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A Report on Curriculum Development Through the Use of an Adoption Cycle

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A REPORT ON CURRICULUM DEVELOPMENT THROUGH

THE USE OF AN ADOPTION CYCLE

(TITLE)

BY

CHARLES DALLAS LANGLEY

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

SPECIALIST IN EDUCATION

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1980

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

June 30, 1980

DATE

July 8, 1981

DATE
ABSTRACT

This project is divided into five areas. The first four areas are Sections I through IV, with the fifth area being the Appendices. Within this abstract the content of Sections I through IV will be discussed, followed by the purpose of the content of the Appendices.

Section I describes both the State and local conditions in which this two-year field study was developed. My project goal was to involve parents, teachers, administrators and Board of Education members in a systematic development of Curriculum on a kindergarten through twelfth grade basis.

I recommended we use an adoption cycle, which is a multiple year study of curriculum, focusing on one or two areas of curriculum each year. The curriculum development through an adoption cycle should include the development of goals and objectives, as well as the selection of textbooks and materials necessary to facilitate these goals and objectives.

Section II is a detailed log of my activities in the role of Chairman of the Curriculum Committee at Northwestern C.U.S.D. #2, Palmyra, Illinois. The primary importance of this section is to present in an orderly manner the flow of activities involved in preparing for and meeting specific deadlines inherent in an adoption cycle.

In Section III is a detailed description of three major components of curriculum development through an adoption cycle. They are: Formation of the Curriculum Committee and Adoption Cycle; Development of the Curriculum
Committee Handbook and Science Goals; Selection of the Science Textbooks and Materials/Preparation of the Science Budget Proposals. These three components were chosen because I felt they were key areas of the two-year project and representative of the work involved in curriculum development.

Section IV is a conclusion containing a financial summary of the project including a list of major accomplishments of the Curriculum Committee. Also included are suggestions for possible improvements upon the adoption cycle being used at Northwestern C.U.S.D. #2.

The Appendices included in Section V are representative samples of the work of the Curriculum Committee during my two-year field study.
A REPORT ON CURRICULUM DEVELOPMENT
THROUGH THE USE OF AN
ADOPTION CYCLE

BY

CHARLES DALLAS LANGLEY
B. S. in Ed., Illinois State University, 1967
M. S. in Ed., Eastern Illinois University, 1971

ABSTRACT OF A FIELD STUDY

Submitted in partial fulfillment of the requirements
for the degree of Specialist in Education at the Graduate School
of Eastern Illinois University

CHARLESTON, ILLINOIS
1980
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SECTION I

Introduction
Since December 1973, when Superintendent of Public Instruction Michael Bakalis introduced the A-160 concept, an increasing emphasis for more involvement of teachers, parents and students in many areas of education has developed. The area of curriculum created quite a stir in the educational community of Illinois. Suddenly, educators were expected to develop goals, and later measurable objectives related to each goal, and finally a means of evaluation for each objective for all the areas of curriculum presently available to students in the local school districts.

When the shock wore off, the realization that the need for in-service training was immense. Colleges were asked to have workshops on curriculum development, especially goals and objectives. We, as educators, not only needed the in-service, but had to try to explain to parents what was happening and convince some to join a committee for curriculum study.

By the time the administrators, then later the teachers and parents, were ready to begin - and many never really were - they realized there was little time left to complete the enormous job that lay ahead. Therefore, instead of carefully deciding what goals and objectives were important for the children of the district, they began looking for short cuts. Of course the publishers were prepared to help with "revised teacher editions" that now included measurable objectives at the end of each "unit." The publishers also had tests printed on ditto masters which they assured us measured all the objectives necessary for a good educational program. Knowing this, it should not be too surprising to be able to go to a school district, look at its A-160 plan, and be able to find the objectives
therein to be almost word-for-word the objectives found in some teacher's edition in the teachers' lounge.

To briefly summarize, the A-160 concept may well be a landmark in Illinois education, but its purpose was nearly defeated by the way in which it was administered, i.e., too much was expected too soon.

The revised concept of the A-160, The Evaluation, Supervision and Recognition of Schools, published by the Illinois State Board of Education, is a more realistic approach, especially in its expectations, which allow a district more time for implementation. This was later followed by the Implementation Guidelines for Free Textbook Adoption, published in January, 1978. One section in particular titled "Determination of Textbook Needs" is quite revealing since it suggests that a school district major adoption cycle may vary from four to six years. At the end of that period of time, the textbook being used may be re-adopted to include the most recent edition or a completely new series may be selected.

We, at Northwestern C.U.S.D. #2, Palmyra, Illinois, had interpreted these two documents to mean an adoption cycle could or should be used to review and develop curriculum (A-160) and to purchase the materials needed (Free Textbooks) to implement that curriculum.

Northwestern C.U.S.D. #2 is made up of the former Palmyra, Hettick, Modesto and Scottville school districts, which are located in the northwest corner of Macoupin County. There were approximately seven hundred fifty students enrolled in the district from 1976 to 1978. The students are divided into two buildings: an elementary building, grades kindergarten through six; and a Junior-Senior High School, grades seven through twelve. The two buildings are located on the same campus and nearly all students are transported to and from school.
There were approximately twenty-five certified staff in each building, with several staff members being shared between buildings, including myself. Most all staff commuted on the average of twenty or more miles to work.

Due to financial conditions in 1975, several budget cuts were made by the Board of Education. Included was the combining of the elementary principalship and junior-senior high school counselor into one position. The School Board also froze salaries of all personnel, except administrators for one year. This action created friction between the teachers, administrators and the board members.

The communication between teachers of each building was on a social basis, but each building had developed curriculum independently. There was no evidence of updating curriculum goals and objectives as required by the A-160 document.

My field study is a report on Northwestern's efforts to meet the demands of the A-160 concept while taking best advantage of the free textbook guidelines, and at the same time promoting better communication between teachers, administrators, parents and the board of education.
SECTION II

Log of Activities
August 30 - September 3  
I discussed with Mr. Cross, Junior-Senior High School Principal, and Mr. Funk, Superintendent, and several teachers from both buildings the communication problems facing the school district.

September 6 - 10  
I suggested to Mr. Funk we have a Curriculum Committee composed of voluntary teachers and the principals from both buildings.

September 13 - 17  
I sent out a statement on the purpose of the Curriculum Committee asking for volunteer members.

September 19 - 23  
We had no volunteers as yet.

September 27 - October 1  
I located members for the Curriculum Committee: Vicky Cordas (grade five); Nancy Givens (grade five); Bob Pierson (grade four); Debbie Statton (grade nine); Linda Coad (grade ten-twelve); Mr. Cross and myself as Chairman.

October 4 - 8  
We held our first half-day meeting of the Curriculum Committee. We candidly discussed school district problems. The Curriculum Committee agreed that curriculum should be studied on a kindergarten through twelfth grade basis and funding should be assured. The members agreed that an adoption cycle would be a good method of curriculum development.

October 11 - 15  
We surveyed teachers concerning the age of their textbooks and materials and their preference as
what subject area to study first. Mr. Funk and I were assured of funds for curriculum development at the October 11, 1976, school board meeting. The funds would come from the free textbook program and local revenue.

October 18 - 22

We held our second half-day Curriculum Committee meeting on October 20. The Committee decided to propose a six-year adoption cycle and to have teachers attend a meeting to explain the cycle. (A copy of the proposed Adoption Cycle is included as Appendix A.)

October 25 - 29

The first district teacher's meeting on curriculum was held to explain the adoption cycle.

November 1 - 5

We held a second district teacher's meeting for anyone who wished to register complaints concerning the proposed adoption cycle.

November 8 - 12

The School Board approved the Adoption Cycle proposed by the Curriculum Committee during its meeting on November 8. I talked to Pam Stritzel about becoming a member of the Curriculum Committee.

November 15 - 19

We held our third half-day Curriculum Committee meeting. We added Pam Stritzel to the Committee. We set four goals for the Curriculum Committee and a timetable for their completion. (The four goals are listed in Appendix B.)

November 22 - 26

We requested every Math teacher to turn in suggested mathematics goals for a kindergarten through grade twelve program.
November 29 - December 3
Teachers completed their mathematics goals and submitted them to their building principal.

December 6 - 10
On December 8, we held our fourth half-day Curriculum Committee meeting. During this session we put the mathematics goals for grades kindergarten through six into a flow chart. (See Appendix C) The junior-senior high teachers completed their mathematics goals, and the Curriculum Committee prepared a list of publishers.

December 13 - 17
I sought out additions to the list of publishers. I also sent a form letter to these publishers requesting sample textbooks and materials.

January 10 - 29
Teachers examined sample materials and textbooks.

January 31 - February 4
I arranged for a trip to Decatur, Illinois, to attend a publisher's workshop.

February 7 - 18
I discussed with teachers their progress in examining samples.

February 21 - 25
The Curriculum Committee went to a publisher's workshop in Decatur, Illinois, on February 22, 1977. We also held a Curriculum Committee meeting after school and chose three publishers to present their mathematics programs: Houghton-Mifflin, Scott-Foresman, and American Book Company.

February 28 - March 4
School was dismissed early so teachers could attend the three publisher's presentations.
March 7 - 11
 We held our sixth Curriculum Committee meeting.

We prepared a mathematics budget proposal to be presented to the board of education. The Curriculum Committee decided to have mathematics teachers write objectives.

March 14 - 18
 The Math Budget Proposal was presented to the board of education. (See Appendix D) The budget was approved for Houghton-Mifflin for grades kindergarten through twelve at a cost of $5,767.41, plus shipping. I assisted Mr. Funk, the Superintendent, in completing the free textbook applications from the Illinois Office of Education.

March 21 - 25
 I prepared requisitions for grades kindergarten through six based upon the approved mathematics budget.

March 28 - April 1
 I developed a workshop program on preparing mathematics objectives.

April 4 - 8
 I presented workshops on writing mathematics objectives at our regular elementary building teacher's meeting. The teachers received sample materials and a copy of the mathematics goals to assist them in writing objectives.

April 11 - 29
 I assisted and encouraged teachers in their effort to write mathematics objectives.

May 2 - 6
 We held two half-day Curriculum Committee meetings
on May 2 and 3. Each building met separately to complete and refine its mathematics objectives.

May 9 - 13
We held a half-day Curriculum Committee meeting on May 12. At this meeting we put the mathematics objectives together in a grade kindergarten through twelve package. We evaluated the year's work and decided the Curriculum Committee needed to develop a handbook as a guide for future committees.

May 16 - 20
Each building secretary was busy preparing mathematics objectives to be presented to the board of education.

May 23 - 27
On May 23, 1977, we presented the mathematics objectives to the board of education. (See Appendix E.) The board members congratulated the Curriculum Committee on its good work.
August 15 - 26
I talked to the new Junior-Senior High School Principal, Mr. Larry Redfern, about the Curriculum Committee. We agreed to the composition of the Curriculum Committee and to wait until September to ask for volunteer members.

August 29 - September 2
I prepared and sent out a statement asking for volunteers to serve on the Curriculum Committee.

September 5 - 9
We received several volunteers and discussed membership on the committee with these teachers.

September 12 - 16
I selected Peggy Heinz and Jack Richburg from the elementary building, and Mr. Redfern chose Don Waters and Debbie Statton to serve on the Curriculum Committee.

September 19 - 23
We held a brief Curriculum Committee meeting after school to introduce members and select a date for our first half-day meeting.

September 26 - 30
I reviewed the Decatur Curriculum Committee Handbook and discussed the purpose of the first meeting with Mr. Redfern and Mr. Funk.

October 3 - 7
We held our first half-day Curriculum Committee meeting on October 5, 1977. We discussed the need for a Curriculum Committee Handbook, reviewed the Decatur Curriculum Committee Handbook, and wrote the first draft of Northwestern's Curriculum Committee Handbook. Each teacher was asked to
prepare a list of publishers from which they wanted sample science materials ordered.

October 10 - 14
I revised the Curriculum Committee Handbook after talking to Mr. Funk and Mr. Redfern. I prepared a form letter and list of publishers with their complete address.

October 17 - 21
We held our second half-day Curriculum Committee meeting on October 18. The Curriculum Committee Handbook was accepted. We discussed strategy to be used in developing our grade kindergarten through twelve science goals. I collected the teacher's lists of publishers. I sent letters to each publisher requesting sample textbooks and materials.

October 24 - 28
At the October 25, 1977, School Board meeting we presented the Curriculum Committee Handbook to the Board. (See Appendix F.)

October 31 - November 4
We asked each science teacher to begin preparing science goals for his/her grade level.

November 7 - 11
I discussed and collected the completed science goals from each teacher.

November 14 - 18
On November 16, we held our third half-day Curriculum Committee meeting. We could not come to a conclusion on science goals and felt we needed a consultant.

November 21 - 25
I contacted Dr. Robert Williams at Southern Illinois University-Edwardsville to arrange a meeting date for him to assist us in preparing science goals.
November 28 - December 2
We examined sample copies of materials that had started arriving.

December 5 - 9
Dr. Williams met with us on December 7, 1977, to assist us in preparing science goals. We agreed upon five important conclusions to be used as guides in developing our science goals. We set a date for an on-site visit with Dr. Williams.

December 12 - 16
The Curriculum Committee members worked on rewriting science goals for their grade levels.

December 19 - 23
Science goals were completed and turned in to building principals.

January 3 - 13
I examined the science goals and made minor revisions in them.

January 16 - 20
On January 18, 1978, the Curriculum Committee went to Edwardsville to meet with Dr. Williams and made three on-site visits to three school districts.

January 23 - 27
The teachers were to complete their examination of sample copies and be prepared to recommend three publishers for the science teacher's meeting.

January 30 - February 3
We held our sixth Curriculum Committee meeting on February 1, 1978. We made minor changes in the science goals and approved them for presentation to the board of education. We selected Houghton-Mifflin, Ginn, and Laidlaw as the publishers for the science teacher's meeting. We also agreed to use the textbook evaluation form included in the
Curriculum Committee Handbook and the Readability Estimator, published by the Charles E. Merrill Company for determining the textbook reading level.

February 6 - 10
I contacted the three publishers to set up a date for their presentation. My secretary typed the science goals for presentation to the board of education.

February 13 - 17
The science goals were presented to the board of education at its meeting on February 13, 1978. (See Appendix G.) We also explained to the board members the method we would use to select science materials and invited them to attend the presentation.

February 20 - 24
We had the publisher's presentations on February 23, 1978. The students were dismissed at 1:00 p.m. so teachers could attend. I collected evaluation forms at the end of the day and tabulated the results.

