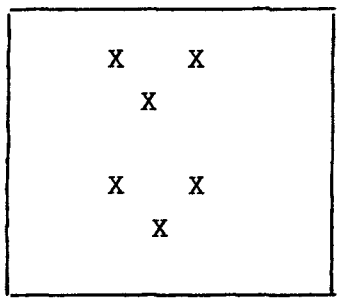
B. High Achievers

1. Teams of four or five use advanced study guide
2. Discussion
3. Special instruction in library use
4. Specialty reports

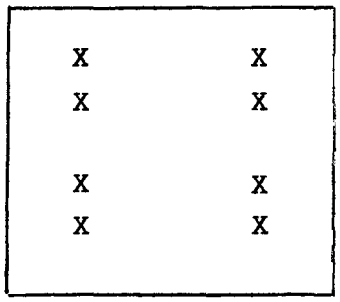


C. Average and Low Achievers

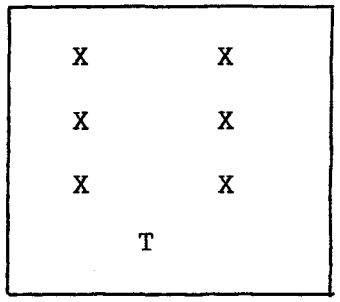
1. Multiple response techniques
2. Heavy vocabulary introduction
3. Special instruction at points of weakness
4. Small group read arounds
5. Oral presentation by teacher



A. High achievers working in three's on advanced study guides.



B. Average achievers using paired practice in review activities.



B. Low achievers receiving direct teacher assistance in vocabulary and map skills.

V. Pupil Specialties

Definition, use, purpose, characteristics. A pupil specialty is an activity in which a child uses the tools of research available to him to find out as much as possible about a topic, area, or project. After the child has amassed considerable knowledge on a particular subject, he becomes a "specialist" on that subject. Hence the term, pupil specialty. As opposed to the traditional booklet-type report or oral report, the specialty is presented orally by means of informal talks or play, with the child's materials displayed on bulletin boards and project tables.

Designed for: Children who are reading at grade level or above, regardless of the grade in which they are enrolled; children who com-

plete regularly assigned work in advance of other members of the class and have spare time in school; children who are interested in doing extra reading, project work, etc. in their spare time outside of school.

Educational purposes. Provides for differences in learning rates and levels of ability; encourages self-expression; teaches the children to budget their time wisely; work with multiple texts which are preferred by children to single texts; are self-directing (self-direction assignments are preferred by children to teacher direction); results in the use of many and varied references and sources; makes school work challenging to bright pupils by raising level of instruction to their abilities; makes effective use of pupil time after the completion of the daily tasks.

Specialties. Provide an opportunity for developing self-discipline through independent study; provide an opportunity to broaden children's interests; allow maximum use of study skills; further positive social relationships.

Initiating the Program

Explain to the class that they are going to take part in a new type of research program called pupil specialties. Explain also that this is very much like reporting, except that it is far more interesting. Read the guide book (enclosed) to the children and discuss the different steps in preparing a pupil specialty. (See Guide Book.) Answer any questions the children might have and then ask if anyone would be interested in starting a pupil specialty. Then assign one or two specialties.

Assigning topics. The teacher determines what his class will be studying in a curriculum area one month from the present time. If the class is studying Colonial America, for example, the following topics would coincide with the planned curriculum: Early American Furniture, Colonial Tools, Colonial Homemaking and Cooking, Early American Firearms, Early American Farming, Colonial Homes and Buildings. The teacher then assigns the projects to individuals or to a small group. After assigning the topic, the teacher checks off in the Guide Book the items that will help the child with his topic. The teacher then determines the day the class will be studying that particular topic and tells the child that this is the date his subject is due and that he will be expected to be ready to report on this day.

As a safeguard, it is wise for the teacher to check the specialty two or three days in advance of the presentation. This gives the child a chance to improve the specialty if any points of weakness are noted by the teacher. The teacher may want to check the child's materials to see that his information is accurate, pertinent to the subject, well-organized, and interesting. Also, to maintain high standards, the teacher should check to see that the display materials are labeled and explained, that the bulletin board is neat and attractive, and that the pupil is completely ready to give his specialty.

Characteristics of a good assignment.

1. A variety of activities and a rich range of learning materials which attempt to develop skills for the individual student.
2. The opportunity for adequate experiences for the bright child

to go far beyond his expectations.

3. The provisions for interests and tastes to develop through research, through local contacts, through literary appreciations, and through personal associations by which the varied interests of the individual can be directed toward new learning.
4. By using many kinds of materials and resources, magazines, newspapers, reference material, and other realia; providing each student with the opportunity to use his abilities to the best possible advantage.
5. The assignment should be specific.
6. The alternatives presented to each pupil should help to meet individual differences.
7. Standards of workmanship at different ability levels should be recognized and established.
8. These activities should permit both individual and cooperative accomplishment.
9. They should move in the direction of the development of important work and study skills.
10. They should arise and be selected in a logical manner from the curriculum.
11. They should have positive and intrinsic interest for the individual.
12. These activities should differ from previous assignments.

Advantages and opportunities.

1. Leads children to a wide variety of resources and fields of endeavor.
2. Each child shares his findings with his classmates.
3. Provides for a unique approach to the curriculum.
4. With little emphasis placed upon the necessity of a formal written report, a unique approach to learning is offered to children who are more accustomed to writing tasks associated with research and areas of investigation.
5. These activities and assignments emphasize pupil participation, discussion, planning, critical evaluation, personal contact, and the development of creative talents.
6. After the initial plans have been formulated by the teacher, these activities require minimum teacher direction and assistance.
7. Allows for individual initiative and personal discipline.
8. Slow learners gain knowledge through observation and listening to a specialty.
9. Provides children with opportunities in skills areas by locating information, selecting and evaluating pertinent material, organizing, participating in research activities, note taking, compilation of bibliographies, letter writing, expressive skills, techniques of reporting, varieties of display and artistic arrangement, labeling, use of high mental processes, and application of critical analysis.

High Motivation

High motivation can be provided through the enthusiasm of the teacher when this new method of reporting is first introduced. Secrecy surrounding each report provides an air of mystery and anticipation preceding the presentation. The student's desire to express himself, to share his findings and research with his classmates is a high motivation in itself. Advance advertising through posters adds to the suspense; the privilege of inviting guests augments the importance of the report. The amount of art work which the child wishes to do in connection with his specialty need not be limited, because he can be provided with as much space as he needs on the bulletin board and project table.

Evaluation. After the presentation, the class may want to evaluate the specialty. The following evaluation techniques have been found very successful:

1. The child giving the specialty makes out a short quiz and gives it to the class. This ensures a listening audience during the specialty presentation and affords the teacher an opportunity to evaluate the specialty in terms of what the children gained from the presentation.
2. After the presentation, the class may want to discuss in small groups the outstanding points of the specialty and make suggestions for improving the specialties which are to follow.

CURRICULUM RELATED PUPIL SPECIALTIES

Calendar of Reports

CURRICULUM RELATED PUPIL SPECIALITES

Schedule of Reports

Name(s)	Description	Date Assigned	Date Due

HOW TO SET UP THE TOPICS FOR CURRICULUM RELATED PUPIL SPECIALTIES					
Curriculum Correlation (Subject-Area)	Title of Pupil Specialty	Week (or day) Class Will Be Studying This Topic	Date of Pupil Specialty	Length of Working Period for Child	Description of Pupil Specialty Topic

CHAPTER IV

EVALUATION OF TEAM LEARNING

I. Introduction

The advantages of team learning instruction are many. These advantages can be generalized thusly:

1. Team study requires that pupils study independently and so gives them practice in self-direction.
2. Level and learning rates can be adjusted to group needs.
3. Practice needs that are common to a group can be met readily.
4. Because of heterogeneous grouping, pupils learn from each other.
5. Team work in itself encourages social development and group responsibility.

II. Advantages for the Pupil

Individualized Instruction

Higher achievers gain greater scope and depth in the subject matter. This pertains particularly to content subjects. Since high achievers work independently, this type of learning situation encourages creativity and self-reliance. High achievers are able to work beyond grade level in arithmetic. This stimulus motivates the student and a greater desire is displayed to reach this goal.

Average and low achievers gain the much-needed individualized

instruction from the teacher. Since the high achievers are working independently, this allows the teacher more time to aim at points of weakness with the low and average achievers.

Grouping heterogeneously in reviews, introductions, etc. allows the average and low achievers to absorb ideas from other students. In these discussions, the average and low students are given every opportunity to contribute as well as to absorb. These outcomes lead to greater interest and motivation on the part of low and average achievers. Where once these same students were frustrated and bored, they now become an integral part of the classroom, contributing their share in all discussions.

Economy of Time

Making the instruction individualized allows the students to use their time effectively. In whole-class instruction, all children would be doing long division, regardless of achievement. With team learning, children are not required to do thirty problems if they can master the skill in fifteen. Hence the time which would have been used to solve the remaining problems can now be used to investigate and practice other skills. This procedure allows for maximum effort in a minimum of time.

