

HOMWORK INSTRUCTION  
FOR STUDENTS WITH DEVELOPMENTAL HANDICAPS:  
APPLIED VERSUS TRADITIONAL APPROACHES,

MASTER'S PROJECT

by

Deborah D. Barry

Submitted in Partial Fulfillment  
of the Requirements for the Degree  
Master of Science in Education

The School of Education  
University of Dayton  
Dayton, Ohio  
1991

UNIVERSITY OF DAYTON ROESCH LIBRARY

Approved by:

Official Advisor

## TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION . . . . .	1
Statement of the Problem . . . . .	2
Purpose of the Study . . . . .	3
Significance of the Study . . . . .	4
Identification of Terms . . . . .	4
II. REVIEW OF LITERATURE . . . . .	5
III. METHODOLOGY . . . . .	20
Results . . . . .	23
Discussion . . . . .	27
REFERENCE SECTION . . . . .	29
APPENDIX I . . . . .	30
APPENDIX II . . . . .	32
APPENDIX III . . . . .	39
SELECTED BIBLIOGRAPHY . . . . .	54
Related Materials . . . . .	55

## LIST OF FIGURES

FIGURE	PAGE
Figure 1. Summary Data . . . . .	23
Figure 2. Upper Limits of D. H. Range . . . . .	24
Figure 3. Lower Limits of D. H. Range . . . . .	25
Figure 4. Ability to Generalize . . . . .	26

## ACKNOWLEDGEMENTS

I would like to thank my advisor, Dr. Roberta Weaver, for the invaluable time and advice she gave me during the development and writing of this project.

I would also like to thank Julie Snyder, teacher of students with developmental handicaps, Northmont City Schools, for allowing me access to her students and classroom during the course of this project. Thanks also to her students for always having a positive attitude toward me and the material with which they were presented.

Finally, I thank my husband, Tim, and my children, for the time they have given up during the work on this project and the many classes that came before it. Although he couldn't always solve the problems I had, Tim offered plenty of advice and sympathy. He was also generous with his expertise in all things related to computers.

CHAPTER I  
INTRODUCTION

Teachers of children with mild mental retardation have for many years attempted to determine the most effective methods for teaching these individuals. Under various labels such as Educable Mentally Retarded (EMR) and more recently, Developmentally Handicapped (D.H.), these students have, since the passage of Public Law 94-142, typically been taught in special classes within public schools. Their academic goals are mapped out in individualized education plans (IEP's), with consideration that they be mainstreamed to regular classes for as much of the day as possible. Often the special education curriculum for many of these classes has been a "watered-down" version of the general school curriculum with the addition of some vocational and social goals.

For a number of years, it was thought that this was the best program for teaching students labelled EMR. They were viewed as performing at a level near the average student, consequently their education should be at a level as close to "normal" as possible. It was even thought that some students could be remediated completely so that by high school they would reenter the mainstream full-time. Even if they were not able to achieve that goal, it was believed that they were receiving the best possible education for their abilities.

It has become increasingly clear especially in the past decade that this is simply not the case. Although schools attempt to

educate students with handicaps in a way that will enable them after graduation to become contributing members of the community, many young people find themselves unemployed (Hasazi and Clark, 1988). They may have learned to read simple novels or recite the multiplication tables, but they are unable to locate a number in the phone book or calculate the money needed to purchase an item at the grocery store.

### Statement of the Problem

Because they have seen first hand the difficulties encountered by graduates of these types of programs, researchers and educators have proposed changes in the curriculum content and teaching methodology for those children with mild retardation. A major change currently being evaluated is a movement away from the traditional academic approach toward a more functional, applied approach. This author, as a teacher of intermediate-age students with developmental handicaps, has received a number of recently developed materials, including courses of study, compilations of lesson plans, and handbooks, all of which have as their purpose the development of daily living and employability skills for persons with mild retardation.

The materials described above have been used successfully by the author on a daily basis in the classroom. But the limited amount of time available during the school day, as well as the limited resources of the school district, led to the question: If

the same types of materials and activities were available to parents to use at home, how much more might the students benefit? Would parents use the materials? Would student learning increase? Are these materials and methods more effective than traditional paper and pencil assignments? These questions form the basis for the proposed study.

#### Purpose of the Study

The purpose of this study is to assess the effects of applied language activities versus traditional language activities completed at home with parental assistance on the ability of students with developmental handicaps ages 8 to 13 to read recipes.

#### Significance of the Study

The author taught in a school district that has adopted as a goal for the students in the developmentally handicapped program, the establishment of daily living skills which will lead to their independence as adults. Toward that end, the secondary program is a highly functional one. It includes a student-run breakfast restaurant, that requires students to perform most of the functions themselves. They wait tables, cook, clear, collect money, and wash dishes. They are responsible for taking an inventory of supplies each week, and shopping for those that are needed. Because this author's students will eventually move into this program, it is



necessary for those students to become familiar with working with food, recipes, utensils, etc. The classroom is a typical one for an elementary school. There are no kitchen facilities available other than a few small appliances. If it can be shown that students can show growth from activities done at home with their parents, then the learning environment can be expanded to include the home on a regular basis, thus preparing the students as fully as possible for the next stage in their growth toward adult independence.

#### Identification of Terms

Developmentally Handicapped (Mentally Retarded) - Significantly below average in general functioning that originates during the developmental period and is associated with impairment in intellectual functioning. (Ohio: IQ below 80)

Functional activities - Those activities which develop skills through the use of real-life materials and situations, such as cookbooks, newspapers, menus, and so on. These are also referred to as applied academics.

Traditional activities - Activities that utilize materials typically found in the classroom, such as basal readers, worksheets and pencils.

## CHAPTER II

### REVIEW OF LITERATURE

The study described in this paper encompasses several areas of concern to researchers. First is the current awareness of a change in the makeup of the population of persons with mild mental retardation and the accompanying implications for changes in the goals and curricula designed for these students. Another area which has been studied is parent interest and willingness to be involved in the educational process. Yet another concern is the effectiveness of home activities as a teaching tool. In order to give all areas the attention they deserve, each will be discussed separately.

#### Curricular Implications of Population Change

Public Law 94-142, the Education for All Handicapped Children Act of 1975, opened the public school doors to students with mild mental retardation. Enrolled in EMR classes, these students attended school with their same-age peers. The opinion held by most educators at the time was that most students who fit in this category should be taught a curriculum as similar as possible to that for the rest of the students, and that they should be mainstreamed into classes with their same-age peers as much as possible. Programs designed on this philosophy worked well with most students initially for several reasons.

The main reason was the placement criteria of the time.

According to the definition accepted by the American Association on Mental Deficiency (AAMD) in the late 1950's, an individual with a measured intelligence quotient (IQ) of 84 or below could be considered mentally retarded. This definition was used as part of the early criteria for placement in EMR classes. Thus many of the students who were placed in EMR classes frequently were very close to the IQ range considered normal. (Polloway & Smith, 1983). They were the "slow learners" of the time. When a slower learning rate was allowed for, these students could learn to read and do basic math successfully with materials and methods similar to those in the regular classroom.

In some sections of the country, special education classes were comprised in large part of minority students, particularly black and Mexican-American. As was shown in the cases of Diana v. State Board of Education (1970) and Larry P. v. Riles (1972), placement in EMR classes was frequently based on discriminatory procedures (Polloway & Smith, 1983). These were not students who needed "special" education at all. They were misplaced. It is no surprise then that they, too, were able to master an academic curriculum.

Another reason for the former success of the "watered-down" curriculum may have been the presence of learning disabled students in EMR classes. MacMillan (1988) notes that while the population of individuals with mild mental retardation decreased 17% between 1976 and 1982, the number of those classified learning disabled increased 104%. Persons with learning disabilities, who

have specific learning problems, may fall within the normal range of intelligence. Many have difficulties in learning in one area, frequently reading, while being able to achieve normally in others. Those students with learning disabilities placed in EMR classes would have been able to complete much of the academically-oriented curriculum successfully.

Today the majority of the types of students described above are no longer placed in EMR classes. Special educators find in their classrooms a "new" EMR student whose character and needs are vastly different from those of his predecessor (Polloway & Smith, 1983; Polloway & Epstein, 1985; MacMillan, 1988). In accordance with new AAMR standards, these students have an I.Q. range from 69 to 50. Educators and researchers who work with secondary and adult members of this group have been the first to recognize that the previous methods are no longer effective with this "new" type of student.

In a study of youths with handicapping conditions leaving high school during the years 1979 to 1983, Hasazi, Gordon, & Roe (1985) located and interviewed 301 of these youths or persons having direct contact with them. The study found that vocational education received during high school, as well as employment during high school, contributed significantly to students' employment status after leaving high school. Also significant to obtaining and keeping employment was the completion of high school. A curriculum of academics appeared to hinder, or at the very least did not aid, the student in acquiring and keeping employment. The authors

suggested that while there were a number of limitations to their study, secondary programs for the students with mild handicapping conditions would be well-advised to consider providing vocational training and other job experiences for their students.

