DOCUMENT RESUME

ED 362 747 CE 064 845

TITLE	Tech-Prep for the '90s. Final Report.
INSTITUTION	John A. Logan Coll., Carterville, IL.
SPONS AGENCY	Illinois State Board of Education, Springfield. Dept. of Adult, Vocational and Technical Education.
PUB DATE	30 Jun 92
NOTE	185p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Academic Education; *Articulation (Education); *Basic Skills; College School Cooperation; *Curriculum Development; Educational Planning; High Schools; Inservice Teacher Education; Institutional Cooperation; *Integrated Curriculum; Postsecondary Education; Program Development; *Program Implementation; *Technology Education; Two Year Colleges
IDENTIFIERS	John A Logan College IL; Tech Prep

ABSTRACT

A project successfully infused tech prep into the vocational-technical programs of 10 of the 11 high schools in the John A. Logan College district in Illinois. All participating schools revised course syllabi for a portion of their academic classes indicating the use of applied materials. The Principles of Technology class was offered successfully in three schools. Nine secondary schools had tech prep teams that worked to determine methods of using tech prep principles and to interest other teachers in using tech prep materials. One board of control approved tech prep entrance requirements. Secondary and postsecondary academic and vocational teachers attended joint inservice activities and worked together in joint planning for the infusion of tech prep. Development of an implementation plan progressed. (Extensive appendixes contain the following: the Williamson County Regional Vocational System programs and classes brochure; tech prep implementation plans for the college and 10 high schools; and tech prep syllabi from the vocational-technical programs in the 10 high schools that indicate the incorporation of basic skills into vocational classes.) (YLB)

FINAL REPORT

ABSTRACT

OFFICIAL PROJECT TITLE:	Tech-Prep for the '90s DAVTE Funding Agreement No. JMAA390 College Project No. 91012
PROJECT DIRECTOR:	Dr. Paul McInturff
FUNDED AGENCY:	John A. Logan College
LOCATION OF FUNDED AGENCY:	Carterville, Illinois
TIME PERIOD COVERED:	July 1, 1991 to June 30, 1992

GOALS

The goals of the Tech-Prep project were:

1. To infuse Tech-Prep into the high school vocational-technical programs.
2. To provide secondary and postsecondary joint planning to ensure delivery to all sites throughout the College district.
3. To establish entrance criteria, including skills needed and course placement.
4. To provide opportunities for secondary and postsecondary academic and vocational education instructors in a variety of in-service activities.
5. To develop a formal articulation agreement specific to Tech-Prep.
6. To develop work-based learning components into all high school programs.

MAJOR ACCOMPLISHMENTS OF THE PROJECT

1. Successful infusion of Tech-Prep has been accomplished in ten of the eleven high schools in the College district.

2. For the second year in a row, secondary and postsecondary academic and vocational teachers have worked together in joint planning for the infusion of Tech-Prep. Joint in-service activities have been most helpful.

3. All participating high schools have developed work-based learning components and have incorporated them into their syllabi. Revised syllabi are on file.

FINAL REPORT

NARRATIVE

OFFICIAL PROJECT TITLE:	Tech-Prep for the '90s DAVTE Funding Agreement No. JMAA390 College Project No. 91012
PROJECT DIRECTOR:	Dr. Paul McInturff
FUNDED AGENCY:	John A. Logan College
LOCATION OF FUNDED AGENCY:	Carterville, Illinois
TIME PERIOD COVERED:	July 1, 1991 to June 30, 1992

GOALS

The goals of the Tech-Prep project were:

1. To infuse Tech-Prep into the high school vocational-technical programs.

2. To provide secondary and postsecondary joint planning to ensure delivery to all sites throughout the College district.

3. To establish entrance criteria, including skills needed and course placement.

4. To provide opportunities for secondary and postsecondary academic and vocational education instructors in a variety of in-service activities.

5. To develop a formal articulation agreement specific to Tech-Prep.

6. To develop work-based learning components into all high school programs.

As a result of the two years of Tech-Prep planning, the District now has sequential plans for the secondary and postsecondary levels. It is expected that these plans will be further defined and expanded in the third year of the grant. (Appendix A) Because of the broad scope of our Tech-Prep proposal, which

includes practically all high school students, our current articulation agreements are sufficient. With the aid of Tech-Prep we are better preparing students for the following areas:

Agriculture

Business

Health & Home Economics

Industrial

We are anticipating that as a result of the broad integration of academic and vocational skills which we are attempting, students will be graduating from high school programs with a higher proficiency in math, science, communication, and workplace skills.

Appendix B lists the individual, detailed implementation plans for each secondary institution within the College district, as well as the implementation plan for the community college.

It is the Project Director's belief that the first two years of the Tech-Prep project have provided an opportunity to prepare a solid foundation on which to build.

OBJECTIVE 1 BY SEPTEMBER 15, 1991, TWELVE VOCATIONAL-TECHNICAL PROGRAMS WHICH ARE ARTICULATED WITH JOHN A. LOGAN COLLEGE WILL BE SELECTED FROM THE TWO EFE REGIONS TO BE INCLUDED IN THE FIRST YEAR OF IMPLEMENTATION OF THE TECH-PREP PROGRAM.

All participating schools have revised course syllabi for a portion of their academic classes indicating the use of applied materials. Teachers are continuing to work on the remaining

syllabi. Syllabi are included in Appendix C. Course outlines for vocational classes indicate the incorporation of basic skills.

The Principles of Technology class was offered in three schools this year and was very successful. One school has completed the plans for the class; however, they were too late for 1992-93 registration.

OBJECTIVE 2 BY JUNE 30, 1992, DELIVERY OF TECH-PREP PROGRAMMING WILL INCREASE TO INCLUDE ALL HIGH SCHOOLS IN THE WILLIAMSON COUNTY EFE REGIONAL SYSTEM AND THE FOLLOWING HIGH SCHOOLS FROM THE JACKSON-PERRY COUNTIES EFE REGIONAL SYSTEM: DU QUOIN, TRICO, AND CARBONDALE.

Nine secondary schools now have tech-prep teams. Team members worked in their subject areas with members from other schools to determine methods of using tech-prep principles. Team members also worked in their home schools to interest or assist other teachers in using tech-prep materials. Most of the time this was one-on-one discussion, planning, and/or assisting. In addition, they previewed curricula to determine how academic and vocational teachers could share materials and teaching responsibilities. Several schools are planning in-services for their entire faculties in the fall.

The second cooperative learning in-service for secondary and postsecondary teachers was held on April 9, 1992. It was well attended and teachers reported on the successful experiences they had using cooperative learning since the first training session.

OBJECTIVE 3 BY DECEMBER 15, 1991, SPECIFIC ENTRANCE AND REMEDIATION REQUIREMENTS, INCLUDING SKILLS NEEDED AND COURSE PLACEMENT, WILL BE APPROVED BY THE TWO BOARDS OF CONTROL.

One Board of Control has approved tech-prep entrance requirements. Student services committees are continuing to work on remediation criteria.

Advisory committees are continuing work on determining performance standards for each subject area. By fall of 1993 all vocational areas will have a plan for assessment of skills.

OBJECTIVE 4 BY JUNE 30, 1992, POSTSECONDARY AND SECONDARY FACULTIES, COUNSELORS, AND ADMINISTRATORS WILL PARTICIPATE IN AT LEAST SIX IN-SERVICE ACTIVITIES.

The final in-service activity, the second cooperative learning workshop, was held on April 9, 1992. Twenty-nine secondary and postsecondary teachers attended. Teachers were enthusiastic about the outcome of activities they had implemented in their classes and were eager to receive additional training.

Development of an implementation plan is progressing. The goal is to be in position to offer firm guarantees on skills abilities of tech-prep students. They will receive certification when they complete a secondary program and a guarantee upon completion of the community college program.

Both Education for Employment systems make a listing of tech-prep programs available to eighth grade graduates. The advantages of a tech-prep program are also explained so that students and parents can make informed decisions.

OBJECTIVE 5 BY MARCH 15, 1992, A FORMAL TECH-PREP ARTICULATION AGREEMENT WILL BE SIGNED BETWEEN THE COLLEGE AND THE TWO EFE REGIONAL SYSTEMS.

A joint advisory committee was organized and members are contributing to decisions on needs of employers, task lists, and curricula.

Articulation agreements between the College and the secondary systems are in place. They will be reviewed periodically as courses are revised or added under tech-prep guidelines.

Plans are underway to help students make a smooth transition from the college to Southern Illinois University at Carbondale. It is expected that several articulation agreements will be signed by fall 1992.

OBJECTIVE 6 BY JUNE 30, 1992, WORK-BASED LEARNING COMPONENTS WILL BE DEVELOPED BY EACH OF THE TWELVE TECH-PREP VOCATIONAL PROGRAMS.

Businesses and industries are still being contacted as to ways in which they would be willing to assist the schools in providing work-based learning experiences. This will add another dimension to the applied activities being completed in the classroom.

OBJECTIVE 7 BY JUNE 30, 1992, A SPECIFIC PLAN WILL BE DEVELOPED TO MEASURE ACADEMIC GAINS AND OCCUPATIONAL COMPETENCE.

Pre- and post-tests have been developed by the secondary schools. In one Regional Delivery System tests were administered this spring. The other system will begin testing in the fall.

The College will use state certification to measure vocational gains in programs where this is required. For other programs final competency tests are being developed by the advisory committees, business and industry, and instructors. These tests will be given spring semester 1993.

MAJOR ACTIVITIES PLANNED:

a. Expand tech-prep activities to include the remaining two schools in the district.

b. Further advance tech-prep activities in secondary schools and John A. Logan College.

c. Continue to articulate tech-prep programs between secondary schools, John A. Logan College, and Southern Illinois University.

d. Provide in-services for teachers, counselors, and administrators.

e. Promote tech-prep programs to students, parents, businesses, and industry.

f. Provide guaranteed certification of secondary and postsecondary tech-prep graduates.

PROBLEMS

The only major problem we encountered during the year occurred at the end of the year when we ran short of money. It is difficult to do a high-quality job with insufficient funds.

MATERIAL RESOURCES

The following types of instructional materials were purchased to implement the objectives listed in the proposal. The materials have been distributed by the EFEs to the high school

teachers participating in the Tech-Prep Program.

Applied Biochemistry materials

Applied Mathematics materials

Applied Communications materials

HUMAN RESOURCES

Paid Participants

Name	Title/Institution	Contribution
McInturff, Paul	Dean for Vocational-Technical Education, John A. Logan College	Project Director
Elliott, Victoria	Secretary, John A. Logan College	Secretary
Jack, Marjorie	Project Coordinator, John A. Logan College	Project Coordinator

Unpaid Participants

Name	Title/Institution	Contribution
Ferguson, Brenda	EFE/Williamson County	Leadership
Vinyard, David	EFE/Jackson-Perry Counties	Leadership
Huelsman, Ray	Voc. Director/Marion	Leadership
Hudson, Ron	Olin Corporation	Advisory Committee
Hunsaker, Janice	tesa tuck, inc.	Advisory Committee
Wilkerson, Joe	EFE/Franklin County	Leadership
Ambos, Arnold	United Technologies	Advisory Committee
Baxter, Mary Lou	Magic Chef	Advisory Committee
Ligon, Betty	Southern Illinoisan	Advisory Committee
Easton, Beverly	Manpower Services	Advisory Committee
Stewart, Ron	KRN Tool & Machinery	Advisory Committee

Name	Title/Institution	Contribution
Choate, Ed	Attorney	Advisory Committee
Shay, Parry	Home Federal Savings and Loan	Advisory Committee
Davidson, Micki	Flexible Flyer Company	Advisory Committee
Hampsey, Brenda	Diagraph Corporation	Advisory Committee
Pass, Francis	Pass Heating & Air Conditioning	Advisory Committee
Reeves, Tim	Southern Illinois Power Company	Advisory Committee
Kattentidt, Hans	Penn Aluminum	Advisory Committee
Powers, William	State Police Headquarters	Advisory Committee
Neuman, Cathy	Memorial Hospital of Carbondale	Advisory Committee

LIST OF APPENDICES

APPENDIX A:	Williamson County Regional Vocational Programs and Classes Brochure Curriculum Guides, John A. Logan College
APPENDIX B:	Tech-Prep Implementation Plans For: John A. Logan College Carbondale Community High School Carterville High School Crab Orchard High School DuQuoin High School Frankfort Community High School Herrin High School Johnston City High School Marion High School Murphysboro High School Trico Community High School
APPENDIX C:	Tech-Prep Syllabi from Vocational-Technical Programs in Ten High Schools
APPENDIX D:	Publicity, Tech-Prep Program

APPENDIX A

Williamson County
Regional Vocational System

BRENDA FERGUSON, *Director*

Participating Districts

Johnston City Unit # 1
Marleis Lauterjung, *Supt.*

Marion Unit # 2
Tom Oates, *Supt.*

Crab Orchard Unit # 3
Gene Stettler, *Supt.*

Herrin Unit # 4
William Clarida, *Supt.*

Carterville Unit # 5
Robert Mees, *Supt.*

PROGRAMS and CLASSES

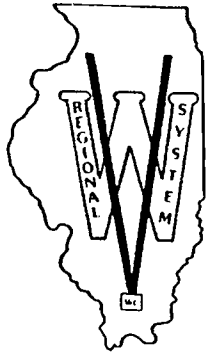
AGRICULTURE

BUSINESS

HEALTH & HOME ECONOMICS

INDUSTRIAL

LOCATION OF CLASSES



Williamson County
Regional Vocational System

BRENDA FERGUSON, *Director*

PROGRAMS and CLASSES

APPENDIX A

Participating Districts

Johnston City Unit # 1
Marleis Lauterjung, *Supt.*

Marion Unit # 2
Tom Oates, *Supt.*

Crab Orchard Unit # 3
Gene Stettler, *Supt.*

Herrin Unit # 4
William Clarida, *Supt.*

Carterville Unit # 5
Robert Mees, *Supt.*

AGRICULTURE

9TH GRADE
Introduction To The Agriculture Industry

10TH GRADE
Agriculture Science
Supervised Occupation Experience I

11TH and 12TH GRADES

Agribusiness Operations
Agribusiness Management

Supervised Occupational Experience
Cooperative Vocational Education

AGRICULTURE

B229 Basic Computer Programming		X		X	
B217 Machine Shorthand I		X			
B224 Machine Shorthand II		X			
B213 Machine Transcription		X			
B205 Office Equipment Appl.		X			
B223 Reprographics		X			
B219 Gen Office Procedures		X			
M201 Marketing & Bus Ownership		X		X	
N201 Nursing Assistant I		X			
H201 Living Environments	X	X	X	X	
H202 Resource Management	X		X	X	
H203 Parenting	X	X	X	X	X
H204 Adult Living	X	X	X	X	
H205 Child & Day Care Serv I		X		X	
H206 Child & Day Care Serv II		X		X	
H210 Cloth & Apparel Serv I	X				X

I218 Commercial Art IA		X			
I219 Commercial Art II		X		X	
I203 Voc Mach Technology I				X	
I204 Voc Mach Technology II				X	
I211 Draft/Comput Aided Draft I	X	X	X	X	X
I212 Draft/Comput Aided Draft II	X	X	X	X	X
I201 Transp-Auto Tech I		X		X	
I202 Transp-Auto Tech II		X		X	
C201 Interrelated CVE-C					X
C202 Interrelated CVE-B				X	
C203 Interrelated CVE-A		X			

Most Orientation 9th and 10th Grade Classes Offered at All Schools
JCHS - Johnston City; MHS - Marion; COHS - Crab Orchard; HHS - Herrin; CHS - Carterville

LOCATION OF CLASSES

CLASS LOCATION	JCHS	MHS	COHS	HHS	CHS
	1	2	3	4	5
A201 Ag/Bus Op I				X	
A202 Ag/Bus Op IA		X			
A203 Ag/Bus Mgmt		X			
A205 Sup Occ Exper II		X			
B204 Accounting I	X	X	X	X	X
B206 Accounting II	X	X		X	X
B221 Office Procedures	X		X		X
B220 Office Procedures IA				X	
B219 Gen Office Procedures		X			
B222 Advanced Office Procedures					X
B212 Information Processing		X			
B227 Desktop Publishing				X	
B228 In School Office Ed.		X			
B216 Shorthand II	X				
B226 Shorthand IIA		X			X

CLASS LOCATION	JCHS	MHS	COHS	HHS	CHS
	1	2	3	4	5
H211 Cloth & Apparel Serv 1A		X		X	
H213 Cloth & Apparel Serv II		X		X	
H214 Food Services I	X				
H215 Food Services IA		X		X	
H217 Food Services II		X		X	
I213 Building Trades I	X			X	
I215 Building Trades IA		X			X
I214 Building Trades II	X			X	
I216 Building Trades IIA		X			X
I207 Voc Electronics IA		X		X	
I206 Voc Electronics II		X			
I208 Voc Electronics IIA				X	
I220 Principles of Tech I		X			
I221 Principles of Tech II		X			
I217 Commercial Art I				X	

BUSINESS

9TH GRADE

Business and Technology Concepts

Accounting-Bookkeeping
10th Grade

Keybd/Typewriting Skills
Computer Concepts
Accounting

Information Processing
10th Grade

Keybd/Typewriting Skills
Computer Concepts
Adv Keybd/Type Skills
Accounting I

Secretarial
10th Grade

Keybd/Typewriting Skills
Computer Concepts
Accounting I
Adv Keybd/Typewriting
Shorthand

Marketing
10th Grade

Keybd/Typewriting Skills
Computer Concepts

11th & 12th Grades

Office Equip. Appl.
Accounting II
Coop. Voc. Ed.