Provisions for Self-reliance and Self-discipline

Students (particularly high achievers) will thus have to make decisions independently. They will be leading groups in discussion and must conduct it correctly. Since study guides are informal, the student must pull out the important ideas and distinguish them from the less

important. As for discipline, maximum standards are set up by the teacher. The student undertakes the tasks knowing "he is on his own" and is responsible for discipline within his group.

Psychological Effects

1. High achievers are finally challenged and are not bored with "busy work."
2. Low achievers are not frustrated, but rather the work is now reduced to their work level.
3. Pupils are not tagged as high or low. One student may be a high achiever in spelling but a low achiever in arithmetic.
4. Children are moving to higher groups throughout the year.
5. The results are seen graphically by the student. Progress charts are kept by each student, and progress is reported for both the student and teacher.

III. Advantages for the Teacher

Utilization of New Materials

The teacher now becomes aware that there are other teaching materials beside the textbook and workbook. Study guides and job sheets were new materials not utilized in whole-class instruction. Other materials were word classification cards, personal spelling lists, specialty reports, and weekly task sheets.

Economy of Time

Time is of the essence to any teacher, and with team learning the teacher can devote more of it to teaching at points of weakness. The day is gone when all children will be working on the same page in arithmetic. Rather, the teacher now circulates around to the various teams, ensuring their progress.

An awareness of the importance of grouping is developed. It is rather obvious that all children within any classroom are individuals and should be challenged as such. The teacher is surprised to find how easy it is to handle multiple groups.

Self-correction is an advantage which allows the teacher more time in teaching the various groups.

Weaknesses experienced by the student become more apparent and are more easily identifiable.

Team learning encourages independence and allows the teacher to utilize the time (which would have been spent in reading simple directions) for other purposes.

Reporting to parents becomes much easier in that progress is graphically kept. The parent can readily see what and where the child is and the progress he has been making.

Psychological Effects on the Teacher

The elimination of lock-step instruction and knowledge of a well-organized program which permits use of multiple texts and multiple levels is a wonderful feeling for a teacher. This effect seems to "rub off" on

the pupils and each contributes his share. The feeling that the teacher is accomplishing more is also quite apparent.

IV. Cautions

As in all plans, the job of teaching is never taken away from the teacher. Also as in all new techniques, several cautions should be watched for. Among them are:

1. There is no behind-the-desk teaching. The teacher is constantly moving and checking from group to group.
2. The teacher is still the center of the class and there are no substitutes.
3. Study guides and job sheets are no panacea. Rather, they are instructional materials used to aid the student and let him progress more rapidly.
4. Periodical checks by the teacher are necessary.
5. Systematic review is also necessary.
6. No group is ever without teacher direction.
7. Enrichment is the key to the content subjects.
8. There are still some wholesome whole-class activities.
9. No group is ever rigid. They are flexible and partners may be changed.
10. Indoctrination of parents as to the how and why of team learning is necessary.
11. High standards of discipline should be kept at all times.

12. Extreme caution should be used when grouping children homogeneously.
13. Children should be able to see their progress at all times.
14. Team learning should be adapted and changed to fit the needs of the teacher and his particular class.

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APPENDIX

STUDY GUIDE ON INDUSTRIAL WESTERN EUROPE

Maps

I. Please read page 55 through the bottom of page 62.

On five separate maps fill in the following items.

1. Print the names of the countries of industrial western Europe. You may check the spelling so it will be correct.
2. Show the latitude and the longitude of industrial western Europe on your second map. Also include the zone or zones industrial western Europe falls in.
3. Note the approximate location of these cities of industrial western Europe: London, Paris, Bonn, Berlin, Nantes, Marseille, Belfast, Amsterdam, Antwerp, Birmingham, Bordeau, Cardiff, Cologne, Dublin, Frankfurt, The Hague, Harve, Leeds, Liverpool, Liege, Manchester, New Castle, Rotterdam, Stoke-on-Trent, and Southhampton.
4. On map four show the important rivers. You should have at least eight.
5. On map five illustrate the rainfall and the growing season.

Be sure to include a key with each of these maps.

In group discussion compare the weather and climatic conditions of industrial western Europe with those in the United States of similar latitude. During the discussion list the important points that are brought out and each person keep a copy to study further.

2. Please read from manufacturing in Western Europe at the bottom of Page 62 through Page 74.

In front of each of the following list the word, words or phrase, phrases that will complete each correctly.

1. The areas of major manufacturing in western Europe are
2. The Industrial Revolution began in
3. Important iron deposits are found in
4. Important coal deposits are found in
5. Three important things to the production of steel are
6. Two great steel districts on the British Isles are
7. The valley with the greatest industrial concentration is the
8. Two centers of heavy manufacturing in Belgium are
9. Belgium's best seaport is
10. In Loraine and the Ruhr we find many
11. One of France's great iron-mining regions is
12. The Rineland coal comes from
13. The great industrial regions in Germany are
14. Some famous shipbuilding centers in industrial western Europe are
15. In early days some of the most famous weavers lived in

16. In England today the woolen industry is centered around
17. Today most wool is imported from
18. We find large woolen mills in
19. The British cotton industry centers around
20. Some of the finest flax is grown in
21. Who helped make English pottery famous
22. Haviland china is made from
23. Some other western European pottery centers are

3. You many read from Page 75 through the middle of page 81

In the following exercise choose the best ending and put the letter of the ending in front of the numbered statement.

1. Industrial Europe is also a great area for
   a. crops b. farming c. harvesting

2. A favorable condition to farming in this area is
   a. rainfall b. the ocean c. industry

3. Another favorable condition to farming is
   a. water b. fertile lowlands c. rich highlands

4. Farming in this area is
   a. crude b. intensive c. agricultural

5. The area around the Wash bay is called the
   a. great fens of England b. Paris Basin c. breadbasket of England

6. A cool-climate crop is
   a. wheat b. sugarbeets c. barley

7. Cool-climate crops grow in abundance in
   a. England b. the Netherlands c. Scotland

8. A crop that supplies much food from little space is
   a. grapes b. potatoes c. rye

9. Planting fields in regular order is called
   a. crop rotation b. intensive farming c. different crops

10. Sugar-beets call for
    a. good rainfall b. sparce population c. middle latitude climate

4. You may read from the bottom of Page 81 (Fishing in Industrial Europe) through the bottom of Page 83, where it begins Industrial Europe and World Trade.

Answer the two questions in complete sentences.
1. Where is one of Europes great fishing grounds?
2. In what ways are fishing communities alike?

5. Please read from the bottom of Page 83 through Page 87. Sort the following products into two lists. List ONE should include those things that are imported into industrial western Europe. List TWO should include those products that are exported by industrial western Europe.

leather	coffee
meat	salt fish
machines for factories	cacao
coconuts	raw woolen and cotton fibers
metal tools	sugar
wheat	

6. Read Page 89 through the middle of Page 105

Prepare an oral report on one of the countries of industrial western Europe. In your report cover these topics:

A. Geography
   1. Growing season
   2. Rainfall
   3. Population
   4. Major or outstanding features

B. History
   1. Language
   2. Government
   3. Cultural life
   4. Important events
   5. Famous people

C. Industry

D. Agriculture (farming)

You may include maps, graphs, and concrete examples to make your report more interesting. You will need to use other sources for information besides your geography book. I suggest you use there: encyclopedias, dictionary, atlas, and the library. There are some filmstrips and there may be one you would like to show in conjunction with your report.

Write a short summary of the important information in the geography book about each of the countries besides the one you are preparing an oral report on. Be sure to try and cover as much information as you are able. You may include any other information you might have or find that you feel is important.

7. Word Meanings
Please underline the correct meaning for the word in the column at the left:

1 rural	a. country	b. woods	c. urban
2 kilns	a. ovens	b. bake	c. bricks
3 kaolin	a. bricks	b. sand	c. white clay
4 intensive farming	a. changing crops	b. producing large crops	c. vegetable farming

5. banks	a. shallow water for fishing	b. money to save	c. surrounding ocean water
6. merchant marines	a. armed services	b. commercial ships	c. navy
7. ford	a. river delta	b. inlet from the sea	c. shallow water for crossing
8. democracy	a. form of government	b. monarchy	c. political party
9. drowned coast	a. seaport	b. sunken coast	c. under water
10. ballast	a. valuable cargo	b. worthless goods	c. full hull
11. peat	a. stores	b. grain	c. fuel
12. polders	a. drained land	b. move slowly	c. low hills
13. crop rotation	a. dairy farming	b. changing fields	c. transport-ing goods
14. drowned valley	b. behind dikes	b. low land	c. under ocean water

STUDY GUIDE ON INDUSTRIAL WESTERN EUROPE

ANSWERS FOR #2, #3, #4, #5, #7

Answers for #2

1. England, Luxemburg, Netherlands, Western Germany, Belgium and France
2. England
3. Eastern France; Luxemburg, England, Belgium and Germany
4. Belgium, Netherlands, Rhine Valley; British Isles
5. iron, coal, and limestone
6. Burmingham and Wales
7. Meuse
8. Liege
9. Antwerp
10. Loraine
11. blast furnaces and steel mills
12. Ruhr and Rhine
13. Ruhr Valley and Rhine Valley
14. Glasgow, South Shields, Belfast, Nantes, and Caen
15. Flanders
16. Leeds and Bradford
17. Argentina, Uruguay, New Zeland and Australia
18. Lille, Roubaiu, Ghent and Reims
19. Manchester
20. Flanders (Belgium)
21. Josiah Wedgewood
22. Kaolin
23. Limoges, Pelft, and Mense Valley

Answers for #3

1	b	4	b	7	c		
2	a	5	c	8	b	10	c
3	b	6	c	9	a		

Answers for #4

1. The North Sea
2. Type of location, importance of the sea, methods of fishing, location near fishing grounds

Answers for #5

Imports	Exports
meat	machines for factories
leather	metal tools
coconuts	salt fish
wheat	sugar
coffee	
cacao	
raw woolen & cotton fiber	

Answers for #7

1	a	5	a	9	b	13	b
2	a	6	b	10	b	14	c
3	c	7	c	11	c		
4	b	8	a	12	a		

INDUSTRIAL WESTERN EUROPE - I.