Edgar (1985) also called for reevaluation of secondary programs, stating, "No longer can we simply employ the remedial model and hope our students make it back to the mainstream and then on to the postschool community as successful citizens. Most of them do not." He called for tracking of students leaving high school on an even broader basis in order to evaluate the effectiveness of programs in use and to determine the best methods for providing a successful transition to adulthood.

Halpern (1985), in a summary of a study of secondary special education in the state of Oregon, found that of ten curriculum clusters deemed appropriate for students in these programs, both parents and teachers determined vocational education as the area most in need of improvement. Nearly half of the teachers surveyed expressed a need for further development in their ability to provide functional experiences outside the classroom setting. Parents were found to need information on the vocational and residential options for students in special education programs. They were unsure of appropriate expectations for independent living by their soon-to-be-adult children. Based on the information obtained by this study, the Divisions of Special Education and Vocational Education at the Oregon Department of Education adopted as goals, 1) a collaboration between departments to provide

vocational education to special education students, and 2) the addition of career education as a component of secondary special education students' IEP's. Career education took on a broader meaning than just job-related education. It referred to educating the student for adult life- including daily living types of skills as well.

Wehman, Kregel, & Barcus (1985) purported that a functional curriculum was necessary not only for secondary students, but for much younger students with handicaps as well. Their reasoning was that since youths with mild retardation learn at a much slower rate, it is necessary to teach any needed skills over a much longer period of time. These authors supported selecting age-appropriate vocational objectives for even the youngest students in special education. Naturally, this is not to suggest that primary students go to work every day; rather, it is important that they begin to learn that work has value and is expected for them. Special education should provide the foundations for adulthood from the beginning years on.

In Career Education for Handicapped Individuals (1985), authors Kokaska and Brolin advocate the concept of a life-centered career education for the student with handicaps. Even during the elementary years, it is important to emphasize career awareness. This would encompass such daily living skills as money management, maintaining a home, purchasing and preparing food, and caring for oneself. They suggest infusing these skills into the existing curriculum rather than approaching career education as a separate

entity. They further stress that special education students learn best through hands-on experiences. This is the preferred mode for teaching these skills. In short, reading class might involve having the student read signs out in the community where they appear, or read and follow recipe directions in a kitchen setting with real utensils and ingredients.

The researchers and educators mentioned above sound a clear call for a change from the traditional, academically-oriented curriculum of the past to a functional, vocational curriculum for the future. They are joined by countless other professionals in the field, some of whom have already invested hours of time and much energy developing materials for use in such a curriculum. School districts have rewritten their courses of study to reflect the infusion of career and life goals. Handbooks, assessment devices, and commercially-marketed materials are readily available at local Special Education Regional Resource Centers (SERRCs) to aid teachers in the transition. Despite the application that has already been accomplished in the field, there exists a surprising lack of research proving that these methods are any more effective at teaching specific skills, functional or otherwise, than the traditional methods previously employed.

The specific functional skill chosen for this study is the recognition of food terms and measurements typically found on product labels, in grocery advertisements, and in recipes. An ERIC search, review of Psychological Abstracts, and hand search through journals emphasizing education and training of people with mental

retardation yielded little research in food preparation training with individuals who are mildly mentally retarded. Not a single study comparing the effectiveness of the traditional approach to the applied approach in teaching the recognition of food terms and measurements could be found.

Schuster (1988) reviewed the research on cooking instruction for people with the mental retardation. After a thorough search, he noted only six studies involving 24 subjects, and of those, eleven had mild to moderate mental handicaps. The rest were more severely handicapped. The studies involved various means of teaching some particular cooking function, such as following a picture recipe card to prepare food. In most studies the subjects were able to complete the tasks satisfactorily, and in some cases were even able to generalize the acquired knowledge to a related task. But while the research studies examined were generally successful, Schuster expressed concern that so few had been done that the results were inconclusive. Food preparation is such an essential skill for daily living, and one that it appears can be done independently at least to some degree, that it ought to have a high priority in the training of individuals with mild mental retardation.

One other study, not included in Schuster's work, described a treatment package for increasing sight word recognition using words found in daily living (Browder, Hines, McCarthy, & Fees, 1984). The program consisted of training adults with moderate retardation to use instruction booklets to perform several groups



of daily living tasks. One skills group involved the preparation of three types of foods. The adults were given booklets containing key instruction words with illustrations of foods and tasks. They were then trained to both read the words and perform the tasks. Once the original task was successfully accomplished, the researcher tested for generalization to a similar task. The program resulted in the adults acquiring the cooking skills in an acceptable time frame with the ability to generalize the skills. Browder, et al also provided evidence of the interest people with moderate retardation have in the tasks of everyday life. For reinforcement during instruction, students earned tokens which could be exchanged for time spent engaging in the daily living skill being taught, in this case, food preparation. Only one subject in one instruction session lost the opportunity to participate in an extra food preparation session. For these subjects, performing daily living skills was an effective motivator.

It is evident that there is a lack of research in the area of food preparation with people with mild retardation. The authors of the previously-cited studies called for additional research and evaluation of existing programs to demonstrate the usefulness of these skills for those who are mildly retarded and to determine effective methods for teaching them.

#### Parent Involvement

Ask any teacher to name the single most important factor

necessary for the success of the student in the community, and chances are the response will relate to the student's parents. Parents are the child's first teachers, and even after the child begins formal schooling, they continue to influence the child's learning through their assistance with homework as well as through the attitudes they display toward all aspects of the child's education. Parents were a major force in calling the public's attention to their children with handicaps and in achieving passage of PL 94-142. Today schools are required to inform parents of all decisions regarding placement in special classes or programs, and their participation in planning their children's goals is encouraged through IEP conferences. Parents are usually willing to attend these meetings, and many add information that is quite helpful to the educators who work with the child. But how much farther are parents willing to go? Do most want to be directly involved in teaching their children at home? And if they do, is it possible for them to be effective as teachers?

Turnbull and Turnbull (1982) sought to answer these and other concerns about parent involvement. They contended that parents of children with handicaps would actually prefer less involvement in the educational process. This contention was based on several studies that show that because of the stress involved in raising a child with handicaps, parents feel a need to be relieved of some of the burden, and generally would rather defer to the expert, the classroom teacher.

Speaking to the issue of the parent as teacher, the authors

cautioned that what is good for one parent is not necessarily good for another. Some parents achieve success as teachers of their own children; however, it is a difficult task at best. Citing Karnes and Teska, the Turnbulls (1982) pointed out that the competencies necessary for parents of children with handicaps who wish to teach their own children are the same as those required of a master level teacher. They added that parents who undertake to teach their own children do so despite having to fulfill all the other responsibilities inherent in family life.

Finally, the Turnbulls expressed concern for the parent-child relationship when the parent becomes the teacher. The family may become too wrapped up in the progress of the handicapped child for a healthy family life. The child's self-image may suffer as a result of feeling that he doesn't measure up to the standards set, or that he is not loved unconditionally by the parents. The authors advocated allowing parents to determine for themselves the amount of their involvement without undue pressure from the school. They did suggest, though, that the school provide ample opportunities for parents to be involved in a meaningful way if they desire to do so.

Allen and Hudd (1987) also examined the issue of parental involvement in the educational process. Speaking specifically to the role of parent as teacher, they pointed out that parents have long been expected to participate in early intervention programs. There are benefits, including the link provided for skills taught in the preschool center to be reinforced at home, and the cost-

effectiveness. Students do benefit from this type of parental involvement, as shown by the effectiveness of the Milwaukee Project (MacMillan, 1982), one of the most extensive early intervention programs to date, encompassing over twenty years.

Recent research on the effectiveness of the Milwaukee Project shows that when mothers were trained in infant stimulation, homemaking, and childrearing skills, the normal daily tasks of parenting, their children scored significantly higher on IQ evaluations than those children whose mothers did not receive the same training. They also scored higher on tests of language development and problem solving ability. The experimental group mothers displayed increased self-confidence as parents, and became more verbal and responsive to their children (MacMillan, 1982).

These results have not gone unnoticed by teachers and parents of children with handicapping conditions. P.L. 99-457 mandates intervention and educational services for all children with handicaps and their families. The law requires individualized family service plans to enable parents to participate more fully in the intervention program. It encourages program planners to develop intervention strategies that can be utilized within the context of ordinary family life to optimize the development of the child with handicaps. The law charges interventionists with encouraging full collaboration with family members.