11th & 12th Grades

Office Procedures
Ad. Off. Procedures
Information Process
Desktop Publishing
Basic Computer Programming
In School Office Practices
Coop. Voc. Education

11th & 12th Grades

Shorthand II
Mach Shorthand I
Mach Shorthand II
Office Equip. Appl
Machine Transcription
Reprographics
Information Processing
General Office Procedure
Office Procedure
In School Office Education
Adv. Office Procedures
Coop. Voc. Education

11th & 12th Grades

Accounting I
Market & Bus Ownership
Coop. Voc. Education

BUSINESS

HEALTH

10TH GRADE

Orientation to Health Occupations

11TH and 12TH GRADES

Nurse Assistant I

Cooperative Vocational Education

HOME ECONOMICS

9TH GRADE

Orientation to Home Economics

Occ. of Homemaking
10th Grade

Foods & Nutrition I
Foods & Nutrition II
Cloth & Textiles I
Cloth & Textiles II
Child Development

11th & 12th Grades

Living Environments
Resource Management
Parenting
Adult Living

Child & Day Care Serv.
10th Grade

Child Development
Foods & Nutrition I

11th & 12th Grades

Child & Day Care I
Child & Day Care II
Cooperative Voc. Educ.

Cloth & Apparel Serv.
10th Grade

Cloth & Textiles I
Cloth & Textiles II

11th & 12th Grades

Cloth & App Serv I
Cloth & App Serv II
Cooperative Voc. Educ

Food Services
10th Grade

Foods & Nutrition I
Foods & Nutrition II

11th & 12th Grades

Food Services I
Food Services II
Cooperative Voc. Educ.

HEALTH & HOME ECONOMICS

INDUSTRIAL

9TH GRADE

Exploring Technology

Construction
10th Grade
Wood I
Electricity
Drafting I

11th & 12th Grades
Bldg. Trades I
Bldg. Trades II
Coop. Voc. Educ.

Electronics
10th Grade
Electricity
Drafting I

11th & 12th Gradea
Voc. Electronics I
Voc. Electronics II
Coop. Voc. Educ.

Technical Prep.
10th Grade
Electricity
Drafting

11th & 12th Grades
Prin. of Technology I
Prin. of Technology II
Coop. Voc. Educ.

Commercial Artist
10th Grade
Visual Art

11th & 12th Grades
Commercial Art I
Commercial Art II
Coop. Voc. Educ.

Manufacturing
10th Grade
Machine Tech
Electricity
Drafting

11th & 12th Grades
Voc. Mach. Tech I
Voc. Mach. Tech II
Coop. Voc. Ed.

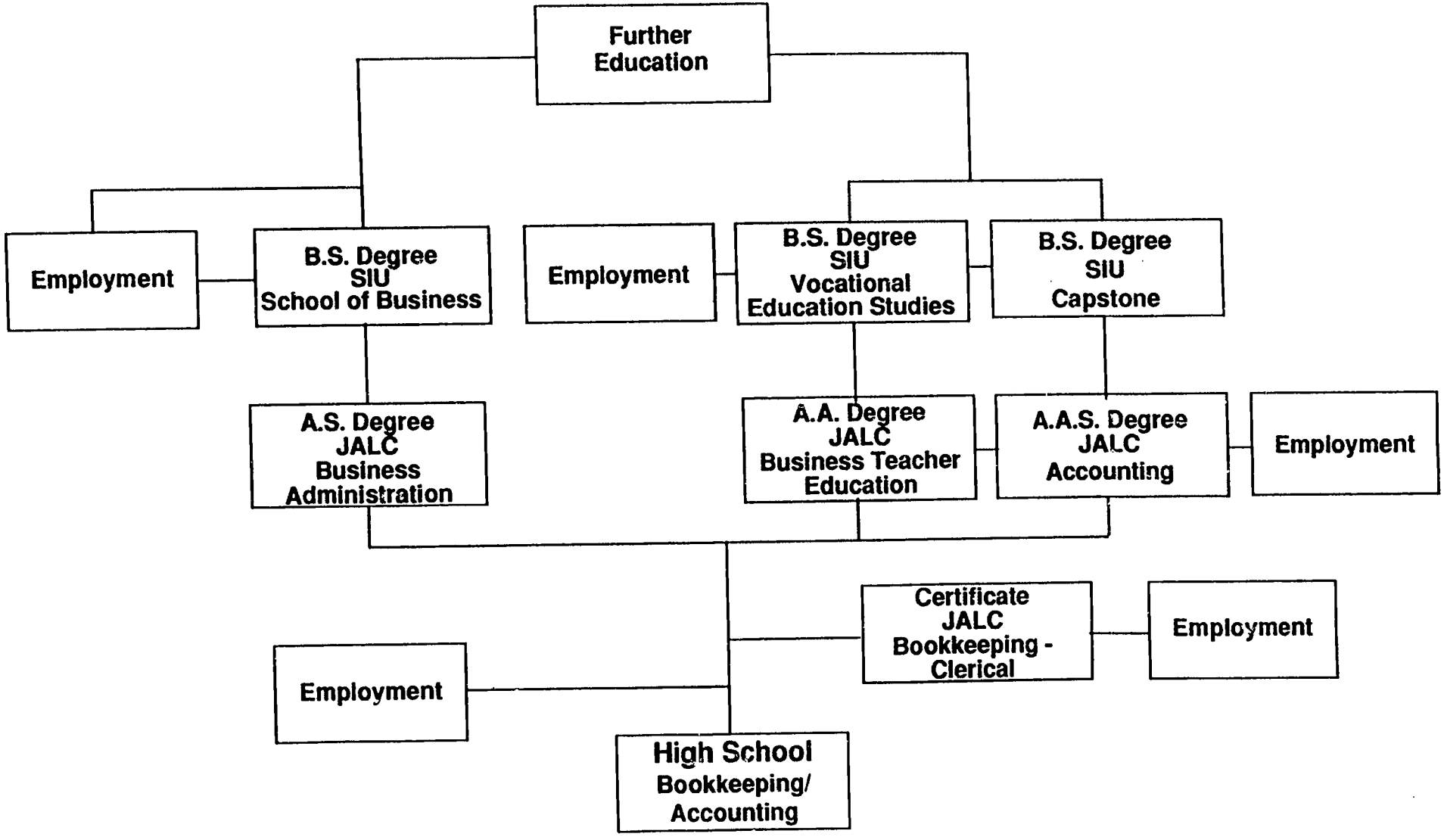
Drafter/Computer-Aid
10th Grade
Drafting I

11th & 12th Grades
Draft/Computer Aid I
Draft/Computer Aid II
Coop. Voc. Educ.

Transportation
10th Grade
Auto Mechanics
Small Engine Repair
Electricity

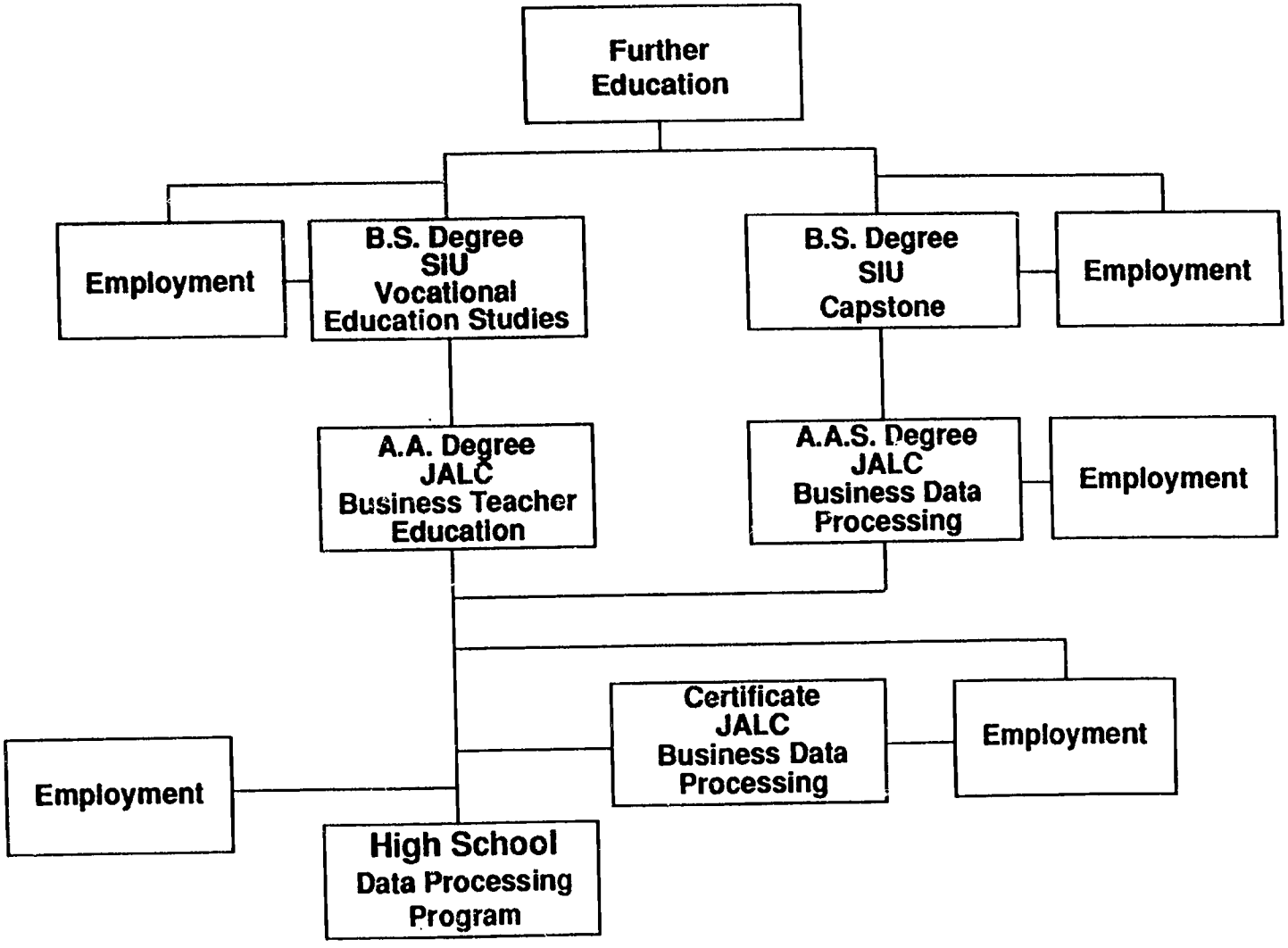
11th & 12th Grades
Transp-Auto Tech I
Transp-Auto Tech II
Coop. Voc. Educ.

INDUSTRIAL



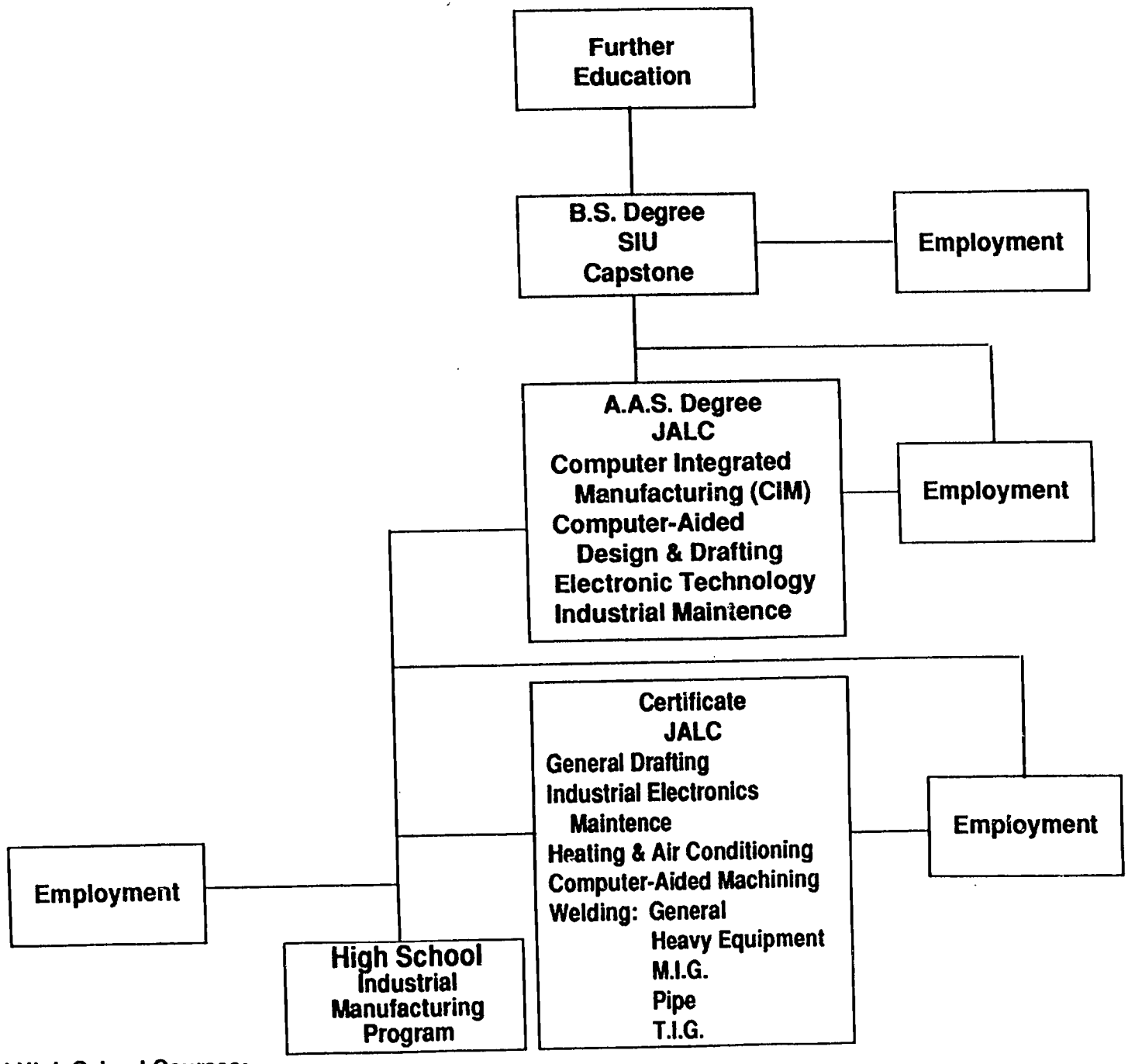
Recommended High School Courses:

11-29-90



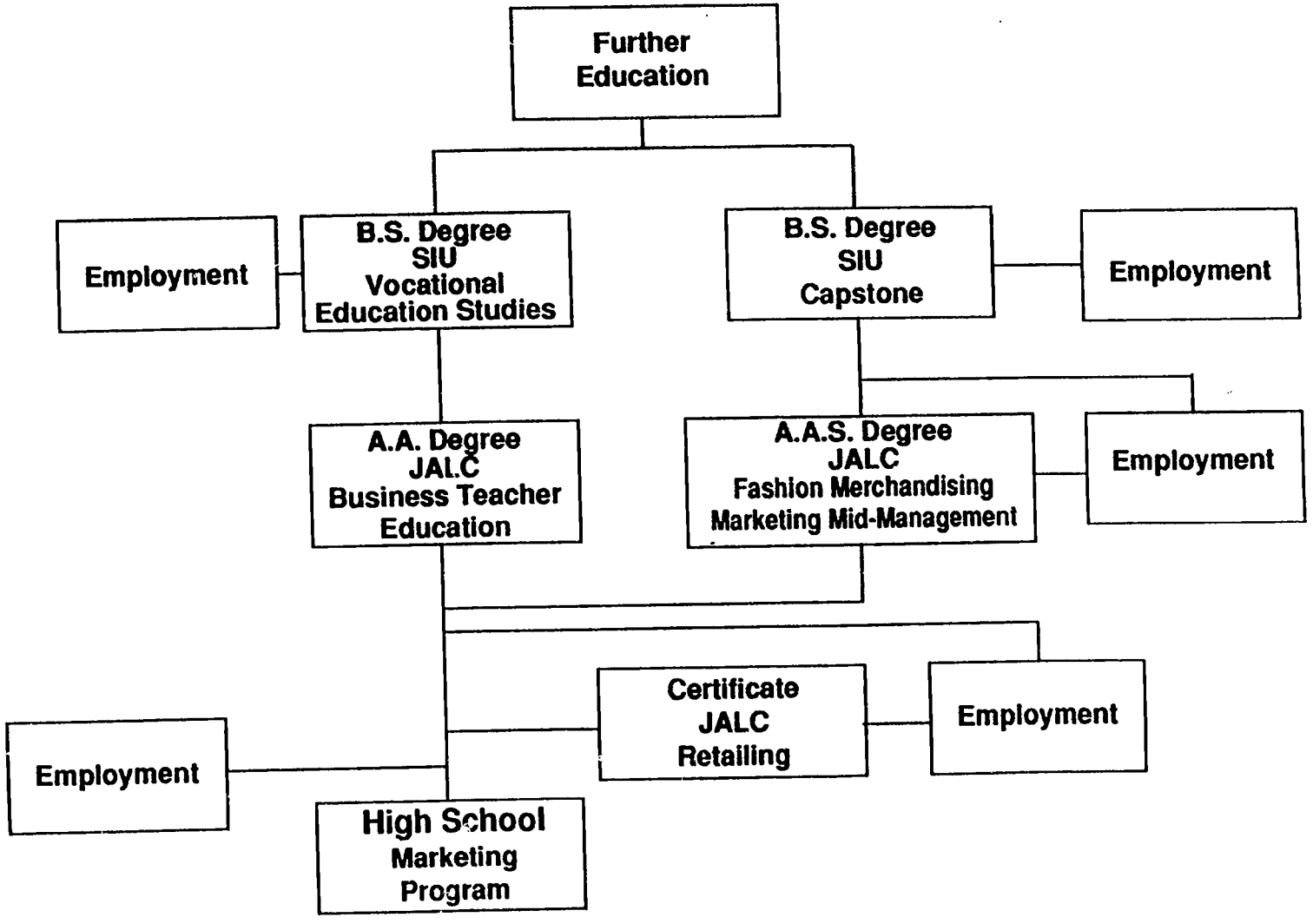
Recommended High School Courses:

11-29-90



11-29-90

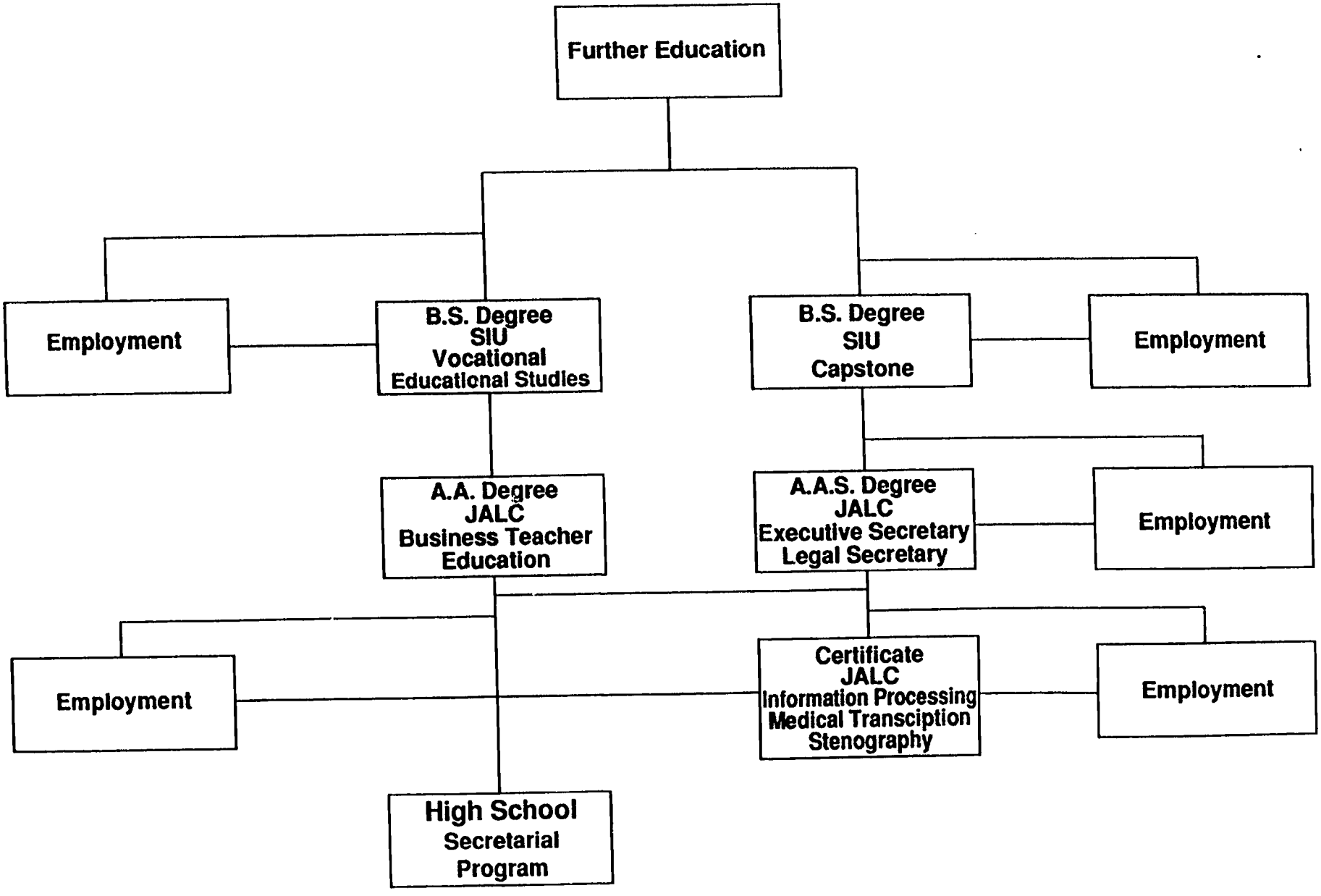
Recommended High School Courses:



12-04-90

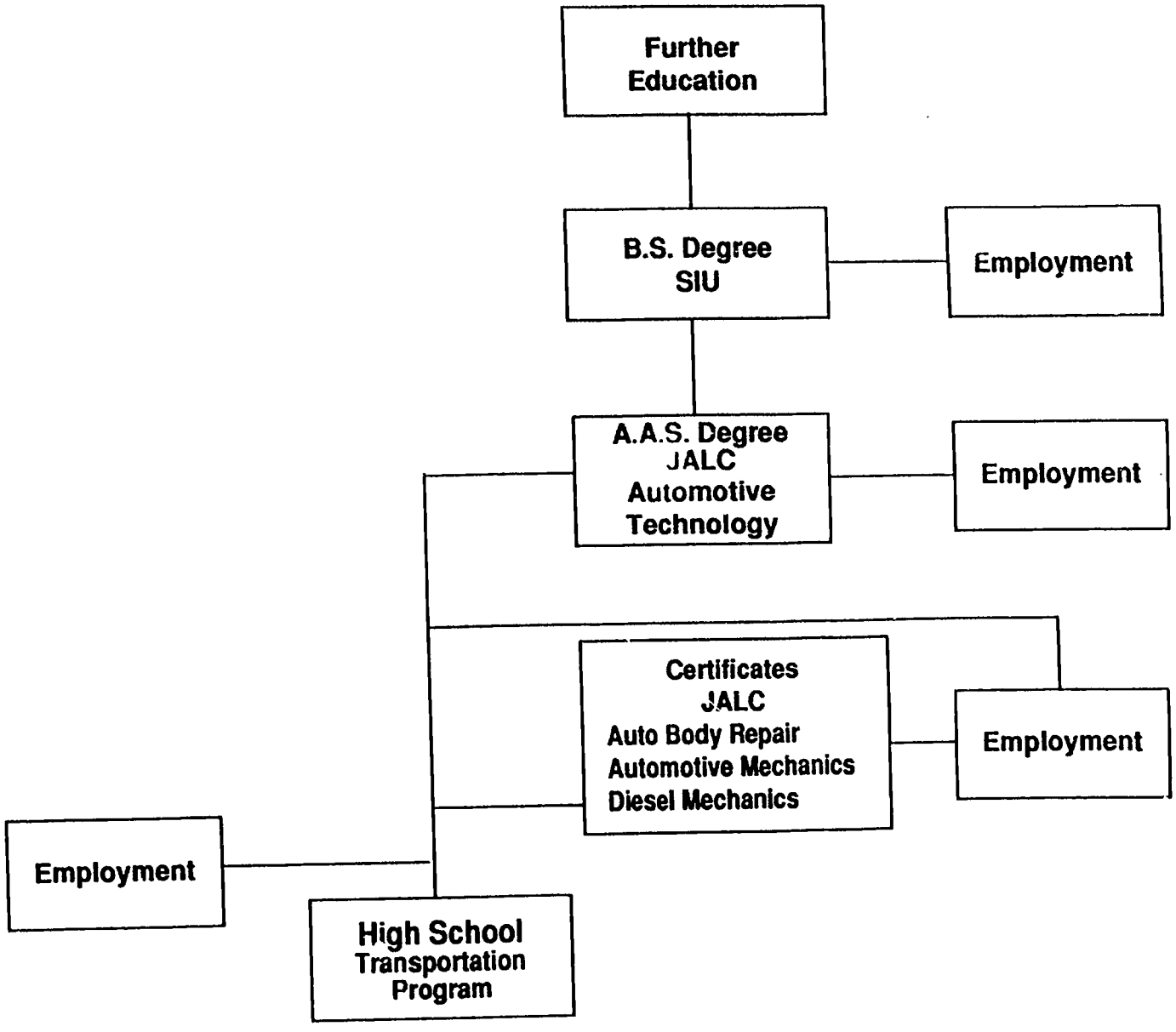
Recommended High School Courses:

35



Recommended High School Courses:

11-29-90



11-29-90

Recommended High School Courses:

John A. Logan College

OBJECTIVES

OBJECTIVE 1 By August 22, 1992, all John A. Logan College vocational-technical faculty will be in-serviced with respect to the total Tech Prep concept.

PROCEDURES

1.1 The entire vocational-technical faculty will attend a half-day Tech Prep in-service session before classes begin in the fall on August 19, 1992.

1.2 Faculty members will evaluate the in-service session by August 29, 1992.

1.3 Interested faculty will volunteer to serve on Tech Prep Steering Committee for the College by August 29, 1992.

EVALUATION

1.1 Attendance will be mandatory and will be checked.

1.2 Faculty members will fill out and turn in an evaluation form on the in-service session to their associate dean by August 29, 1992.

1.3 Faculty members will fill out an application and turn it in to their associate dean by August 29, 1992.

OBJECTIVE 2 By November 30, 1992, all John A. Logan College academic faculty will be in-serviced with respect to the total Tech Prep concept.

PROCEDURES

1.1 The entire academic faculty will be in-serviced using regularly scheduled departmental meetings by November 30, 1992.

1.2 Faculty members will evaluate the in-service session by November 30, 1992.

1.3 Interested faculty will volunteer to serve on the Tech Prep Steering Committee for the College by November 30, 1992.

EVALUATION

1.1 Attendance will be mandatory and will be checked.

1.2 Faculty will fill out an evaluation and submit it to the Career Dean by November 30, 1992.

1.3 Faculty members will fill out an application and turn it into the Career Dean by November 30, 1992.

OBJECTIVE 3 By November 30, 1992, a self-study will be completed by the John A. Logan faculty members directed by the Steering Committee.

PROCEDURES

1.1 By October 1, a questionnaire will be developed by the Steering Committee which will determine how we are incorporating applied units and applied methods in our present classes.

1.2 The faculty will be surveyed using the devised questionnaire by October 30, 1992.

1.3 Survey will be used to determine what changes need to be made in each class.

EVALUATION

1.1 In order to validate the questionnaire,the questionnaire will be field tested by October 15, 1992.

1.2 Surveys will be returned to the Career Dean and results will be tabulated by November 15, 1992.

1.3 By November 30, 1992, each instructor will meet with the appropriate associate dean to determine what changes need to be incorporated into existing classes and how to incorporate the changes.

OBJECTIVE 4 By May 1, 1993, a "Tech Prep Bridge Program" will be in place at John A. Logan College.

PROCEDURES

1.1 By December 31, 1992, the Steering Committee will have reviewed the status of all Tech Prep Programs at the College and the feeder high schools.

1.2 By December 31, 1992, the Steering Committee will have researched the existence and status of bridge programs at other institutions.

1.3 The Steering Committee will make a recommendation for a bridge program to be established by January 31, 1993.

EVALUATION

1.1 The review will be completed by December 31, 1992, and this will be used as basis for recommendations.

1.2 The research will be completed by December 31, 1992.

Carbondale Community High School

OBJECTIVE 1 - By May 1, 1993, we will integrate the academic and vocational areas of study.

PROCEDURES

1.1 List learning activities through VIP program that can be implemented into Tech Prep.

1.2 Incorporate usable materials and information from Connection 2000 Conference into Tech Prep.

1.3 Purchase materials and equipment for integration into Tech Prep.

EVALUATION

1.1 Select activities from VIP program and the Connection 2000 Conference that can be incorporated into Tech Prep.

1.2 Revise syllabi and course outlines.

1.3 Submit itemized bill for equipment and materials purchased for Tech Prep.

OBJECTIVE 2 - By May 1, 1993, well have involved total faculty in the Tech Prep concept.

PROCEDURE

2.1 Visit industrial firms and other schools involved in the implementation of Tech Prep.

2.2 Purchase the Applied Biology/Chemistry materials for implementation into Tech Prep.

2.3 In-service all faculty members with the Tech Prep concept including a Cooperative Learning Seminar.

2.4 Provide a Resource Information Center for Tech Prep materials in the Learning Center and the Guidance Office.

EVALUATION

2.1 Have faculty sign up for visitation and file report with team leader on visit.

2.2 Revise syllabi and course outlines to reflect changes.

2.3 Revise syllabi.

2.4 Establish center.

OBJECTIVE 3 - By May 1, 1993, we will have planned and written the curriculum for the Principles of Technology course to be offered for the 1993-94 school year.