I. INTRODUCTION - READ PAGES 55 - 56, AFTER LEARNING VOCABULARY.

VOCABULARY

1. maritime region - A region greatly influenced by the sea. (It usually has a long coastline, and many of the people of the region depend on the sea to make a living.)
2. inlets - where the water enters into the land (like small bays)
3. commerce - trade
4. commercial advantages - opportunities for trade.
5. elevations - different heights of the land.
6. population - number of people living in a region
7. dense population - many people living in each square mile of a region
8. sparse population - few people living in each square mile of a region.
9. moors - swampy wasteland found in Scotland and England.

p. 55 - a) What ocean does western Europe face? b) What are the advantages of facing this ocean? c) Name 6 busy ports and the countries they are located in (Use the map on p.58 to find the countries.) d) What is the surface of the land like in western Europe? e)

p 56 - a) What occupations are influenced by the land surface? b) What is the area of Industrial Western Europe? c) What type of population is found here? d) What natural conditions affect the way the people live in Industrial Western Europe?

II. MANUFACTURING

VOCABULARY

1. quarries - open pits from which stone used in building is taken.
2. transportation - means of transporting or carrying people or goods from place to place (as truck transportation, bus, train, ship)
3. landscape - a view of the land as seen from far off(as by plane)
4. skilled craftsmen - workers who did things carefully and beautifully by hand.
5. power - means of running machinery(like water power, steam, electricity)
6. Industrial Revolution - turn-over or change in industry - when things were no longer hand-made but made by machines.
7. industrialized region - one where many people work in manufacturing.
8. coke - partly-burned coal
9. smelting - melting iron ore to remove the iron from the impurities found with the iron when it is taken from the ground.
10. blast furnace - a very hot furnace where iron ore is melted down.
11. pig iron - the product of the blast furnace - pure iron with the impurities removed.
12. abundant supplies - rich in supplies, large quantities of goods.
13. United Kingdom - includes the countries of England, Scotland, Wales, and Northern Ireland)
14. charcoal - partly burned wood.
15. Birmingham - great iron and steel district of England.
16. import - to bring things into a country
17. export - to ship goods out of a country.
18. foundry - a large building where metals are cast.
19. heavy manufacturing - bulky, heavy manufactured products which require large quantities of raw materials and fuel like metal works, glass works, and chemical works.
20. cooperation - helping each other.

READ PAGES 62 - 68. THEN ANSWER THE QUESTIONS ON THE NEXT SHEET.

Manufacturing(cont.)

p. 62 - Why are we taking this imaginary airplane trip? Where do we start from? What is our destination?

63 - a) What do we notice about England's landscape?b)What body of water do we cross to get to the mainland of Europe c) What kind of region do we find ourselves in now? d) Four hundred years ago how would western Europe's landscape been different? e) How were things made then? f) Where were they made then? g) Tell about the craftsmen of different countries and the things they were famous for making.

p. 64 - What was the big disadvantage of making things by hand? b) What did inventors do to take care of this problem? c) For what industry were the first machine made? d) What type of power ran the first machines? e) What new type of power did James Watt put to use? f) When big machines began to be used, where was work done? g) What grew up around factories? h) What changes did the machines and factories bring about? i) Where did the Industrial Revolution begin? j) Why did it begin here? k) What do we mean when we say that England became industrialized? l) to what countries did the Industrial Rev. spread?

COAL, IRON, AND STEEL

p. 65 - a) Why is steel so important to the world today? Tell how steel is made from iron ore in this way (1) What is putinto the blast furnace? (2) What is the product of the blast furnace? (3) How is steel made from this product?

b) Tell the raw materials that Industrial Western Europe is rich in that are needed for the making of steel (Use the map on p. 62)

c) What industry of western Europe is most important in supporting her dense population?

p. 66 - Using the map on page 62, and the diagrams on page 66, would you say that the United Kingdom is well supplied with iron? Does it have large deposits of coal?

b) What is Birmingham famous for? c) Why did it grow up to be such an important iron and steel district? d) What city in the U.S.A. is it similar to?

p. 67 - Where is another famous British steel district? b) What 2 seaports does it lie close to? c) What it exported from these ports? d) What is imported? e) What important deposits found in Belgium helped her become an industrial country? f) Where does Belgium get many of her raw materials today? g) What Belgian district has the greatest industrial activity? h) What type of manufacturing is carried on here?

p.68 - a) What region in France is one of the world's greatest iron-mining regions? b) What important deposit for steel-making is France lacking? c) How do the French get this material? d) Name 2 French cities important for big iron and steel works.

e) What region of Germany is an important steel center? f) What natural deposit is found abundantly in this region? g) Name 2 river valleys rich in coal in Germany, where the steel industry is important. h) What raw material is lacking in the Rhineland? I) How do the people of the Lorraine District and the people of the Rhineland cooperate with each other?

SHIPBUILDING, TEXTILES, AND POTTERY

VOCABULARY

1. estuary - wide mouth of a river where an arm of the sea enters in.
2. cultivated - prepared the soil for raising crops.
3. textiles - all woven cloths.
4. textile industry - industry concerned with the making of cloth.
5. flax - raw material of linen.
6. Flanders - region of France extending into Belgium famous for cloth-making
7. chalk - a limey rock under the soil - where it is found the soil is poor.
8. rural population - made up of people who live in villages or on farms.
9. urban population - made up of people who live in city or large town areas.

VOCABULARY, CONT.

10. the Potteries - region in England famous for the making of pottery.
11. kiln - oven where pottery is baked to make it hard.
12. kaolin - a pure white clay used in making pottery.
13. Josiah Wedgewood - famous English potter who improved methods of making and decorating pottery. Wedgewood pottery is known all over the world for its beauty in color and design.

READ PAGES 69 to 74) SHIPBUILDING

p. 69 - a) What is needed for large importing and exporting carried on in Western Europe? b) What is a shipyard's greatest need? c) What else is needed in shipbuilding? d) Name 3 important factors that must be considered in deciding where a shipyard should be built. e) Name an important shipbuilding center in Scotland. f) In what other western European countries are other lage shipbuilding centers located?

TEXTILE INDUSTRY

P. 70 - What use is made of land too rough to be cultivated? b) List 2 important raw materials of the textile industry that have long been raised in western Europe. c) In early days what kind of cloth were the English famous for? What kinds were the people of Flander s famous for? d) How did machines help the woolen industry? e) Explain why the wooken industry no longer scattered but centered in a few large districts.

p. 71 - Where is England's woolen industry centered? b) Why did big woolen mills start in these places? c) Where does England get most of her wool? d) Why are so many woolen mills located near coal fields?

p. 72 - Why is the Champagne region of France an important woolen center? b) Where does England get the raw cotton for her cotton industry? c) Where is the British cotton industry centered? d) Why did the cotton industry grow up in Manchester if no cotton can be grown in England and the raw materials must all be imported? p.72-73 Name the important cotton-and woolen-manufacturing center in France and tell why the textile industry grew up here.

p. 73 - a) What is the raw material of linen that grows well in W. Europe? b) Where in the British Isles is this industry important? c) What part of Belgium and France is important for the linen industry?

POTTERY

p. 73 - What kindsof pottery are made in the Potteries. b) What is the city in the Potteries famous for pottery-making called? c) What advantages helped to make this city a pottery center? d) Who was Josiah Wedgwood? e) What type of clay is today used in Stoke-on-Trent? f) Where do they get this type clay?

p 74 - a) Why did the pottery industry remain in Stoke-on-Trent? b) Where is tableware made in France? c) What type of clay is found in the Netherlands? d) What is it used for?

FARMING IN WESTERN EUROPE

VOCABULARY

1. fertile soil - rich soil from which many crops can be raised.
2. beef cattle - cattle raised mainly for meat.
3. dairy cattle - cattle raised mainly for dairy products(milk, butter, etc)
4. intensive farming - In areas of dense population, farmers must make every precious acre of land yield as much as possible. No soil is wasted Crops are planted right to the edge of the roads; no fences are built because the space would be wasted.
7. winter wheat - wheat planted in fall that grows through the mild winters.
8. Paris Basin - area of lowland in Northern France which is one of the most fertile farming areas of the world
9. fertilizers - substances added to the soil to make it richer and to make it produce more crops.