The idea behind this law is to shift the emphasis of early intervention plans from the traditional clinical model to a more family-focused model. Many programs have been modified with this

goal in mind. Mahoney and O'Sullivan (1990) surveyed family service providers to determine to what extent and how well the law has been implemented thus far, and what needs and problems are perceived by those who are directly involved in the programs. They found that many of these providers interpreted their role to be that of teaching parents to instruct their children at home. They found that the providers depended mainly on their own expertise in planning and implementing the programs, rather than soliciting the concerns and needs of parents. When questioned on problems associated with their programs, over half of service providers reported problems with gaining families' interest in remaining involved in the program. The authors suggest that the instructional nature of many programs may be one of the impediments to maintaining families' interest and cooperation. A shift to a more supportive, consultative model with a focus on helping families adjust to the child with handicaps and structure the home to accommodate his or her needs may result in a more active participation by families and therefore a more effective program. However, at this time, research to determine the attitudes of families toward programs is needed to clarify the situation.

Allen and Hudd (1987) also found that parents report feeling uncomfortable when asked to become involved in direct teaching. Parents feel they may lack the necessary skills or the confidence needed to be effective. In agreement with the Turnbulls, Allen and Hudd believe that many times educators incorrectly assume that parents wish to be involved in the education aspect of their

children's lives. They also pointed out that excessive involvement in this aspect may detract from other, more enjoyable family pastimes which are also necessary for healthful growth.

The authors cited above agree that some parents may wish to become involved in the educational process. None of the authors spoke specifically about homework as an entity separate from the rest of the curriculum, but it is possible to infer from their research that if a teacher wishes to involve parents in homework, especially homework that involves direct teaching of the subject matter rather than reinforcement, the teacher should ask the parents for their involvement, rather than expect it. Additionally, designing assignments that fit within the normal context of the home, as in the case of virtually all the daily living skills, may be more appreciated and accomplished by parents than those which are designed to teach the traditional academic skills.

#### Homework as a Useful Tool

The usefulness of homework for persons with mild retardation has received little attention by researchers. The majority of studies on homework have dealt with high school students of normal intelligence and measured academic performance in reading or mathematics. Of the few studies that have involved elementary students as subjects, most used the performance of students with average intelligence on standardized tests as the measure of success. Among the various researchers who study the effects of homework, there is controversy over the interpretation of the

results (Barber, 1986; Walberg, et al, 1985). Studies involving students with mild retardation as subjects have tended to focus on programs in which parents first receive training as tutors, which may be an unfair expectation on the part of the teacher or the school (Turnbull & Turnbull, 1982).

Vinograd-Bausell, Bausell, Proctor, and Chandler (1986) evaluated the effectiveness of untrained parents as tutors of word recognition skills. They offered free teaching materials for use at home to the parents of students who had mild retardation. They sent the materials to half of those who responded positively, while they sent a letter to the rest explaining that the materials would be sent in two weeks. Testing only those students whose parents had volunteered to receive the materials, they found that students whose parents had received the materials two weeks previously recognized significantly more of the selected words than those whose parents had not yet received the materials. In a follow-up study, they further determined that a majority of parents, if given the raw materials and instructions, would even construct the instructional materials themselves, achieving similar results with their children. Despite the positive results, the authors recognize the limitations of the study, including content to be taught and sample size and make-up. It was their conclusion that more research is needed.

#### Summary

A survey of the available literature indicates a general need

for more research into issues relating to students with mild mental retardation. More specifically, in light of the changes that have occurred in the makeup of classes for students with mild retardation, the issues raised by the proposed study are current and valid in the field.



## CHAPTER III

## METHODOLOGY

## Student description

This study involved students with mild mental retardation aged 8 to 12 years enrolled in a suburban school district north of Dayton, Ohio. The group included 3 boys and 4 girls. Two students were physically handicapped with cerebral palsy and were in wheelchairs much of the day. The students' reading skills included prereading to approximately third grade. Their math skills were similar. The socioeconomic status of the group ranged from lower to upper middle class. Parental education ranged from some high school to completion of college.

## Design and Procedure

A modified multiple probe design (Gaule & Nietupski, 1985, and Horner & Baer, 1978) was used to determine the effectiveness of applied and traditional homework activities. Prior to the baseline phase of the study, letters briefly describing the study and requesting an intent to participate were sent to the parents of all students in the class for students with developmental handicaps. (See Appendix I.) Eight students and families participated in the study.

## Phase I: Baseline

All students participated individually in two baseline trials

given by the researcher on the same day two weeks apart on recipe reading tasks to determine individual abilities to recognize direction and food words, as well as measurement numbers and terms. The researcher gave only the verbal cue, "Please read this recipe for me." The student then performed the task, reading aloud any recipe terms recognized. Following a 100% accurate reading of the lowest level of recipe, the student would proceed to try the next level of recipe. A total of four levels of recipes were available, ranging from a simple picture with key word recipe to a recipe taken from a popular adult cookbook. (See Appendix II.) Of the eight students who received parental permission to participate, one was able to read the first three levels with 100% accuracy. None of the other seven students mastered the first level. As the one student was far beyond the others in initial ability, with no one available for comparison purposes, her results are not included in the study data.

#### Phase II: Instruction

In consultation with the current classroom teacher, each student was then assigned to one of two groups. All students received a series of homework activities designed to improve recognition of terms not recognized in the pretests and that required some parental assistance to complete. (See Appendix III.) These were sent home at the rate of one per week over a period of six weeks. One group received activities that are functional, or applied, in design, while the other group received a set of

traditional activities. Students were to complete the activities at home as directed, and return any paperwork provided. All other aspects of classroom instruction were managed by the teacher in her usual manner.

After two weeks, the researcher conducted a trial with each student to determine if any had reached 100% accuracy in reading the recipe. At this time, while all students except one had shown an increase in numbers of words and symbols recognized, none had reached 100% mastery of the recipe. All students therefore received more activities based on the initial baseline trial and group placement.

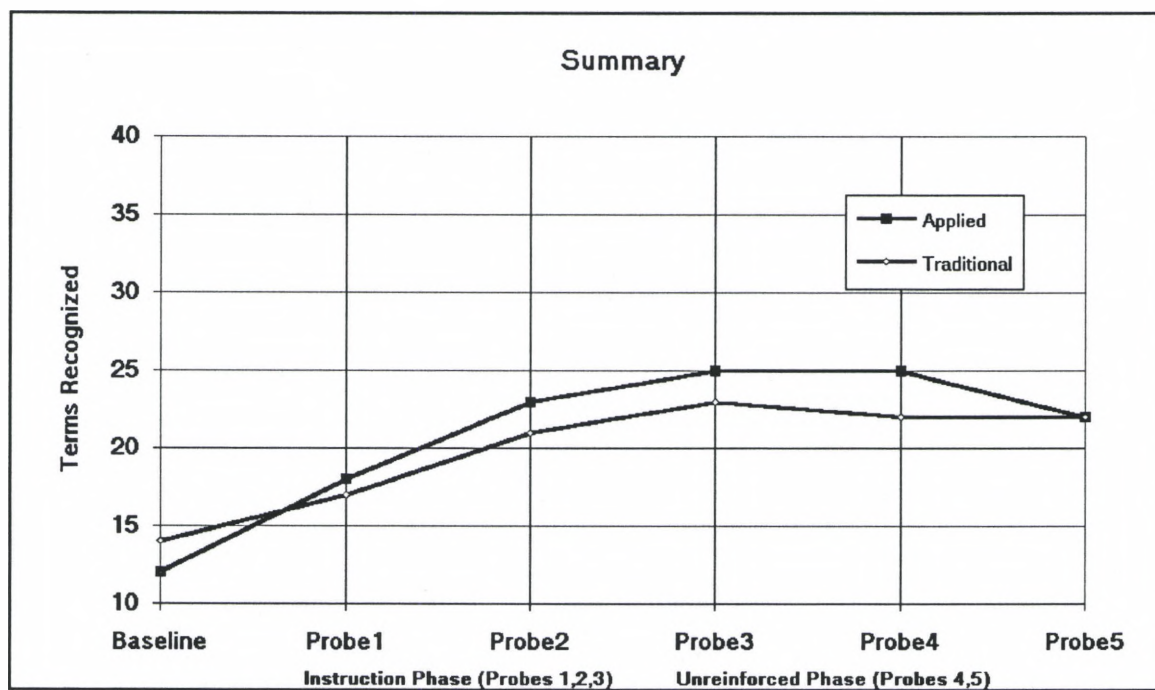
A similar trial was conducted after two more weeks of instruction and again after two more weeks, for a total of six weeks.

#### Phase II: Maintenance Trial

Two additional probe trials were conducted, one probe- two weeks following termination of parent instruction and one probe- three months later. These probes were conducted under the conditions described in the initial, baseline phase. These probes allowed for testing of retention of acquired skills. At the time of the two-week probe, students were also tested with recipes similar to the original one to determine if the acquired skills could be generalized.