PROCEDURES

3.1 Write course description.

3.2 Choose texts, materials, and equipment.

3.3 Submit the Principles of Technology course of study to the Curriculum Committee and to the Department Chair.

EVALUATION

3.1 Submit to Curriculum Committee for approval.

3.2 Purchase texts, materials, and equipment.

OBJECTIVE 4 - By March 1, 1993, we will have updated the curriculum materials in English, Math, Science, and Vocational Areas to include integrated methods and activities.

PROCEDURES

4.1 Use one day in the summer and one Saturday or two half-days during regular school year.

EVALUATION

4.1 Completed curriculum materials.

Carterville High School

OBJECTIVE 1 - By September 30, 1992, units and activities will be written by our academic and vocational staff which incorporate academics into vocational areas and units and activities to be written by our academic and vocational staff which incorporate applied methods into the academic areas.

PROCEDURE

1.1 Two day meetings in August 1992, with 11 participants (5 vocational, 6 academic teachers) from vocational, math, science, English at Carterville High School to write units.

1.2 One-half day, on a Saturday in April 1993, to evaluate what has been done in the classrooms during the year.

EVALUATION

1.1 Developed units to be used during school year 1992-93.

1.2 Written report will be filed with project director.

OBJECTIVE 2 - By September 30, 1992, we will communicate to the high school faculty ways of implementing applied methods into the academic areas and of bringing basics into the vocational areas. Team will present activities that can be used in classes.

PROCEDURE

2.1 At the beginning of school on a 2:15 p.m. early dismissal day meet with all teachers in program areas for a report of what has been done in all classes.

EVALUATION

2.1 At the end of the school year on a 2:15 p.m. early dismissal day meet with all teachers in program areas for a report of what has been done in all classes and written report filed with project director.

OBJECTIVE 3 - By December 31, 1992, we will in-service teachers at Carterville High School in cooperative learning to be used as a teaching method during school year 1992-93.

PROCEDURE

3.1 One-half day workshop for teachers on cooperative learning, using one of the district's 1/2 day built in in-service days.

EVALUATION

3.1 Evidence of implementation of cooperative learning methods into curricula.

OBJECTIVE 4 - By January 1, 1993, we will establish a computer laboratory which will be available for all vocational and academic teachers for classroom instruction during the seven hours per school day. Small computer lab to be set up on the teachers' work room which is already wired for computers.

PROCEDURE

4.1 Purchase computers.

EVALUATION

4.1 Computer lab available for all teachers during the school day and teachers using the lab with their classes. Usage report filed with project director.

OBJECTIVE 5 - By January 1, 1993, we will purchase software to be used in all teaching areas both academic and vocational.

PROCEDURE

5.1 Academic and vocational teachers work together to select software that will integrate the basics into vocational areas and applied into academic areas.

EVALUATION

5.1 Use of materials by teachers and students.

OBJECTIVE 6 - By June 30, 1993, we will in-service teachers in Tech Prep program from Carterville High School.

PROCEDURE

6.1 Attend 2000 Conference to be held June 10-12.

EVALUATION

6.1 Teachers attending conference incorporating information into Tech Prep program in the high school.

OBJECTIVE 7 - By June 30, 1993, academic teachers will participate in VIP.

PROCEDURE

7.1 Teachers will spend one week working in a related position during summer of 1993.

EVALUATION

7.1 Teachers will work in position related to teaching area. Report to be filed with project director.

OBJECTIVE 8 - By November 1, 1992, we will purchase measuring equipment, calculators, and supplies to be used in Applied Math class and other math classes using applied math activities.

PROCEDURE

8.1 Mathematics teachers will use equipment, calculators, and supplies in applied math activities. One-half day workshop for math teachers to plan and get materials together. 2:15 p.m. in-service day for teachers to evaluate materials used.

EVALUATION

8.1 Actual use of materials by teachers and students.

Crab Orchard High School

OBJECTIVE 1 - By October 1, 1992, we will inform and motivate the educational staff as to the goals of the Tech Prep program and seek their help in implementing such a program.

PROCEDURE

1.1 Conduct a 1/2 day in-service, with Dr. Paul McInturff and Marjorie Jack as resource persons, which would point out to faculty members what employees want from today's graduates in terms of basic skills needed in the workplace.

EVALUATION

1.1 The success of this objective would be measured through the expressed willingness of the faculty to participate through attendance at the in-service and integration of Tech Prep into their classrooms.

OBJECTIVE 2 - By November 1, 1992, we will stimulate cross-curricular involvement through full-faculty planning and participation.

PROCEDURE

2.1 Conduct a second 1/2 day in-service to ensure that all departments are consulted and have input for proposed programs that implement Tech Prep. Each department and each faculty member would fill out a questionnaire including possible suggestions for group projects.

EVALUATION

2.1 The degree of participation in the workshop and the response to the questionnaire would be the method of evaluation for this objective.

OBJECTIVE 3 - By October 30, 1992, we will develop three major cross-curricular projects for the 1992-93 school year that would involve the maximum possible number of students and faculty. An example of such a project might be to have science students evaluate water samples in the community and report their findings to the local water department.

PROCEDURE

3.1 The science department would initiate a student field trip to the S.I.U. Chemistry Department for a study of procedures for analysis. This would be followed up by collection of water samples and a laboratory analysis.

3.2 The mathematics department would analyze the data collected (all work done by students), chart results, and establish a relationship (if one exists) between dependent and independent variables.

3.3 The business department would supervise the actual production of the report in typewritten form, possibly utilizing the computer science department and the art department for diagrams, charts, title pages, etc. The English department would also be involved in the actual presentation of the report.

EVALUATION

3.1 Faculty members from each department would be responsible for evaluation of the portion of the project under their supervision. Unit grades for the project would be given in several areas.

DuQuoin High School

OBJECTIVE 1 - Provide opportunities for Tech Prep team to learn more about integration and stimulate entire faculty involvement by May 30, 1993.

PROCEDURE

1.1 Participate in Connections conference or other similar training, VIP program (both academic and vocational), and visit other schools with successful integration projects.

1.2 Conduct a cooperative learning workshop for the entire faculty.

EVALUATION

1.1 Complete evaluation forms for all faculty training/in-service.

1.2 Produce course outlines showing integration on new procedures learned in VIP, visits or staff training.

OBJECTIVE 2 - By June 1993 we will successfully integrate applied mathematics into the curriculum.

PROCEDURE

2.1 Identify cord materials and related software needed to help determine the needs of students for remedial math work.

2.2 Conduct a workshop for math teachers to show them available materials and software.

EVALUATION

2.1 Purchase materials and software.

2.2 Submit course outlines and unit plans utilizing applied mathematics materials.

OBJECTIVE 3 - By June, 1993, will have successfully integrated Applied Biology/Chemistry materials into the existing biology curriculum.

PROCEDURES

3.1 Identify modules and equipment needed. Use Model 1-6 purchased during 1991-92 school year.

3.2 Implement modules.

EVALUATION

3.1 Purchase modules and equipment.

3.2 Submit course outline by June 1993 showing areas of integration of Applied Biology in curriculum.

OBJECTIVE 4 - To successfully implement the self-study Health Occupations course into the DHS curriculum by May 1, 1993.

PROCEDURES

4.1 Identify the textbook material and tapes from ISBE.

4.2 Identify 4-6 people planning to pursue a career in a health occupations.

4.3 Expose students to various health occupations through tours of regional facilities.

EVALUATION

4.1 Purchase text, materials, and tapes.

4.2 Enroll students.

4.3 Arrange to use.

OBJECTIVE 5 - By June 1993 DuQuoin High School will integrate Principles of Technology into the Tech Prep curriculum using the first seven units published by CORD.

PROCEDURE

5.1 Order the text from CORD, purchase the appropriate equipment, visit other schools that have a Principles of Technology class.

EVALUATION

5.1 Check enrollment for September 93 to see if there is an interest in keeping the Principle of Technology Class. Poll the students that have completed the class to see if they feel the course was worth while and to make changes based on some of their recommendations.

OBJECTIVE 6 - By June of 1993 to successfully integrate Applied Communications materials into the existing English curriculum.

PROCEDURE

6.1 Acquire modules 1-15 in the English classes.

6.2 Secure literary works with Applied Communication vocational literature titles.

EVALUATION

6.1 Revise syllabi.

6.2 Submit a list of book titles and a list of those students reading the selected books for individual reports.

Frankfort Community High School

OBJECTIVE 1 - By August 19, 1992, four areas: Principles of Technology, Applied Mathematics I, Applied Communications, and Applied Biology will be coordinated through counselors, administrators, and involved teachers so that students in one area will have flexibility in scheduling to be involved in all areas.

PROCEDURES

1.1 FCHS will confirm its choices of the Tech Prep curriculum and implement a schedule which allows participation in all four areas. Math, Biology, and English will retain the regular curriculum guides but will be taught in an applied manner.

EVALUATION

1.1 By August 19, 1992, FCHS will submit a master schedule implementing all Tech Prep classes.

OBJECTIVE 2 - By January 4, 1993, the area of Applied Math (Algebra II) will introduce Applied Math I.

PROCEDURES

2.1 Applied Math I will use the CORD text in conjunction with 30 scientific calculators necessary for course work. Applied Math I will also add 30 TI 81 calculators and a TI 81 view screen to facilitate student understanding of more complex lessons in relation to the advanced CORD lessons. These aids will also promote familiarity with more advanced technology needed in Advanced Math II and real job situations.

2.2 Applied Math I will focus on Cooperative Learning strategies in its instruction which will necessitate the purchase of tables and chairs for the correct instruction environment.

2.3 Equipment needed for Applied Math I:
30 scientific calculators
30 TI 81 calculators
1 TI 81 view screen
5-6 tables
30 student chairs
1 storage case for TI 81 calculators

EVALUATION

2.1 Lesson plans will reflect usage of scientific calculators, TI 81 calculators, and TI 81 view screen.

2.2 Lesson plans will specify cooperative learning activities.

2.3 By January 4, 1992, equipment will be accounted for on Applied Math I instructor's inventory sheet.

OBJECTIVE 3 - By January 4, 1993, Applied Communications will be taught in an English III C section, using CORD to supplement the existing junior composition curriculum. This course will focus on as many areas of communication as feasible: i.e. oral, written, visual, and electronic.

PROCEDURES

3.1 The Applied Communications instructor will teach composition, research methods, group work, and electronic communication using CORD materials in conjunction with the standard junior composition text.

3.2 Presentations will be made using the overhead projector, VCR and monitor, worksheets, and computer assisted writing and electronic researching methods.

3.3 A computer lab large enough to accommodate class size, equipped with software, modem, and CD rom capability will be used to facilitate students' understanding of modern technology as it is in use at job entry level by most of the companies in this area.

3.4 The instructor will need to be trained in whichever software area, hardware use, and electronic search procedures are selected by the overseeing agency.

3.5 Equipment needed for Applied Communications
15--20 Computer stations with printer(s)
Word processing software compatible for above hardware
Electronic Research Material compatible for above
CD ROM equipment
Telephone
Modem

EVALUATION

3.1 Lesson plans will reflect use of CORD activities.

3.2 Lesson plans will incorporate the use of the overhead projector, VCR and monitor, worksheets, and computer generated writing, editing, and researching.

3.3 By January 4, 1993, a computer lab will be installed for Tech Prep classes in a site accessible to Applied Communications as well as other Tech Prep areas, in accordance to the master schedule.

3.4 The instructor will receive training from the installing company or from an agency designated as instructors of procured software and hardware.

3.5 Equipment needed to facilitate the above instruction will be on the FCHS inventory or on the designated instructor's inventory of equipment.

OBJECTIVE 4 - By January 4, 1993, the area of Applied Biology will be introduced in a section of freshman science.

PROCEDURES

4.1 The Applied Biology instructor will incorporate labs from the CORD texts in conjunction with the standard biology curriculum.

4.2 Presentations will be made using VCR and monitor, lab demonstrations, and group lab projects involving materials commonly used in technical applications for science related vocations. (A VCR Monitor System will need to be purchased.)

4.3 The instructor will be trained in the CORD procedures and familiarized with the equipment necessary for those labs.

4.4 Some labs will require the procurement of equipment:

Calorimeter Kit
PH meter
hot plate
Soil test kit (Sudbury)
Drying oven
Triple-beam balance (121 g @ 0.01g)
Lugol's solution
Dialysis tubing
Luria broth agar
ampicillin vials
EDTA Buffer
Rnase A buffer
Sarkosyl solution
Pronase buffer
Tris Buffer
10 ml pipettes
Isopropanol
gel electrophoresis chamber w/power supply
DNA visualization system
electrophoresis buffer
straw thermos
Background and storage envelopes for moths
Background and storage envelopes for squar
Set of 59 moths of 9 different color patterns
Set of 82 squares
Set of 82 squares
Natural selection kit
DNA plasmids
Micropipette (automatic)
incubator
Micropipettes (adjustable)
Acetate sheet
1--5 pipettes
Water bath

EVALUATION

4.1 Lesson plans will reflect the use of CORD texts.

4.2 Lesson plans will incorporate the use of a VCR and monitor and the VCR/monitor will appear on the instructors equipment inventory. Lesson plans will also reflect technical application labs.

4.3 The instructor will have completed a training class on the CORD instruction method.

4.4 Equipment will be on the instructor's equipment and supply inventory.

OBJECTIVE 5 - By January 4, 1993, the Principles of Technology instructor will enhance his I and II level instruction by use of the CORD text, video instruction, math skills labs, and technical labs.

PROCEDURE

5.1 Identify equipment needed.

5.2 The Principles of Technology instructor will implement eight lab stations to enhance the understanding of existing technology in the work place in PT I and two lab stations will be added to the PT II program.

EVALUATION

5.1 Purchase equipment.

5.2 The lesson plans of PT I will reflect the use of CORD, video instruction, math skills labs, and technical labs for eight lab stations and two additional stations in PT II.

Herrin High School

OBJECTIVE 1 - In-service entire faculty on Tech Prep by October 31, 1992.

PROCEDURES

1.1 Herrin High School will hold two 1/2 day institutes to educate the faculty members on the principles of Tech Prep. First session will be with area speaker to introduce principles of Tech Prep. Second session will be in small integrated groups to identify areas in which course work overlaps. Teachers will brainstorm ways to integrate curriculum and will pick one topic on which to concentrate.

EVALUATION

1.1 By the end of the second session, each group will produce a list of possible cross-curricular teaching ideas and the teachers who will participate in the activity.

OBJECTIVE 2 - In-service faculty on cooperative learning by May 1, 1993.

PROCEDURE

2.1 By the end of the school year, Herrin High School faculty will participate in a 1/2 day Cooperative Learning Workshop. Judith Ivarie (or alternate) will conduct 1/2 day in-service at Herrin High School.

EVALUATION

2.1 Teachers will attend and complete in-service evaluation form.

OBJECTIVE 3 - In-service of Tech Prep team members for expanding Tech Prep curriculum and development of materials by May 1, 1993.

PROCEDURES

3.1 In-service will include release time to coordinate Tech Prep objectives, educational tours, conferences, and VIP. Five 1/2 days of release time for up to five team members to coordinate and work on interdisciplinary curriculum development and applied academic implementation activities. Days will be every other month starting in August, but can be adjusted if need be. Three days release time for up to five team members. Two days will be spent in metropolitan area touring industries to identify principles of technology in the workplace, or visiting schools who employ Tech Prep principles in their curriculum. One day will be devoted to touring local industries for examples of applications. Release

time to provide opportunity for 6 team members to attend educational conferences and VIP work. Ten teachers will be allowed to attend a summer Tech Prep workshop for 3 days. Six teachers will be allowed to attend Connections 2000, a summer workshop. Stipend for 3 days work time during the summer for team members for development of curriculum materials.