INDUSTRIAL WESTERN EUROPE - IV (CONT.)

Fishing, Vocabulary

1. fishing banks - shallow areas in the sea which are the best fishing grounds. Here the sunlight reaches down to the bottom of the sea and plants grow which are feeding grounds for the fish.
2. Dogger Bank - famous fishing bank in the North Sea.
3. fishing communities - regions where most of the people make a living by fishing.
4. irregular coastline - coast has many harbors, bay and inlets. This is an advantage for fishing and trading.
5. Brittany - peninsula in northwestern France.
6. drowned valleys - valleys which years ago were above sea level, sunk and the ocean flowed into them forming small bays or inlets.
7. cargo - those things that a boat or ship carries.
8. cured fish - method of preserving (keeping) fish by drying or salting.

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READ PAGES 81-83

p. 81 - a) Why have the people of western Europe been fishermen for centuries?
b) Why is the North Sea good for fishing?

p. 82 - a) What fish are caught in the North Sea's banks?
What is a famous bank here?
b) In what parts of industrial western Europe do we find fishing communities?
c) What are the advantages of an irregular coastline to fishing?
d) Tell about the quaint fishing villages or western Europe.

p. 83 - a) Tell how fishing is carried on as a large-scale industry here.
b) Tell how all fishing communities are alike.
c) Why did many fishing peoples become traders on the sea also?
d) How did the Dutch prepare the fish they had to trade?

INDUSTRIAL WESTERN EUROPE - IV (CONT.)

Farming, Vocabulary - Cont.

8. cool-climate crops - crops that will grow well in areas of cool, rainy climate, like oats, rye and barley.

9. livestock - farm animals raised for the products they give.

10. crop rotation - a farming method by which a farmer does not grow the same crop year after year in the same field, but instead changes the crop, growing different ones in different order. This saves the soil.

11. beet pulp - the solid part of the beet left when the juice is extracted.

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READ PAGES 75-80

p. 75. - a) What are some of the natural conditions that affect farming?
b) What are the natural conditions of western Europe that made it a great farming area?
c) Name some of the abundant crops raised, also name some of the animals raised.

p. 76. - a) What do we call the farming carried on in very densely populated areas?
b) Explain how the farmers of western Europe carry on this type of farming.
c) Besides farming, what industries do the farmers carry on?

p. 77. - a) What natrual conditions are necessary for raising winter wheat in western Europe?
b) Why can wheat be raised in eastern England?

p. 78. - a) What region of France raises much wheat?
b) What conditions favor the raising of wheat here?
c) What kind of farming accounts for the high yields of wheat grown in Netherlands and Belgium?
d) Why is so much wheat imported into Netherlands and Belgium?
e) Name 3 important grain crops raised in summers too cool and rainy for raising wheat.

p. 79. - a) From what continent were the first potatoes brought to Europe?
b) What country is well suited to raising potatoes in Europe?
c) Name at least 4 uses for the potato.

p. 80 - a) Why isn't sugar cane grown in western Europe?
b) Where do the people of western Europe get most of their sugar?
c) How do the farmers of western Europe get high yields in sugar beets?
d) How can the farmer of sugar beets get even higher profits from them?

TRADE
VOCABULARY

1. merchant marine - The merchant marine of a country means all the commercial ships that fly the flag of that country.
2. imports - goods that are brought into a country.
3. exports - goods that are shipped out of a country.
4. surplus goods - when a country produces more goods than it can use at home, the extra or surplus goods are shipped to markets all over world.
5. ford - a shallow place in a river where horses and people can wade across.
6. docks - artificial basins lining a river and connected to the river with docks. Ships unload and load cargo at these docks.
7. transit trade - trade of a country handling more than its own products, but handling the products of other countries as well.
8. canal - an artificial waterway or channel used to connect two larger bodies of water.

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READ PAGES 83 - 88.

p. 83 - Why did Industrial Western Europe become a center of world trade?
p. 84 - a) How large is western Europe's merchant marine? b) What goods does western Europe export? What goods does she import? c) What happens to the surplus goods produced in western Europe? d) No place in western Europe is more than a few hundred miles from the coast. How is this an advantage in trade? e) What other waterways are helpful in shipping goods across western Europe? f) How does western Europe's coastline help? g) Name 5 seaports of western Europe that are among the world's greatest ports.
p. 85 - FILL IN THE BLANKS.

PORT OF LONDON: London is not only the capital of the British Empire, but also a center of world __(1)__. The Romans long ago found it easy to ford the __(2)__ River where London now stands. Later they built a __(3)__ and a village grew up here. London is built about 50 miles from the mouth or __(4)__ of the Thames. The Thames River empties into the __(5)__ Sea, a great trading sea.
p. 86 - The Thames has many __(6)__ built alonside so the river will not become overcrowded. Besides trade, London is also very important for the __(7)__ carried on within the city.

LIVERPOOL Liverpool is located on the __(8)__ coast of England on the estuary of the __(9)__ River. Large ships must wait for __(10)__ before entering the docks here. Liverpool serves especially the __(11)__ industry of Manchester, and the __(12)__ industry of Birmingham.

p. 87 - ROTTERDAM: Rotterdam is a seaport of the country of __(13)__. It is situated on the mouth of the __(14)__ River on the __(15)__ Sea. Rotterdam carries on a large __(16)__ trade from Germany and other countries of __(17)__ Europe. A large part of Rotterdam's trade comes from former Dutch __(18)__ near Eastern Asia. (19) List some of the tropical products brought into Rotterdam.

AMSTERDAM: Amsterdam started as a fishing village on the __(20)__.
p. 88 - Many of the streets of Amsterdam are __(21)__. Because it was not situated on the sea, Amsterdam built a deep canal to connect its old harbor ~~xix~~ with the __(22)__. Another interesting industry carried on in Amsterdam is __(23)__.

ANTWERP: Antwerp is situated on the __(24)__ River. It is connected to other large rivers by __(25)__. It shares the trade shipped from Central Europe with the port of __(26)__.

AT THE BOTTOM OF PAGE 88, LIST THE PRODUCTS GIVEN UNDER THE HEADINGS OF EITHER IMPORTS OF I.W. EUROPE OR EXPORTS OF I.W.EUROPE.

NATIONS OF WESTERN EUROPE

VOCABULARY

1. natural boundaries - these are where one country is set off from another by part of the natural environment like mountains, rivers, seas, etc.
2. political boundaries - these are lines between countries that were set up by agreements between the countries.
3. tourists - people visiting and travelling through foreign countries.
4. democracies - countries with the type of government where people are free to make their own laws and choose their own leaders. The United States is a democracy.
5. political division - an area of land that is all under one government.
6. Commonwealth of Nations - includes the United Kingdom and the dominions.
7. dominions - large colonies of England which became self-governing colonies. They are still closely tied to Great Britain.
8. drowned coast - a coast where many inlets extend from the sea deep into the land, and many islands fringe the coast.
9. ballast - When a ship carries a load of worthless material like rock or salt water, it is said to be traveling in ballast. The worthless cargo makes the ship ride well through the water.
10. coaling stations - ports at which coal can be bought for refueling.
11. Celts - early people who lived in the British Isles before the invasions.
12. Republic of Ireland - southern part of Ireland which withdrew from the Commonwealth of Nations for complete self-government.
13. bogs - low, swampy areas.
14. peat - a spongy material made from decayed plants and trees - usually found in bogs. The Irish people use it for fuel.
15. Eire - another name for the Republic of Ireland.

READ PAGES 89 - 94.

INTRODUCTION - COMPLETE THE OUTLINE.

89 I. Reasons for so many countries in Industrial Western Europe

A. Natural environment which separates the people

1. _____
2. _____

B. Other reasons

1. _____
2. _____

II. How the countries are alike

A. _____
B. _____
C. _____
D. _____
E. _____

III. How the countries differ

A. _____
B. _____
C. _____
p. 90 - D. _____
E. Other smaller differences

1. _____
2. _____
3. _____
4. _____

LIVING IN THE BRITISH ISLES

90 - a. What are the 2 political divisions that make up the British Isles?

THE UNITED KINGDOM

91 - a) What countries make up the United Kingdom? b) Why isn't Ireland included? c) Is the population of the United Kingdom more dense than the population of the United States? d) What is the Commonwealth of Nations? e) What natural advantages have the British

THE UNITED KINGDOM, CONT.

Isles a location favorable to defense? f) What advantages gives the British a location favorable to trade? g) Why is coal such an important natural resource to the British?

p. 92 - a) In what other resource are the British rich?

IRELAND

p. 92 - Why are the Irish mainly Celtic and different from the British?
b) Why are there 2 political divisions in Ireland?

p. 93 - The population of Ireland is _____.
b) The surface of Ireland is rugged because of an _____ long ago.
c) To make up for the lack of coal, the Irish use _____.
d) The Emerald Isle has good bright green grass because of the _____ climate.
e) The chief occupation of the Irish is _____.
f) The main crops raised are _____, _____, and _____.

p. 94- g) The Irish also raise fine _____, _____, & _____
h) _____ in Northern Ireland is an important shipbuilding center.
i) _____ in Ireland is a busy seaport and capital of the Republic of Ireland which is opposite the industrial center of _____ in England.
j) _____, _____, and _____ are shipped from Dublin to Manchester.