February 27 - March 3
On March 1, 1978, we held our seventh Curriculum Committee meeting. We examined and tabulated the results and concluded that Ginn would be used for grades kindergarten through six, and Merril for grades seven through nine. The high school science teacher selected science materials for grades ten through twelve. We also agreed upon the strategy for developing science budget proposals.

March 6 - 10
Each teacher was asked to present three science budget proposals for his/her grade level. I then
put them together for a kindergarten through grade twelve science budget proposal to be presented to the board of education.

March 13 - 17

The Curriculum Committee members attended the board of education meeting on March 13, 1978. We discussed each budget proposal with the board members, and they selected the most expensive, $15,550.41. (See Appendix H.) Mr. Funk and I prepared the free textbook application for the Illinois Office of Education. Each science teacher was asked to complete requisitions for the materials approved.

March 20 - 24

I assisted the teachers in completing their requisitions. I collected the requisitions on March 24.

March 27 - 31

Each science teacher was given a copy of the science goals, last year's mathematics objectives and encouraged to begin developing measurable science objectives for their grade level.

April 3 - 14

I assisted the science teachers in developing their objectives. I collected the science objectives from my building on April 14.

April 17 - 21

We held our eighth Curriculum Committee Meeting on April 19. The elementary teachers and I began putting together science objectives and identifying any problems that needed to be taken back to the science teachers in our building. The junior-senior high teachers worked on completion of their objectives.
April 24 - 28  I discussed problems in the science objectives with the elementary teachers, and all were resolved.

May 1 - 5  We held our ninth Curriculum Committee meeting on May 3. We revised the science objectives so there would be a smooth transition from kindergarten through twelfth grade. We also decided to use the testing program provided with the Ginn Series to evaluate student progress and use the S.R.A. achievement test scores in science as an indicator of the program's success.

May 8 - 12  The Curriculum Committee presented the science objectives to the board of education on May 8, 1978. (See Appendix I.) We also sent out a notice asking for volunteers for the 1978-1979 Social Studies Curriculum Committee.

May 15 - 19  Mr. Redfern and I selected our Curriculum Committee members. We had a short meeting after school on May 18, We gave each member a copy of the Curriculum Committee Handbook and ask them to give us a list of publishers from which they wanted sample textbooks and materials ordered.

May 22 - 26  We collected the lists of publishers and sent letters requesting samples.

May 29 - August 18  Sample copies were received and distributed by each principal.
SECTION III

Selected Activity Analysis
Formation of the Curriculum Committee and Adoption Cycle

Northwestern C.U.S.D. #2 was faced with several problems concerning the development of an adoption cycle. Among the major problems were the following:

1. Nearly non-existent communication between buildings.
2. No organized effort in kindergarten through twelfth grade curriculum development.
3. Friction between teachers, administrators and the board of education due to budget cuts and salary freezes.

When I was employed, Mr. Funk and Mr. Launer, President of the School Board, both expressed the hope that I would be able to organize curriculum development on a district wide basis. They felt my background in curriculum development at Decatur plus my unique position of Elementary Principal/Junior-Senior High School Guidance Counselor would assist me in establishing the communication necessary for curriculum development.

After talking with several teachers in both buildings; Mr. Funk; and Mr. Cross, the Junior-Senior High School Principal, I proposed we have a committee of teachers from each building meet with Mr. Cross and I to study the problem of curriculum development. I also suggested to Mr. Funk that these teachers be volunteers and that they be released from their assigned duties to attend meetings. I felt this was necessary due to low morale, driving distances and reluctance to accept additional assignments without pay. Mr. Funk approved my proposal and asked Mr. Cross and I to seek our volunteers to serve on the Curriculum Committee.
I prepared a brief statement on the purpose of the committee, method of operation, and asked for volunteers. After approximately two weeks, neither Mr. Cross nor I had received any volunteers. My second approach was to discuss the committee membership with individual teachers, and I found five willing to serve on the Curriculum Committee. The Curriculum Committee consisted of: Vicky Cordas (grade five); Nancy Givens (grade five); Bob Pierson (grade four); Debbie Statton (grade nine); Linda Coad (grades ten through twelve); Mr. Cross; and myself as Chairman.

Our first Curriculum Committee meeting was held after school. It was very brief since the only purpose was to introduce everyone and set a date for our first half-day meeting.

The first half-day meeting of the Curriculum Committee was held on October 4, 1976. We candidly discussed the various problems the district faced and all members agreed that curriculum development should be a kindergarten through twelfth grade effort. The committee also felt that better communication was needed between buildings and wanted assurance that monies would be available to purchase materials after developing the curriculum.

I then informed the Curriculum Committee of the adoption cycle used by the Decatur Public School District #61. After further discussion, the members agreed that an adoption cycle would be a good method of curriculum development. In addition, we hoped the implementation of the adoption cycle would bring about better communication between all parties involved.

We set our next meeting date for October 20, 1976. We also established two goals to be completed by that date. First, we would survey every teacher in the district concerning the age of their textbooks and materials and their preference as to what subject area should be reviewed first. Secondly, Mr. Cross and I were to talk to Mr. Funk and the board members concerning the certainty
of available funds for this project.

Mr. Cross and I discussed with Mr. Funk, and later the board members, the funding of Curriculum Proposals that would result from the Adoption Cycle. Mr. Funk stated that since the board of education would be presented with several proposals, and the money would come from the following year's school budget, the approved project would be completely funded by the district. Mr. Funk also suggested that we have a five or six year adoption cycle in order to spread the cost of curriculum development over a period of several years.

Mr. Cross and I gathered our survey information from all teachers in both buildings. During our second half-day meeting held on October 20, the Curriculum Committee decided to propose the following six-year Adoption Cycle:

<table>
<thead>
<tr>
<th>Review</th>
<th>Adopt</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-77</td>
<td>1977-78</td>
<td>Math</td>
</tr>
<tr>
<td>1977-78</td>
<td>1978-79</td>
<td>Science</td>
</tr>
<tr>
<td>1978-79</td>
<td>1979-80</td>
<td>Social Studies/History/Career Education</td>
</tr>
<tr>
<td>1979-80</td>
<td>1980-81</td>
<td>Reading-Literature</td>
</tr>
<tr>
<td>1980-81</td>
<td>1981-82</td>
<td>Language/Grammer</td>
</tr>
<tr>
<td>1981-82</td>
<td>1982-83</td>
<td>Other Areas (i.e. Vocational Education, Driver Education, Business Education, Health Education)</td>
</tr>
<tr>
<td>1982-83</td>
<td>1983-84</td>
<td>Math</td>
</tr>
</tbody>
</table>

We based the Adoption Cycle mainly upon the following:

1. The dates of the present textbooks.
2. Individual teacher preferences.
3. General feeling of the Curriculum Committee members.

The Curriculum Committee decided to have a district teacher's meeting to explain the proposed Adoption Cycle and then have another meeting in approximately two weeks to answer any questions and try to resolve any disagreements.
Students were dismissed at 2:00 p.m. on October 26, 1976, to enable teachers to attend the first district teacher's meeting on the Curriculum Adoption Cycle. Each teacher was given a copy of the proposed Curriculum Adoption Cycle and an explanation as to how and why it was developed. The last portion of this meeting was devoted to general discussion and answering any questions.

On Thursday, November 4, 1976, we scheduled the second district teacher's meeting on the Curriculum Adoption Cycle. The meeting was scheduled for immediately after school dismissal in the high school Library. The purpose of the meeting was to consider any further questions or suggested changes brought about after studying the proposed Adoption Cycle. No one except the Curriculum Committee members attended this meeting. We were, therefore, able to recommend the Adoption Cycle as proposed by our Curriculum Committee. On November 8, 1976, the board of education approved the Adoption Cycle.

At our Curriculum Committee meeting after School Board approval of the Adoption Cycle, the committee decided to add Pam Stritzel to their numbership. Pam would represent grades kindergarten through three, thus giving us a kindergarten through grade twelve representation on the Curriculum Committee.

The Curriculum Committee agreed upon five broad goals to be completed before the end of the 1976-77 school year. They were:

1. Develop mathematics goals on a kindergarten through grade twelve basis.
2. Select textbooks and materials that would best implement these goals.
3. Prepare budget proposals for presentation to Mr. Funk and the board of education.
4. Develop specific, measurable mathematics objectives, related to
our goals, textbooks and materials.

5. Establish a standard method for evaluating the new mathematics program.

In order to meet the free textbook guidelines, we agreed to complete the first three goals by February, 1977. We also agreed to complete our fourth and fifth goals by the end of the 1976-77 school year.
Development of the Curriculum Committee Handbook and Science Goals

On May 12, 1977, the Curriculum Committee reviewed the past year's work, committee members felt they had made substantial progress and actually had been quite successful in promoting communication and good will, while developing a new mathematics curriculum.

We recommended that next year's Curriculum Committee develop a Curriculum Committee Handbook to be used as a guide by future committees. The primary purpose for the Curriculum Committee Handbook was to resolve the following problems:

1. Lack of a general philosophy of the Curriculum Committee.
2. Need for predetermined timetable for completion of Curriculum Committee goals.
3. Identification of a reading level instrument to be used to evaluate all textbooks.
4. Additional time for textbook evaluation.

At the onset of the 1977-1978 school year, Mr. Redfern, our new Junior-Senior High School Principal, and I selected volunteers to serve on the Science Curriculum Committee. The members were: Peggy Heinz (grade three, Science); Jack Richburg (grade six, Science); Don Waters (Junior High School, Science); Debbie Statton (Senior High School, Science); Larry Redfern (Junior-Senior High School Principal); myself (Elementary Principal).

The first meeting of the Curriculum Committee was held on September 21. This brief meeting was scheduled for the purpose of introducing the members and setting a date for our first half-day meeting.

The primary goal of the first half-day meeting held on October 5, 1977,
was to begin development of a Curriculum Committee Handbook which could be used as a guide for future Northwestern Curriculum Committees. The first part of the meeting was spent discussing the need for the Curriculum Committee Handbook. When the committee had agreed to develop a Curriculum Committee Handbook, I distributed copies of the Curriculum Committee Handbook of the Decatur Public School District #61. We selected several portions we felt could be used as guidelines in composing our handbook. The most difficult section of the handbook to complete was the schedule of events (Timetable). Future Curriculum Committees may wish to adjust the schedule in order to meet their unique needs. We completed the first draft of our Curriculum Committee Handbook and set a date for our next meeting.

After the first meeting of the Curriculum Committee, I had three typewritten copies of the proposed Curriculum Committee Handbook prepared. Mr. Redfern and I took a few days to look over the proposed handbook. We then met to discuss what changes we might make before presentation to the Superintendent. Mr. Redfern and I agreed upon a few minor changes in the Curriculum Committee Handbook. The Handbook was retyped and copies distributed to the Curriculum Committee members for their review prior to the second half-day meeting.

Our second half-day meeting was held on October 18, 1977. We discussed and accepted the revised Curriculum Committee Handbook. At this meeting we also agreed upon the strategy for developing science goals. The strategy was to have each science teacher prepare a copy of his/her present goals along with any suggestions for deletions or additions. These goals were to be submitted to their building principals before the next Curriculum Committee meeting scheduled for November 16, 1977. I made myself available to the teachers for any assistance they might need in completing their science goals.
The Curriculum Committee Handbook was presented to the School Board on October 25, 1977, by the Curriculum Committee. (See Appendix F.) After discussing the purpose of the Curriculum Committee Handbook, it was unanimously approved by the board of education. The school board members congratulated the committee on their hard work and foresight.

The purpose of the third half-day meeting was to develop a kindergarten through grade twelve flow chart of science goals. After much discussion and several attempts to prepare a flow chart, we decided to consult an expert in science curriculum for assistance.

I contacted Dr. Robert Williams of Southern Illinois University-Edwardsville and requested his assistance, as I knew him from previous work and felt his expertise in science education would be invaluable. Dr. Williams agreed to attend our fourth half-day session held on December 7, 1977.

We began our fourth half-day meeting with a discussion of the problems we faced in developing a flow chart of our science goals. With Dr. Williams assistance we reached the following conclusions:

1. We should divide the field of science into several areas and develop each separately.
2. Science concepts taught at our level very seldom act as building blocks.
3. It is not necessary to cover every area of science at each grade level.
4. It would be best to cover a few concepts thoroughly at each grade level.
5. There must be assurances that all major concepts would be covered in grades kindergarten through nine, leaving grades ten through twelve for intensified specialization.
With these conclusions in mind, the Curriculum Committee members were asked to develop goals for their grade levels in the following areas:

1. Living Things
2. Earth Science
3. Physical Science
4. Space

Mr. Redfern and I assisted the Curriculum Committee members in completing their science goals using the guidelines developed at our last meeting. The science goals were submitted to Mr. Redfern and me on January 18, 1978.

Mr. Redfern and I examined the science goals and made corrections necessary for a smooth transition from kindergarten through grade twelve. Our secretaries typed the science goals and a copy was presented to the Superintendent. After Mr. Funk approved the science goals, they were presented to the board of education on February 13, 1978 (See Appendix G).
Selection of Science Textbooks and Materials/
Preparation of the Science Budget Proposal

During our first half-day session on October 5, 1977, each Curriculum Committee member was asked to prepare a list of publishers from which they would like sample textbooks and materials.

The next week I prepared a form letter to publishers and a list of their complete addresses. During our second half-day meeting of the Curriculum Committee on October 18, 1977, I collected the lists of publishers compiled by the members. I then sent a letter to each requesting samples of their textbooks.

All Curriculum Committee members began examination of samples as they arrived.

During our fourth half-day Curriculum Committee meeting, December 7, with Dr. Williams, we arranged a trip to Southern Illinois University-Edwardsville and some nearby school districts.

On January 18, 1978, the Curriculum Committee traveled to Edwardsville to meet with Dr. Williams. He had arranged three on-sight visitations in neighboring school districts. After the last visitation we returned to Dr. Williams' work area to discuss what we had seen. Dr. Williams had several suggestions for supplemental materials which he demonstrated to the committee. By the end of the day the Curriculum Committee members were excited about selecting three publishers to present their programs to the entire science staff.

Before our sixth meeting, the Curriculum Committee was to complete their examination of sample textbooks and materials. Upon completion of this examination they were to be prepared to recommend three publishers.

During our sixth half-day meeting on February 1, 1978, we discussed the
advantages and disadvantages of several publisher's programs. After a long period of discussion, we selected Houghton-Mifflin, Ginn and Laidlaw. We also agreed to use the textbook evaluation form included in the Curriculum Committee Handbook and the Readability Estimator published by the Charles E. Merrill Company for determining the reading level of each textbook.