EVALUATION

3.1 Team members will take advantage of the opportunities provided.

OBJECTIVE 4 - By May 1, 1993, the faculty will develop a student awareness of Tech Prep applications in life. Students will be exposed to outside speakers and field trips to area industries.

PROCEDURES

4.1 Teachers will bring in area business and industrial personnel to speak to their classes.

4.2 Academic and Vocational students will take field trips to area businesses and industries. Plans include a total of 2 buses and substitutes for four people.

EVALUATION

4.1 Students will identify areas in which their educational skills will carry over to the work world.

4.2 Students will fill in a questionnaire concerning the field trips.

OBJECTIVE 5 - By June 1, 1993, the Tech Prep team will seek publicity to make community, faculty, and students more aware of Tech Prep objectives.

PROCEDURES

5.1 Teachers will have two cameras and film available to take pictures and slides of Tech Prep activities.

5.2 Team members will seek local newspaper publicity for program.

EVALUATION

5.1 Vocational Advisory Committee will be made aware of Tech Prep Program.

5.2 All publicity releases will be filed with project director.

OBJECTIVE 6 - By June 1, 1993, Herrin High School will implement a Principles of Technology course.

PROCEDURES

6.1 Identify equipment, books, and materials necessary for the course.

6.2 Provide release time for the instructors involved to visit local schools which are using the program.

6.3 Train two teachers who will be directly involved in implementing the program.

EVALUATION

6.1 Purchase equiplment, books, and materials.

6.2 Arrange for visits.

6.3 Provide training.

OBJECTIVE 7 - By June 30, 1993, we will provide additional equipment for Tech Prep Curriculum. Additional equipment is needed to facilitate the instruction of students.

7.1 Identify equipment: four additional microscopes and three additional triple beam balances which will be used to facilitate food science instruction. A computer, printer, monitor, and computer stand to facilitate math instruction. Software which shows the students the direct application of mathematics to the business world. PC viewer to project computer software onto an overhead screen so all students can utilize it at the same time. 24 meter sticks, 12 rulers, and 10 solar calculators to implement applied principles.

EVALUATION

7.1 Purchase equipment.

Johnston City High School

OBJECTIVE 1 - By May 1, 1993, we will have indoctrinate the entire faculty as to what Tech Prep is, what has already been done, as well as plans for the future.

PROCEDURES

1.1 In-service training (1/2 day) for all high school faculty.
- A. Show the Daggett tape.
- B. Team members explain progress and plans.

EVALUATION

1.1 Observe faculty involvement in integration process during the 1992-93 school year.

OBJECTIVE 2 - By January 1, 1993, we intend to integrate English/Vocational by teaching the skill of word processing to sophomore level students through their English courses.

PROCEDURES

2.1 Add four computers and two printers.

2.2 Use an IBM/IBM compatible lab in the business department to instruct and assist students. (Only one is now available. For our size school, 12 computers is a reasonable goal.)

EVALUATION

2.1 Purchase computers and printers.

2.2 Teacher evaluation of completed assignments. Student reaction to new skill.

OBJECTIVE 3 - By January 1, 1993, we intend to show how lasers can be used in everyday life for such vocational work as surveying, field drainage, and pipe construction.

PROCEDURE

3.1 Identify laser and laser equipment.

3.2 Demonstrate with water and water pipes on open fields--like our football field.

EVALUATION

3.1 Purchase equipment.

3.2 Have several students set up projects outside of classroom, surveying elevation for pond dams, etc.

OBJECTIVE 4 - By June 1, 1993, we intend to familiarize staff with applied math problems and get them to use them in class.

PROCEDURE

4.1 Hold three 1/2 day in-service on applied math and using a newspaper for applied math in Grades 5 - 12.

Day 1 -- Introduction
Day 2 -- Work on modules for class
Day 3 -- Evaluate the effectiveness of modules and rewrite.

EVALUATION

4.1 Staff perceptions. Student evaluations.

MARION HIGH SCHOOL

OBJECTIVE 1 Faculty and staff to be in-serviced by October 31, 1992.

PROCEDURES

1.1 All faculty and staff will be in-serviced to ensure that they have a complete understanding of Tech Prep and the Carl Perkins Act.

1.2 The Tech Prep team will take steps to ensure that the faculty and staff is working toward one common goal.

EVALUATION

1.1 Administration will monitor Tech Prep in-service activities to ensure that all faculty attend.

1.2 Tech Prep team committee will meet with department heads and verify Tech Prep understanding.

OBJECTIVE 2 By May 30, 1993, interested faculty will visit business/industry to become aware of current trends and needs.

PROCEDURES

2.1 Interested faculty will apply for visitations.

2.2 Discussion and correspondence with faculty concerning the visitations and their intended approach to the classroom with information obtained from the visitations.

EVALUATION

2.1 Tech Prep team will select faculty for visitations.

2.2 Revised syllabi will be submitted.

OBJECTIVE 3 By June 30, 1993, we will provide our faculty with the opportunity to share in the current labor market and share that knowledge with their students.

PROCEDURES

3.1 Interested faculty will apply.

EVALUATION

3.1 Observation and discussion with faculty and student feedback.

OBJECTIVE 4 By May 30, 1993, we will provide informational workshops for our faculty to enhance their understanding of Tech Prep.

PROCEDURES

4.1 We will provide workshops to bring our faculty closer together and provide additional applied strategies to all.

EVALUATION 4.1 Discussion and visitation to classroom to view teaching strategies.

OBJECTIVE 5 By March 31, 1993, a study will be completed investigating the feasibility of offering an integrated (math, physics, technology) course to a randomly selected group of 24 ninth grade students. Proposal enclosed. (See Appendix __.)

PROCEDURES 5.1 By December 1, 1992, Tech Prep team will have evaluated course materials.

5.2 Submit suggested course by December 31, 1992.

5.3 Seek course approval.

5.4 Seek student enrollment.

EVALUATION 5.1 Purchase materials and submit written evaluation to EFE.

5.2 Submit course syllabus.

5.3 Submit new course through curriculum approval process.

5.4 Offer new course on schedule.

OBJECTIVE 6 To provide applied classroom materials to faculty to implement a uniform applied curriculum by May 1, 1993.

PROCEDURES 6.1 Tech Prep team will provide applied materials and provide necessary training to faculty.

EVALUATION 6.1 Student participation and faculty feedback will be monitored by Tech Prep team.

OBJECTIVE 7 To provide faculty and students with a computer lab to work on applied curriculum and integration by June 1, 1993.

PROCEDURES 7.1 Determine equipment needed.

7.2 Structure a uniform computer applied curriculum.

7.3 Develop procedure to allow academic and vocational instructors to work together designing strategies, selecting programs and methods.

EVALUATION 7.1 Purchase and install equipment.

7.2 Curriculum will be submitted to Tech Prep team.

7.3 Academic and vocational instructors regularly attend the computer lab to observe how students apply the concepts that were involved in both academic and vocational classes.

Murphysboro High School

OBJECTIVE 1 - By September 15, 1992, the faculty of Murphysboro High School will have an orientation to Tech Prep.

PROCEDURE

1.1 Conduct orientation sessions with faculty from Marion, Carterville, DuQuoin, Trico, and Carbondale.

EVALUATION

1.1 All participants will file evaluation forms with EFE.

OBJECTIVE 2 - By May 31, 1993, faculty will have released time to visit classes of other faculty members at the high school to work on integration activities between academics and vocational.

PROCEDURE

2.1 Interested faculty will apply.

2.2 Faculty members will file plan with EFE for use of released time with team leader.

EVALUATION

2.1 Faculty will be selected by the Tech Prep team.

2.2 Evaluation will be filed with EFE.

OBJECTIVE 3 - By May 31, 1993, faculty at Murphysboro High School will have released time to visit classes of other Tech Prep programs currently in place in other area schools.

PROCEDURE

3.1 Interested faculty will apply.

3.2 Faculty will file plan with EFE for realeased time.

EVALUATION

3.1 Faculty will be selected by the Tech Prep team.

3.2 Evaluation will be filed with EFE.

OBJECTIVE 4 - By June 1, 1993, VIP monies should be awarded to interested academic faculty to work in areas related to their teaching assignments.

PROCEDURE

4.1 Faculty will file application with EFE.

EVALUATION

4.1 A formal report will be filed with EFE.

OBJECTIVE 5 - By March 30, 1993, interested faculty will be able to attend a cooperative learning workshop presented by Dr. Judith Ivarie, Eastern Illinois University and subs will be provided.

PROCEDURE

5.1 Application filed with EFE.

EVALUTATION

5.1 Evaluation filed with EFE.

OBJECTIVE 6 - By June 1, 1993, interested faculty will be able to attend seminars, conferences, and workshops related to Tech-Prep.

PROCEDURE

6.1 Plan filed with EFE.

EVALUATION

6.1 Evaluation filed with EFE.

OBJECTIVE 7 - By December 1, 1993, interested faculty will be granted released time to become acquainted with the CORD materials of other applied materials and will then work with other faculty members in other departments on integration activities.

PROCEDURE

7.1 Need to identify materials.

7.2 Work sessions scheduled.

EVALUATION

7.1 Materials purchased.

7.2 Syllabi revised.

OBJECTIVE 8 - By June 1, 1993, a Principles of Technology course should be offered as a science elective.

PROCEDURE

8.1 Identify materials.

8.2 Identify equipment.

8.3 Organize course.

EVALUATION

8.1 Purchase materials.

8.2 Purchase equipment.

8.3 Implement course.

OBJECTIVE 9 - Establish computer and multi-media lab for Tech Prep students by June 1, 1993.

PROCEDURE

9.1 Identify equipment.

9.2 Identify role of lab for Tech Prep students.

EVALUATION

9.1 Purchase equipment.

9.2 Establish lab as supplemental Tech Prep lab.

Trico Community High School

OBJECTIVE 1 - Establish a writing lab by December 1, 1992.

PROCEDURE

1.1 An integrated writing format, including all Tech Prep and academic classes across the curriculum, will be initiated.

1.2 Choose the right computers.

EVALUATION

1.1 Purchase and install computers.

1.2 Educators will submit an evaluation of format as to up-dated and acceptable forms.

OBJECTIVE 2 - By December 1, 1992, all involved Tech Prep team members will participate in a one day, learning field trip to a successful area industry and John A. Logan College. Here they will learn first hand the needs and expectations that industry has for its workers and the resources available to address these needs.

PROCEDURES

2.2 All team members will identify areas within their curriculum that, when integrated, will directly address the needs and expectations expressed by industry. These will concentrate in the areas of problem solving, communication, creative thinking, and teamwork.

EVALUATION

2.2 By the end of the first semester, all team members will have materials addressing these areas available for integration.

OBJECTIVE 3 - By June 1, 1993, team members will have the opportunity to participate in Sharing Days on the local level and visitations to other school systems. This will provide opportunities to discuss ideas on integration with other involved educators.

PROCEDURE

3.3 Funding for substitute teachers will be available for two days in each the fall and spring semesters at the local level for all involved teachers. Funding for a bank of a minimum of 20 days, will be available for individual teacher visitations to other schools.

EVALUATION

3.3 Participating teachers will submit documents containing information gained to the team leader for distribution to team members.

OBJECTIVE 4 - By June 1, 1993, the Tech Prep team will develop an Information Resource System at Trico High School. The system will house curriculum materials, resource guides, and available equipment lists.

PROCEDURE

4.4 Team members will install copies of resource materials and equipment valuable to integration. This information will be available for utilization by all members.

EVALUATION

4.4 Members will have knowledge of all available resources and implement them into their curriculum where possible. All members will document the utilization of equipment and resources as well as the benefits provided by their use.

OBJECTIVE 5 - By June 1, 1993, we will initiate courses in Biological Science Applications in Agriculture and Physical Science Applications in Agriculture in an effort to integrate academic and vocational agriculture curriculum.

PROCEDURE

5.5 Trico will acquire the necessary materials and resources to start the programs.

EVALUATION

5.5 All involved instructors will submit an evaluation of the course, its content, and the overall effectiveness of the class.

Carterville High School - Kemp

APPENDIX C

SCIENCE DEPARTMENT
(Two Years Required)

PHYSICAL SCIENCE (Required)

Credits: 1
Prerequisites: None
Grade Level: 9
Course Description: The aim of the required course in physical science is to present basic scientific laws and principles which, in our scientific age, should be familiar to all students regardless of their educational objectives. Even the non-scientist needs to know the difference between a theory and a law; become aware of the uncertainties in science; how a scientist thinks and works; and something about the philosphy, history, and social implications for the scientist's work. In agreement with this philosopy, physical science has been selected as the only required science course at Carterville High School. In order to accomplish this aim, the student must learn and analyze large numbers of carefully selected facts about chemistry, physics and geology. Some of the specific areas studied include: matter, energy, motion, space science, metric metrology, heat, light, sound, work, meteorology, music and nucleonics. The facts must then be assembled, sorted and correlated by logical reasoning and imagination. Effort is made to present the broad base of the various science disciplines with a directness and simplicity which will enable the student to achieve maximum comprehension and appreciation of the disiplines. During the final term of the course, students are introduced to the biological sciences in order that they become aware of the differences, similarities, and interrelationships between the physical and biological disciplines.

BIOLOGY I

Credits: 1
Prerequisites: Physical Science
Grade Levels: 10, 11 and 12
Course Description: Biology is the study of life and the processes that enable it to promote itself. It is the study of the living condition, how it came to be and how it changes. During the course, the student will learn how cells, the building blocks of life, carry on processes essential for life, such as growth, respiration, digestion, division and synthesis. Environmental relationships such as food chains, food webs, food cycles, biogeochemical cycles and symbiosis are studied so the student can understand and appreciate his position as a living organism on this planet. The continuity of life can be understood as similarities in many life forms can be seen in the dissections and vivisections of the sponge, earthworm, grasshopper, crayfish, starfish, clam, perch and frog. The information gathered from these dissections helps the student to recognize his own structure, function and relationship to other living things. The study of the classification of plants and animals as well as leaf and insect collections are part of the course. To get the most out of the class, the student should try to develop skills in scientific method, observation and microscopic technique.

BIOLOGY II

Credits: 1
Prerequisites: Biology I
Grade Levels: 11 and 12
Course Description: Biology II is basically the study of human anatomy and physiology, although other topics are included. The first nine weeks is used to study the cell, protein synthesis, genetics, photosynthesis, respiration, various ecological relationships and a review of the classification of plants and animals. The remaining three 9 week periods are spent studying anatomy and physiology. Units of study include histology, the skeletal system and muscular system in detail, the circulatory system, the respiratory system and reproductive system. Dissections are made of the fetal pig, domestic cat, shark, sheep brain, cow eyes and sheep hearts. Two field trips are scheduled, one to the SIU Medical Center and the other to the Environmental Center at SIU. Before entering the advanced biology class, the student should have passed Biology I with at least a B average. The course materials are set up to meet the needs of those who intend on going to college as well as those who do not.

EARTH SCIENCE

Credits: 1
Prerequisites: Physical Science
Grade Levels: 10, 11 and 12
Course Description: Earth Science is a course dealing with the physical features of the earth. Topics covered include: geology, the study of the earth's solid rock, with special emphasis on identification of rocks and minerals; meteorology, the study of the earth's atmosphere especially as it relates to weather; and oceanography, the study of the oceans and their basins. There will be lectures, instructor demonstrations and some laboratory work.

CHEMISTRY I

Credits: 1
Prerequisites: Physical Science and a second year of science
Grade Levels: 11 and 12
Course Description: The aim of the introductory course in Chemistry is to present a framework of basic chemical laws and principles which in our scientific age should be familiar to all students, regardless of their educational objectives. A knowledge of the laws, principles and concepts of theoretical chemistry and the facts of traditional descriptive chemistry discussed will help students to understand ordinary chemical and other scientific phenomena which they encounter in their every-day activities and appreciate the role of the chemist and chemical industry in the evolution of our present day highly technological society. While emphasis is placed on the study of inorganic chemistry; the laws, principles and concepts dealing with organic, physical, pharmaceutical and nuclear chemistry are also studied. It is recommended that the prospective student has received adequate preparation in algebra.