## Results

Data regarding student performance can be found in figure 1. As shown, both groups increased in recognition of recipe terms during the instruction phase. The group who completed applied activities increased in recognition of the terms by 13 words by the end of the instruction phase. The group who received traditional activities increased recognition by 9 terms, making a difference between the groups of about 4 words. Out of 40 terms available to be learned, the increase is a minor one, indicating that there would be no difference in achievement between the two groups.



**Figure 1.** Term recognition by Probe Trial for all students

Since a wide range of abilities and IQ levels can be found within this special population, it could be hypothesized that those abilities could have an effect on the achievements of the students in the two groups. The initial two groups of students could be

divided further by IQ ranges, into 2 groups of students with IQ levels above 69, and two groups of students with IQ ranges below 60. This allows for comparison of students whose achievements might generally be even more similar than in the original groups.

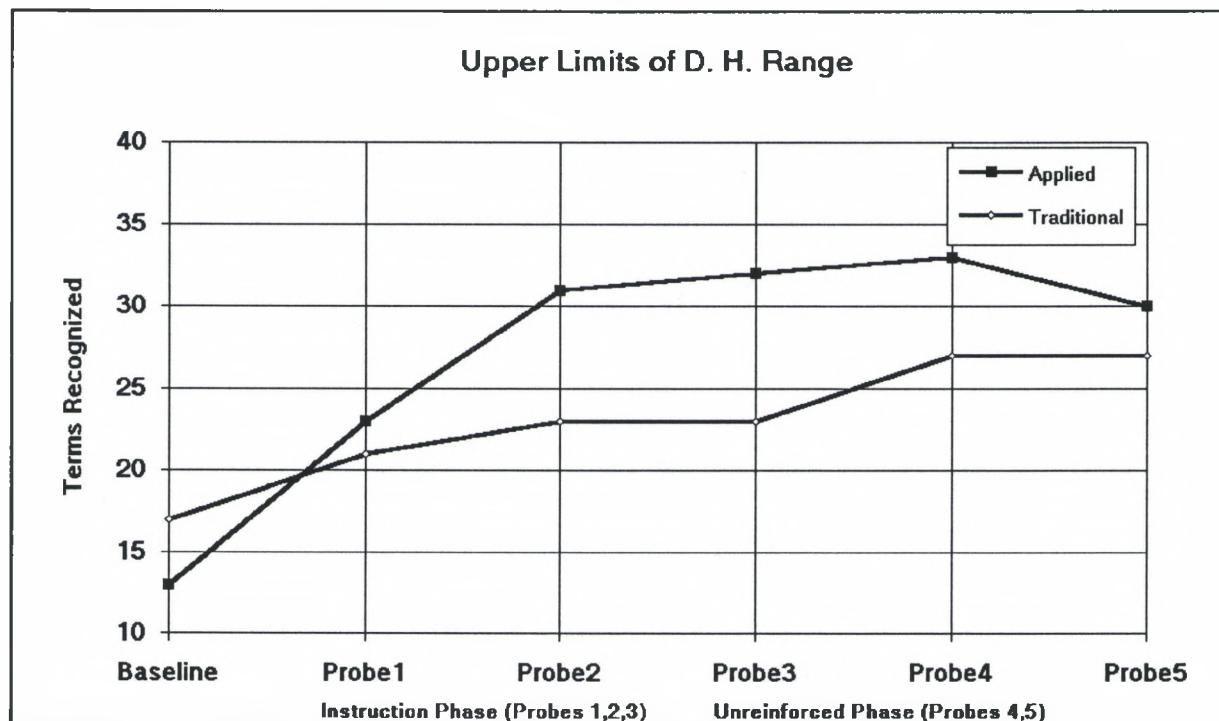
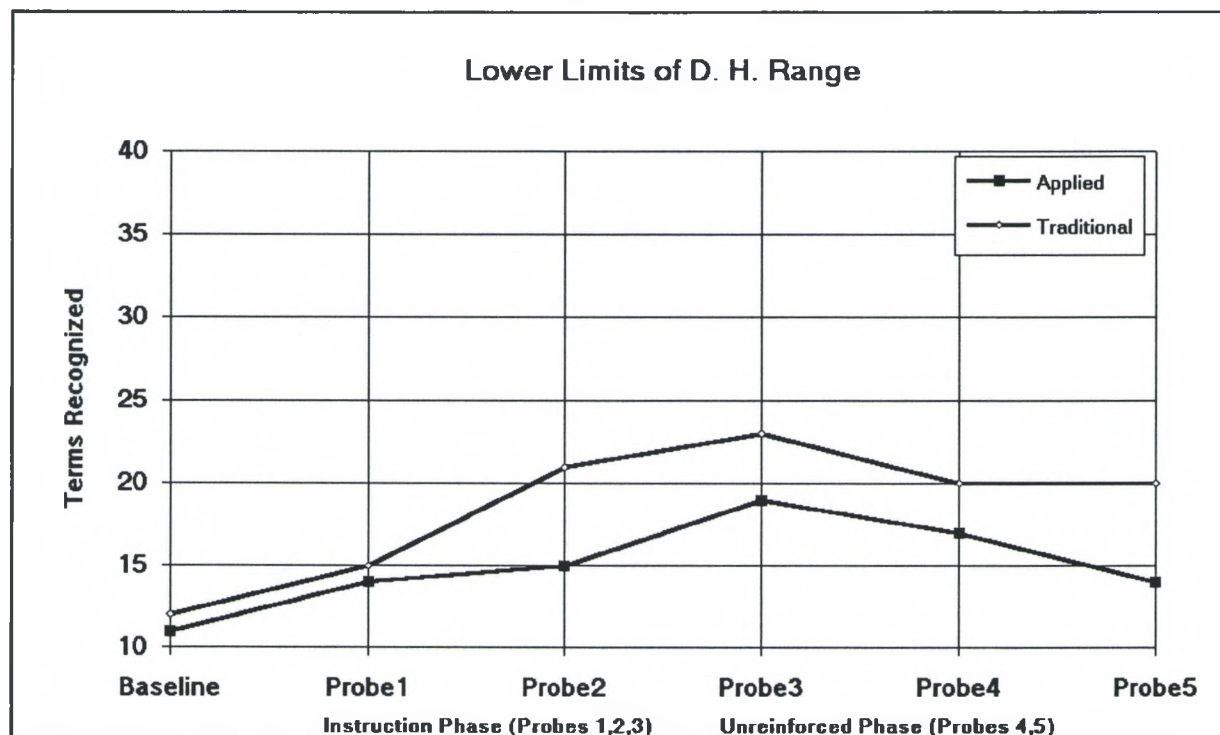


Figure 2. Term recognition by Probe Trial for upper D. H. range

A comparison of the achievements of two groups of students whose IQs fall within the upper limits of the D.H. range (70 - 79) shows that during the instruction phase the group receiving applied activities attained an increase of 19 terms recognized. The group receiving traditional activities increased by 6 terms, making a difference of 13 words recognized (figure 2). Out of the 40 terms in the recipe, the difference between the two groups is much more noticeable. Further examination of the data reveals that for both groups, learning continued to increase slightly during the first unreinforced phase as well, suggesting that concurrent classroom

instruction and other at-home incidental learning may have contributed in part to the gains in term recognition.



**Figure 3.** Term recognition by Probe Trial for Lower D. H. range

A comparison of the two groups of students who fall within the lower limits of the D.H. range (59 and below) reveals a different result (figure 3). During the instruction phase, the group receiving applied activities showed an increase of about 8 terms recognized. The group receiving traditional activities showed a gain of about 11 terms recognized. This difference of three terms recognized out of 40 presented is minor.

As one of the accepted purposes of homework is to enhance the student's retention of material, the researcher tested short and long term retention of the recipe terms instructed. The group receiving traditional activities showed a loss of one word at the two-week interval, with exactly the same result three months later.

The group receiving applied activities displayed no loss at the end of two weeks, a loss of three terms at the end of three months (figure 1). The group of students in the lower I.Q. range receiving applied activities incurred the largest loss of recognized terms (figure 3). Their drop of 5, out of an original increase of 8 terms, is substantial.