I contacted the three publishers later that week and asked for additional sample copies of textbooks and materials for each science teacher in the district to evaluate. I also arranged for the publisher presentations on February 23. At the board of education meeting on February 13, 1978, the Curriculum Committee informed the board members of the selection process used and the date for final selection. Every board member was invited to attend and participate in the final selection.

On February 23, 1978, students were dismissed at 1:00 p.m. so teachers would be free to attend publisher presentations. Houghton-Mifflin began its presentation at 1:15 p.m. in the Library; meanwhile the Laidlaw representative was setting up in the Cafeteria. While we were in the Cafeteria, the Ginn representative set up his presentation in the Library. The Ginn presentation was at 2:45 p.m. and from 3:30 to 4:00 p.m. we held a closed meeting concerning the final selection. Before everyone left for the day, I collected their evaluation forms. I felt the teachers should make their final decision while the presentations were fresh in their minds and before they could be unduly influenced by their peers. Once I received all evaluation forms, I tallied the results on a blank copy of the evaluation form.

During our seventh half-day meeting of the Curriculum Committee on March 1, we discussed the tabulated results of our evaluation of textbooks. Ginn was chosen for the science program for grades kindergarten through six. The junior-senior high school teachers chose the Merril Science Program for grades seven
through nine. The high school science teacher selected those textbooks she felt would best assist her in meeting the science goals for grades ten through twelve.

Before concluding our seventh meeting, we agreed upon the methods the two buildings would use to develop science budget proposals. The Curriculum Committee asked each elementary science teacher to develop three budget proposals: a) what he/she would consider an ideal program, b) what he/she would like to have and c) what he/she felt we must have. The secondary science teachers felt they should inventory their present materials before preparing a budget. These teachers were given additional released time to prepare their inventory and three budget proposals.

I discussed with the two elementary Curriculum Committee members the budget proposals received from each teacher before putting the final budget proposals together. Mr. Redfern later sent me a copy of the three budget proposals for the junior-senior high school building. I combined the two building's proposals in order to develop a district budget proposal. (See Appendix H).

The Curriculum Committee attended the board of education meeting on March 13. We discussed each budget proposal with the board members and much to our delight, they approved the proposal considered to be an ideal program at a cost of $18,550.41. One board member commented that this was the first district-wide effort in science since he had been on the school board and thought it should be encouraged to the fullest of the school board's ability.

After the proposal was approved, each Curriculum Committee member was asked to prepare the necessary requisition forms for his/her grade levels. On March 24, 1978, I collected the requisitions and checked them for accuracy and thoroughness. After being sure that all approved materials were ordered,
I submitted the requisitions to the Superintendent. I also assisted Mr. Funk in applying for free textbooks from the Illinois Office of Education and was later notified that the district would receive free textbooks for grades seven, eight and nine.
SECTION IV

Conclusion
During the first year of the Curriculum Committee's existence, 1976-1977, we met for eight half-day sessions. We also had one full-day workshop in Decatur, Illinois. There were also two brief meetings held after school. The Superintendent dismissed school early on two occasions for teacher workshops.

Expenses incurred by the School District are summarized below:

Substitute Teachers

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight half-days</td>
<td>$1,015.00</td>
</tr>
<tr>
<td>One full day</td>
<td></td>
</tr>
</tbody>
</table>

Mileage and Meals

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>One trip to Decatur, Illinois</td>
<td>70.00</td>
</tr>
</tbody>
</table>

Math Budget

| Amount | 5,767.41 |

Shipping

| Amount | 129.78   |

State funds from free textbook program

| Amount | -1,091.88 |

Total Expense

| Amount | $5,890.31 |

The cost per student was approximately $8.17 based on an average daily attendance of 718 students.

The secretary and administrator's time was not included in the cost to the School District. I felt that curriculum development is part of every building principal's duty.

For a cost of $8.17 per student, the Curriculum Committee accomplished the following:

1. It produced the first Curriculum Adoption Cycle ever used by Northwestern C.U.S.D. #2.

2. It developed comprehensive kindergarten through grade twelve mathematics goals.
3. It prepared comprehensive kindergarten through grade twelve measurable mathematics objectives.

4. It obtained School Board approval to purchase new mathematics textbooks and materials.

5. It obtained free textbooks for grades four, five and six through the Illinois Office of Education.

It is important to remember that the previously mentioned accomplishments of the 1976-1977 Curriculum Committee were achieved in spite of many obstacles. These included low teacher morale in both buildings, friction between teachers, administrators and the board of education, budget cuts and salary freezes.

Through the work of the Curriculum Committee there was great improvement in communication and positive working relationships at Northwestern. Teachers, administrators and school board members worked together for a common goal, and old anxieties seemed to be melting away.

The 1977-1978 Curriculum Committee met for eight half-day sessions and one full-day visitation to Southern Illinois University-Edwardsville and nearby school districts. The junior-senior high school teachers were given released time to complete their inventory. We held one short meeting after school, and students were dismissed early for the publisher's presentations.

Expenses incurred by the School District are summarized below:

Substitute Teachers

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight half-days</td>
<td></td>
</tr>
<tr>
<td>One full-day</td>
<td>$700.00</td>
</tr>
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Mileage and Meals

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Trip to Edwardsville</td>
<td>50.40</td>
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Science Budget

<table>
<thead>
<tr>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,550.41</td>
</tr>
</tbody>
</table>

Shipping

<table>
<thead>
<tr>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>278.63</td>
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State funds from free textbook program

<table>
<thead>
<tr>
<th>Amount</th>
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<tbody>
<tr>
<td>19,579.44</td>
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</table>

<table>
<thead>
<tr>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1,710.00</td>
</tr>
</tbody>
</table>

Total Expense

<table>
<thead>
<tr>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$17,869.44</td>
</tr>
</tbody>
</table>
The cost per student was approximately $25.28 based on an average daily attendance of 707.

Again, the secretary and administrator's time was not included in the cost to the School District for the science adoption. Also, the released time for the science teachers to take an inventory was not charged to the district because it was not necessary. Fellow teachers, Mr. Redfern and I volunteered to cover classes for the science teacher's inventory. This reflects the positive change in attitude and morale of the entire school district.

For a cost of $25.28 per student, the 1977-1978 Curriculum Committee produced the following:

2. Comprehensive kindergarten through twelfth grade science goals.
3. Measurable comprehensive kindergarten through twelfth grade science objectives.
4. Acceptance by the School Board of the science budget proposal that included all materials desired by the Curriculum Committee.
5. Free textbooks for grades seven, eight and nine from the Illinois Office of Education.

There were several areas in which the functioning of the Curriculum Committee improved. Improvements were made in the following:

1. Budget proposal development.
2. Organization of publisher presentations.
3. Using the expertise of a consultant.
The communication, attitude and morale throughout the school district continued to improve. I am sure the 1978-1979 Curriculum Committee continued to foster good will and made significant strides in curriculum development.

I have learned in my two years as Curriculum Committee Chairman that curriculum development is an ongoing process, always changing and improving.

One significant improvement I would like to have seen is the inclusion of the librarian as an associate member of all Curriculum Committees. My reasoning for this is that Title IV funds could be utilized to purchase supplemental materials. This would assure the Curriculum Committee that its efforts in selecting supplemental materials would be rewarded and the librarian that the materials ordered would be used by teachers and/or students.

It would also be advantageous for the Title I coordinator to be involved in curriculum development whenever the committee is studying reading, language arts, or mathematics. My reason is that remedial programs in these subject areas should be coordinated with any new programs developed for the classroom. This would enable the Title I personnel to keep their programs updated and maximize their ability to assist remedial students to function in the regular program.

Finally, I would recommend the inclusion of parents as members of the Curriculum Committee. The original membership of the 1977-1978 Curriculum Committee included two parent volunteers. However, one accepted full-time employment and the other moved out of the School District. I believe, in spite of the absence of parents on our committees, that parent membership is an asset because of the added perspective they would provide.

I felt my participation in the curriculum development at Northwestern was both challenging and rewarding.
I have been credited by Mr. Funk for initiating the Curriculum Committee and successfully guiding it through its first two years. However, none of the Curriculum Committee's accomplishments could have been achieved without the hard work, dedication and cooperation of the teachers, secretaries, fellow administrators and the school board members.
List of Resources

The Illinois Program for Evaluation, Supervision, and Recognition of Schools (Circular Series A Number 160)
Mr. Joseph Cronin
Superintendent of Education
State Board of Education
100 North First Street
Springfield, IL 62777

Rules and Regulations to Govern the Administration and Operation of the Secular Textbook Loan Program
Mr. Joseph Cronin
Superintendent of Education
State Board of Education
100 North First Street
Springfield, IL 62777

Guidelines for Proposal Writers Title IV E.S.E.A.
Mr. James Mendenhall
Department of Federal and State Grants
100 North First Street
Springfield, IL 62777

Public Law 95-561, Amendment to Title I Elementary and Secondary Act of 1965
Robert H. Hardy, Jr.
Compensatory Education Section
E.S.E.A. Title I
100 North First Street
Springfield, IL 62777

Task Force Handbook, Curriculum Advisory Council, Decatur Public School District #61
Mr. Robert Oakes
101 West Cerro Gordo
Decatur, IL 62523
Northwestern C.U.S.D. #2
Six Year Adoption Cycle

<table>
<thead>
<tr>
<th></th>
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<td>MATH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCIENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL STUDIES</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LANG. ARTS.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>READING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALL OTHERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Starting date for curriculum study

Starting date for implementation of program
CURRICULUM COMMITTEE GOALS
1976-1977

1. Develop mathematics goals on a kindergarten through grade twelve basis.
2. Select textbooks and materials that would best implement these goals.
3. Prepare budget proposals for presentation to Mr. Funk and the Board of Education.
4. Develop specific, measurable mathematics objectives, related to our goals, textbooks and materials.
5. Establish a standard for evaluating the new Mathematics program.
The development of the science goals is explained in detail in Section III. The mathematics goals found in Appendix C were developed as a flow chart. The Curriculum Committee felt this would show the developmental sequence they desired in their mathematics curriculum. The percent shown in each box indicates the number of students in each grade expected to complete the goal.
NORTHWESTERN COMMUNITY UNIT DISTRICT
NO. 2

MATH GOALS
(K - 6)

TELL ME - I FORGET

SHOW ME - I REMEMBER

INVOLVE ME - I UNDERSTAND

Submitted by:
Math Committee
December 8, 1976
<table>
<thead>
<tr>
<th>GRADE 1</th>
<th>GRADE 2</th>
<th>GRADE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KINDERGARTEN</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Recognizing Shapes.</td>
<td>1. Sets; more than, less than.</td>
<td>1. Addition of facts up to 10.</td>
</tr>
<tr>
<td>2. Sizes, such as length, width, possible a little use of 6&quot; ruler.</td>
<td>2. Matching sets.</td>
<td></td>
</tr>
<tr>
<td>3. Some measurement facts just as introduction.</td>
<td>3. Numerals 0-20 (recognition and sequential order).</td>
<td></td>
</tr>
<tr>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Measurement to the nearest inch.</td>
<td>1. Use 1 to 1 matching.</td>
<td>1. Identify addition operation, plus (signs (+)) &amp; language (addend, sum, etc.).</td>
</tr>
<tr>
<td>2. Distinguish between open and closed curves.</td>
<td>2. Read &amp; write numbers to 100.</td>
<td>2. Identify subtraction minus sign (-) &amp; language (difference etc.).</td>
</tr>
<tr>
<td>3. Recognize triangle, square, rectangle, circle.</td>
<td>3. Use ordinal numbers from 1st to 10th.</td>
<td>2. Be able to use number line to add.</td>
</tr>
<tr>
<td></td>
<td>4. Count by 2's, 5's &amp; 10's to 100.</td>
<td>3. Subtraction facts to 10.</td>
</tr>
<tr>
<td></td>
<td>5. Forms and identify sets (more than &amp; less than).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Use even &amp; odd numbers.</td>
<td>4. Be able to use number line to add.</td>
</tr>
<tr>
<td></td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GRADE 1</strong></td>
<td><strong>GRADE 2</strong></td>
<td><strong>GRADE 3</strong></td>
</tr>
<tr>
<td>2. Simple measurement.</td>
<td></td>
<td>2. Be able to understand basics of geometry.</td>
</tr>
<tr>
<td>100%</td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Can do simple comparison in length, size, &amp; weight.</td>
<td>1. Understanding meaning of sets.</td>
<td>1. Add two &amp; three numbers.</td>
</tr>
<tr>
<td>2. Be able to understand basics of geometry.</td>
<td></td>
<td>2. Can reason &amp; solve word problems.</td>
</tr>
<tr>
<td>85%</td>
<td>95%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Timetables 2's, 3's &amp; 5's.</td>
<td>1. Basic addition facts thru 18 with emphasis on 13-18.</td>
<td>1. Subtract two &amp; three place numbers (borrowing).</td>
</tr>
<tr>
<td></td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Two place addition (carrying).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>3. Solve word problems.</td>
<td>1. Be able to multiply rapidly through 9's.</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td></td>
</tr>
</tbody>
</table>
| | | 0's - 5's 100%, 0's - 9's 60%
<table>
<thead>
<tr>
<th>GRADE 4</th>
<th>GRADE 5</th>
<th>GRADE 6</th>
</tr>
</thead>
</table>
| 1. Simple measurement: length-cm, mm, angles-degrees, perimeters, areas or parallelograms.  
2. Terminology introduced: parallel, congruent, right angle, radius, diameter.  
3. Use of protractor & compass.  
50% | 1. Review multidigit addition problems.  
2. Word problems.  
60% | 1. Subtraction of multidigit numbers with borrowing.  
85-90% |
| 1. Add four & five digit problems with carrying, also columns.  
2. Commutative & associative properties.  
80% | 1. Subtraction up to four digits with & without borrowing.  
80% | 1. Timetable (1-10).  
85%  
1. One digit problems.  
85%  
2. Two & three digit problems.  
50% of class achieve 75% or better on test using 2 or 3 digit problems in multiplication.  
80% |
| 1. Subtraction of multidigit numbers with borrowing.  
85% | 1. Subtraction of multidigit numbers with borrowing.  
100% | 1. Timetables (0-10).  
100%  
Do 45 basic facts in 4 min. with no mistakes.  
90%  
2. One-digit problems.  
90%  
3. Two & three digit problems.  
90%  
4. Four & five digit problems.  
60%  
5. Word problems.  
40% |
| 1. Basic geometry shapes & designs.  
65%  
2. Understanding of "foot-pound" & metric measuring system.  
85% | 1. Review multidigit addition problems.  
100% | 1. One & two digit multiplication.  
100%  
2. Word problems.  
10% |
1. Recognize:

$\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$,

$\frac{1}{3}$ & $\frac{2}{3}$. 
<table>
<thead>
<tr>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. One digit evenly into two &amp; three digit numbers. 75 - 80%</td>
<td>1. One digit division even &amp; with remainders. 85%</td>
<td>1. One &amp; two digit division. 100%</td>
</tr>
<tr>
<td>2. Two digit into two &amp; three digit numbers. 25%</td>
<td>2. Multi-digit division even &amp; with remainders. 60%</td>
<td>2. Word problems. 10%</td>
</tr>
<tr>
<td>1. Equivalent and renaming</td>
<td>1. Equivalent &amp; renaming (reducing &amp; changing to mixed numbers). 60%</td>
<td>1. Addition. 100%</td>
</tr>
<tr>
<td>1. Place value.</td>
<td>2. Addition &amp; subtraction. 50%</td>
<td>2. Subtraction 100%</td>
</tr>
<tr>
<td></td>
<td>3. Multiplication. 45 - 50%</td>
<td>3. Multiplication. 40 - 50%</td>
</tr>
<tr>
<td></td>
<td>4. Division. 30%</td>
<td>4. Division. 40 - 50%</td>
</tr>
<tr>
<td></td>
<td>5. Word problems. 10%</td>
<td>5. Word problems. 10%</td>
</tr>
<tr>
<td>1. Recognition of reverse operation thru checking problems. 60%</td>
<td>1. Decimals, percents, interest &amp; finance charges. 100%</td>
<td>1. Decimals, percents, interest &amp; finance charges. 100%</td>
</tr>
</tbody>
</table>
APPENDIX D
PROPOSED MATHEMATICS ADOPTION

for

1977-78 through 1983-84

presented by

K-12 Curriculum Committee

March 14th, 1977
The Northwestern Community Unit School District No. 2 committee members for this proposal are:

**Elementary School**

Charles Langley, Principal  
Vicky Cordes - 5th Grade  
Bob Pearson - 4th Grade

**Jr. - Sr. High School**

William Cross, Principal  
Debbie Staton - General Math  
Linda Coad - 9-12 Math

Note: We received additional help from Ron Bryan - Jr. High Math and Pam Stritzel - 3rd Grade.

We based our number of books and materials needed upon our current enrollment, with the expectation that our enrollment may increase slightly next year. The enrollment figures below are current as of March 14, 1977:

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Current Enrollment</th>
<th>Number of Books Ordered or on Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>51</td>
<td>55</td>
</tr>
<tr>
<td>1st Grade</td>
<td>51</td>
<td>62</td>
</tr>
<tr>
<td>2nd Grade</td>
<td>58</td>
<td>62</td>
</tr>
<tr>
<td>3rd Grade</td>
<td>44</td>
<td>62</td>
</tr>
<tr>
<td>4th Grade</td>
<td>45</td>
<td>62</td>
</tr>
<tr>
<td>5th Grade</td>
<td>56</td>
<td>62</td>
</tr>
<tr>
<td>6th Grade</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>7th Grade</td>
<td>72</td>
<td>0</td>
</tr>
<tr>
<td>8th Grade</td>
<td>52</td>
<td>0</td>
</tr>
<tr>
<td>9th Grade</td>
<td>70</td>
<td>SEE SEPARATE CHART BELOW</td>
</tr>
<tr>
<td>10th Grade</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>11th Grade</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>12th Grade</td>
<td>39 (45)</td>
<td></td>
</tr>
</tbody>
</table>

| General Math | 35 |
| Algebra I    | 40 |
| Algebra II   | 35 |
| Geometry     | 30 |
| Advanced Math| 20 |

The committee is offering two different programs for the Board's consideration for grade levels K - 8, and one program for grades 9 - 12.

The programs offered are published by Houghton Mifflin and Scott, Foresman & Co. Since we knew the financial situation of the district is difficult, we are presenting a bare bones program and yet one that the entire staff feels they could use to provide a good math program K - 12.

The first proposal for K - 8 is from Scott, Foresman and lists out as follows: (Appendix A)
### Kindergarten:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Students Books (paper)</td>
<td>62</td>
<td>1.92@</td>
<td>$119.04</td>
</tr>
<tr>
<td>Teachers Edition</td>
<td>1</td>
<td>3.03@</td>
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$$3,954.03$$ TOTAL PROGRAM COST K - 8

SCOTT, FORESMAN & CO.
The second proposal for K - 8 is from Houghton Mifflin and carries the strongest recommendation of the committee as well as all teachers who would be involved in using the math materials. It lists out as follows: (Appendix B)

Kindergarten

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Book I

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**Total Program Cost K - 8:** $2,809.09

HOUGHTON MIFFLIN CO.
The secondary proposal is from Houghton Mifflin only and lists out as follows: (Appendix C)

<table>
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<tr>
<th>Course</th>
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**SUMMARY**

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We have selected a very small number of supplementary aides for the math program which include: (Appendix D)

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<td>Intermediate Math Lab Kit (3-6)</td>
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$1,290.38

Finally we recommend the following workshop in Metrics from Lincoln Land Community College. (Appendix E)

19 Teachers $12.00 $228.00
Materials estimate at $6.00/teacher $114.00 $342.00

The total cost of each program can be shown as follows:

| HOUGHTON MIFFLIN K - 8 | $2,809.09 |
| " " 9 - 12 | 1,325.94 |
| Supplements | 1,290.38 |
| Lincoln Land C.C. Metric Workshop K - 12 | 342.00 |
| $5,767.41 |
| SCOTT, FORESMAN & CO. K - 8 | $3,954.03 |
| HOUGHTON MIFFLIN 9 - 12 | 1,325.94 |
| Supplements K - 12 | 1,290.38 |
| Lincoln Land C.C. Metric Workshop K - 12 | 342.00 |
| $6,912.35 |

HOUGHTON MIFFLIN K - 12 5,767.41 divided by 718 equals 8.03 per child.

SCOTT, FORESMAN - HOUGHTON MIFFLIN 6,912.35 divided by 718 equals 9.63 per child.
APPENDIX E
When our Curriculum Committee began developing measurable objectives, we decided not to base our evaluation upon national norms that could not possibly be an accurate reflection of our local conditions and students. We developed objectives we felt to be easy and quick to evaluate periodically throughout the school year.

The Curriculum Committee decided to use teacher prepared tests based on the content of our objectives expecting a certain percentage of correct answers in order to consider the student having successfully completed the objective. We realized that this percentage should raise in some cases as students were repeatedly exposed to certain concepts. The Curriculum Committee felt, for example, that while many students should know their addition facts in the second grade, all students should know them in the fourth grade. The approach was followed throughout all the objectives for grades kindergarten through six.
NORTHWESTERN COMMUNITY UNIT DISTRICT
NO. 2

MATH OBJECTIVES
(K-6)

TELL ME - I FORGET

SHOW ME - I REMEMBER

INVOLVE ME - I UNDERSTAND

Submitted by
Math Committee
May 23, 1977
A. Whole numbers:
   1. 80% of the students will score above 70% on a worksheet dealing with:
      a. Identifying members of sets
      b. Matching members of one set to another
      c. Matching sets with appropriate numbers
      d. Selecting sets that show more, most, fewer, and fewest

   2. 90% of the students will score 100% on a worksheet in which they will identify and place in order the numerals 0 - 10.

B. Fractional numbers:
   1. 85% of the students will demonstrate oral recognition of 1/2 as related to regions and sets.

C. Extensions: (Not covering this area during Kindergarten.)

D. Whole numbers. Addition and Subtraction Facts:
   1. 50% of the students will score above 70% on a worksheet in which they
      a. Join sets to 6
      b. Separate set to 5

E. Whole numbers. Multiplication and Division Facts: (Not covering in Kindergarten.)

F. Whole numbers. Addition, Subtraction Algorithms: (Not covering in Kindergarten.)

G. Whole numbers. Multiplication, Division Algorithms: (Not covering in Kindergarten.)

H. Operations with Fractional Numbers: (Not covering in Kindergarten.)

I. Applications: (Not covering in Kindergarten.)

J. Problem Solving:
   1. 50% of the students will score above 70% on a worksheet in which they order, join, and separate sets using picture sequence.

K. Number Sentences:
   1. 90% of the students will score 70% on a worksheet dealing with:
      a. Matching longest-smallest of set of shapes
      b. Matching longest-shortest of set of shapes

L. Measurements and Geometry:
   1. 85% of the students will identify the shapes of:
      a. Circle
      b. Triangle
      c. Rectangle
      d. Square
   2. 75% of the students will score above 70% on a worksheet dealing with:
      a. Closed curve
      b. Concept of "above/below"
GRADE ONE

A. Whole numbers:
   1. 60% of the students will score above 70% on a worksheet in which they are:
      a. Counting members of sets
      b. Doing one-to-one matching
      c. Showing right, left, and between
   2. 70% of the students will score 95% on a worksheet in which they read, write, compare, and match in order the numerals 0 - 399:

B. Fractional numbers:
   1. 85% of the students will demonstrate oral recognition of 1/2 and 1/4 as related to regions and sets.
   2. 70% of the students will demonstrate oral recognition of fractional form a/b.

C. Extensions:
   1. 85% of the students will score above 100% on a worksheet in which they match ordinal numbers to the "eighth" to ordered drawings.

D. Whole numbers: Addition and Subtraction Facts
   1. 95% of the students will demonstrate understanding of signs (+ - +) by meeting objectives D #2 below.
   2. 85% of the students will score 100% on timed tests of addition and subtraction facts 0 - 9.
   3. 35% of the students will score 100% on timed test of addition and subtraction facts 0 - 18.

E. Whole numbers. Multiplication and Division Facts.
   1. 35% of the students will score 95% on a worksheet in which they count by 2's, 3's, 4's & 5's to 100.

F. Whole numbers. Addition, Subtraction Algorithms:
   1. 85% of the students will score above 70% on a worksheet of two-digit numbers between 10 and 100. (no re-naming!)

G. Whole numbers. Multiplication, Division Algorithms: (Not covering in Grade 1.)

H. Operations with Fractional Numbers: (Not covering in Grade 1.)

I. Applications: (Not covering in Grade 1.)

J. Problem Solving:
   1. 85% of the students will score above 70% on a worksheet in which they solve picture problems using operations of addition and subtraction.

K. Number Sentences: (Not covering in Grade 1.)
GRADE ONE Cont.

L. Measurement and Geometry:
   1. 50% of the students will score above 70% on a worksheet in which they:
      a. Measure inches and centimeters
      b. Estimate inches and centimeters
      c. Show relationship between cup, pint, and quart
      d. Identify time to 1/2 and 1 hour
      e. Show relationship between penny, nickel, and dime
   2. 85% of the students will score above 95% on a worksheet in which they
demonstrate understanding and recognition of:
      a. Open and closed curves
      b. Concept of "inside/outside"
      c. Shapes of rectangles, triangles, circles and squares

M. Logical Thinking (not covering this area during Grade 1.)

N. Number Theory:
   1. 75% of the students will score above 95% on a worksheet using odd
      and even numbers in a series.

O. Probability and Statistics:
   1. 60% of the students will score above 95% on a worksheet where they
      read and answer questions about a bar graph.

P. Functions: (not covering this area during Grade 1.)
GRADE TWO

A. Whole Numbers:
1. 70% of the students will score above 75% on a worksheet in which they:
   a. Count members of sets
   b. Do one-to-one matching
   c. Show more, fewer, before, after, between, less and greater, and (respective signs )
   d. Identify the empty set
2. 70% of the students will score 95% on a worksheet on which they read, write, compare, and match in order numerals 0 - 999.
3. 60% of the students will score above 70% on a worksheet dealing with the relationship between place values.

B. Fractional Numbers:
1. 50% of the students will demonstrate oral recognition of 1/2, 1/4, 3/4, 1/3, 2/3 as related to regions and sets.
2. 80% of the students will demonstrate oral recognition of fractional forms a/b.

C. Extensions:
1. 90% of the students will score above 100% on a worksheet in which they match ordinal numbers to the "tenth" in ordered drawings.

D. Whole Numbers. Addition and Subtraction Facts:
1. 80% of the students will demonstrate understanding of signs (=, +, -) by meeting objective D #2 below.
2. 80% of the students will score 100% on a timed test of addition and subtraction facts 0 - 18.

E. Whole Numbers. Multiplication and Division Facts:
1. 50% of the students will score 95% on a worksheet in which they count by 2's, 3's, 4's, & 5's to 100.
2. 35% of the students will demonstrate understanding of X sign by meeting objectives E3 & E4 below.
3. 35% of the students will score above 70% on a worksheet showing multiplication as repeated addition.
4. 35% of the students will score 100% on a timed test of their X facts at the 2, 3, & 5 level.

F. Whole Numbers. Addition, Subtraction Algorithms:
1. 90% of the students will score above 75% on a worksheet of two-digit numbers between 10 and 100 without renaming.
2. 60% of the students will score above 70% on a worksheet in which they:
   a. Add and subtract 2 digit, 0 - 100 without renaming
   b. Add and subtract 3 digit, 100 - 1000 without renaming
   c. Add 3 addends, 0 - 10, sum greater than 18

G. Whole Numbers. Multiplication, Division Algorithms: (Not covering in Grade 2.)

H. Operations with Fractional Numbers: (Not covering in Grade 2.)

I. Applications: (Not covering in Grade 2.)
J. Problem Solving:
1. 85% of the students will score above 70% on a worksheet in which they will solve word problems by:
   a. Writing number sentences
   b. Working forms

K. Number Sentences:
1. 85% of the students will score above 70% on a worksheet which includes sentences involving:
   a. Addition-subtraction facts sums 18
   b. Multiplication facts on 2, 3, 5 level
   c. Picture problems

L. Measurement and Geometry:
1. 40% of the students will score above 70% on a worksheet in which they
   a. Measure inches, 1/2 inches, feet and centimeters
   b. Estimate w/terms "near" & "between"
   c. Measure distance around (perimeter)
   d. Show relationship between cup, pint, qt., 1/2 gal., gal.,
      metric cup, 1/2 liter, and liter
   e. Identify time to hour, 1/2 hr., 1/4 hr.
   f. Show relationship between penny, nickel, dime, qtr., half dollar
2. 75% of the students will score above 90% on a worksheet in which they demonstrate understanding and recognition of:
   a. Open and closed curve, line, and line segment
   b. Shapes and regions of rectangles, triangles, squares, and circles
   c. Congruent curves

M. Logical Thinking (not covering this area during Grade 2.)

N. Number Theory:
1. 80% of the students will score above 95% on a worksheet using odd and even numbers in a series.

O. Probability and Statistics:
1. 75% of the students will score above 95% on a worksheet in which they read and answer questions about a bar graph.
2. 75% of the students will score above 80% on a worksheet for which they have collected and filled in data for a bar graph.