[Units from Applied Biology / Chemistry]

APPENDIX C

Freshman (Sophomore)

Bio. I

Course Outline

Kemp

Room 305

Units

I Brief History of Science

A) Who, What, When, Where, Why of Science

B) Definition of Science

C) Types of Science (Pure & Applied)

D) Branches of Science

E) Methods of Science

II Study of Living things - Unit 6 -

A) Science and Problem Solving

B) Tools and Techniques

C) Basic chemistry (Molecular models) Unit 6 Vitamins p. 189-190

D) Organic chemistry - Unit 6 (pages 46-51) Subunit 2 - Subunit 1 (page 10-11), Unit 7 p. 197-205

III The Cell's structure and function - Unit 5, p. 4-5

A) Organelles and their functions - Unit 5, Subunit 1 p. 5-6

Unit 6, Lab 6 - B) Cell TRANSport (Diffusion, osmosis, Active transport)

C) Cells and energy (ATP, Respiration, Photosynthesis, Fermentation)

D) Protein Synthesis (DNA - RNA) - Unit 5, p. 15

E) Cell Reproduction (Meiosis & Mitosis) - Unit 5, p. 16 p. 45

IV Continuity of Life

A) Mendel's Laws (Monohybrid & Dihybrid Crosses)

B) Probability & genetics $p^2 + 2pq + q^2 = 1$

C) Human Genetics (Blood groups, Rh, etc) - Unit 5, Lab 6 p. 131 p. 121-122

D) Applied Genetics - Unit 5, Subunit 6 p. 164-174

E) The Chromosome Theory and Sex Chromosomes - Unit 5, p. 119

F) DNA, Genes & Mutations & Variations - Unit 5, p 10-15 p. 143-144

V Diversity of Life - Unit 5 -
A) Change through time. (Beginning of Life) (Evolution)
B) Theory of Evolution by Natural Selection. - Unit 5, p. 144 p. 157
C) Patterns of Evolution. (Hardy-Weinberg Law)
D) Human Evolution. (Ramapithecus to Cro-magnon)
E) History of Classification + TAXONOMY
F) Survey of the 5 Kingdom System of Classification

VI Human Biology - Unit 5 p. 49-50 Unit 6
A) Systems of the body. - Subunit 3 (pages 90-103)
B) Human disease - Unit 7, Subunit 3 (p 91-113)
C) Alcohol, Tobacco, Drugs - Unit 7, Subunit 4 p. 137-171

VII Plant reproduction
A) Flower parts, seed development to fruit.
B) Spore formers (Ferns, etc)
C) Leaf Collections

VIII Ecology - Unit 1 -
A) Food Chains + Webs
B) Symbiotic relationships
C) Ecological Succession (Biomes)
D) Conservation of Resources. - Unit 1 - Natural Resources

(Juniors + Seniors)

Biology II — Modern Human Anatomy and Physiology

Cornett and Gratz (1987)

I. Organization of the body
- A. Basic plan (Cavities, planes, terminology)
- B) Basic body chemistry (bonding, reactions, pH scale, organic chemistry)
- C) Cell structure and function (organelles)
- D) Histology - tissues of the body (slides)

II. Framework
- A) Skeleton (bones and processes) (skeletal functions)
- B) Muscle Tissue (85-100 muscles)

III. Coordination
- A) Nervous tissue
- B) Nervous system (CNS, PNS, ANS) (cranial nerves) (The Brain - sheep)
- C) Eye and Vision (Sheep eye)
- D) Ear and Hearing
- E) Skin and receptors (regulation of body temperature)

IV. Transport Systems
- A) Blood (groups, typing, clotting, etc.)
- B) The Heart
- C) Vascular and Lymphatic systems
- D) Fetal Pig - Sheep Heart dissections

Unit 6 & 7

V. Systems of the body. (Human Biology)

A) Digestive system

B) Respiratory system

C) Excretory system (Kidneys - sheep)

D) Metabolism (BMR - proteins and carbohydrates)

E) The Endocrine System - glands and hormones (dysfunctions of the glands)

F) Reproduction

VI Genetics

A) Human and population genetics

B) Problems

FUNDAMENTAL LEARNING AREA: BIOLOGICAL AND PHYSICAL SCIENCES **APPLIED ACADEMIC AREA: APPLIED**

GOAL 1. As a result of their schooling, students will have a working knowledge of: the concepts and basic vocabulary of biological, physical and environmental sciences and their application to life and work in contemporary technological society.

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
A	Symmetries or patterns in the natural and physical world.	Unit 5 Continuity of Life
B	Orderliness in nature and the schemes we use to express this order.	Unit 5 " " "
C	Fundamental units used to express the structure of nature.	Unit 1 Nat. Resources
D	How two or more things interact and the effect each has on the other.	Unit 7 Disease Wellness
E	Common characteristics of plant and animal communities	Unit 1 Natural Resources
F	Characteristics of energy and matter.	
G	Equilibrium applied to simple systems.	Unit 7 Disease and Wellness Subunit 2

FUNDAMENTAL LEARNING AREA: APPLIED ACADEMIC AREA: APPLIED

GOAL #1 con't.

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
A H	Influence of a field on objects within its domain	
C I	Cause and effect relationships which allow predictions to be made.	Unit 7 Disease & Wellness
D J	Cycles in which conditions or events are repeated at regular intervals.	Unit 5 Continuity of Life
E K	Systems as defined by boundaries.	Unit 1 Natural Resources Populations
F L	Stages, mechanisms, and rates of change.	Unit 5
G M	Organism as a system which can be characterized by the processes of life	Unit 5
H N	Relationship of structure to function.	Unit 5 DNA

73

FUNDAMENTAL LEARNING AREA:

APPENDIX C

APPLIED ACADEMIC AREA: APPLIED

GOAL #1 continued

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
O	The nature of force.	
P	Perception as our way of interpreting the world	
Q	Time and space as dimensions which separate things and events.	
E		
F		
G		
H		

FUNDAMENTAL LEARNING AREA: BIOLOGICAL AND PHYSICAL SCIENCES **APPLIED ACADEMIC AREA:** **APPLIED** COMMUNICATIONS

GOAL 2. As a result of their schooling, students will have a working knowledge of: the social and environmental implications and limitations of technological development.

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
A	Relationships between science & technology	
B	Selected nonrenewable and renewable natural resources.	Unit 1 Nat. Resources p. 20
C	Relationships between the natural and technological world.	Unit 1
D	Influence of scientific and technological research on the needs, interest, and financial support of society.	
E	Application of selected ecological concepts to human and environmental situations	Unit 1
F	Application of scientific research to consumer decision making.	
G	Society's responsibility for improving the environment and protecting natural resources.	Unit 1
H	Environmental issues in light of scientific and technological knowledge and ethical principles.	83

FUNDAMENTAL LEARNING AREA: BIOLOGICAL AND PHYSICAL SCIENCES

APPLIED ACADEMIC AREA: APPLIED COMMUNICATIONS

GOAL 3. As a result of their schooling, students will have a working knowledge of: the principles of scientific research and their application in simple research projects.

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
A	Understand an example of serendipity in research	
B	Use graphs to chart information	Units 1, 5, 6, 7
C		
D		
E		
F		
G		

FUNDAMENTAL LEARNING AREA: BIOLOGICAL AND PHYSICAL SCIENCES

APPLIED ACADEMIC AREA: **APPLIED** COMMUNICATIONS

GOAL	4. As a result of their schooling, students will have a working knowledge of: the processes, techniques, methods, equipment and available technology of science.

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
A	Understand how weather data is collected, observe and collect.	
B	Classify things based on structure, or function.	
D C	Understand how landforms affect climate. Mt. ranges can affect climate	
E D	Understand that weather prediction is based on data collected.	
F E	Understand how to calculate density.	
G F	Understand that a graph communicates data or information gathered from observations	Units 1, 5, 6 & 7
H G	Plot information to form a graph.	"
H	Make or use models to explain ~~[illegible]~~ in science. (DNA model, View model, [illegible])	Unit 5 87

FUNDAMENTAL LEARNING AREA: Cont

APPENDIX C

APPLIED ACADEMIC AREA: APPLIED

GOAL 4

K & S CODE	LEARNING OBJECTIVE	MODULES COVERING OBJECTIVE
I	Identify possible sources of error when making scientific measurements.	
J	To design a simple experiment to show chemical activity or change.	
K	Understand how models of compounds are formed. (Water, Methane, Glucose, Peroxide)	Unit 6
L	Be able to duplicate a previously done experiment.	
M	Demonstrate the proper use of scientific equipment such as balances, microscopes, vacuum pumps, etc.	

85

CHEMISTRY COURSE OUTLINE - CARTERVILLE HIGH

CHAPTERS

I. INTRODUCTION TO CHEMISTRY
- A. SAFETY IN THE CLASSROOM
- B. THE SCIENTIFIC METHOD
- C. MAKING GRAPHS
- D. CONTROLLED EXPERIMENTS

II MEASUREMENT
- A. UNDERSTANDING SI UNITS, PREFIXES
- B. UNCERTAINTY IN MEASUREMENT
- C. ACCURACY VS. PRECISION (LAB)
- D. SIGNIFICANT NUMBERS
- E. FIGURING PERCENT ERROR. (LAB)

III. PROBLEM SOLVING
- A. SCIENTIFIC NOTATION
- B. DIMENSIONAL ANALYSIS PROBLEMS
- C. GENERAL PROCEDURE FOR SOLVING PROBLEMS

IV. MATTER.
- A. VARIETIES OF MATTER - ELEMENTS, COMPOUNDS, MIXTURES
- B. DENSITY (LABS)
- C. PROPERTIES - CHEMICAL & PHYSICAL (LABS)
- D. SYMBOLS & ABUNDANCE OF THE ELEMENTS

V. ENERGY

- A. FORMS OF, CONVERSION OF, & CONSERVATION OF ENERGY
- B. HEAT AND ITS MEASUREMENT (LAB)
- C. THE KINETIC THEORY OF HEAT & TEMPERATURE.

VI. THE STRUCTURE OF THE ATOM.

A. ATOMS: HISTORICAL & MODERN VIEW. (FILMSTRIP, VIDEO)
B. ELECTRONS, PROTONS & NEUTRONS (VIDEO)
C. MODELS OF THE ATOM: RUTHERFORD, BOHR, CHARGE CLOUD.
D. LIGHT AND THE ELECTROMAGNETIC SPECTRUM. (FILM
E. QUARKS
F. CONCEPTS DEALING WITH ATOMIC MASS. (LAB)

VII. CHEMICAL FORMULAS

A. FORMULAS: KINDS OF, SYMBOLS OF.
B. NAMING IONIC COMPOUNDS
C. NAMING MOLECULAR COMPOUNDS
D. NAMING ACIDS

VIII. MATHEMATICS OF CHEMICAL FORMULAS

A. MOLES, ATOMS, AND FORMULA UNITS (DEMONSTRATION)
B. FORMULA MASS (LAB)
C. STOICHIOMETRY
D. PERCENT COMPOSITION
E. EMPIRICAL FORMULAS

IX. CHEMICAL EQUATIONS

A. BALANCING, INTERPRETING FORMULA EQUATIONS
B. ENERGY CHANGES IN EQUATIONS (DEMONSTATIONS)
C. PHASES IN CHEMICAL EQUATIONS
D. CLASSIFYING CHEMICAL REACTIONS (4 PRIMARY TYPES)
E. A DETAILED LOOK AT EACH TYPE OF REACTION.

X. THE MATHEMATICS OF CHEMICAL EQUATIONS.

A. MEANINGS OF COEFFICIENTS IN EQUATIONS
B. MASS-MASS RELATIONSHIP PROBLEMS
C. MIXED MASS-VOLUME-~~PARTICLE~~ PARTICLE RELATIONSHIP
D. LIMITING REACTANT PROBLEMS

XI THE GAS LAW.

A. BOYLES LAW (LAB)
B. CHARLES LAW (LAB)
C. THE COMBINED GAS LAW
D. DENSITIES OF GASES (DEMONSTRATIONS)
E. DALTONS, GRAHAMS LAW
F. IDEAL GAS LAWS.

XII ELECTRON CONFIGURATIONS

A. ENERGY LEVEL AND THE WAVE MECHANICAL MODEL
B. ORBITALS AND THE~~IR~~ SHAPES.
C. ELECTRON SPIN
D. QUANTUM NUMBERS (VIDEO)
E. ELECTRON CONFIGURATIONS FOR ALL ELEMENTS

XIII THE PERIODIC TABLE

A. ORIGIN AND HISTORY OF THE TABLE (FILMSTRIP)
B. PERIODICITY - PERIODS, GROUPS.
C. IONIZATION, ELECTRONEGATIVITY
D. METALS, NON-METALS

Principles of Technology

Course Description; This course focuses on the principles that underlie today's high technology. It is an applied physics / science course dealing with principles as applied to mechanical, fluid, electrical, and thermal systems .

GOALS :

The first goal of Principles of Technology is to help the students develop an understanding of the basic physical principles involved in all working technology, their applications and advantages or drawbacks. The students will learn to analize technical applications in a systematic order and understand how and why technical systems work.

The second goal of Principles of Technology is to help students develop creative thinking, working, social, technical, and problem solving skills.

SUBJECT MATTER AREA: APPLIED PHYSICS

GRADE LEVEL AND/OR COURSE TITLE: SOPHMORE THRU SENIOR
PRINCIPLES OF TECHNOLOGY

COURSE OUTLINE:

I. FORCE AND ITS RELATED PROPERTIES (7 Weeks)

A. Force in Mechanical Systems (2 week)
   1. Student Exercises
   2. Math Skills Lab: Working with Vectors/Substituting Formulas
   3. Lab Activity: Students will design, construct and test an apparatus demonstrating mechanical stress, its cause and effect.
   4. Measuring Forces

B. Pressure in Fluid Systems (1 week)
   1. Student Exercises
   2. Math Skills Lab: Substituting Formulas
   3. Lab Activity: Measuring Specific Gravity and Pressure

C. Voltage in Electrical Systems (1 week)
   1. Student Exercises
   2. Math Skills Lab: Working with Graphs
   3. Lab Activity: Measuring Voltage in Electrical Circuits

D. Temperature in Thermal Systems (1 week)
   1. Student Exercises
   2. Math Skills Lab: Using Formulas to Calculate Temperature
   3. Lab Activity: Measuring Temperatures with Thermometers

E. Vehicle Design (2 weeks)
   1. Students will work in teams to design and build a vehicle that will incorporate the four technology systems and demonstrate the prime movers found in Force.

II. **WORK** (4 weeks)

A. Work in Mechanical Systems (2 week)
   1. Student Exercises: Measuring Angles and Radians/Solving Mechanical Work Problems
   2. Lab Activity: Work Done by Pulley and Winch Systems, Students will design and build a system that will demonstrate mechanical advantages of pulley & winch systems.

B. Work in Fluid Sytems (1 week)
   1. Student Exercises: Solving Fluid Work Problems
   2. Math Activities : Solving for Unknowns/ Rearranging Symbols
   3. Lab Activity: Work Done by a Piston and Water Pump Students will design and build a working simulation of a piston driven fluid system using tubing and syringes.

C. Work in Electrical Systems (1 week)
   1. Student Exercises: Solving Word Problems
   2. Math Skills Lab: Reading Voltage Scales / Solving Electrical Work Problems
   3. Lab Activity: Measuring Work Done by a Motor, Students will use motors and solenoids to perform tasks that will demonstrate work. Students will use test equipment and formulas to measure work done in systems.