Finally, the researcher examined the ability of students to transfer the acquired skills to other, similar recipes. Students in the traditional activities group were able to transfer virtually all of the terms recognized at the time of the first unreinforced probe, while students in the applied activities group transferred

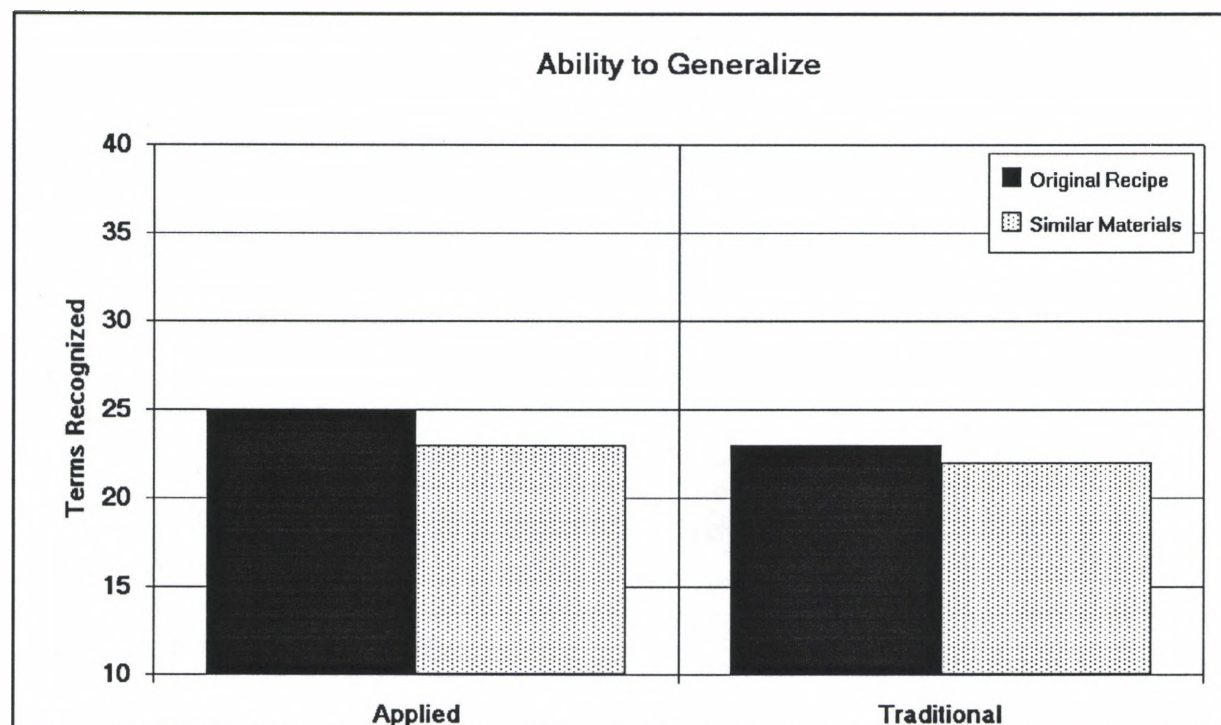


Figure 4. Ability to Generalize

all but two terms (figure 4).

## Discussion

The results of this study suggest that homework instruction for students with developmental handicaps can be a useful tool available to teachers. All students in both groups showed gains in term recognition during the instruction phase; even those who recognized the fewest words in the initial probe improved during instruction. Retention for both groups was good for the short term. Applying these results to the classroom, one might consider sending home activities relating to future in-school cooking tasks, with the goal of enabling students to come prepared for the task with some prior knowledge of the terms to be used.

The results of the present study seem to indicate that for most students, either type of activity would be acceptable for presenting the terms a teacher may want to introduce, although for the students with greater predicted ability, the applied approach appeared to be more effective.

In all cases but two there was a high degree of compliance with the request to complete the activities. Five of the students returned 5 or 6 of the activities completed. The two remaining students completed two activities, with apologies from one parent that more would have been done had the home situation not been disorganized at that time. As parents had been requested to become involved, rather than being expected to, it is possible that, having been given the decision, parents were more willing to follow through with the program than they might have been otherwise. A teacher interested in using homework instruction requiring help



from parents might consider requesting the assistance, explaining what would be required, and utilizing a scheduled routine to encourage participation by the parents.

Finally, this study sought to determine if the move toward a more applied approach for students with developmental handicaps could be validated. From the results examined above, at the very least, more study is indicated. It appeared that applied activities were more beneficial for students with higher IQs and initial reading skills than for those with lower IQs and initial reading skills.

Certain factors over which the researcher and teacher would have little control may be involved in this difference. Parents of students with higher predicted abilities may find it less frustrating to work with them, as progress is generally quicker and easier to see than for those with lower potential abilities. These students may have already been involved in some food preparation at home and therefore would have more familiarity with cooking terminology. Some parents may have been more interested in extending these activities while other parents may view them as valueless to their own situation. A teacher would need to be aware of these factors when designing activities to be used at home.

REFERENCE SECTION

Appendix I

Letter to parents requesting intent to participate

October 1, 1990

Dear parents,

Mrs. Deborah Barry, who is currently a graduate student at the University of Dayton, has asked our class to participate in a research project on which she is working. She has developed a number of activities for students to do at home with their parents' help. The activities would be done over six weeks' time, approximately one to two activities per week, taking a total of 10 to 20 minutes to complete. They would be sent home on Monday each week and would need to be completed and returned by Friday. After the six week time period, she would evaluate the effectiveness of the activities in increasing the students' skills. The activities would be individualized to each student's IEP goals and abilities.

We hope you will be willing to participate in this project. If you are, the activities will begin Monday, October 8. The last week will be November 12. If you would rather not participate, please fill out the section below and return it to school by Wednesday, October 3. Thank you for your consideration of this project.

(Signed by the classroom teacher)

-----

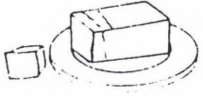
I do not wish to have \_\_\_\_\_ participate in the  
(child's name)  
home activities project.

\_\_\_\_\_  
(parent's signature)

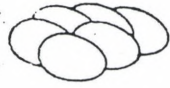
APPENDIX II  
Materials Used in Testing

# SCRAMBLED EGGS

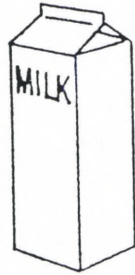
## YOU NEED:



MARGARINE



EGGS



MILK



SALT



PEPPER



MEASURING CUP

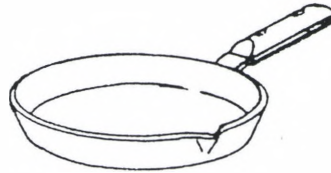


T.

MEASURING SPOONS



1/2 tsp.



SKILLET

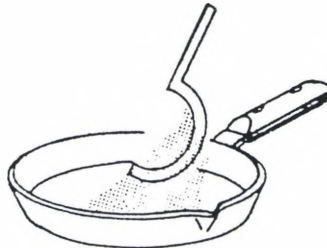
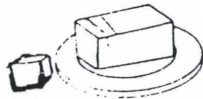


SPOON

2

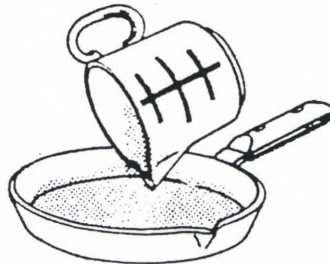


T.



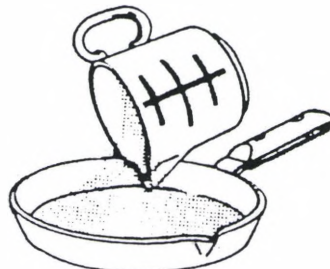
Melt.

6



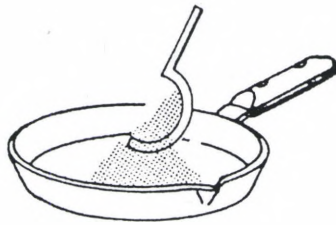
Pour.

1/3 cup

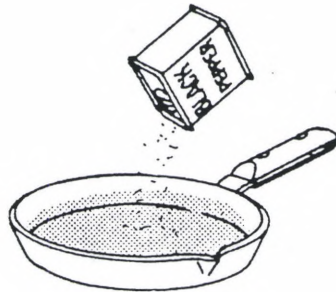


Pour.

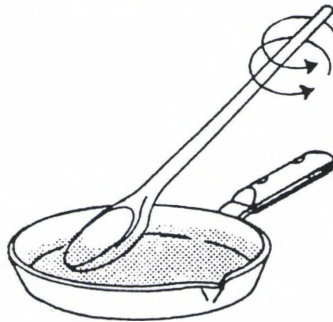
dd



ASH



Stir.