P. Functions:
1. 50% of the students will score above 70% on a worksheet which contains problems using number pairs in operations of addition, subtraction, and multiplication.
GRADE THREE

A. Whole Numbers:
1. 85% of the students will score above 80% on a worksheet in which they:
   a. Count members of sets
   b. Do one-to-one matching
   c. Show knowledge of more, fewer, before, after, between, less & greater (& respective signs (< >) and nearer and nearest
d. Identify the empty set
2. 75% of the students will score above 95% on a worksheet in which they write by 10's, 100's, & 1000's in order.
3. 60% of the students will score above 75% on a worksheet in which they read, write, compare, match and round off numbers 0 - 1,000,000 (in range of).

B. Fractional No's:
1. 90% of the students will demonstrate oral recognition of fractional form a/b.
2. 70% of the students will demonstrate oral recognition of common fractions (1/2, 1/4, 3/4, etc.) as related to regions & sets.

C. Extensions:
1. 70% of the students will score above 70% on a worksheet in which they match ordinal numbers to the "thousandth" in ordered drawings.

D. Whole Numbers. Addition and Subtraction Facts:
1. 85% of the students will demonstrate understanding of signs (+, -, =, () ) by meeting objectives D#2 below.
2. 85% of the students will score 100% on a timed test of addition and subtraction facts 0 - 18.

E. Whole Numbers. Multiplication and Division Facts:
1. 70% of the students will score 95% on a worksheet in which they count by 2's, 3's, 4's, & 5's to 100.
2. 60% of the students will demonstrate understanding of X and ÷ signs by meeting objective E#3 below.
3. 60% of the students will score 100% on a time test of multiplication and division facts through 5.
4. 40% of the students will score 100% on a time test of multiplication and division facts through 9.

F. Whole Numbers. Addition, Subtraction Algorithms
1. 60% of the students will score above 75% on a worksheet of numbers between 10 and 1,000 with renaming.

G. Whole Numbers. Multiplication, Division Algorithms:
1. 35% of the students will score above 70% on a worksheet:
   a. Of Multiplication of multiples of 10, of 100
   b. Of multiplication of less than 1000
   c. Of division with divisor & quotient between 10 & 100 with and without remainder

H. Operations with Fractional Numbers:
1. 35% of the students will score above 70% on a worksheet of addition with sums to one and like denominators.
GRADE THREE Cont.

I. Operations with Fractional Numbers: (Not covering this area during Grade 3.)

J. Problem Solving:
   1. 85% of the students will score above 80% on a worksheet in which they will solve word problems by:
      a. Writing number sentences
      b. Working forms

K. Number Sentences
   1. 35% of the students will score above 80% on a worksheet which includes sentences involving:
      a. Addition & subtraction facts sums to 18
      b. Multiplication facts
      c. Picture problems
      d. Division facts

L. Measurement and Geometry:
   1. 10% of the students will score above 70% on a worksheet in which they:
      a. Weigh in ounces, pounds, kilograms
      b. Identify and duplicate square inches, square centimeters
      c. Identify time to hr., 1/2 hr., 1/4 hr., min., day, week, & month
      d. Show relationship between penny, nickel, dime, quarter, half dollar, and dollar
   2. 50% of the students will score above 70% on a worksheet in which they demonstrate understanding and recognition of:
      a. Open, closed curve, line, line segment, parallel lines, center, radius, diameter
      b. Congruent curves, segments, angles, right angles, angles larger or smaller than right angles

M. Logical Thinking: (Not covering this area during Grade 3.)

N. Number Theory: (Not covering this area during Grade 3.)

O. Probability and Statistics:
   1. 80% of the students will score above 95% on a worksheet in which they read and answer questions about a bar graph.
   2. 80% of the students will score above 95% on a worksheet in which they have collected and filled in data for a bar graph.
   3. 50% of the students will score above 80% on a worksheet in which they interpret graphs and tables using number pairs.

P. Functions:
   1. 50% of the students will score above 70% on a worksheet which contains problems using number pairs in operations of addition, subtraction, multiplication, and division.
GRADE FOUR

A. Whole Numbers:
   1. 40% of the students will score above 95% on a worksheet in which they orally read, write, and recognize place value in numerals ranging from 0 - 1,000,000,000.
   2. 55% of the students will score above 70% on a worksheet in which they round to the nearest multiple of ten to the 1,000's.

B. Fractional No's:
   1. 50% of the students will score above 70% on a worksheet in which they recognize fractions as a form of division to obtain a mixed numeral.
   2. 60% of the students will score above 70% on a worksheet in which they compare and order fractional properties.

C. Extensions:
   1. 80% of the students will score 100% on a worksheet in which they write Roman Numerals I - X.

D. Whole Numbers. Addition and Subtraction Facts: 
   (Not covering this area during Grade 4.)

E. Whole Numbers. Multiplication and Division Facts:
   1. 60% of the students will score 100% on a time test of multiplication and division facts through 9.

F. Whole Numbers. Addition, Subtraction Algorithms:
   1. 70% of the students will score above 80% on a worksheet of 4 place numbers.

G. Whole Numbers. Multiplication, Division Algorithms:
   1. 50% of the students will score above 75% on a worksheet using:
      a. Multiplication by 10's & 100's
      b. Multiplication by number of less than 10,000
      c. Multiplication with both factors between 10 & 100
      d. Multiplication with one factor less than 10,000 and the other factor between 10 & 100
      e. Division with divisor and quotient between 10 & 100 with and without remainder
      f. Checking division by inverse operation (Multiplication)

H. Operations with Fractional Numbers:
   1. 50% of the students will score above 75% on a worksheet of addition & subtraction of fractional numbers and mixed numerals with sums less than or greater than 1 with like and unlike denominators.
   2. 20% of the students will score above 70% on a worksheet with multiplication of a whole number by a fractional number.

I. Extensions:
   1. 20% of the students will score above 70% on a worksheet with problems involving exponents and powers.
GRADE FOUR Cont.

J. Problem Solving:
1. 60% of the students will score 70% on a worksheet of word problems using whole and fractional numbers and all 4 operations by:
   a. Writing number sentences
   b. Working forms
   c. Working money problems

K. Number Sentences:
1. 50% of the students will score 70% on a worksheet showing understanding of signs ($<$, $>$, $\neq$).
2. 70% of the students will score 95% on the writing of the Families of Facts (0-9).

L. Measurement and Geometry:
1. 35% of the students will score 70% on a worksheet using all standard units of measurement in both English and Metric systems.
2. 35% of the students will score 70% on a worksheet in which they demonstrate understanding and recognition of:
   a. Point, line, line segment, ray, plane, parallel lines, parts of a circle (center, radius, diameter, etc.)
   b. Polygons
   c. Congruent curves, segments, angles, right angles, angles larger and smaller than right angles

M. Logical Thinking: (Not covering this area during Grade 4.)

N. Number Theory:
1. 35% of the students will score above 70% on a worksheet in which they name:
   a. Prime numbers
   b. Multiples, common multiples, LCM
   c. Factors, common factors, GCF

O. Probability and Statistics:
1. 80% of the students will score above 80% on a worksheet in which they read and answer questions about a bar graph, circle graph, and tables.
2. 80% of the students will score above 80% on a worksheet in which they have collected and filled in data for a bar graph, circle graph, and tables.

P. Functions:
1. 20% of the students will score above 70% on a worksheet which contains problems using whole and fractional number pairs in operations of addition, subtraction, multiplication, & division.
GRADE FIVE

A. Whole Numbers:
1. 45% of the students will score above 95% on a worksheet in which they orally read, write, and recognize place value in numerals ranging from 0 - 1,000,000,000.
2. 30% of the students will score above 70% on a worksheet in which they round to the nearest multiple or power of 10.

B. Fractional Numbers:
1. 65% of the students will score above 90% on a worksheet in which they recognize fractions as a form of division to obtain a mixed numeral.
2. 40% of the students will score above 85% on a worksheet in which they
   a. Compare and order fractional numbers
   b. Write fractions as decimals and percents.
   c. Round a decimal to nearest whole numbers.

C. Extensions: (Not covering this area during Grade 5.)

D. Whole Numbers. Addition and Subtraction Facts: (Not covering this area during Grade 5.)

E. Whole Numbers. Multiplication and Division Facts:
1. 80% of the students will score 100% on a time test of multiplication and division facts through 9.

F. Whole Numbers. Addition, Subtraction Algorithms:
1. 90% of the students will score above 70% on a worksheet of numbers up to 1,000,000 with renaming.

G. Whole Numbers. Multiplication, Division Algorithms:
1. 70% of the students will score above 75% on a worksheet using:
   a. Multiplication by 10's and 100's
   b. Multiplication by numbers of less than 10,000
   c. Multiplication with both factors between 10 & 100
   d. Multiplication with one factor less than 10,000 & the other factor between 10 & 100
   e. Division with divisor and quotient between 10 & 100 with and without remainder
   f. Checking division by inverse operation (multiplication)

H. Operations with Fractional Numbers:
1. 60% of the students will score above 75% on a worksheet of addition and subtraction of fractional numbers and mixed numerals with like and unlike denominators.
2. 60% of the students will score above 70% on a worksheet with multiplication of whole and fractional numbers.
3. 60% of the students will score above 70% on a worksheet with division of whole and fractional numbers.
4. 70% of the students will score above 80% on a worksheet with addition and subtraction of decimal numbers to hundredths.
5. 70% of the students will score above 70% on a worksheet with multiplication of decimals by whole numbers and decimals to hundredths.
6. 50% of the students will score above 70% on a worksheet with division of a decimal by a whole number to thousandths.
7. 45% of the students will score above 70% on a worksheet in which they add, subtract, and find percentages.

I. Extensions:
1. 40% of the students will score above 70% on a worksheet with problems involving exponents and powers.

J. Problem Solving:
1. 60% of the students will score 70% on a worksheet of word problems (using whole and fractional numbers and all four operations) by:
   a. Writing number sentences
   b. Working forms
   c. Working money problems

K. Number Sentences:
1. 60% of the students will score above 75% on a worksheet showing an understanding of signs (<, >, ≠)

L. Measurement and Geometry:
1. 50% of the students will score above 70% on a worksheet using all standard units of measurement in both English and Metric systems:
   a. Linear, square, cubic
   b. Capacity (volume)
   c. Weight
   d. Temperature
2. 50% of the students will score above 70% on a worksheet in which they demonstrate an understanding by recognition and drawing of:
   a. Point, line, line segment, ray, plane, parallel lines and parts of a circle (center, radius, diameter, etc.)
   b. Polygons
   c. Congruent curves, segments, angles, right angles, angles larger and smaller than right angles
   d. Drawing shapes with given dimensions

M. Logical Thinking:
1. 20% of the students will score above 70% on a worksheet in which they answer questions about flow charts.

N. Number Theory:
1. 50% of the students will score above 70% on a worksheet in which they name:
   a. Prime numbers
   b. Multiples, common multiples, LCM
   c. Factors, common factors, GCF, prime factors
2. 30% of the students will score above 70% on a worksheet in which they recognize and name number patterns.

O. Probability and Statistics:
1. 80% of the students will score above 80% on a worksheet in which they read and answer questions about a bar graph, tables, number plane, and ordered pairs.
GRADE SIX

A. Whole Numbers:
   1. 45% of the students will score above 80% on a worksheet in which they orally read, write and recognize place value in numerals ranging from 0 - 1,000,000,000,000.
   2. 40% of the students will score above 70% on a worksheet in which they round to the nearest multiple or power of 10.

B. Fractional Numbers:
   1. 80% of the students will score above 90% on a worksheet in which they recognize fractions as a form of division to obtain a mixed numeral.
   2. 45% of the students will score above 85% on a worksheet in which they:
      a. Compare and order fractional numbers and decimals
      b. Write fractions as decimals and percent
      c. Round decimals to nearest whole number
      d. Solve ratio problems

C. Extensions:
   1. 50% of the students will score above 70% on a worksheet in which they:
      a. Read and write Roman Numerals
      b. Read and write rational and irrational numbers

D. Whole Numbers. Addition and Subtraction Facts: (Not covering this area in Grade 6)

E. Whole Numbers. Multiplication and Division Facts:
   1. 80% of the students will score above 100% on a time test of multiplication and division facts through 9.

F. Whole Numbers. Addition, Subtraction Algorithms:
   1. 80% of the students will score above 80% on a worksheet using:
      a. Multiplication by 10's, 100's & 1000's
      b. Multiplication by numbers of less than 10,000
      c. Multiplication with both factors between 10 & 1000
      d. Multiplication with one factor less than 10,000 and the other factor between 10 and 1000
      e. Division with divisor and quotient between 10 and 1000 with and without remainders.
      f. Checking division by inverse operation (multiplication)

H. Operations with Fractional Numbers:
   1. 70% of the students will score above 70% on a worksheet of addition and subtraction of fractional numbers and mixed numerals with sums
   2. 60% of the students will score above 70% on a worksheet with multiplication of a whole number, fractional number, and/or mixed numerals.
   3. 60% of the students will score above 70% on a worksheet with division of a whole number, fractional number and/or mixed number.
   4. 80% of the students will score above 80% on a worksheet in which they add and subtract decimals to 1000ths.
5. 75% of the students will score above 70% on a worksheet in which they multiply decimals by whole numbers and decimals to 1000ths.

6. 70% of the students will score above 70% on a worksheet in which they divide a decimal by whole numbers and decimals to 1000ths.

7. 60% of the students will score above 70% on a worksheet in which they add, subtract, and find percentages.

I. Extensions:
1. 50% of the students will score above 80% on a worksheet with problems involving exponents and powers.
2. 25% of the students will score above 70% on a worksheet finding squares and square roots of numbers when given a table.

J. Problem Solving:
1. 60% of the students will score above 80% on a worksheet of word problems (whole, fractional, decimals, percents & all 4 operations) by:
   a. Writing number sentences
   b. Working forms
   c. Working money problems

K. Number Sentences:
1. 35% of the students will score above 70% on a worksheet they will use letters as place holders.

L. Measurement & Geometry:
1. 60% of the students will score above 70% on a worksheet using all standard units of measurement in both English and Metric systems:
   a. Linear, square, cubic
   b. Capacity
   c. Weight
   d. Temperature
2. 50% of the students will score above 75% on a worksheet in which they demonstrate an understanding by recognition and drawing of:
   a. Point, line, line segment, ray, plane, parallel line, parts of a circle (center, radius, diameter, etc.)
   b. Polygons
   c. Congruent curves, segments, angles, right angles, angles larger and smaller than right angles.
   d. Drawing shapes with given dimensions (examples, congruent angles and triangles, bisecting segments and angles)

M. Logical Thinking:
1. 50% of the students will score above 70% on a worksheet in which they construct and answer questions concerning said chart.