III. **Rate** (4 weeks)

A. Rate in Mechanical Systems (1 week)
   1. Student Exercises: Solving Word Problems in Rate
   2. Math Activities: Using Equations to Solve Mechanical Rate Problems
   3. Lab Activity: Measuring Rate on Materials Handling Equipment Studnets will design a material handling system and measure the mechanical rate of the the system.

B. Rate in Fluid Systems (1 week)
   1. Student Exercises: Solving Word Problems in Fluid Rate
   2. Math Skills Activity: Using Powers of ten Numbers in Fluid Rate Problems.
   3. Lab Activity: Measuring Liquid -flow Rate in a Channel

C. Rate in Electrical Systems (1 week)
   1. Student Exercises/ Math Skills Activity: Determining Period and Peak to peak voltage.
   2. Lab Activity: Measuring Current and Frequency

D. Rate in Thermal Systems (1 week)
   1. Student Exercises: Solving Thermal Rate Problems
   2. Lab Activity: Settingup Steady-state Heat Flow Conditions
      Measuring Heat-flow Rate

IV. RESISTANCE (4 weeks)

A. Resistance in Mechanical Systems (1 1/2 weeks)
   1. Student Exercises / Math Activities: Rearranging Symbols to Isolate Unknowns - Solving Mechanical Resistance Problems
   2. Lab Activity: Investigating Friction / Streamlining Shapes to Reduce Air Drag. Students will design and build airfoils and test lift in a wind tunnel.

B. Resistance in Fluid Systems (1/2 week)
   1. Student Exercises / Math Activities: Solving Fluid Resistance Problems
   2. Lab Activities: Measuring Fluid Resistance in Tubes
      Measuring Resistance in Air Filters

C. Resistance in Electrical Systems (1 week)
   1. Student Exercises / Math Activities: Solving Electrical Resistance Problems
   2. Lab Activity: Understanding and Using Ohm's Law in Series and Parallel Circuits.

D. Resistance in Thermal Systems (1 week)
   1. Student Exercises / Math Skills Activity: Solving Thermal Resistance Problems
   2. Lab Activity: Measureing Thermal Resistance of Materials
      Students will measure resistance and conductivity of certain materials.

V. ENERGY (4 1/2 weeks)

A. Energy in Mechanical and Fluid Systems (1 week)
   1. Student Exercises / MathSkills Activity : Identifying sources of energy, Solving problems that involve energy and work in mechanical and fluid systems.

B. Energy in Electrical Systems (1week)
   1. Student Exercises / Math Skills Activity: Reviewing Examples of Electrical Potential Energy. Solving Practical Problems That Involve Energy and Work in Electrical Systems

C. Energy in Thermal Systems (1/2 week)
   1. Student Exercises / Math Skills Activity: Reviewing Heat Transfer Between Objects, Solving Practical Problems That Deal with Heat Transfer
   2. Lab Activity: (2 weeks)
      Students will design and build an apparatus that will demonstrate the utilization of potential and kinetic energy in systems. The project will include all systems studied.

VI. POWER (4 weeks)

A. Power in Mechanical Systems (2 week)
   1. Student Exercises / Math Activity: Solving Power Problems for Mechanical Energy Systems
   2. Lab Activity: Measuring Linear and Rotating Mechanical Power

B. Power in Fluid Systems (1 week)
   1. Student Exercises / Math Activity: Solving Power Problems in Fluid Energy Systems
   2. Lab Activity: Fluid Power in Hydraulic Sysyems

C. Power in Electrical Systems (1week)
   1. Student Exercises / Math Activity: Solving Power Problems That Appear in Electrical Energy Systems
   2. Lab Activity: Measuring Electrical Energy with Watt-Hour Meters

D. Power in Thermal Systems

VII. FORCE TRANSFORMERS (4 1/2 weeks)

A. Force Transformers In Linear Mechanical Systems
   1. Student Exercises / Math Activity: Understanding Ratio and Proportion/Using Ratio and Proportion in Linear Mechanical Force Transformer Problems
   2. Lab Activity: Linear Mechanical Transformers/The "Come Along"

B. Force Transformers In Rotational Mechanical Systems
   1. Student Exercises / Math Activity: Solving Rotational Force Transformer Problems
   2. Lab Activity: Force Transformers- Gears, Belts and Pulleys

C. Force Transformers In Fluid Systems
   1. Student Exercises / Math Skills: Solving Fluid Transformer Problems for Fluid Systems
   2. Lab Activity: Force Transformers The Hydraulic Jack

D. Force Transformers In Electrical Systems
   1. Student Exercises / Math Skills: Solving Force Transformers Problems in Electrical Problems
   2. Lab Activity: Electrical Transformers

SUBJECT MATTER AREA: APPLIED PHYSICS

GRADE LEVEL AND / OR COURSE TITLE : SOPH - SENIOR
PRINCIPLES OF TECHNOLOGY

MEASURABLE OBJECTIVES:

Students shall maintian a comprehensive level of 70% on all evaluating materials in the following areas:

1. Developing an understanding of the basic principles that are present in all aspects of technology.

2. Developing an understanding of the impact that technology has made and will make on today's - and tomorrow's technology.

3. Developing a social skills and a positive attitude toward working with others to solve problems and achieve a common goal.

4. Developing reading skills that enable the student to read, comprehend, interpret, evaluate, and use technical written material.

5. Developing technical writing skills in direct relation to the acceptable practices found in language arts curricula.

6. Developing skills that will enable the student to organize, focus, and present material in a clear and cohorent manner, both written and orally.

7. Understanding and using correct formulas to perform computations relavent to the systems studied in each unit.

8. Developing problem-solving skills to common technical situations with or without calculators.

9. Developing skills to identify, analyze, and solve problems using algebraic equations.

10. Identify and understand physical and environmental sciences and their application to life and work in contemporary technological society.

bII. Specific Course Offering Considerations
A. Introductory Statement about the Course

SHORT FICTION

1. Rationale:

Short Fiction is designed for all students interested in studying the writings of outstanding authors through a variety of selected genre. The student will be exposed to short stories, biblical literature, mythology, and science fiction.

2. Objectives:

Through the study of short fiction the students will be able to recall the major elements of form in fiction, including characterization, plot, setting and theme. In addition, he will be able to distinguish between several types of fiction, including myths, parables, science fiction and the common short story. Through these genres, he will then be able to render opinions of various literary themes.

3. Balance:

Short Fiction is an elective course on the junior-senior level and fulfills the literature requirement for the third year of English Coursework. It is a terminal course for those students not taking an English class during their senior year, but can be considered a developmental course for those desiring to continue in the English curriculum beyond their third year.

4. Flexibility:

Provision for individual learning experiences will be developed through subjective essay tests, themes written on materials read, and the composing of a short story based on the principles studied in the course. Applied Communications Module 6 will be used to teach maintenance roles in group membership. Extensive class discussion with student leadership will be provided with the application of the module.

B. Fundamental Skill Areas in the Course

1. Prerequisite Skills:

Students with average abilities in reading and writing will have attained acceptable levels of achievement necessary for satisfactory course completion.

2. Skills Reinforced:

Reinforcement of reading comprehension and composition skills will be developed throughout the scope of the course. The student will have the opportunity to read material assigned and to express

his own ideas and emotions through writing projects. He will also learn the effectiveness of group membership through Applied Communications Module 6.

3. New Skills Learned:

The student will identify short fiction as a type of literature apart from other genres previously studied. He will read a variety of selections to better understand each writer's tools of imagery, plot characterization, theme, etc. The student will also learn new group skills as he steps into the role of group member or leader in the writing of an original short story.

C. Cognitive Development Areas in the Course

1. Core Concepts:

To enable the student to appreciate the literature and the writing styles of short fiction authors is the aim of the course.

2. Major Themes:

The major areas of study covered within the outline of the course are:

1. Readings in basic anthology as an exposure to short fiction material.
2. Selected readings from supplemental books.
3. Extensive discussion to provide for a more thorough understanding of selected materials.
4. Composing of a short story through group interaction.

3. Specific Content:

1. Texts:

A. READING LITERATURE

B. SCIENCE FICTION HALL OF FAME

C. APPLIED COMMUNICATIONS MODULE 6, LESSONS 2 AND 7

D. MYTHOLOGY

E. LITERARY INTERPRETATION OF BIBLICAL LITERATURE

2. Units:

A. Short Stories, Fiction, non-fiction, mythology, science fiction

B. Biblical Literature, (Samson, Ruth Prodigal Son, Good Samaritan, Jonah)

C. Mythology, Independent study

D. Short Story composition through group participation

E. Short Story study in periodical publications

3. Activities

A. Composition: themes on short stories

B. Group writing of short story

C. Oral reports on authors

D. Group membership techniques

E. Contractual study of mythology

D. Affective Development Areas in the Course

The student enrolled in Short Fiction will become aware of the unique aspects of short fiction writings and will learn, through a study of the various elements used by each author, an appreciation of this mode of writing and its application to his own life, past and future.

INSTRUCTOR: JUDY MOORE

FOOD SCIENCE II

1/2 CREDIT (MEETS 1/2 CREDIT SCIENCE REQUIREMENT)

1/2 YEAR COURSE

COURSE DESCRIPTION

THE FOOD SCIENCE COURSES TEACH SCIENCE PRINCIPLES USING GOOD AS THE VEHICLE TO DELIVER THE SCIENCE CONCEPTS. THESE FOODS COURSES INCORPORATE THE PRINCIPLES OF PHYSICS, CHEMISTRY, BIOLOGY, BACTERIOLOGY, PHYSIOLOGY AND NUTRITION AS IT RELATES TO FOODS. PHYSICS CONCEPTS COVERED WILL BE RELATED TO CONVECTION, CONDUCTION, RADIATION, VOLUME, DENSITY, CALORIES, LEVERS, WHEELS AND AXLES, PULLEYS, AND INCLINE PLANES. CHEMICAL CONCEPTS COVERED WILL RELATE TO ACIDS, BASES, SALTS, SUCROSE,GLUCOSE, SOLUTIONS, SUSPENSIONS AND COLLOIDAL DISPERSIONS. THE BIOLOGICAL AND PHYSIOLOGICAL CONCEPTS RELATE TO THE DIGESTION, ABSORPTION AND ASSIMILATION OF FOOD. BACTERIOLOGICAL CONCEPTS WILL BE COVERED IN THE CANNING OR FREEZING OF FOOD. NUTRITION CONCEPTS WILL BE COVERED IN THE PLANNING OF MEALS TO MEET THE USRDA FOR GOOD HEALTH.

BROAD OBJECTIVES

STUDENTS WHO HAVE COMPLETED FOOD SCIENCE I & II SHOULD BE ABLE TO:

1. TO DEVELOP AN APPRECIATION AND UNDERSTANDING OF THE SCIENTIFIC METHOD AS IT RELATES TO FOODS.
2. TO UNDERSTAND THE ROLE OF PRECISE MEASUREMENT IN FOODS EXPERIMENTS.
3. TO UNDERSTAND THE ROLE OF SANITATION AS IT RELATES TO FOODS.
4. TO UNDERSTAND THE VARIOUS METHODS OF HEAT TRANSFER.
5. TO UNDERSTAND THE PHYSICS CONCEPTS IN THE OPERATION OF BASIC KITCHEN EQUIPMENT.
6. TO UNDERSTAND THE ROLES OF VARIOUS INGREDIENTS IN FOOD EXPERIMENTS.

SPECIFIC INSTRUCTIONAL OBJECTIVES

UPON COMPLETION OF THE READING,DISCUSSION, LABORATORY EXPERIMENTS, INDIVIDUAL PROJECTS, LECTURES, WORKSHEETS, GROUPWORK, STUDY QUESTIONS, AND DEMONSTRATIONS PERTAINING TO EACH UNIT IN FOOD SCIENCE AND WHEN ASKED TO DEMONSTRATE, LIST, IDENTIFY, PRESENT, PREPARE OR RESPOND EITHER ORALLY OR ON A WRITTEN TEST, STUDENTS WILL BE ABLE TO:

1. WORK IN AREAS OF QUANTITY FOOD PRODUCTION.
2. CATER FOODS FOR VARIOUS FUNCTIONS.
3. PREPARE AND EVALUATE FOOD EXPERIMENT PROJECTS RELATED TO EACH UNIT.
4. SHOW PROPER SANITATION PROCEDURES WHEN CARRYING OUT ALL FOOD EXPERIMENTS.
5. QUESTION, EXPLORE AND DEVELOP EXPERIMENTS TO ANSWER QUESTIONS

USING FOOD AS THE EXPERIMENTAL MEDIUM.

6. BE ABLE T PREPARE GOOD EXPERIMENTS USING VOLUME AND WEIGHT AND DENSITY MEASUREMENTS.
7. BE ABLE TO PREPARE FOOD EXPERIMENTS USING CONDUCTION, CONVECTION AND RADIATION.
8. PREPARE VARIOUS FOODS EXPERIMENTS SHOWING THE CHEMICAL CONTRIBUTIONS OF VARIOUS INGREDIENTS.
9. PLAN BALANCED NUTRITIONAL DIETS FOR EVERYONE INCLUDING THOSE WHO WANT TO CONTROL WEIGHT AND ATHLETES.
10. DECORATE CAKES FOR FUN AND PROFIT.

COURSE OUTLINE

I. SANITATION REVIEW
* A. FOOD SANITATION & POISONING
* B. SANITATION PRACTICES IN FOOD HANDLING
C. PROCEDURE FOR DISHWASHING
D. CLEANING VS. SANITATION
E. STORAGE, REFRIGERATION REQUIREMENTS

II. MEASUREMENT REVIEW
* A. VOLUME
* B. WEIGHT
* C. DENSITY
* D. METRIC
E. COSTING OF RECIPES

* III. FATS & OILS
* A. CHEMISTRY OF FATS
* 1. FATTY ACIDS
* 2. GLYCERIDES
* B. CRYSTALS OF FAT
* 1. MELTING POINTS
* 2. POLYMORPHISM
* C. MODIFICATION OF NATURAL FATS
* 1. HYDROGENATION
* 2. REARRANGEMENT
* 3. ACETYLATION
* 4. SUPERGLYCERINATION
* D. DETERIORATION OF FATS
* 1. ABSORPTION OF ODORS
* 2. RANCIDITY
* 3. ANTIOXIDANTS
* E. FAT AS MEDIUM FOR TRANSFER OF HEAT

* IV. SOLUTIONS
* A. SATURATED
* B. SUPERSATURATED
* C. CRYSTALLINE FORMATION
* D. CARMELIZATION

* V. BREWS AND INFUSIONS
* A. STEEPING
* B. PERCOLATING

* C. USING A VACUUM COFFEE MAKER
* D. USING A DRIP COFFEE MAKER
* E. CAFFEINE

* VI. SCIENCE OF NUTRITION
* A. NUTRIENTS
* 1. VITAMINS
* 2. MINERALS
* 3. PROTEINS
* 4. FATS
* 5. CARBOHYDRATES
* 1. SUGARS
* 2. STARCHES
* 6. CHOLESTEROL
* B. NUTRITION FOR WEIGHT CONTROL
* C. DIETING DISORDERS
* 1. BULIMIA
* 2. ANOREXIA NERVOSA
* D. NUTRITION AND THE ATHLETE

VII. CATERING
A. COSTING
B. ADVERTISING
C. PREPARATION

VIII. QUANTITY COOKERY
A. PLANNING
B. PURCHASING FOOD

IX. FOOD SERVICE OPPORTUNITIES
A. JOB OPPORTUNITIES
B. SKILLS NEEDED
C. EMPLOYEE QUALIFICATIONS
1. ATTITUDES
2. PERSONAL CHARACTERISTICS

NOTE: ITEMS WITH AN ASTERISK ARE SCIENCE CONCEPTS, NON-ASTERISK ITEMS ARE FOOD PREPARATION CONCEPTS.