FRANCE

VOCABULARY:

1. lava - melted rock that pours from volcanoes.
2. French Alps - part of the Alps range that extends into France.
3. glacier - a great ice sheet that moves slowly from high land to lowland.
4. marine climate - climate of warm summers and mild winters because the winds from the Atlantic warm land - found in western France.
5. continental climate - climate of warm summers and cold winters - found in central and eastern France.
6. Mediterranean climate - climate of hot, dry summers and mild, rainy winters - found in south eastern France.
7. inhabitants - people living in a region are the inhabitants of the region.

READ PAGES 94 - 98. CHOOSE THE CORRECT ANSWER.

p. 94 - a) France has natural advantages for farming, manufacturing, and _____ (trapping, trading)
b) France's favorable _____ helped her become one of the great trading countries of the world. (climate, location)
c) On the Central Plateau, the remains of _____ (sea, volcanoes) give the plateau a _____ soil. (fertile, chalky)

p. 95 - d) On the rugged lands of the Ardeau Plateau, many different types of _____ are cultivated. (flowers, trees)
e) A popular _____ center is located in French Alps. (tourist, industrial
f) Western France has a _____ climate. (Mediterranean, marine)
g) We find a _____ climate in central and eastern France. (continental, marine)

p. 96 - h) In southern France there is a _____ climate. (marine, Mediterranean)
i) Rainfall is _____ in France. (well-distributed, sparse) because there are no _____ in western France. (lowlands, mountains)
j) Because France has many natural boundaries, her people were _____ early. (separated, united)
k) Most French people are engaged in _____ for an occupation. (herding, farming)
l) Most French farms are _____ (small, large)

p. 97 - TELL THE CROPS GROWN BY FRENCH FARMERS.

FRANCE, CONT.

p. 97 - m) France lacks the natural resource of _____(coal, iron), but has large supplies of _____(coal, iron), in Lorraine.
n) Besides the heavy manufacturing of France, the French make small high-quality products like _____(steel rails, gloves)
o) Paris began on an _____(island, peninsula)

p. 98 - p) Most of the food used in Paris is _____.(imported, home-grown)
q) Many types of_____connect Paris with the other countries of Europe. (buildings, transportation)
r) The chief industry of Paris is _____(steel making, dress design)
s) The French have made _____all over the world.(cathedrals, colonies)
t) The French carry on a large trade in _____latitude products from French lands scattered over the earth.(middle, low)

. . . . . .

BELGIUM, NETHERLANDS, LUXEMBOURG, RHINE RIVER VALLEY

VOCABULARY

1. polders - lands reclaimed from the sea by pumping the water off the land.
2. Zuider Zee - large inlet extending into the Netherlands- most of the land in the Zuider Zee is being reclaimed for farming - "South Sea".
3. cacao - bean from which cocoa and chocolate are made; grown in tropics.
4. hyacinth - flower grown in Netherlands for it bulbs to be sold elsewhere.
5. hydroelectric power - electric power made from fast flow of water.
6. site - a location
7. delta - lands at the mouth of a river - made by materials carried along by the river, and dropped at the mouth as river entered the ocean.

. . . . . .

BELGIUM AND THE NETHERLANDS

p. 99 - a) Why were Belgium and the Netherlands once called the "Low Countries?" b) How did the people overcome and put to use their natural environment? c) What is a polder? d) In what three ways do the people use canals? e) What has happened to the Zuider Zee?

p. 100 - a) What type of population do we find in Belgium and Netherlands? b) How has the sea helped these people? c) What type of climate is found here? d) Why have the Dutch always been traders?

p.101 - a) How do the colonies of these countries help them? b) What type of farming is carried on? c) What other occupations are carried on in the lowlands? d) In the Low Countries how do most of the people make a living?

p.102 - a) In the Netherlands, where do they get their raw materials? b) What is their main source of power? c) List the manufactured products produced.
d) Where do the Belgians get their raw materials? e) List their manufactured products.
f) What is Belgium's largest city? g) What is The Hague famous for?

LUXEMBOURG

p.102-103 List the disadvantages which Luxembourg must face because of her natural environment. Is any industry carried on here?

RHINE RIVER VALLEY

p. 103-105 Name the 5 sections of the Rhine River Valley and give a short description of each.

INDUSTRIAL WESTERN EUROPE TEST

I. Circle true or false before each of the following statements.

1. True False The population of Industrial Western Europe is very dense.
2. True False The North Sea is important for both trade and fishing.
3. True False The capital of Belgium is Antwerp.
4. True False Stokes-on-Trent is an important shipbuilding center.
5. True False London is built on an estuary.
6. True False Wales lies west of England.
7. True False The steel industry is most important in the Netherlands.
8. True False Rich iron fields are found in the Lorraine district.
9. True False The merchant marine of a country helps to defend that country in war time.
10. True False The British people raise most of the wool they use in making textiles.
11. True False Intensive farming is carried on in Industrial Western Europe.
12. True False The Rhine River is an important waterway for trade from Germany and Switzerland.
13. True False Luxembourg is the smallest country of Industrial Western Europe.
14. True False Manufacturing is the most important occupation of France.
15. True False The mouth of a river is where it empties into a larger body of water.
16. True False A river always flows from high land to lower land.
17. True False An irregular coastline is a great advantage to a country.
18. True False Most of the land of the Netherlands is land below sea level.
19. True False In the United Kingdom there are only two countries.
20. True False In the British Isles there are two political divisions.
21. True False The boundary between Ireland and Northern Ireland is a natural boundary.
22. True False Maritime means sea-influenced.
23. True False The capital of the Republic of Ireland is Belfast.
24. True False The Rhineland is rich in iron ore.
25. True False Most of the countries of Industrial Western Europe at one time held many important colonies in other parts of the world.

II. Fill in the missing word or words:

1. _____ is the capital of the United Kingdom.
2. A _____ is land reclaimed from the sea.
3. England is separated from France by the _____.
4. _____ is made from the raw material flax.
5. An important seaport of Scotland on the Clyde River is _____.
6. The _____ is the big turn-over in industry when things were made by machine instead of by hand.
7. A _____ is an oven used for baking pottey.
8. _____ and _____ are exported from Ireland to England.
9. The things shipped into a country from another country are called _____.
10. The raw materials of steel are _____, _____, and _____.
11. The capital of the Netherlands is _____.
12. _____ is imported into England from the United States for their textile industry.

(coal) (cotton) (Glasgow) (The Hague) (Industrial Revolution) (linen) (kiln) (bacon) (iron ore) (limestone) (London) (English Channel) (imports) (polder) (cheese) (Dublin) (exports) (drowned valleys) (Amsterdam)

INDUSTRIAL WESTERN EUROPE - TEST - Part I

I. MATCH THE CITIES TO THE COUNTRIES IN WHICH THEY ARE FOUND.

1. The Hague ___
2. London ___
3. Brussels ___
4. Paris ___
5. Dublin ___
6. Belfast ___
7. Manchester ___
8. Glasgow ___
9. Rotterdam ___
10. Stoke-on-Trent ___

a. Belgium
b. France
c. Northern Ireland
d. Netherlands
e. England
f. Ireland

II. CHOOSE THE CORRECT ANSWER, AND PUT IN THE BLANKS.

1. Industrial Western Europe is a region of _____population. (dense, sparse)
2. Industrial Western Europe is a _____ or sea-influenced region. (intensive, continental, maritime)
3. People working and living in a city are called _____people. (rural, urban, agricultural)
4. A wide deep mouth of a river where the ocean enters in, and which makes a fine, deep harbor is called an _____. (dock, estuary, polder)
5. Land reclaimed from the sea is called _____. (polders, drowned valleys, peat)
6. Western France has a _____climate. (Mediterranean, continental, marine)
7. England, Scotland, Wales, and Northern Ireland make up the _____. (British Isles, Commonwealth of Nations, United Kindom)
8. An area of land all under one government is called a _____ _____. (democracy, political division, continent)
9. The type of government where people elect their own rulers and make their own laws is called a _____. (democracy, kingdom, colony)
10. _____farming is carried on in Industrial Western Europe. (Tenant, Plantation, Intensive)
11. The trade ships of a country which fly the flag of that country make up the _____. (Navy, Merchant Marine, Fishing Fleet)
12. Large, bulky manufactured goods which require large quantities of raw materials and fuel are examples of _____ manufacturing. (light, pottery, heavy)
13. The port of _____is situated on the estuary of the Mersey River in England. (Rotterdam, Liverpool, London)
14. _____ are xx exported from Ireland. (steel products, china ware, dairy products)
15. The _____ lies between Ireland and England. (English Channel, Irish Sea, Bay of Biscay)
16. The boundary between France and Spain is a _____boundary. (natural, river, political)
17. _____is the smallest country of Western Europe. (Wales, Luxembourg, Scotland)

INDUSTRIAL WESTERN EUROPE - TEST - CONT. II.