N. Number Theory:
1. 60% of the students will score above 75% on a worksheet in which they name:
   a. Prime numbers
   b. Multiples, common multiples, LCM
   c. Factors, common factors, GCF
2. 45% of the students will score above 70% on a worksheet in which they recognize and complete number patterns.
GRADE FIVE Cont.

0. Probability and Statistics:
   1. 50% of the students will score above 70% on a worksheet in which they find averages, locate median and mode of a set of given numbers.
   2. 30% of the students will score above 70% on a worksheet in which they determine the probability of single or paired events when needed data is given.

P. Functions:
   1. 60% of the students will score above 70% on a worksheet in which they write number pairs when given the rule or an equation.
   2. 50% of the students will score above 70% on a worksheet in which they graph number pairs when given the rule or an equation.
APPENDIX F
CURRICULUM MATERIALS

COMMITTEE

HANDBOOK

"BETTER TEACHING BY TEACHERS THROUGH BETTER SERVICE TO TEACHERS"

NORTHEASTERN COMMUNITY UNIT
DISTRICT # 2
Palmyra, Illinois

Victor M. Funk
Superintendent
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CURRICULUM COMMITTEE HANDBOOK

Purpose of the Curriculum Adoption Cycle Handbook

The formulation of the handbook is based on the following premises:

1. That teachers and administrators need to be actively and cooperatively involved in the curricular decision-making process.

2. That curriculum change efforts are a function of planning rather than responding to immediate problems.

3. That the setting of goals and rational movement toward them are essential ingredients of dynamic, workable organizations.

Responsibilities of the Curriculum Committee Using Handbook

1. Establish and maintain long-range plans for systematic approaches to overall curriculum development and maintenance. The basic objectives of such plans are:
   a. To provide for K-12 articulation, planning, and development of curriculum.
   b. To provide for the coordination of the several curriculum areas.
   c. To assure maximum funding in order that curriculum efforts may be implemented.
   d. To minimize "piecemeal" and "patchwork" results in planning curricula.
   e. To operate within guidelines requiring basic adopted materials to be used a minimum of six years.
   f. To insure a continuum of curriculum committee activities and evaluation.

2. Make recommendations to the superintendent and the school board regarding curriculum change, innovation, or modification.

3. Maintain a general policy under which the groups operate.
Philosophy of Curriculum Development

Curriculum development involves more than decisions about the subject matter of courses and what materials are to be used. Curriculum study must also focus on how learning takes place.

What is learned—the content of a course—is more than what is to be covered. The critical content of any learning experience is the method or process through which the learning occurs.

What students do in class is what they learn. If what they are asked to do is listen to, or read, an authoritative point of view and remember and repeat to the satisfaction of an authority, these processes will be learned, and these are what the students may learn to value.

If they are asked to make observations, formulate definitions, or question a situation or concept, these processes will be learned, and these are what the students may learn to value.

Once a student has learned how to ask questions—relevant and appropriate and substantial questions—he has learned how to learn and can learn whatever he needs to know.

Asking questions is behavior. If the students do not ask questions, they do not learn that behavior. An education which guides students in learning to question promotes the beliefs and behaviors that are necessary for the survival of a democratic constitutional society.

Six Year Plan

Table I shows the basic curriculum areas listed vertically with the committee's completion dates shown horizontally across the top. Curriculum committees will be initiated early enough in the six-year cycle to allow approximately one full school year of preparation prior to target dates.

The basic funds available to the committee for instructional materials come from the Educational Fund of District No. 2. Funds will be added as they become available to replace damaged books, supplies and consumables.

Curriculum Committee Operations

Teacher committees constitute the backbone of the process of curriculum development. They are composed of interested and competent teachers in the subject, service, or supportive areas of the curriculum which have been selected for special emphasis or study.
Organization of the Curriculum Committee

1. The school board and the superintendent defines the composition, the size, and the operational boundaries of the curriculum committee.

2. The curriculum committee, once it has been selected and has begun its work, is responsible to the school board and the superintendent for committee completion. The committee will be asked to report to both periodically.

3. The curriculum committee will direct and plan group work, articulate and coordinate K-12 programs, resolve problems, and work out other administrative details.

4. The elementary and secondary principals will be responsible for calling the first organizational meeting of the curriculum committee.

Scheduling of Meetings

1. Curriculum Committee meetings should be scheduled as needed at the end of each previous meeting.

Communications

1. Notification of meetings to participants will come from the principal.

2. The curriculum committee should submit a roster of its membership to the school board.

3. The curriculum committee should work out communicative processes for keeping the professional staff informed of its progress.

Extra Duty Pay and Released Time

Funds for extra duty pay and for released time will vary from year to year. All such details will be worked out through the superintendent each year.

Rationale of the Curriculum Committee

1. People work as individuals and as members of groups on problems that are significant to them.

The problem of developing curriculum is significant to an individual when he can become involved in it emotionally as well as intellectually; when it can be seen as a basis for action; and when a solution is demanded by the urgency of the situation as he perceives it.
2. People change ideas through group interaction. The purpose of a curriculum committee is to produce a desirable change within the instructional system. Since it has been suggested that such changes are best brought about by changes within the instructional staff, the interaction of the group's ideas is a crucial dimension of task force activity.

The group leader may provide opportunities for members to work in small groups, or even individually, as well as in large groups and in informal meetings as well as formal.

3. Continuous attention is given to individual and to group problem-solving processes.

The processes used in problem-solving are as important as the solution itself. All organizational activity, even the form of the organization, depends upon the problem-solving process. The problem-solving process determines the allocation of resources, the communications, the informal and formal groupings, and the achievement of goals. There is no one pattern or set of logical and sequential steps of problem-solving processes. Each group will have to decide for itself plans for procedure.

General Guidelines

1. The curriculum committee should begin work in September. The allotted time is not nearly as long as you think it is.

2. May consult secondary level and graduate students in the various phases of planning and evaluation of program.

3. Plan for students as they are.

4. Develop communications among teachers to share ideas and materials.

5. Plan for an ideal program. If it can't be done, then modify it.

6. Plan for a variety of materials for students to meet their levels of ability and interest.

7. Build library use into your program.

8. Prepare a calendar of deadlines and target dates—committee reports, reporting dates, requisitions for textbooks and materials, etc.
Procedural Guidelines

1. In the curriculum committee, plan for articulating K-12 philosophy, goals, processes, and subject content. Plan for all levels to meet together as early and as often as possible.

2. Study and review current literature and thought.

3. Analyze and evaluate present program: materials and processes.

4. Develop philosophy and goals.

5. Develop program.

6. Develop procedures for evaluation of adopted program: methods, content and materials.

7. The committee may plan a resource book containing suggested activities, bibliographies, free materials, etc. The resource book should be open enough to provide a wide degree of latitude to individual teachers and needs to be replete with ideas--more than any one teacher can use in any year. This will allow a creative teacher to go beyond or even ignore the written ideas in favor of his own. The resource book should free, not restrict, teachers in their work and free children to learn through many diverse avenues.

8. The committee may plan for in-service training of teachers.

9. Do not stop after your program has been adopted. Continue to re-evaluate yearly and improve all aspects of the program. Act as a clearinghouse of ideas.
I. By the second board meeting of September, a list of members selected by the building principals will be presented to the Superintendent and the school board.

A. Should be made up of at least two elementary teachers (one primary, one intermediate), one junior high teacher and one senior high teacher.

B. Both principals should be members of the committee.

C. Parents and/or Advisory Council Members should be invited to be members of the committee.

II. The first meeting should be called by the end of September.

A. This is an organizational meeting to introduce the members to each other, to schedule the first half-day workshop and pass out any materials needed to get started, i.e. handbook.

III. By the second board meeting of November, the committee will present a K-12 co-ordinated set of goals for board approval.

A. This will require each teacher involved in the program to write his/her own goals.

B. The elementary part of the committee will require a half-day workshop of the committee to co-ordinate the goals from each teacher involved.

C. The committee will also require a one half-day workshop to co-ordinate the goals for a K-12 program.

IV. By December 15, the committee will review all materials available and select three companies to present their materials to the superintendent and subsequently at a district wide teacher institute.

A. The committee will review the evaluation tool on pages 9 - 11 and assign a given weight to each item of the tool. The committee should also use the Readability Estimator on every textbook under consideration and provide their results to the teachers by filling in the correct space at the top of the rating sheet for evaluating books.

B. This may require two or three half-day workshops of the committee using the evaluation tool found on pages 9 - 11 of this handbook.

V. By January 15, a district wide teacher institute should be covered for the three companies to present their materials.

A. All teachers involved in using these materials should be in attendance.
Schedule of Events cont.

B. The evaluation tool found on pages 9 - 11 of this handbook should be used by all teachers.

VI. By the second board meeting of February, at least two proposals, including cost, list of materials and any additional information requested by the school board shall be presented to the school board for final adoption.

A. This adoption can be used for the free-textbook survey sent out by Illinois Office of Education.

B. This may require two or three half-day workshops of the committee depending upon the variety of materials needed.

VII. By the second board meeting of April, the committee will present a co-ordinated set of objectives for the adopted program.

A. These objectives will be presented in the form of a K-12 flow chart.

B. The objectives will be specific enough to be measurable in a consistent manner.

C. This may take two or three half-day workshops of the committee and one or two at the elementary level to co-ordinate the efforts of all involved.

III. By the first school board meeting in May, a systematic program of evaluation of the objectives presented in April will be submitted for board approval.

IX. By May 15, the committee will order all sample copies of materials thought necessary for the next year's committee. This will also be the end of this committee's term.

A. Next year's committee members will be selected, so they can provide a list of textbook companies and related materials they wish to investigate.

B. These sample copies will be ordered in May so they will be here when school starts in the fall for any interested teachers to preview.
Six Year Plan Diagram

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Starting date for curriculum study

Starting date for implementation of program
RATING SHEET FOR EVALUATING BOOKS

The reading level of this text is __________ as determined by the Readability Estimator published by Charles E. Merril Company.

COURSE__________________________

DIRECTIONS: The reading level given below is for your information only. You may wish to use this information in answering several of the item below. Rate each book on the items listed below on a 5-point scale as follows: 1--unsatisfactory, 2--poor, 3--fair, 4--good and 5--superior.

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<th>As an instructional tool:</th>
<th>TITLE 1</th>
<th>TITLE 2</th>
<th>TITLE 3</th>
<th>W</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
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<td>1</td>
<td>How well does the book achieve the objectives of the course?</td>
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<td>How satisfactory is organization of material for effective learning and for course study?</td>
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<td>How appropriate is vocabulary and style of presentation for students for whom intended?</td>
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<td>Gifted Material?</td>
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**General Comments:**

________________________________________________________________________

Recommendations in order of preference:

1. ____________________________________________

2. ____________________________________________

3. ____________________________________________

Date _______________________________________

Examiner ___________________________________

Note: W = assigned weight
APPENDIX G
NORTHWESTERN COMMUNITY UNIT DISTRICT
NO. 2

SCIENCE GOALS
(K - 6)

TELL ME - I FORGET

SHOW ME - I REMEMBER

INVOLVE ME - I UNDERSTAND

Submitted by
Science Committee
February 13, 1978
Plants

1. How Plants Grow Without Seeds
   a. How do plants grow from the roots of old plants?
   b. How do plants grow from the tips of stems?
   c. How do plants grow from bulbs?
   d. How do plants grow from cuttings?

2. Flowers
   a. What are the parts of a flower?
   b. How are flower seeds made?

3. Seeds and How They Travel
   a. What is a seed?
   b. What protects seeds?
   c. How do seeds travel?

4. Plants of the Sea, Mountains, and Other Regions
   a. Simple plants.
   b. The higher plants.

5. Energy for Life Activities
   a. Plants use the sun's energy.
   b. How they use the energy.
   c. How plants get the energy.

6. How Does a Plant Make Its Food?

7. Fossils of the Past
   a. Plant life evolved from a simple one-celled form to a seed bearing and flowering plant.

8. Protection Mechanisms of Plants

9. Plant Interaction with Animals

Animals

1. Cells - Tissues and Your Body
   a. The cell.
   b. Cells, tissues, organs, systems.
   c. Intake and emission of food.
   d. Man's systems
   e. Nervous system-controls all others.
   f. Five basic senses.

2. How Animals Interact with Plants and Environment

3. Protective Mechanisms for Animals
4. Invertibrates vs. Vertibrates

Man's Systems

5. The Skin
   a. Purpose
   b. Structure
   c. Care of and first aid
   d. Skin damage

6. The Systems - In-depth Study of
   a. Purpose of
   b. How they work
   c. What makes them unique
   d. Naming and labeling parts
   e. Understanding functions of
   f. Interaction of the systems
   g. Mechanism of defense
   h. How the body repairs itself

Animals-Digestion and Food

7. Digestion Begins
   a. The stomach
   b. Small intestine
   c. Digestive glands
   d. Large intestine

8. Digestion is Completed
   a. Mouth
   b. Salivary glands
   c. Esophagus

9. Eating for Good Health
   a. Carbohydrates
   b. Fats
   c. Proteins
   d. Vitamins
   e. Minerals and Water
   f. Sources of Nutrients
   g. Food Groups

10. Learning about Health
    a. Instruments to Measure Body Functions
    b. Procedures to Measure Body Functions
    c. Immunization

11. Care of Teeth
    a. Examining teeth
    b. Parts
    c. Kinds
    d. Causes of Illness
    e. Growing Molds
    f. Micro-organisms
   a. How are animals alike?
   b. How does a frog reproduce?
   c. The life cycle of a frog.