**COOK UNTIL SET**

**SERVES: 3 to 4**

# SCRAMBLED EGGS

## INGREDIENTS



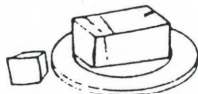
1 egg



2 tablespoons milk



pinch of salt

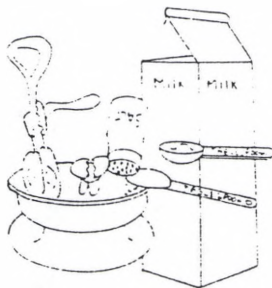


1 tablespoon  
margarine

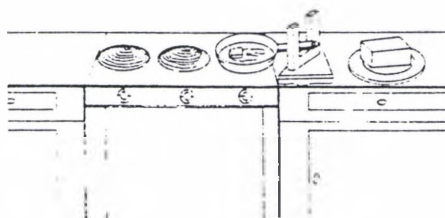


**DIRECTIONS**

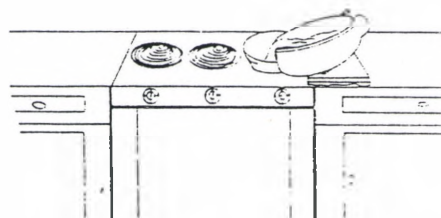
1. Mix milk, egg, salt.



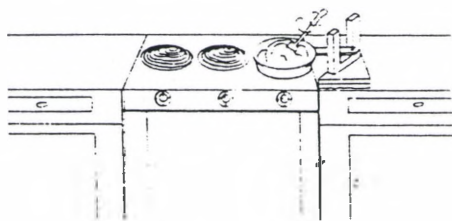
2. Melt margarine.



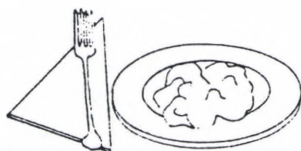
3. Pour in egg mixture.

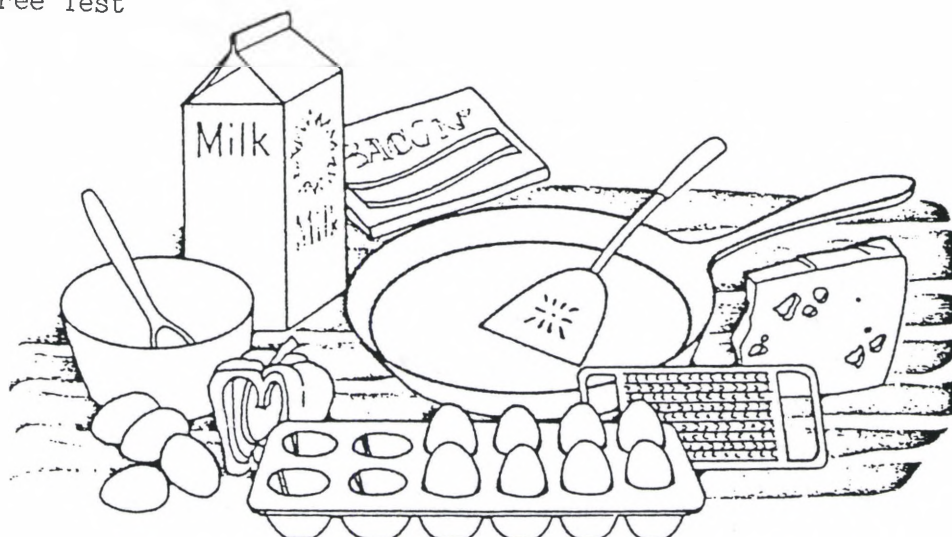


4. Stir constantly.



5. Serve.





**Scrambled Eggs**  
*(serves 2 or 3)*

4 eggs

dash of salt and pepper

4 T. milk

1 T. margarine

1. Break eggs into small mixing bowl.
2. Add milk, salt, and pepper and beat with a fork.
3. Melt margarine in skillet.
4. Pour eggs into frying pan. Cook over low heat. Stir the eggs while they cook.
5. Serve when the eggs are thick. Do not let them get too dry.

### SCRAMBLED EGGS

*Eggs that double as a supper dish. We've pictured our shredded Cheddar version of Party Scrambled Eggs on page 203.*

For each serving, break 2 eggs into bowl with 2 tablespoons milk or cream,  $\frac{1}{4}$  teaspoon salt and dash pepper. Mix with fork, stirring thoroughly for a uniform yellow, or mixing just slightly if streaks of white and yellow are preferred.

Heat  $\frac{1}{2}$  tablespoon butter or margarine in skillet over medium heat until just hot enough to sizzle a drop of water. Pour egg mixture into skillet.

As mixture begins to set at bottom and side, gently lift cooked portions with spatula so that thin, uncooked portion can flow to bottom. Avoid constant stirring. Cook until eggs are thickened throughout but still moist, about 3 to 5 minutes.

Appendix III  
Examples of Instructional Materials-  
Paired Applied - Traditional Approaches

Activity

This activity uses the enclosed word cards.

Have your child read each of the words on the word cards. After you have read through them two times, have your child read them one more time, this time locating the named items in your kitchen.

Work with the word cards this way at least 3 nights this week.

Parent check (X) \_\_\_\_\_

Traditional Activity

Activity

This activity uses the enclosed word cards.

Have your child read each of the words on the word cards. After you have read through them one time, help with any that are unknown and read through them two more times.

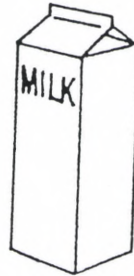
Work with the word cards this way at least 3 nights this week.

Parent check (X) \_\_\_\_\_

Measuring

You need:

measuring cup



Look at the marker lines on the measuring cup. They show measurements. Read the marker lines out loud.

Point to the marker lines for:

Parent  
check (X)

1/3 cup \_\_\_\_\_

1 cup \_\_\_\_\_

1/2 cup \_\_\_\_\_

1/4 cup \_\_\_\_\_

Now, pour enough milk to show the following amounts:

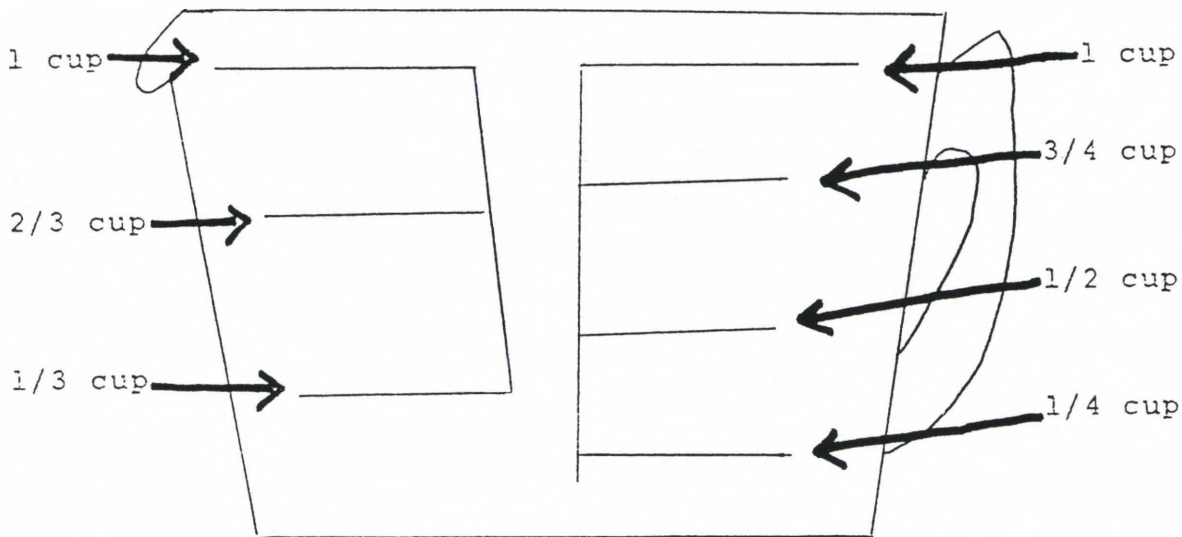
Parent  
check (X)

1/3 cup \_\_\_\_\_

1 cup \_\_\_\_\_

### Measuring

This is a cup for measuring liquids. The marker lines show the measurements.



Look at the cup above. Read out loud and point at the marker lines.