II. Cont.

18. The boundary between Ireland and Northern Ireland is a _____ boundary. (political, natural, mountain)
19. The chief raw materials needed for the steel industry are: limestone, _____, and _____. (coal, tin, brick, iron ore)

III. With which country of Industrial Western Europe do you connect the following?

1. Brittany _____
2. Wedgewood china _____
3. Clyde River _____
4. polders _____
5. largest cotton industry of Western Europe _____
6. Lorraine iron district _____
7. peat bogs _____
8. famous fashion center _____
9. windmills _____
10. Beginning of the Industrial Revolution _____
11. Birmingham _____
12. Saar River _____
13. The Paris Basin _____
14. Diamonds being cut and polished _____
15. The Wash _____
16. Zuider Zee _____
17. No coastline _____
18. Glasgow _____
19. Seine River _____
20. Canals instead of streets _____

IV. CLASSIFY THE FOLLOWING UNDER THE HEADINGS OF IMPORTS OR EXPORTS; TO INDUSTRIAL WESTERN EUROPE.

machines for factories	wheat	rubber
dried fish	coconuts	cacao
coffee	metal tools	chinaware
textiles	automobiles	flower bulbs
dairy products	raw cotton & wool	perfumes

IMPORTS

EXPORTS

INDUSTRIAL WESTERN EUROPE - TEST - PART III

V. TRUE OR FALSE - CIRCLE THE CORRECT ANSWER.

1. T F The Atlantic Ocean is the world's greatest trade ocean.
2. T F One would find an estuary in a mountain range.
3. T F France lies west of England.
4. T F Every country of Western Europe has a long coastline.
5. T F Shipbuilding is not important in Industrial Western Europe.
6. T F Crop rotation helps the farmer to grow more crops.
7. T F Brittany is in Belgium.
8. T F The Dogger Bank is where the people of France save their money.
9. T F The people of Industrial Western Europe have a large surplus of manufactured goods.
10. T F The product of the blast furnace is steel.
11. T F The city of Paris situated on an island and two river banks.
12. T F The most densely populated country of Western Europe is Scotland.
13. T F Canada is a part of the Commonwealth of Nations.
14. T F The countries of Industrial Western Europe get many of their raw materials from colonies in the middle latitudes.
15. T F The Rhine River flows south.
16. T F Rotterdam carries on a large transit trade.
17. T. F Most of the manufactured goods of Paris are examples of light manufacturing.
18. T F Ireland exports many manufactured goods to England.
19. T F The Republic of Ireland is part of the United Kingdom.
20. T F Winter wheat is planted in the spring.
21. T F Much of the land of the Netherlands is below sea level.
22. T F All of the cotton England uses in her textiles industry is imported.
23. T F There is a natural boundary between France and Spain.
24. T F Intensive farming is carried on in Industrial Western Europe.
25. T F A country's merchant marine defends the country in war time.

VI. DRAW ONE LINE THROUGH ANY OF THE CROPS LISTED THAT ARE NOT GROWN IN INDUSTRIAL WESTERN EUROPE.

WHEAT SUGAR BEETS SUGAR CANE PINEAPPLES POTATOES
RYE CACAO BARLEY OATS COCONUTS

VII. PUT A CHECK BESIDE THE OCCUPATIONS OF THE PEOPLE OF WESTERN EUROPE THAT YOU THINK ARE MOST IMPORTANT TO THEM.

1. Farming _____
2. Textiles _____
3. Diamond Cutting ___
4. Lumbering ___
5. Fishing ____
6. Manufacturing ____
7. Lace Making in the homes ___
8. Pottery ___
9. Steel Industry___
10. Trading ___

VII. ANSWER THE FOLLOWING QUESTIONS IN GOOD SENTENCES. BE SURE TO TELL ENOUGH IN EACH ANSWER.

1. Why did the steel industry grow up in Industrial Western Europe?
2. How does a long, irregular coastline help a country?
3. Tell some of the ways in which the countries of Western Europe are different from each other.
4. How did the people of the Netherlands use and improve their natural environment?

INDUSTRIAL WESTERN EUROPE

TEST ON UNIT ONE

II. Answer the following with a word, words or statement that will correctly finish each of the following:

1. The areas of major manufacturing in western Europe are:

2. Three important things to the production of steel are:

3. Some famous shipbuilding centers in industrial western Europe are:

4. The western European woolen industry imports most of the raw material from:

5. Some famous western European pottery centers are:

III. Match those in Column two with those in Column one. (Put the letter beside the number on your paper)

I	II
1. Industrial Revolution	a. Birmingham
2. Steel district	b. Liege
3. Heavy manufacturing centers	c. England
4. Famous weavers	d. Antwerp
5. Iron deposits	e. Ruhr
6. English woolen industry	f. Flanders
7. Haviland China	g. Leeds
8. Industrial region	h. Lorraine
9. Seaport	
10. Blast furnaces	

IV Choose the best ending and put the letter of that ending beside the correct number on your paper.

1. Industrial Europe is also a great area for
   a. crops b. farming c. harvesting
2. A favorable condition to farming is
   a. rainfall b. the ocean c. industry
3. Another favorable condition to farming is
   a. water b. fertile lowlands c. highlands
4. The area around the Wash bay is called the
   a. great fins of England b. Paris Basin
   c. breadbasket of England

5. A cool climate crop is
   a. wheat b. sugar beets c. barley

6. Cool climate crops grow in abundance in
   a. England b. The Netherlands c. Scotland

7. A crop that supplies much food from little space is
   a. grapes b. potatoes c. rye

8. Sugar beets call for
   a. good rainfall b. sparce population
   c. middle latitude climate

V. Choose the best meaning and write the letter in front of the correct number on your paper.

1. rural	a. country	b. woods	c. urban
2. kilns	a. oven	b. bake	c. bricks
3. kaolin	a. bricks	b. sand	c. white clay
4. intensive farming	a. changing crops	b. producing large crops	c. vegetable farming
5. banks	a. shallow water for fishing	b. money to save	c. surrounding ocean water
6. merchant marines	a. armed services	b. commercial ships	c. navy
7. ford	a. river delta	b. inlet from the ocean	c. shallow water for crossing
8. ballast	a. valuable cargo	b. worthless load	c. full hull
9. peat	a. stoves	b. grain	c. fuel
10. drowned valley	a. behind dikes	b. low land	c. under ocean water

VI. Answer completely and in sentences.

1. How did manufacturing with machinery come about?
2. Why are some areas industrial and others not?
3. Why is trade important to industrial western Europe?
4. How does farming there differ from that in the U.S.?
5. Why is the fishing industry important to industrial western Europe?

VII Choose <u>one</u> of the following topics and discuss it fully

1. England
2. Ireland (Northern & Republic of)
3. France
4. Belgium
5. Netherlands
6. Western Germany
7. Luxemburg

You should include such things as:

climate
rainfall
growing season
important cities
industrial areas
government
important people
agriculture
outstanding geographical features
important events in history

JOB SHEETS FOR GROWTH IN ARITHMETIC - GRADE 6

JOB SHEET #1 UNITS 1-8

Pupil's Check *Teacher's Check*

p. 7 EX. (1-4) RDA READ, DISCUSS, and ANSWER, (RDA) with your partner. Only one set of answers is required.

p. 8 EX. (1-6) RDA

*p. 10 EX. (1-3) RDA

p. 10 EX. (4, 5, 9) WA WRITE ANSWERS, WA (This means you do it by yourself on paper. You may check your answers with your partner. Correct your work and be sure to do wrong examples again correctly.)

p. 14 Test III and Test IV - WA

p. 16 Addition Facts - WA

p. 17 EX. 1 - RDA

p. 17 EX. 7g, 7h, 8g, 8h, 9-11 WA

p. 20-21 RDA

p. 22 Tests III, IV, V WA

p. 23 Subtraction Facts - WA

p. 24 EX. (1-6) RDA

p. 24 EX. (13-16) WA

p. 26 EX. (7-10) WA

p. 31 EX. (1-6) RDA

p. 31 EX. (8) WA

p. 33 EX. (1-13) WA

p. 34-35 RDA

p. 37 Division Facts, WA

p. 38 EX. (7e, 7f, 8e, 8f, 9, 10, 11-15) WA

p. 39 EX. (1-13) WA

p. 40, EX. (1-6) RDA

p. 41 EX. (1-8) RDA

p. 42 EX. (1-9d and e) WA

p. 45 EX. (6-11d and e) WA

p. 47 Top-half, RDA

p. 47 EX. (6-7) WA

p. 48 EX. (1-8) RDA

p. 48 EX. (16-17) WA

p. 49 EX. (1-3) RDA

p. 49 EX. (11-13) WA

*p. 51 EX. (8-18) WA

p. 52 EX. (1-3) RDA

p. 52 EX. (15-16) WA

Pupil's Check

Teacher Check

p. 54 EX. (1-5) RDA

p. 55 EX. (1-5) WA

p. 56 EX. (1-9) WA

p. 57 EX. (1-16) WA

p. 58 EX. (1-10) RDA

p. 59 EX. (1-12) RDA

p. 60 EX. (1-26) RDA

p. 61 EX. (1-12) RDA

p. 61 EX. (13-17) WA

*p. 62 EX. (1-6) RDA

p. 63 EX. (1-4) RDA EX. 5 WA

p. 64 EX. (1-14) RDA

p. 65 EX. (1-8) RDA

p. 66 EX. (1-10) RDA

p. 67 EX. (1-10) RDA

p. 69 EX. (1-20) WA

p. 70 EX. (1-7) RDA

p. 70 EX. (13,16,18) WA

p. 71 EX. (1-7) WA

p. 72 EX. (1-9 Top) RDA

p. 72 EX. (1-3d, e, f, 4-7) WA

p. 73 EX. (1-17 - Still Harder Practice) WA

Test 2 - (Test Booklet, p. 3-4)