13. How Fish Reproduce
   a. Fish are alike
   b. Journey of salmon
   c. Cycle of salmon

14. How Reptiles and Birds Reproduce
   a. Reptiles alike
   b. Green Turtle reproduce
   c. Birds alike
   d. Robin reproduces and cares for young

15. Habitats of Animals
   a. Regions of country and animals
   b. Protection against enemy
   c. Preparation for future
   d. Remanents of past

   Planet Earth

1. Origin of the Earth
   a. Earth's shape
   b. Indirect observation
   c. Core sampling
   d. Layers of earth
   e. Models of earth

2. The Earth - What Is It Made Of?
   a. The earth's shape
   b. The hydrosphere
   c. What is the water cycle
   d. The lithosphere
   e. The barysphere

3. Earths Age
   a. Ages of rocks and types
   b. Radioactive dating
   c. Characteristics of eras
   d. Measuring sedimentary deposits
   e. Minerals make up rocks

4. Weathering and Erosion
   a. Mechanical weathering
   b. Chemical weathering
   c. Erosion, wind, water and temperature
5. Earth Build Up
   a. Movement of crust
   b. Types of mountains
   c. Volcanoes
   d. Earthquakes
   e. Hot Springs and geysers
   f. Modeling changes
   g. Man changes crust

6. Conservation
   a. Natural resources
   b. Resources of crust
   c. Animals and plants as resources
   d. Water pollution
   e. Composition of soil
   f. Layers of soil
   g. How to reduce erosion

7. Weather and Climate-Describing the Atmosphere
   a. Air temperature
   b. Heating the atmosphere
   c. Measuring air moisture
   d. Causes of wind
   e. Weighing air

8. Conditions Making Weather
   a. Warming speed of water and soil
   b. Water cycle
   c. Forming clouds
   d. Predicting weather

9. Studying the Weather
   a. Wind direction
   b. Wind speed
   c. Air pressure
   d. Precipitation
   e. Relative humidity
   f. Weather maps
   g. Forecasting weather

10. Factors Affecting Climate
    a. Microclimates
    b. Climate regions
    c. Effects of slanting sun rays
    d. Latitude and climate
    e. Why seasons change
    f. When do seasons change
Matter and Change

1. Properties of Matter
   a. Volume of a rectangular solid
   b. Volume of a nonrectangular solid
   c. Describing objects
   d. Finding density

2. Changes in Matter
   a. States of matter and weight
   b. Melting and freezing points
   c. Making solutions
   d. Mixtures and solutions

3. Chemical Changes
   a. Rusting
   b. Chemical reactions vs. physical
   c. Detecting chemical changes
   d. Acids and bases
   e. Identifying unknowns
   f. Chemical properties and physical

4. Composition of Matter
   a. Mixing materials
   b. Diluting Solutions
   c. Number of elements
   d. Atoms and up

Matter and Energy

1. Energy and Work
   a. Force, friction, and resistance
   b. Work and energy
   c. What is energy
   d. Potential and kinetic energy
   e. Relation between matter and energy
   f. Source of energy
   g. Use of fuels
   h. Energy sources of future

2. Heat and Friction
   a. Matter, molecules and heat-motion
   b. Heat travels by conduction
   c. Heat travels by convection
   d. Heat travels by radiation
   e. Heat and changes
   f. Heat travels through solids, liquids, and gases
   g. Temperature and thermometers-how to use them
3. Machines
   a. Simple machines
   b. The lever
   c. The pulley
   d. The wheel and axle, and the gear
   e. The inclined plane
   f. The wedge and the screw

4. Methods of Measuring
   a. Need for measuring
   b. Length
   c. Area
   d. Volume
   e. Estimating
   f. Metric
   g. Scales and balances

5. Measuring Time
   a. Making and using timers
   b. Standard time measures

6. Periodic Motion - Describing
   a. Comparing kinds of motion
   b. Predicting
   c. Finding patterns

7. Pendulums
   a. Making a pendulum
   b. Pendulums as timers
   c. Period of a pendulum

8. Kinds of Periodic Motion
   a. Shadows and periodic motion
   b. Changes in shadows
   c. Apparent star motion
   d. Tuning forks
   e. Making a stroboscope

   Energy and Change

1. Energy at Work
   a. A swinging machine
   b. A returning can
   c. Comparing energy changes
   d. Measuring energy effects

2. Energy Travels and Changes
   a. Conduction
   b. Convection
   c. Radiation
   d. Mixing energy
   e. Changing forms of energy
8. Sources of Energy
   a. Radiometer
   b. Radiant Energy

9. Energy and the Atom
   a. Radioactivity
   b. Making a radiograph

Sound Is Energy

1. What is Sound?
2. How Does Sound Travel?
3. Characteristic of Sound.
4. What is Music?
5. How Sound Is Used In Communication.

Light Energy and How We Use It

1. Characteristics of Light
   a. Light travels
   b. Shadows
   c. Reflection
   d. Refraction
   e. Lenses
   f. Camera Functioning
   g. Transmitting Materials
   h. Is light white?

2. Light is Transmitted
   a. Properties of waves
   b. Colors of sunlight
   c. Spectrum
   d. Modeling light

3. Interaction of Light and Organisms
   a. Light for plants
   b. Kinds of light

Electricity

1. Electrical Charges
   a. Static electricity
   b. Determining electric charge

2. Detecting of Moving Electric Charge
   a. Light bulb detectors
   b. Compass
   c. Electric current
3. Generating Electrical Current
   a. Chemical generators
   b. Chemical dry cells
   c. Magnet generators

4. Transmitting Electricity
   a. Transmitting materials
   b. On and off switches
   c. Flash light circuits
   d. Conductors and nonconductors

5. Uses of Electricity
   a. Generating heat and light
   b. Producing magnetism
   c. Producing motion
   d. Fuses
   e. Circuit breakers

Space

1. Identifying the Sun
   a. Energy
   b. Brightness
   c. Use of instruments
   d. Main source of energy
   e. Give off light (sun starts)
      1. Reflected by planets

2. Solar Motion
   a. Relative motion
   b. Day and night
   c. Star motion

3. Causes of Seasons
   a. Sunlight angle
   b. Earth's tilt
   c. Changing star patterns

4. Planetary motion
   a. Seeing planets (naming and voyage to)
   b. Revolving
   c. Asteroids and comets
   d. Comparing size

5. Man on the Moon
   a. Confirmation of earlier predictions
   b. Moon's orbit
   c. Gravitational pulls of moon and sun on earth
      1. Seasons
      2. Tides
      3. Weather
   d. Earth as a spaceship
6. Space Travel
   a. Moving objects
   b. Rockets
   c. Return to earth
   d. Observing force and motion
   e. Measuring forces

7. People Existing in Space
   a. Air contains oxygen
   b. Air pressures
   c. Weightlessness
   d. Life in a space capsule
   e. Preserving food in space
   f. Storing food in space

8. Environments of the Solar System
   a. Telescopes
   b. Describing the planets

9. Study of the Universe
   a. "Black Box"
   b. Radiation
   c. Spectrum
   d. Diffraction spectroscope

10. Milky Way Galaxy
    a. The universe
    b. Light years
    c. Moving energy sources
    d. Doppler effect
    e. Dust clouds
    f. Expanding universe

This Science Program is for grades 4-6.
NORTHWESTERN CURRICULUM COMMITTEE'S
BUDGET PROPOSALS
FOR
K-6 BUDGET SUMMARY

TELL ME - I FORGET

SHOW ME - I REMEMBER

INVOLVE ME - I UNDERSTAND

Submitted on March 13, 1978
by
Mr. Funk
and
Science Committee
K - 3 PROPOSAL A

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### Sixth Grade PROPOSAL A

**3/13/78**

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| **Steam Tables**                  |                    |
| T.M. and Cards                    | $11.40             |
| Class Kit                         | $52.38             |
| **Total**                         | **$63.78**         |

| **Pond Water**                    |                    |
| Cards                             | $7.80              |
| T.M.                              | $4.20              |
| **Total**                         | **$12.00**         |

| **Ecology**                       |                    |
| T.M.                              | $4.50              |
| Cards                             | $4.86              |
| Equipment                         | $49.50             |
| **Total**                         | **$58.86**         |

| **Body Structures and Disease**   |                    |
| Replacement                       | $10.35             |
| **Total**                         | **$14.60**         |

| **Brain**                         |                    |
| **Total**                         | **$12.00**         |

| **Nervous System**                |                    |
| **Total**                         | **$68.00**         |

| **Circulatory System**            |                    |
| **Total**                         | **$857.84**        |

| **Terrarium**                     |                    |
| **Total**                         | **$215.66**        |

| **Water Garden Kit**              |                    |
| **Total**                         | **$215.68**        |

| **Water Pollution Kit**           |                    |
| **Total**                         | **$1,073.50**      |

| **Astolobe Kit**                  |                    |
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| **Dangerous Drugs Chart**         |                    |
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| **Emergency Procedures**          |                    |
| **Total**                         | **$1,661.69**      |

| **Lab Table**                     |                    |
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| **1/3 of Super 8 Projector**      |                    |
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Fourth Grade PROPOSAL C  

3/13/78

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<td>Logbooks</td>
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## Fifth Grade PROPOSAL C

### Logbooks
- Student Text: $381.00
- Logbooks: $90.00
- Evaluation Experiences: $15.40

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### Lab Table
- $427.80

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3/13/78

$914.20
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Charts:

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<td>Emergency Procedures</td>
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**Subtotal**: $1,018.46
Budget Summary
Intermediate Elementary Science

Proposal A Summary
Fourth Grade  $1,712.37
Fifth Grade  1,305.32
Sixth Grade  1,661.67
Contingency  375.00
Living Things  150.00

$5,204.38

Proposal B Summary
Fourth Grade  $ 1,127.11
Fifth Grade  996.62
Sixth Grade  1,259.47
Contingency  325.00
Living Things  135.00

$3,843.20

Proposal C Summary
Fourth Grade  $ 954.80
Fifth Grade  914.20
Sixth Grade  1,018.46
Contingency  275.00
Living Things  120.00

$3,282.46
### BUDGET SUMMARY FOR ELEMENTARY BUILDING

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### BUDGET SUMMARY FOR K-12

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APPENDIX I
When our Curriculum Committee began developing measurable objectives, we decided not to base our evaluation upon national norms that could not possibly be an accurate reflection of our local conditions and students. We developed objectives we felt to be easy and quick to evaluate periodically throughout the school year.

The Curriculum Committee decided to use teacher prepared tests based on the content of our objectives expecting a certain percentage of correct answers in order to consider the student having successfully completed the objective. We realized that this percentage should raise in some cases as students were repeatedly exposed to certain concepts. The Curriculum Committee felt, for example, that while many students should know their addition facts in the second grade, all students should know them in the fourth grade. This approach was followed throughout all the objectives for grades kindergarten through six.
NORTHWESTERN COMMUNITY UNIT DISTRICT
NO. 2

SCIENCE OBJECTIVES
(K - 6)

TELL ME - I FORGET

SHOW ME - I REMEMBER

INVOLVE ME - I UNDERSTAND

Submitted by:
Science Committee
May 8, 1978
The philosophy of this science committee is best represented by the following motto: "Tell Me - I Forget, Show Me - I Remember, Involve Me - I Understand". We hope to involve all our students in a personal exploration of the exciting world of science by achieving the objectives we have included in the following pages.

It should be understood that when the second through twelfth grade objectives refer to a test, it is the test provided by the publishers. We do this in hopes of gaining a more standardized evaluation procedure.

The following are members of the science committee:

Charles Langley, Elementary Principal
Peggy Heinz, Primary Elementary Teacher
Jack Richburg, Intermediate Elementary Teacher
Larry Redfern, Jr.-Sr. High Principal
Donald Waters, Jr. High Science Teacher
Debbie Staton, Sr. High Science Teacher
KINDERGARTEN
UNIT 1: Exploration

Objectives:
Teach the children to observe and explore through the use of a variety of living and nonliving objects.

a. Explore a variety of objects.

b. Tell about objects he explores.

c. Identify and tell about objects in the classroom.

d. Observe and tell about plants and animals.

UNIT 2: Sight and Sound

Objectives:
The child should learn to identify colors.

a. Identify colors.

b. Tell about objectives in terms of their properties - likenesses and differences.

c. Tell how plants are the same or different.

d. Tell about the movements of animals.

UNIT 3:
The child should be able:

a. To identify objects or events by the sounds they make.

b. To describe objects in terms of the sounds they make.

c. To distinguish among sounds of different volume and direction.

d. To identify common sounds.
KINDERGARTEN Cont.
UNIT 4: Tastes and Scents

Teach the child to:

a. Distinguish among common objects by scent.

b. Distinguish among familiar foods by taste.

c. Identify and name the tastes of food as sweet, sour, salty or bitter.

d. Identify objects by their scent.

UNIT 5: Comparing

The child should be able:

a. To describe and contrast the shapes and textures of objects.

b. Identify and name the textures of objects as "hard" or "soft" and "rough" or "smooth".

c. Describe the extent to which objects possess properties of texture or colors.

d. Describe and contrast the properties of seeds and bulbs.

UNIT 6: Sorting Objects Into Many Piles

Encourage the child to:

a. Describe how objects are the same and how they are different.

b. Sort objects into as many piles as he wishes.

c. Sort the same set of objects two or more ways based on color, shape, size and texture.

d. Describe the basis upon which he sorts objects.

3. Describe his criteria for classifying objects.

UNIT 7: Ordering Events

Objectives:

a. Teach the child to tell the correct sequence of events in familiar stories.

b. Identify events that are out of order in familiar stories.

c. Arrange five pictures of events in chronological order using self correcting puzzles.

d. Describe the sequence of events illustrated by ordered pictures.
GRADE ONE
UNIT 1: You

1. 90% of the students will identify a collection of objects from their own environment with a score of 80% or better.

2. 90% of the students will demonstrate the continuum of growing up and older by picture sequence with a score of 80% or more.

3. 90% of the students will demonstrate their ability to recognize different kinds of families by constructing a collage of 5 or more.

UNIT 2: Alike But Different

1. 90% of the students will score 80% or more on a test comparing objects for likenesses and differences.

2. 90% of the students will classify 20 objects according to common properties.

UNIT 3: A World Full of Animals

1. 90% of the students will recognize and name 15 different kinds of animal pictures.

2. 90% of the students will match 15 or more animals with their environment.

3. 90% of the students will match 20 or more young animals with their parents by a picture test.

UNIT 4: A World Full of Plants

1. 80% of the students will display a seed collection consisting of 5 or more different seeds.

2. 80% of the students will identify the parts of a plant by matching name with part on a worksheet with a score of 80% or more.

3. 90% of the students will grow plants from seeds.

UNIT 5: The World We Live In

1. 90% of the students will name water, air, and rock as three main parts of the earth.

2. 90% of the students will name the seasons.

3. 90% of the students will collect 5 or more pictures showing different kinds of places on earth.
GRADE ONE Cont.

UNIT 6: What Makes Things Change

1. 90% of the students will put 5 series of changes in order.
2. 90% of the students will score 80% or better on a test identifying fast & slow changes.
3. 90% of the students will draw pictures of objects that change.
GRADE TWO
UNIT I: Looking and Thinking

1. 80% of the children will be able to score 80% on a worksheet identifying characteristics of objects, living and non-living.