Now point to the line for

Parent  
check (X)

1/3 cup \_\_\_\_\_

1 cup \_\_\_\_\_

1/2 cup \_\_\_\_\_

1/4 cup \_\_\_\_\_



Measuring

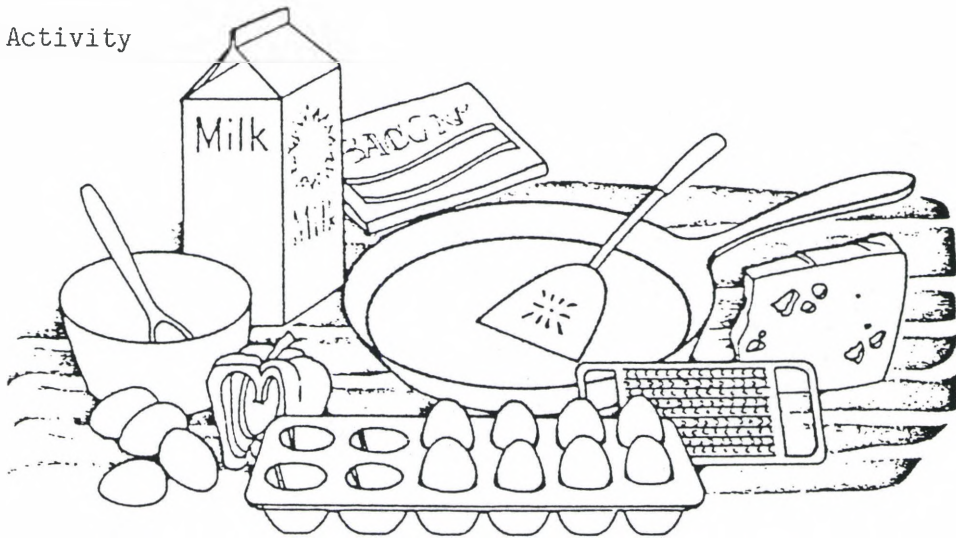
Draw a line to show the following measurements.



Now shade in the marked amount with a pencil.

Read the measuring cups below. Write the amounts they are holding beside them.





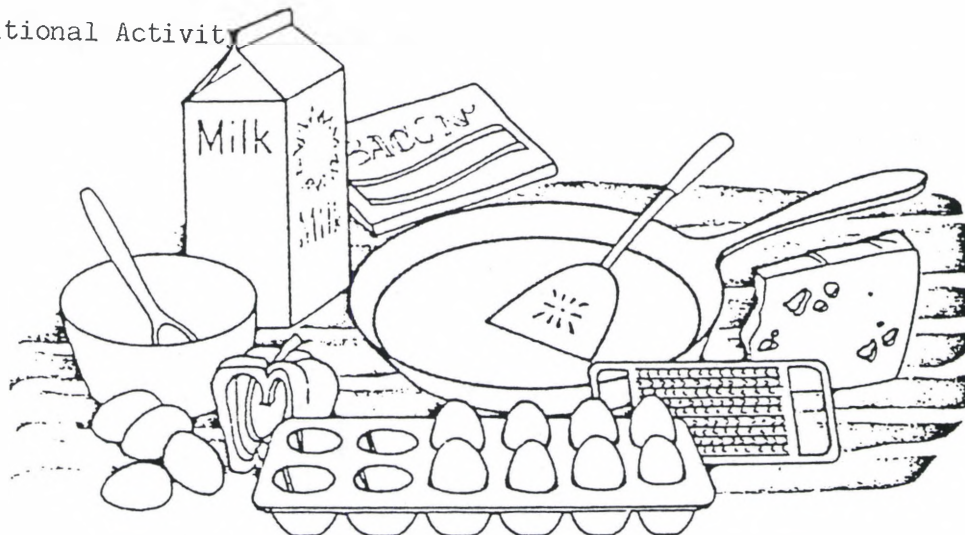
Find and circle the following words in the recipe below.

EGGS            SALT            PEPPER            MARGARINE            MILK  
 MELT            POUR            COOK            ADD            DASH  
 STIR            SERVE

### Scrambled Eggs *(serves 2 or 3)*

4 eggs            dash of salt and pepper  
 4 T. milk            1 T. margarine

1. Break eggs into small mixing bowl.
2. Add milk, salt, and pepper and beat with a fork.
3. Melt margarine in skillet.
4. Pour eggs into frying pan. Cook over low heat. Stir the eggs while they cook.
5. Serve when the eggs are thick. Do not let them get too dry.



Find and circle the following words in the puzzle below. Some appear more than once.

- |      |       |        |           |      |
|------|-------|--------|-----------|------|
| EGGS | SALT  | PEPPER | MARGARINE | MILK |
| MELT | POUR  | COOK   | ADD       | DASH |
| STIR | SERVE |        |           |      |

A B C D E G G S I J K L M N  
 O P Q A P O U R O W X Y A B  
 A D D S G H I J K L M N R S  
 Q R S H M V W X Y P A B G E  
 E G G S I S K L M E L T A R  
 S T U V L A Y P E P P E R V  
 G H I J K L M C O P Q R I E  
 S T I R Y Z A O C E E F N H  
 I J K M I L K O Q R S T E V  
 W X Y Z A D D K F S T I R K

## Measuring

You need:

measuring spoons



salt



To measure small amounts, you use measuring spoons.

Look at each spoon. Find the one marked 1 Tablespoon (or 1 T.).

Measure 1 Tablespoon (1 T.) of salt.

Now take the tablespoon and place it upside down in the space below. Draw around it.

Now find the spoon marked 1 teaspoon (1 tsp.).

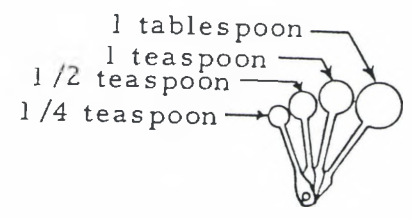
Measure 1 teaspoon (1 tsp.) of salt. Draw around it below.

Do the same with 1/2 teaspoon (1/2 tsp.) and 1/4 teaspoon (1/4 tsp.).

1/2 tsp.

1/4 tsp.

Measuring spoons are for measuring small amounts. They can be used to measure both dry and liquid ingredients. Measuring spoons come in sets of four.



Notice how the measuring spoons can be placed inside each other. Let's call this a nest of spoons.



1. Take the 1 tablespoon, which is the largest, and place the 1 teaspoon in it.
2. Then take the 1/2 teaspoon and place it inside the 1 teaspoon.
3. The 1/4 teaspoon is the smallest and will fit inside the 1/2 teaspoon.

YOU HAVE WHAT CAN BE CALLED A NEST OF SPOONS.

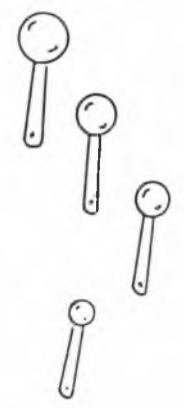
Try to remember that:

1 tablespoon is the largest

1 teaspoon is next to the largest

1/2 teaspoon is next to the smallest

1/4 teaspoon is the smallest





**Sue Cautions:** A teaspoon or tablespoon used at the table is not for measuring. They do not hold the same amount as a measuring spoon.

**EXERCISES:**

**MATCHING:** Put the letter (A, B, C, or D) in front of the name of the right size of spoon.

- \_\_\_\_\_ 1. 1/2 teaspoon
- \_\_\_\_\_ 2. 1 tablespoon
- \_\_\_\_\_ 3. 1/4 teaspoon
- \_\_\_\_\_ 4. 1 teaspoon



**FILL IN:** Fill in the blank with the right size of measuring spoon.

1. The \_\_\_\_\_ is the largest measuring spoon.
2. The \_\_\_\_\_ is the smallest measuring spoon.
3. The \_\_\_\_\_ is next to the tablespoon in size.
4. The \_\_\_\_\_ is next to the 1/4 teaspoon in size.

**MULTIPLE CHOICE:** Underline the right answer.

1. To measure small amounts, you would use (measuring cups, measuring spoons).

INGREDIENTS AND EQUIPMENT

Identify the following ingredients and equipment, then locate each item in your kitchen.

Parent  
Check (X)

Parent  
Check (X)



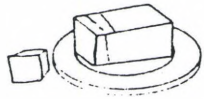
**SALT**

\_\_\_\_\_



**EGGS**

\_\_\_\_\_



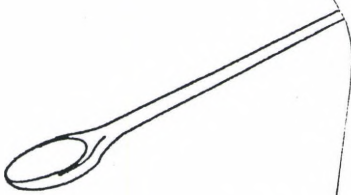
**MARGARINE**

\_\_\_\_\_



**MEASURING  
CUP**

\_\_\_\_\_



**SPOON**

\_\_\_\_\_



**MILK**

\_\_\_\_\_



**PEPPER**

\_\_\_\_\_

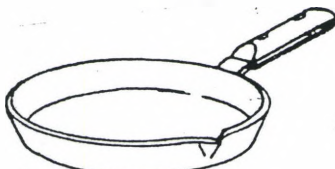


**T.**

**1/2 tsp.**

\_\_\_\_\_

**MEASURING  
SPOONS**



**SKILLET**

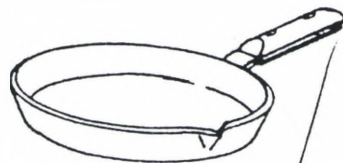
\_\_\_\_\_

INGREDIENTS AND EQUIPMENT

Identify the following ingredients and equipment:



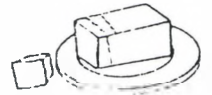
SALT



SKILLET



PEPPER



MARGARINE



EGGS



SPOON



T.