JOB SHEET #3 UNITS 12-15

Pupil's Check

Teacher's Check

p. 74 EX (1-3) RDA
p. 75 EX. (1-8) RDA
p. 76 EX. (1-13) RDA
p. 78 EX. (6-11b, 12-17) WA
p. 79 EX. (1-7) RDA
p. 80 EX. (1-14) RDA
*p. 81 EX. (1-8) RDA
p. 82 EX. (1-7d, e, 8-12) WA
p. 83 EX. (1-10) WA
p. 84 EX. (7-11) WA
p. 85 EX. (1-10) WA
p. 86 EX. (1-9) RDA
*p. 87 EX. (1-6) RDA
p. 87 EX. (13, 14, 16, 17) WA
p. 88 EX. (1-9) RDA
p. 90 Top of page, RDA
p. 90 EX. (4-5) WA
p. 91 EX. (1-5) RDA
p. 91 EX. (12-13, 20-21) WA
p. 92 EX. (1-7) RDA
p. 92 EX. (11-13) WA
*p. 93 EX. (1-8) RDA
p. 94 EX. (5-6) WA
p. 95 EX. (1-5) RDA
p. 95 EX. (6-8) WA
p. 96 EX. (1-2) RDA
p. 96 EX. (7-8) WA
p. 97 (Practice Sets II and IV) WA
p. 98 (Written Review, EX. 1-10) WA
p. 99 EX. (1-7) RDA
p. 100 EX. (1-6) RDA
p. 100 EX. (13-14) WA
p. 101 EX. (1-5) RDA
p. 102 EX. (1-3) RDA
p. 103 EX. (13-16) WA

Test 3. Achievement Test 2 — Test Booklet, p. 5-6.

JOB SHEET #4 UNITS 16-21

Pupil's Check

Teacher's Check

p. 105 EX. (1-11) WA
p. 106 EX. (1-3) RDA
p. 107 EX. (1-5) RDA
p. 109 EX. (11-20) WA
p. 110 EX. (1-4) RDA
p. 110 EX. (11-12) WA
p. 111 EX. (1-4) RDA
p. 111 EX. (14-15) WA
p. 112 (Top of page) RDA
p. 112 EX. (2-11) WA
p. 114 EX. (6-9) WA
*p. 115 EX. (1-5) RDA
p. 115 EX. (7-8) WA
p. 120-121 EX. (1-5) RDA
p. 121 EX. (10-14) WA
p. 122 EX. (1-5) RDA
p. 122 EX. (10-12) WA
p. 123 EX. (1-10) WA
p. 126 (Self-Help Tests 1 and 2) WA
p. 127 EX. (1-10) WA
Test 4 - Test Booklet, p. 7-8 WA
*p. 128 EX. (1-5) RDA
*p. 131 EX. (15-18) RDA
p. 131 EX. (19-22) WA
p. 132 EX. (14-15) WA
*p. 133 EX. (3-5) RDA
p. 134 EX. (11-12) WA
p. 135 EX. (7-9) WA
p. 136 EX. (1-8) RDA
p. 136 EX. (15-16) WA
p. 137 EX. (1-6) RDA
p. 137 EX. (13-14) WA
p. 139 EX. (1-24) WA
*p. 140 EX. (1-5) RDA
p. 141 EX. (1-6) RDA
p. 141 EX. (10-11) WA
p. 142 EX. (1-7) RDA
p. 142 EX. (9-10) WA
p. 143 EX. (7-9) WA
p. 149 EX. (1-14) RDA
*p. 150 EX. 1-7 RDA, 9-10 RDA
p. 151 EX. (4-16) WA
p. 152 EX. (4-15) WA
p. 153 EX. (1-10) WA
p. 154 EX. (15-16) WA
p. 155 (Self-Help Tests 3 and 4) WA
p. 156 EX. (1-10) WA

Test 5 Mid-Year Mastery Test - Test Booklet, pp. 9-15

GRADE 6

JOB SHEET #5 UNITS 22-26

Pupil's Check

Teacher's Check

*p. 157 EX. (1-7) RDA
p. 158 EX. (1-19) RDA
p. 159 EX. (1-10) RDA
p. 160 EX. (7-9) WA
p. 161 EX. (1-8) RDA EX. 17, WA
p. 162 EX. (1-5) RDA
p. 163 EX. (22-27) RDA
p. 164 EX. (1-4) RDA
p. 165 EX. (1-10) RDA
p. 166 EX. (11-19) WA EX. (24-27) WA
p. 169 Written Practice, EX. (1-8) WA
p. 167 EX. (1-10) RDA
p. 171 EX. (1-10b, c, 11-15) WA
p. 173 EX. (1-10) RDA
p. 173 EX. (11-13) WA
p. 174 EX. (4 and 9) WA
p. 175 EX. (7-11) WA
p. 176 Top of page EX. (6-11) WA, Matching Contest 1-12 RDA
p. 177 EX. (1-15) WA
*p. 178 EX. (1-5) RDA
p. 180 B-Column EX. (1-8) WA
p. 181 Written Review - EX. (10-18) WA
p. 182 EX. (1-10) WA
p. 183 Tests 5 and 6 WA
p. 184 EX. (1-10) WA
*p. 185 EX. (1-13) RDA
p. 186 EX. (1-6) RDA
p. 186 EX. 7 WA
p. 187 EX. (16-17) WA
p. 188 RDA
p. 189 EX. (1-7 and 10) WA
p. 190 EX. (7-14, 16-17) WA
*p. 191 EX. (1-12) RDA
p. 192 EX. (1-10) RDA
p. 194 EX. (1-17) RDA
p. 194 EX. (21-23) WA
p. 195 EX. (6-12a-b) WA
p. 196 EX. (1-18) WA

Test 6 — Test Booklet, pp. 17-18 Test 7, Achievement 3 pp. 19-20

JOB SHEET #6 UNITS 27-29

Pupil's Check

Teacher' Check

*p. 198 EX. (1-6) RDA
p. 199 EX. (1-2) WA
p. 199 EX. (4-19) RDA
p. 200 EX. (1-3) RDA
p. 201, 202 RDA
p. 203, EX. (1-17) RDA
p. 204 EX. (13-14) WA
*p. 205 EX. (1-6) RDA
p. 207 Top of page, RDA EX. (7-8) WA
p. 208 EX. (4-5) WA
*p. 209 EX. (1-9) RDA
p. 209 EX. (12-13) WA
p. 214, EX. (1-10) WA
p. 215 EX. (14-19) RDA
p. 216 (Self-Help Tests 7 and 8) WA
p. 217 (Self-Help Tests 9 and 10) WA
p. 218 EX. (1-8) WA
*p. 220 EX. (1-8) RDA
p. 221 EX. (1-11) RDA
p. 222 EX. (1-8) RDA
p. 223 EX. (1-5) RDA
p. 223 EX. (15-16) WA
p. 224 EX. (1-3) RDA
p. 224 EX. (10-11) WA
p. 225 EX. (1-5) RDA
p. 225 EX. (6-18) WA
p. 226 EX. (1-5) RDA
p. 227 EX. (6, 10, 13, 14) RDA
p. 228 EX. (1-5) RDA
p. 229 EX. (18-19) WA