2. 75% of the children will score 80% on a test in which they make decisions about classifying living and non-living objects based on their observations, and will be able to explain their decisions, thus proving that their are options in decision making.

UNIT 2: Animals

1. 80% will score 75% or higher on a test displaying their ability to observe characteristics of different kinds of animals.

2. 80% will score 85% on a worksheet demonstrating their ability to classify different animals according to their coverings - hair or feathers, skin, shells, scales.

3. 80% will score 75% on a test in which they make inferences, from an animal's shape, about how it moves.

4. 75% will score 80% on an activity which demonstrates their ability to investigate animal behavior and observe what happens.

UNIT 3: Our World

1. 80% will score 75% in an activity making conscious connections between living and non-living elements in their environment.

2. 80% will achieve 80% on an activity displaying their ability to make a model, putting elements together to make a "small world" which will support living things. In this activity they will learn an order to putting those elements together, exercise judgements about elements they use, and measure amounts and temperature.

3. 80% will score 80% on an activity showing their ability to decide when the environment is ready to support life-plant, then animal and also calculate how much animal life the environment can support.

4. 80% will score 75% on a worksheet watching and recording changes in the environment over a period of time and experiment with making changes. Observing what happens when they do make changes.

5. 80% will score 85% on a worksheet displaying their ability to make inferences, using what they have observed, about changes in the larger world.
GRADE TWO Cont.
UNIT 4: Motion

1. 80% will score 85% in an activity observing many kinds of motion—motion from different viewpoints and distances, and motion relative to changes in time and space.

2. 85% will score 90% in an activity comparing speeds to find out "how fast".

3. 75% will score 80% on a worksheet describing and communicating their observations about kinds and directions of motion.

UNIT 5: Solid, Liquid, Gas

1. 75% will score 80% in an activity investigating properties of solids, liquids, and gases, and the ways these things take up space, and describing each.

2. 70% will score 75% on an activity in which they weigh and measure as a way of determining properties.

3. 80% will score 85% on an activity in which they experiment with changing shapes and changing matter from one form to another.

4. 85% will score 80% on a worksheet observing properties of different objects and making decisions, based on their observations, about the states of these objects.

UNIT 6: Plants

1. 85% will score 90% on a worksheet identifying plants as living things and growing in many places.

2. 80% will score 80% on an activity experimenting with growing their own plants, and observing what happens to them under different conditions.

3. 90% will score 85% on an activity observing likenesses and differences between different kinds of plants, and parts of plants.

4. 85% will score 80% on an activity comparing seeds and making inferences about the functions of their shapes.

5. 80% will score 85% on a test displaying their understanding of the many uses of plants.
GRADE THREE

UNIT 1: Learning To Be An Animal Watcher

1. 80% of the students will score 85% on a multiple test concerning animal behavior.

2. 100% of the students will observe over a period of time, the day-by-day behavior of classroom gerbils.

3. 85% of the students will do 100% of the record keeping of gerbil responses to various stimili.

UNIT 2: Passing It On

1. 80% of the students will score 85% on a matching test about plant reproduction.

2. 80% of the students will score 85% on a matching test about animal reproduction.

3. 100% of the students will observe and 85% will record likenesses and differences of different kinds of plants.

UNIT 3: What Makes the Weather

1. 80% of the students will score 85% on a multiple choice test about weather and its effects on the earth.

2. 80% of the students will score 85% on a test in which they read and interpret weather related maps and instruments.

3. 100% of the students will observe and describe different clouds.

4. 100% of the students will construct a wind vane and observe wind direction.

5. 85% of the students will chart the weather where they live, keeping a temperature graph and a day-by-day record of the weather.

6. 85% of the students will learn to read 100% of the weather symbols covered in third grade Ginn Science Program.

UNIT 4: Water On The Move

1. 80% of the students will score 85% on a multiple test concerning water effects on land surfaces.

2. 85% will construct a model of a river and observe the effect of moving water.

3. 85% of the students will trace rivers on a map, finding beginnings and ends.
GRADE THREE Cont.
UNIT 5: Is Seeing Believing?

1. 90% of the students will score 85% on a True and False test about perceptual relationships of the earth and solar system.

2. 85% of the students will keep 100% records and observations of star, sun and shapes of the moon.

3. 90% of the students will build a model of the solar system.

UNIT 6: Measuring Motion

1. 75% of the students will score 80% on a multiple test concerning relative motion.

2. 80% of the students will be able to do 85% of problems about distance and time.

3. 90% of the students will build different kinds of clocks.

4. 75% of the students will score 80% on a test concerning the different measurements of man (time, year, moon, etc.).

5. 75% of the students will score 80% on graphing the speed of various animals.

UNIT 7: What Can Heat Change?

1. 80% of the students will score 85% on a test concerning the three states of matter.

2. 80% of the students will score 85% on a test about matching definitions of solids, liquids, and gases.

3. 75% of the students will score 80% on a test concerning temperature effects on the three states of matter.

4. 75% of the students will score 80% on a test of True and False concerning changes in the states of matter.

5. 75% of the students will score 80% identifying chemical changes from physical changes.

UNIT 8: Learning To Be A Plant Watcher

1. 90% of the students will score 85% on a multiple test about plants.

2. 90% of the students will observe plant growths in various plants.

3. 90% of the students will use their senses to experience leaves by sight, touch, taste, and smell.

4. 90% of the students will collect different kinds of plants and compare differences and likenesses.
GRADE FOUR
UNIT 1: Where Do Living Things Live?

1. 85% of the students will define the term environment.

2. 80% of the students will identify and match the three soil layers.

3. 80% of the students will score 75% on a matching and multiple choice test on the plant-animal relationships including (consumer-producer; food chains, and habitat).

UNIT 2: Getting To Know A Community

1. 80% of the students will score 75% on a short answer test of how plants and animals adapt to changes in their environment.

2. 80% of the students will score 75% on a multiple choice and matching test demonstrating an understanding of the animal groups.

3. 80% of the students will score 75% on a short answer test of physical adaptation of plants and animals to their environment.

4. 90% of the students will observe and explain the effects of variation in watering and sunlight levels, a plant receives.

UNIT 3: Important Things About Important Animals

1. 80% of the students will score 75% on a test in which they list the characteristic traits of all mammals, (hair, lungs, backbone, warm-blood, live birth, milk-first food).

2. 75% of the students will classify and sub-divide mammals into groups by like traits.

UNIT 4: Motion, Friction, and Force

1. 75% of the students will define friction.

2. 85% of the students will define gravity.

3. 75% of the students will show an understanding of simple machines, as covered in fourth grade Ginn Program, on a matching test by scoring 80%.

4. 50% of the students will construct and use two simple machines.

UNIT 5: Can You Read The Sun?

1. 70% of the students will determine north, south, east, and west by observing the apparent motion of the Sun.

2. 80% of the students will score 75% on a short answer test on the concepts of revolution, rotation and tilting of the Earth's axis.
GRADE FOUR Cont.

UNIT 6: Over and Over

1. 70% of the students will score 80% on a multiple choice and matching test of the concept of single to multiple cell organisms.

2. 80% of the students will score 80% on a test labeling cell behaviors as "all" or "some".

3. 75% of the students will score 80% on a test labeling cell structure.

4. 70% of the students will score 80% on a multiple choice test of cell reproduction patterns.

UNIT 7: Living Things All Around

1. 85% of the students will demonstrate a knowledge of the two basic types of living things by cataloging various living things as plant or animal.

2. 80% of the students will score 80% on a multiple choice test of cataloging animals by likenesses.

3. 85% of the students will demonstrate a knowledge of the major animal groups of reptiles, mammals, fish, amphibians, and birds by a matching test.

UNIT 8: What Can Heat Do?

1. 80% of the students will demonstrate a knowledge of stored energy versus mechanical energy versus chemical energy versus electrical energy by labeling pictures of the various energy forms.

2. 85% of the students will define insulator.

3. 85% of the students will define conductor.

4. 80% of the students will explain the three methods of heat transfer by the definition of the three process.

UNIT 9: What The Earth Is Like

1. 80% of the students will score 80% labeling a cross sectional diagram of the Earth and its atmosphere.

2. 30% of the students will score 80% on a test labeling resources as natural or man-made.

UNIT 10: Weather

1. 80% of the students will score 75% on a test of interpreting a simplified weather map.

2. 60% of the students will collect data and make a simplified weather forecast.
GRADE FIVE
UNIT 1: Investigating Motion
1. 80% of the students will score 75% on a test which provides problems with force mass and acceleration.
2. 90% of the students will score 80% on a worksheet using the correct terminology of mass, weight, inertia, gravity and force.
3. 80% of the students will score 80% on a test of problems using the concepts of gravity.

UNIT 2: What Can You Find Out About Stems?
1. 90% of the students will score 90% on a test on which they label parts of a plant.
2. 80% of the students will score 75% on a test where they define the function of different plant cells.
3. 90% of the students will be able to identify on a test the age of a tree using the ring count method.
4. 85% of the students will demonstrate a knowledge of plant growth and development by scoring 75% on a written test.

UNIT 3: How Do You Move and Breathe?
1. 90% of the students will score 80% on a test matching the correct terminology and definitions of tendons, bones and muscles.
2. 90% of the students will score 85% on a test where they label diagrams of muscle movements.
3. 90% of the students will score 90% on a worksheet in which they label reactions as voluntary or automatic.
4. 95% of the students will demonstrate an understanding of the respiratory system by scoring 80% on a test in which they label the various parts and explain their function.

UNIT 4: Making A Model Of The Solar System
1. 80% of the students will score 75% on a multiple choice test on the history of early astronomy.
2. 80% of the students will score 75% on a test where they match correct astronomers names to their theories.
3. 95% of the students will construct a model of the solar system to demonstrate their understanding.
4. 80% of the students will score 75% on a worksheet concerning the movements of the planets and their relationship to the earth.
GRADE FIVE Cont.

UNIT 5: Particles - The Substance of All Things

1. The students will list the three forms of matter and give examples of each with 90% of the students scoring 85%.

2. 85% of the students will score 70% on a test concerning the concepts of diffusion, evaporation, freezing points, melting points and crystallization.

3. 95% of the students will demonstrate a knowledge of crystallization by producing their own crystals.

UNIT 6: Exploring The World of Rocks

1. 85% of the students will score 80% on a test where they label sedimentary, metamorphic and igneous rocks.

2. 80% of the students will score 80% on a matching test telling when and how sedimentary, metamorphic and igneous rocks were formed.

3. 90% of the students will score 80% on a test concerning mechanical and chemical weathering.

UNIT 7: How Do Living Things Grow and Reproduce?

1. 85% of the students will score 80% on a test about human growth by interpreting a growth chart.

2. 90% of the students will score 75% on a multiple choice test concerning human cellular growth.

3. 80% of the students will score 75% on a test labeling correct terms of cell division.

4. 85% of the students will score 80% on a multiple choice test on sexual and asexual reproduction.

UNIT 8: The Differences of Life

1. 75% of the students will score 75% on a test about plant or animal classification.

2. 75% of the students will score 75% on a multiple choice test on the correct classification of various animal species.

3. 90% of the students will score 85% on a test concerning the evolution and extinction of certain animal species.

4. 85% of the students will score 80% on a multiple choice test concerning habitat and adaptation of various animals.
GRADE SIX

UNIT 1: How Do Leaves Make Food For The World?
1. 75% of the students will score 80% on a multiple choice test covering plant production and usage of food.
2. 75% of the students will score 80% on a multiple choice test covering leaf identification and its function in photosynthesis.
3. 75% of the students will score 80% by graphing areas of food growth and distribution according to world population.
4. 80% of students will score 75% on a test on environmental balance of the food chain pertaining to plant life.

UNIT 2: Using Energy To Do Work
1. 75% of students will score 75% on tests and worksheet material dealing with force, relationship to work, transfer and magnitude.
2. 100% of the students will observe machines' relationship to force.
3. 75% of the students will score 75% on a test on Kinetic and potential energy relating to motion, matter, transfer and the creation of energy.
4. 85% of the students will score 80% on a test on the relationships of heat to motion.

UNIT 3: How The Planets Move:
1. 100% of the students will observe and 80% will recognize predictable patterns of stars and planets in the sky.
2. 80% of the students will score 80% on motion of planets and their varying speeds of orbit and rotation on a test.
3. 80% of the students will score 80% on a test of past scientists and their beliefs and various system models.
4. 100% of the students will observe and 80% will graph the reaction of an objects attraction and repulsion according to size, weight and distance between them.

UNIT 4: Transportation and Communication In The Human Body
1. 75% of the students will score 80% on a test on function of the blood in the body.
2. 75% of the students will score 80% on a test on parts of the heart and their function.
3. 80% of the students will diagram and 100% will observe artificial models of the circulatory pathways in the body.
GRADE SIX Cont.
UNIT 4 Cont.

4. 100% of the students will observe by lab work the impulses and reactions of the spinal cord and brain discussed within the sixth grade.

5. 80% of the students will work with and identify 80% of the body systems and their independence of each other.

UNIT 5: Particles In Motion

1. 80% of the students will score 80% on a test on matter and its constant motion.

2. 75% of the students will score 75% on a test on the effects of temperature, pressure, and volume on matter.

3. 100% of the students will observe various methods of heat transfer and 85% will recognize its effect.

UNIT 6: Do All Animals Develop From Eggs?

1. 85% of the students will score 80% on a test on life beginning as a single cell.

2. 75% of the students will be exposed to various methods of egg division.

3. 80% of the students will score 80% on a test on specialization of cells and their growth.

4. 100% of the students will observe different types of early embryonic development; to young sibling.

5. 75% of the students will score 80% on a test on changes of appearance from youth to adult (physical and biological changes).

6. 95% of the students will observe by field trips life's natural cycle from birth to death; 80% will develop a project dealing with their observations.

UNIT 7: Fantastic Creatures

1. 80% of the students will observe by field trips man's effect on nature.

2. 75% of the students will score 75% on a test of changes by adaption of animals from fossils observation to area mutations.

3. 75% of the students will score 75% on a test of various methods of age determination.

4. 75% of the students will score 80% on a test on a theory of cordate development.
GRADE SIX Cont.
UNIT 8: What Are Webs of Life?

1. 95% of the students will observe by field trips the interdependency of living things.

2. 75% of the students will observe by lab tests and field trips interaction of living and non-living things within an ecosystem.

3. 75% of the students will score 80% on a test on man's direct and/or indirect effect on nature.

4. 75% of the students will score 75% on a test on man's responsibility to himself and destiny working with nature.