1/2 tsp.

MEASURING SPOONS

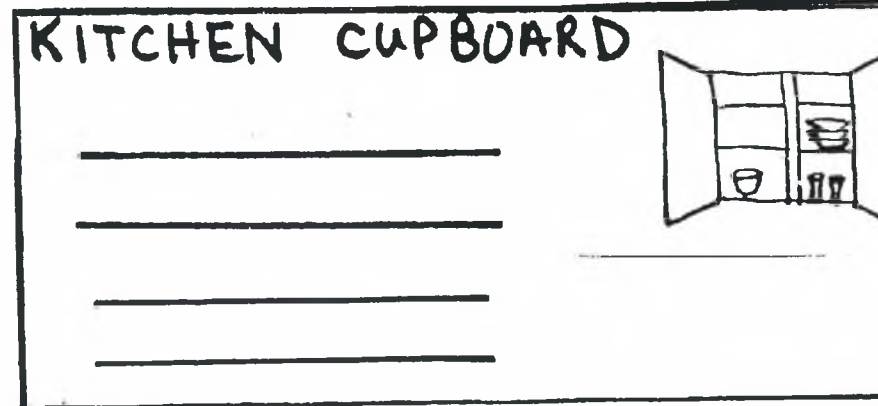
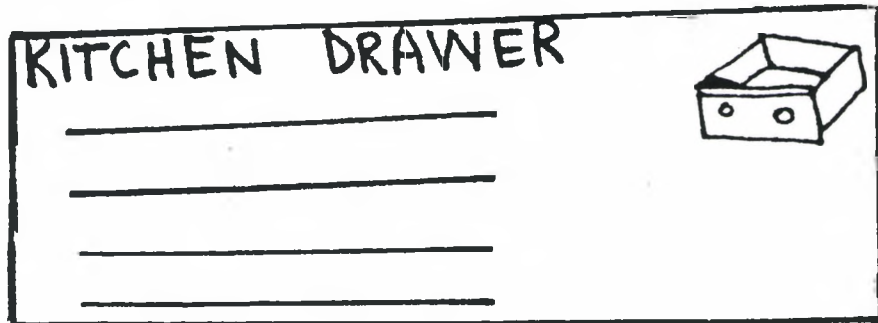
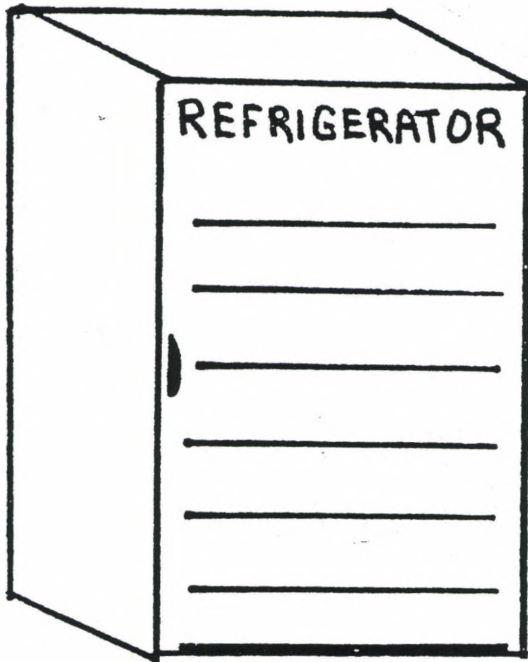


MEASURING CUP



MILK

Now put the ingredients and equipment away by writing the names in the correct spaces. (Put them in the place where they are kept in your kitchen.)





Direction Words

This activity uses the enclosed word cards.

With your child, read the words on the word cards. The same word is printed on both sides of the word card, once in capital letters and once in lower case. As you go through the cards, discuss each word and its meaning. Demonstrate for your child when and how the direction would be followed in a recipe. (For example, for the word POUR, you would use a measuring cup to show a pouring motion.) After you have gone through the words one time, go through them two more times, having your child demonstrate the direction each time.

Repeat the activity one more time this week.

Parent check (X) \_\_\_\_\_

Direction Words

This activity uses the enclosed word cards.

With your child, read through the words on the word cards. The same word is printed on both sides of the word card, once in capital letters and once in lower case. After you have gone through the once with your child, continue to drill on them three more times.

Repeat the activity one more time this week.

Parent check (X) \_\_\_\_\_

## SELECTED BIBLIOGRAPHY

- Allen, D.A., & Hudd, S.S. (1987). Are We Professionalizing Parents? Weighing the Benefits and Pitfalls. Mental Retardation, 27, 133-139.
- Barber, B. (1986). Homework Does Not Belong on the Agenda for Educational Reform. Educational Leadership, 55-57.
- Benz, M.R., & Halpern, A.S. (1987). Transition Services for Secondary Students with Mild Disabilities: A Statewide Perspective. Exceptional Children, 53, 507-514.
- Browder, D.M., Hines, C., McCarthy, L.J., & Fees, J. (1984). A Treatment Package for Increasing Sight Word Recognition for Use in Daily Living Skills. Education and Training of the Mentally Retarded, 19, 191-200.
- Edgar, E. (1985). How Do Special Education Students Fare After They Leave School? A Response to Hasazi, Gordon, and Roe. Exceptional Children, 51, 470-473.
- Gaule, K., Nietupski, J., & Certo, N. (1985). Teaching Supermarket Shopping Skills Using an Adaptive Shopping List. Education and Training of the Mentally Retarded, 53-59.
- Halpern, A.S. (1985). Transition: A Look at the Foundations. Exceptional Children, 51, 479-486.
- Hasazi, S.B., & Clark, G.M. (1988). Vocational Preparation for High School Students Labeled Mentally Retarded: Employment as a Graduation Goal. Mental Retardation, 26, 343-349.
- Hasazi, S.B., Gordon, L.R., & Roe, C. A. (1985). Factors Associated with the Employment Status of Handicapped Youth Exiting High School from 1979 to 1983. Exceptional Children, 51, 455-469.
- Horner, R.D., & Baer, D.M. (1978). Multiple-Probe Technique: A Variation of the Multiple Baseline. Journal of Applied Behavior Analysis, 11, 189-196.
- Kokaska, C.J., & Brolin, D.E. (1985). Career Education for Handicapped Individuals. Columbus: Charles E. Merrill Publishing Company.
- MacMillan, D.L. (1988). Issues in Mild Mental Retardation. Education and Training in Mental Retardation, 23, 273-283.
- MacMillan, D.L. (1982). Mental Retardation in School and Society. Boston: Little, Brown, & Company.

- Mahoney, G., & O'Sullivan, P. (1990) Early Intervention Practices with Families of Children With Handicaps. Mental Retardation, 28, 169-176.
- Polloway, E.A., & Epstein, M. (1985). Current Research Issues in Mild Mental Retardation: A Survey of the Field. Education and Training of the Mentally Retarded, 20, 171-174.
- Polloway, E. A., & Smith, J. D. (1983). Changes in Mild Mental Retardation: Population, Programs, and Perspectives. Exceptional Children, 50, 149-159.
- Schuster, J.W. (1988). Cooking Instruction with Persons Labeled Mentally Retarded: A Review of Literature. Education and Training in Mental Retardation, 23, 43-50.
- Turnbull, A.P. & Turnbull, H.R. (1982). Parent Involvement in the Education of Handicapped Children: A Critique. Mental Retardation, 20, 115-122.
- Vinograd-Bausell, C.R., Bausell, R.B., Proctor, W., & Chandler, B. (1986). Impact of Unsupervised Parent Tutors on Word Recognition Skills. The Journal of Special Education, 20, 83-90.
- Walberg, H.J., Paschal, R., Weinstein, T. (1985). Homework's Powerful Effects on Learning. Educational Leadership, 42, 76-79.
- Wehman, P., Kregel, J., & Barcus, J.M. (1985). From School to Work: Vocational Transition Model for Handicapped Students. Exceptional Children, 52, 25-37.

#### Related Materials

- \_\_\_\_\_. Betty Crocker's Cookbook. New York: Golden Press, 1976.
- Shenk, Carol. Sue: A Self - Paced Learning Package. Phoenix: Frank E. Richards Publishing Company, Inc., 1971.
- Steed, Frieda Reed. A Special Picture Cookbook. Lawrence, KS: H & H Enterprises, 1974.
- Taylor, Valerie; Carlson, Carolyn; Close, Daniel; Larrabee, Dierdre. Simply Cooking. Bellevue, WA: Edmark Corp., 1980.
- Weaver, Ann A. Planning Meals and Shopping. Belmont, CA: David S. Lake Publishing, 1970.