Test 8 — Test Booklet, pp. 21-22

GRADE 6

JOB SHEET #7 UNITS 30-32

Pupil's Check

Teacher's Check

p. 230 EX. (1-5) RDA

p. 231 EX. (1-5) RDA

p. 231 EX. (6-8, 15-19) WA

p. 234 EX. (1-13) RDA

p. 235 EX. (1-12) WA

p. 236, 237, 238, 239, 240, 241, 242, 243, 244 RDA (Read various kinds of graphs)

p. 245 EX. (1-6) RDA

p. 246 EX. (1-8) RDA

p. 247 EX. (1-16) WA

p. 250 EX. (1-10) WA

p. 251 EX. (20-24) RDA

p. 252 (Self-Help Tests 13 and 14) WA

p. 253 (Self-Help Tests 15 and 16) WA

p. 254 EX. (1-10) WA

Test 9 — Achievement Test 4 — Test Booklet, pp. 23-24

JOB SHEET #8 UNITS 33-34

Pupil's Check

Teacher's Check

p. 255 EX. (1-8) WA

p. 256 EX. (1-7) RDA

p. 257 EX. (1-13) RDA

p. 258 EX. (1-8) RDA

p. 259 EX. (10) WA EX. (11-12) RDA

p. 260 RDA

p. 261 EX. (3-6) RDA

p. 262 (Written Review — EX. 1-7) WA

p. 265 RDA

p. 267 EX. (1-7) RDA

p. 268 EX. (1-10) WA

p. 269 EX. (1-8) RDA

p. 270-271 EX. (1-10) RDA

p. 272 EX. (1-7) WA

p. 273 EX. (1-31) WA

p. 274 EX. (1-15) RDA

p. 275 EX. (1-14) RDA

p. 276 EX. (1-10, and 14) RDA

p. 276 EX. (4, 9, 13, 15) WA

Test 10 — Test Booklet, pp. 25-26

GRADE 6

JOB SHEET #9 UNITS 35-38

Pupil's Check

Teacher's Check

p. 280 EX. (1-10) RDA

p. 281 EX. (1-13) RDA

p. 281 EX. (14-21) WA

p. 284 EX. (1-5) RDA

p. 286 EX. (1-6) RDA

p. 287 EX. (1-23) RDA

p. 288 EX. (1-16) RDA

p. 289 EX. (1-14) RDA

p. 290 EX. (1-3) RDA EX. (9-10) WA EX. (12-16) RDA

p. 291 EX. (1-15) RDA

p. 292 EX. (1-15) RDA EX. (16-33) WA

p. 294 EX. (1-2) RDA EX. (3-19) WA

p. 295 EX. (1-9) WA

p. 297 EX. (1-10) WA

p. 301 EX. (1-11) WA

p. 302 (Self-Help Tests 17 and 18) WA

p. 303 (Self-Help Tests 19 and 20) WA

p. 304 EX. (1-10) WA

Test 11 — End-of-Year Mastery Test — Test Booklet, pp. 27-34

GROWTH IN ARITHMETIC **GRADE 7** JOB SHEET #1

Pupil's Check

Units 1-7, pages 1-90, review Our Number System, Round Numbers, Roman Numerals, Bar and Line Graphs, Common Measures, and the Four Computations with Integers and Fractions.

Teacher's Check

p. 16 RDA, 1-6 WA 7-10

p. 19 RDA 1-6 WA 7-12

p. 40 WA Test 1a and Test 1b

Maintenance Test 1

p. 42 RDA 1-4

p. 44 RDA 1-3 WA 4-8

p. 49 RDA 1-22

p. 50 WA 1-30

Maintenance Test 2

p. 52 RDA 1-19

p. 53 RDA 1-16

p. 54 RDA 1-8

p. 55 WA 1-10

p. 56 WA 7-9; 15-17

p. 57 RDA 1-25

p. 58 RDA 1-17

p. 59 RDA 1-10

p. 62 WA 1-8

Maintenance Test 3

p. 70 WA 1-25

p. 73 RDA 1-22

p. 74 WA 1-26

Maintenance Test 4

p. 80 WA 1-17

p. 81 WA 7-8; 15-16

Maintenance Test 5

p. 82 RDA 1-11

p. 83 WA 24-30

p. 84 RDA 1-10

p. 85 WA 1-30

p. 86 RDA 13-19

p. 88 WA 1-10 (e) only

GRADE 7

JOB SHEET #2 — Units 8-10 Review of Decimals

Pupil's Check

Teacher's Check

p. 100 RDA 8-14

p. 101 RDA 1-8

p. 106 RDA 12-16

p. 107 RDA 1-12

Maintenance Test 8

p. 110 RDA 1-11

p. 111 RDA 1-2 WA 4-5

p. 113 RDA 1-8

p. 114 RDA 1-9

p. 115 RDA 1-15

Maintenance Test 9

p. 116 RDA 1-16

p. 117 RDA 1-33

p. 119 RDA 1-17

p. 120 WA 1-29

p. 121 WA 1-18

Maintenance Test 10

GRADE 7

JOB SHEET #3

Pupil's Check

Teacher's Check

Units 10 and 11 contain Comparisons of Numbers Using Fractions or Decimals, Ratio, Fraction, Decimal, and Per Cent Equivalents with Rules for Changing Each to the Other Two, and Finding a Per Cent of a Number with Applications in Discount and Commission.

p. 126 RDA 1-5 WA 20-24

p. 127 RDA 1-5

p. 128 RDA 1-11

p. 129 RDA 18

p. 130 WA 1-11

p. 131 WA 17-20

Maintenance Test 11

*p. 132 RDA 1-4

p. 133 WA 12-17

p. 134 WA 9-14

p. 135 WA 1-6

p. 137 WA 15-19

p. 138 RDA 1-23

p. 139 WA Test 4a and Test 4b

Maintenance Test 12

MID YEAR MASTERY TEST Part 1, Part 2, Part 3 and Part 4

p. 140 RDA 1-5 WA 10-15

141 RDA 1-8

p. 142 RDA 1-15

p. 143 RDA 1 WA 3-4; 9-10; 12

p. 144 RDA 1-6

p. 145 WA 9-10

p. 146 WA 9-11 12-15

p. 147 RDA 1 WA 6-10

p. 148 RDA 1-12 WA 17-18

p. 149 WA 1-18

p. 150 RDA 1-15

Maintenance Test 13

GRADE 7

JOB SHEET #4

Pupil's Check

Teacher's Check

p. 152 Ex. 1-10 RDA WA 15-16

p. 153 RDA 1-7 WA 8-11

p. 155 WA 1-17 (c and d)

p. 156 RDA 1-2 WA 4-6

p. 157 WA 16-19

p. 158 RDA 1-2 WA 13

*p. 159 RDA 1-2 WA 3-6

Maintenance Test 14

p. 160 RDA 1-5

p. 166 WA 1-22

p. 171 Test 8 Ex. 1-11 WA

p. 172 Test 5b Ex. 1-10 WA

*p. 173 RDA 1-7

*p. 176 RDA 1-13

p. 177 WA 7-14

Maintenance Test 16

p. 181, 182, 184, 185, 186, 188, 189 RDA Thoroughly and very carefully

Maintenance Test 17

Pupil's Check

Teacher's Check

p. 194 RDA 1-4

*p. 195 RDA 1-7

*p. 196 RDA 1-2 WA 18-22

p. 198 RDA

p. 200, 201, 202, 203 RDA Thoroughly and very carefully

Maintenance Test 19

p. 205 RDA 1-6 WA 15-18

p. 207 Ex. 1-27 WA

Maintenance Test 20

*p. 209 RDA

*p. 212 RDA 1-7

p. 213 RDA 1-3

*p. 214, 215, 216, 217 RDA Thoroughly and very carefully

*p. 218 Read carefully

p. 219 WA 1-5

Maintenance Test 21

*p. 220, 221, 222, 223, and 224 RDA Read carefully, learn rules and all words in dark print and italics.

Maintenance Test 22

Pupil's Check

Teacher' Check

p. 226-227 RDA 1-10

*p. 228, 229, 230, 231, 232, 233, 234, 235, 236, 237 RDA Read carefully, Study figures, learn rules, learn formulae

Maintenance Test 23

p. 238 RDA

p. 239 WA 1-11

p. 241 WA 1-26

Maintenance Test 24

p. 242 RDA

p. 243 RDA 1-3 WA 4-5

p. 244 RDA 1-6

p. 245 RDA 1-3

p. 246 RDA 1-6 WA 8-9

p. 247 RDA 1-6 WA 8-15

*p. 249 RDA 1-13

p. 250 RDA 1-6

*p. 251 RDA 1-3

p. 253 WA 11-16 Select *one* to do.

p. 254 WA 1-13

Maintenance Test 25

p. 256 RDA 14-20

p. 258 and 259 WA 1-28

GRADE 7

JOB SHEET #7 UNITS 18-19

Pupil's Check

Teacher's Check

p. 264 RDA

*p. 265 RDA 1-10

p. 268, 269, 270, 271 RDA Study Gas and Electric Meters and Bills

*p. 272 RDA 1-4

p. 273 RDA 1-7

Maintenance Test 27

p. 274 and 275 WA 1-31

p. 276 WA 1-14

p. 277 WA 15-22

Maintenance Test 28

p. 286 WA 1-8

p. 289 EX. 1-4 RDA

Maintenance Test 29

p. 290 WA 1-14

p. 291 WA 25-41

p. 292 WA 1-26

End of Year Mastery Test

GRADE 7

Pupil's Check

Teacher Check

QUALIFYING TESTS FOR GRADE SEVEN

After Job Sheet #1 page 89, Test I and II; page 90, Test 2a and Test 2b

After Job Sheet #2 page 123, 1-18; page 124, Test 3 and 4; page 125 Test 3a and 3b

After Job Sheet #3 page 151, Test 5 and 6

After Job Sheet #4 page 192 and page 193, Test 6a and Test b

After Job Sheet #5 page 208 Test a and Test b page 225 Test 8a and Test 8b

After Job Sheet #6 page 262 and page 263 Test 9a and Test 9b

After Job Sheet #7 pages 296, 297 and 298