TECH PREP
CARBONDALE COMMUNITY HIGH SCHOOL
Algebra I - Saxon Textbook
Bill Yates/Brenda Berg

LESSON IN TEXTBOOK	CORD material for application
31 - Word Problems	Unit 1 - Learning Problems-Solving Techniques
38 - Ratio	Unit 10 - Working with Scale Drawings
76 - Scientific Notation	Unit 12 - Using Scientific Notation
81 - Operations with scientific Notation	
83 - Writing the equation of a line	Unit 17 - Graphing Data
81 - Intercept slope method of graphing	Unit 21 - Using Right Triangle Relationships
98 - Pythagorean Theorem	

Integration between Academic and Vocational

Lesson 38 -	Drafting teacher could show and explain how to produce accurate scale drawings of a house.
Lesson 76 or 81 -	Science teacher could show examples of where scientific numbers are used in Science.
Lesson 98 -	Invite a surveyor to explain how right-triangle relationships are used in surveying.

TECH PREP
CARBONDALE COMMUNITY HIGH SCHOOL
ALGEBRA 1/2 - Saxon Textbook
Bill Yates/Brenda Berg

LESSON IN TEXTBOOK	CORD material for application
30 - Graphs	Unit 4 - Using Graphs,Charts, and Tables
57 - Decimals, fractions and percents	Unit B - Naming Numbers in Different Ways
66 - Ratio word problems	Unit 9 - Using Ratios and Proportions
97 - Points, lines and rays. Angles, copying angles by construction	Unit 6 - Working with Lines and Angles

Integration between Academic and Vocational

Lesson 30 - Social Sciences teacher could show examples of interpreting graphs.

Lesson 57 - Business teacher could explain how percentages are used to determine percent markup, discount, etc.

Lesson 97 - Drafting teacher could show how mechanical drawing relates to geometry.

Cindy Vernon

TECH PREP - CARBONDALE HIGH SCHOOL

COURSE OUTLINE FOR PHYSICS WITH INCORPORATION OF PT MATERIALS

U=unit SU=subunit V=video L=lab D=demo

Introductory material
Scientific Method

Precision vs. Accuracy

Metric System----------U1-SU1

Motion (straight line)----------U3-SU1-V,D1,L1
Speed vs. velocity

Acceleration

Falling Bodies

Newton's Laws----------U1-SU1-V,D,L1,L2,
U2-SU2-V,D,L1,L2

1st (inertia)

2nd (F=ma)

3rd ($F_1 = -F_2$)

Vectors
Equilibrant----------U1-SU1

Concurrent Forces

Perpendicular components

Inclined planes

Two-dimensional motion
Projectiles

Centripetal force

Satellites

Simple harmonic motion

Universal gravitation
Apparent weightlessness

Gravitational fields

Conservation of momentum----------U1-SU1
- Linear momentum
- Impulse
- Angular momentum----------U3-SU1-L2, U5-SU2-L2
- Torque----------U1-SU1-D3, U7-SU2-L1, L2
- Center of gravity
- Internal/External forces
- Conservation in 2 dimensions

Energy----------U5
- Kinetic----------
- Potential----------} U5-SU1-D
- Work----------U2
- Power----------U6
- Simple machines----------U2-SU1-L1, L2, U5-SU1-L1, L2, U7-SU1-L1, L2, U7-SU3-L1, L2
- Efficiency
- Conservation of energy (mechanical)

Thermal energy----------U1-SU4
- Temperature vs. heat
- Temperature scales
- 1st Law of thermodynamics (enthalpy)
- 2nd Law of thermodynamics (entropy)
- Specific heat----------U5-SU2-L2
- Conservation of energy in heat transfer----------U3-SU4-L1, L2, U5-SU4-D, L1
- Change of state

Transmission of heat
- Conduction
- Convection
- Radiation

Electrostatics
- Conductors
- Insulators
- Semiconductors
- Electrostatic force (Coulomb's law)
- Charging by induction

Electric Fields and Potentials----------U1-Overview V, U1-SU3-V,L1
- Field of intensity
- Work and electric potential----------U2-SU3-V,D,U6-SU1-L1, L2
- Electric field between parallel plates
- Charge density (sharing of charge)
- Capacitors----------U5-SU3-D, L1

Electric current----------U3-SU3-D1,L1
- Sources
- Definition
- Ohm's law----------U4-SU3-V, D, L1, L2
- Electric power----------U5-SU3-V, D, L1
- Circuit diagrams
- Heating effects

Series & Parallel Circuits
- Simple circuits
- Combination circuits

Magnetic fields
- Properties of magnets
- Electromagnetism
- Magnetic field around a coil
- Forces on currents in magnetic fields
- Electric motors (dc)----------U3-SU3-L1, L2
- Force on charged particles

Electromagnetic Induction
- DC generators----------}U5-SU3-L2
- AC generators----------
- Lenz's law
- Self Inductance (Impedance)
- Transformers----------U7-SU4-D, U7-SU4-L1,L2
- Nature of light

Vibrations and waves
- Types of waves
- Wavelength
- Frequency (period)----------U3-SU3-L2
- Amplitude
- Wave speed
- Behavior at boundaries (transmission)
- Interference
- Modes, Antinodes, Standing waves
- Law of Reflection
- Refraction
- Diffraction

Sound
- Doppler shift
- Pitch
- Loudness
- Resonance
- Tone

Nature of light
- Speed
- Wave characteristics
- Illuminance

Light and color vision

Polarization

Interference

Reflection & Refraction of light
Plane mirrors

Concave mirrors

Convex mirrors

Concave lenses

Convex lenses

Snell's law

Total internal reflection

Real & Virtual images

Spherical aberration

Chromatic aberration

Introduction to Electricity
course outline

Each student will keep a notebook. The student notebook will contain an outline of each unit, an outline of each unit, answers to the questions at the end of the unit, and notes from the lectures on the unit. The notebook will conform to english class standards.

Each student will participate in a sustained silent reading program. The students will be required to read silently on day a week for a period of fifteen minutes.

I. Unit # 1 Learning and Applying the Fundamentals

- A. Requirements of an electrical circuit
- B. Atomic structure
  1. This will show the relationship between atomic structure learned in science class and the field of electricity.
- C. Movement of electrons
- D. Electricity lab using scientific format the student will set up and explore a simple electrical circuit.

II. Unit # 2 Sources of electricity

- A. Chemical energy
  1. Cells
  2. Batteries
- B. Light as a source of electricity
  1. Photo voltaic cells
  2. Photo resistance cells
- C. Pressure as a source of electricity
  1. The crystal
- D. Heat
  1. The thermocouple
- E. Magnetism
  1. Generators
  2. Alternators

Students will use the electronic encyclopedia and reference material in the class room to research and write a report on one of the sources of electricity.

Students will then give an oral presentation on the report subject. This will help student develop their english skill in the vocational setting.

III. Unit # 3 Conductors and Insulators

A. Types of conductors

1. Using chemistry and periodic table to show the connection between science and the vocational class.

B. Using electrical tools

C. Soldering

1. Soldering lab
2. Component identification
3. Switches in electrical circuits

IV. Unit # 4 Resistors and Capacitors

A. Electrical schematic symbols

B. Types of resistors

C. Resistor color code

1. Metric prefixes, applying math concepts and scientific notation, to calculate the resistance of resistors.

2. Calculating tolerances using percentages to find a range of values.

3. Discuss the math concepts we are using compared to finding percentages in the math class. Exchange some math problems with the math instructor.

D. Capacitors

1. Calculate capacitance with the formula
   $C = .2235 * KA/D(N-1)$
2. Metric prefixes
3. Calculate the rc time constant of an rc circuit

V. Unit # 5 Ohm's Law

A. Voltage, Current, Resistance

B. Ohm's Law formula

1. Voltage, Current, and Resistance
2. Ohm's Law formula, show students that algebra is being applied in the field of electricity. Exchange some math problems with the math teacher.
3. Ohm's Law lab, using scientific methods to prove the Ohm's Law formula.
4. Calculating Voltage Current and Resistance using the Ohm's Law formula.

VI. Unit # 8 Meters

A. Voltmeter

1. Reading a scale is taught and a connection between all science classes and lab classes is reinforced.

B. Ammeter

C. Ohmmeter

VII. Unit # 6 Series Circuits

A. Using math formula to calculate the components of a series circuit.

B. Series circuit lab, using the scientific method prove the series laws are true.

VIII. Unit # 7 Parallel Circuits

A. The parallel Laws and formula

B. Using the math formula calculate the components of a parallel circuit.

C. Design and construct parallel circuits in the lab.

Robert L. Colp
Career Math
DuQuoin High School

TECH PREP CHANGES TO CAREER MATH

1. Students are arranged in groups of three - High, middle, and low.

2. Buying Clothes Unit will be eliminated.

3. A Place TO: LIVE UNIT will be eliminated.

4. The next school year will begin with Applied Mathematics Unit A (Getting To Know Your Calculator).

5. Next, Applied Mathematics Unit C (Finding Answers With Calculators) will be used.

6. Applied Mathematics Unit 3 (Measuring in English and Metric Units) will be covered.

7. Single concept lessons, simulations, and laboratory exercises are being developed. Some of these will be adapted from Applied Mathematics.

CAREER MATH - COURSE OUTLINE

FIRST QUARTER
Buying Clothes

1. Determine whether to purchase basic clothes of fad clothes by computing wearing cost.
2. Coordinate outfits by constructing tree diagrams.
3. Determine whether quality or quantity meets the shopper's needs.
4. Choose the type of store that meets the consumer's needs.
5. Use a sales tax table to find the amount of tax.
6. Compute price plus sales tax.
7. Change a budget expressed in percent to one in dollars.
8. Compute discount and sale price of a sale item.
9. Compare sale prices and determine the best buy.
10. Read newspaper ads to determine the best buy.
11. Calculate shipping and handling charges on catalog items.
12. Use a metric ruler and determine the amount of material needed.
13. Use an English ruler and determine the amount of material needed.
14. Review.
15. Trial Test.
16. Final Test.

Earning Money

1. Select a job from want ads using hour and money as the main criteria.
2. Calculate job expenses and determine net salary for a job.
3. Complete a job application.
4. Complete a sample employment test.
5. Use a time card to read and interpret 24 hour notation.
6. Interpret flow charts and express hours and minutes as fractions.
7. Use a trucker s log book to express time in decimal notation.
8. Compute weekly wage based on hourly rate.
9. Compute overtime rates, overtime wages, and total wages.
10. Compute annual wages.
11. Determine wages, given pay per piece and number of pieces.
12. Determine earnings, given commission and sales.
13. Calculate profit of a small business, given earnings and expenses.
14. Review.
15. Trial Test.
16. Final Test.

SECOND QUARTER
Handling Money

1. Find the average weekly household expenses for a given period of time.
2. Calculate weekly and monthly budgets using percentages.
3. Compute monthly charges on a checking account.
4. Find the subtotal and total deposit for a checking account.
5. Calculate the total cost of money orders, certified checks, and cashier's checks.
6. Write the dollar amount correctly on a check.
7. Fill in and read a check register.
8. Read and understand a checking account bank statement.
9. Reconcile a bank statement.
10. Become familiar with obtaining and using credit.
11. Choose a credit plan and compute the balance on a statement.
12. Calculate the finance charge on a credit statement.
13. Obtain a bank credit card and determine the charges and available credit.
14. Calculate finance charges and monthly payment on a short-term loan.
15. Review.
16. Trial Test.
17. Final Test.

Take Home Pay and Taxes

1. Determine the difference between mandatory and voluntary deductions on a pay stub.
2. Compute FICA deductions.
3. Compute personal deductions such as insurance, credit union, and charity.

4. Calculate personal deductions such as insurance, credit union, and charity.
5. Compute federal withholding tax, given a tax table.
6. Make certain that a paycheck is correct by computing the take home pay.
7. Read a form W-2 and identify its parts.
8. Complete the top of a Form 1040A.
9. Complete the bottom part of Form 1040A using a tax table.
10. Complete a Form 1040 given sample data and a tax table.
11. Complete a Form 1040 using Schedule X, Y, Z.
12. Itemize deductions in order to complete Form 1040.
13. Determine the amount of tax credits such as child care and energy credits.
14. Determine the amount of tax credits such as child care and energy credits.
15. Review.
16. Trial Test.
17. Final Test.

SEMESTER EXAMS

THIRD QUARTER
Buying A New Car

1. Compute yearly savings given the amount of weekly savings.
2. Choose the appropriate sized car based on driving and family needs.
3. Determine the sticker price given the base price and price of options.
4. Calculate a reasonable price to offer for a new car.
5. Find the complete cost of a new car including sales tax and registration fees.
6. Compute the down payment and the amount to be financed.
7. Compute the deferred payment price of a new car.
8. Become familiar with different types of car insurance and the terms used in the policies.
9. Use an insurance rating chart to calculate the cost of car insurance.
10. Calculate the cost of operating a car base on mpg and cost of gasoline.
11. Determine the cost of car maintenance and minor repairs.
12. Determine the cost of major repairs based on parts and labor.
13. Calculate the depreciation and estimated value of a used car.
14. Determine the fixed costs, variable costs and the cost per mile of operating a car.
15. Calculate the cost of renting a car based on time, mileage and cost of gasoline.
16. Review.
17. Trial Test.
18. Final Test.

A Place to Live

1. Prepare a budget to determine the amount available for housing costs.
2. Convert a budget to percentages and construct a circle graph.
3. Read rental ads to determine which apartment is affordable and suitable.
4. Read the parts of a lease and answer questions about the lease.
5. Find the initial cost in moving to an apartment.
6. Use a table to determine the premium for renter's insurance.
7. Read the parts of several different utility bills.
8. Read utility meters.
9. Compute the kilowatts and kilowatt hours to operate various appliances.
10. Read an verify the parts of a telephone bill (USS).
11. Find the cost of carpeting a room.
12. Determine the area to be painted, amount and total cost of paint.
13. Measure and determine the cost of rods and drapes.
14. Make a scale diagram of two rooms in an apartment.
15. Review.
16. Trial Test.
17. Final Test.

FOURTH QUARTER
Saving Money

1. Solve word problems that involve saving money.
2. Identify various savings institutions.
3. Determine the cost per year of safety deposit boxes.
4. Complete a savings account application.
5. Complete a savings account deposit slip.
6. Complete a savings account withdrawal slip and calculate successive balances.
7. Compute simple interest.
8. Compute compound interest.
9. Determine annual yield when compounding semiannually, quarterly, and daily.
10. Identify parts of savings account passbook and calculate successive balances.
11. Find total deposits, total withdrawals, and ending balance on savings account statement.
12. Compute interest earned on a certificate of deposit.
13. Compute issue price, majority price, and interest on a Series EE U.S. Savings Bond.
14. Calculate the future value of an IRA account.
15. Calculate the amount of life insurance needed and determine the types available.
16. Review.
17. Trail Test.
18. Final Test.

Worksheets and quizzes will be used as the need arises and do not appear in this outline.

CARTERVILLE HIGH SCHOOL
MATHEMATICS SYLLABUS
LESSONS IN SAXON SERIES TO USE APPLIED MATH MATERIALS

ALGEBRA 1/2 (2nd Edition)

Saxon	Applied Math
Lesson 9 Points, Lines, Rays	Unit 6 Working with Lines and Angles
Lesson 30 Graphs	Unit 4 Using Graphs, Charts, and Tables
Lesson 58 Decimals, Fraction, Percents	Unit B Naming Numbers in Different Ways
Lesson 69 Ratio Work Problems	Unit 9 Using Ratios and Proportions

ALGEBRA I (2nd Edition)

Saxon	Applied Math
Lesson 31 Word Problems	Unit I Learning Problem Solving Techniques
Lesson 38 Ratios	Unit 10 Working with Scale Drawings
Lesson 77 Scientific Notation	Unit 12 Using Scientific Notation
Lesson 83 Operation with Scientific Notation	Unit 12 Using Scientific Notation
Lesson 85 Writing the Equation of a Line	Unit 17 Graphing Data
Lesson 93 Slope Intercept Method of Graphing	Unit 17 Graphing Data
Lesson 101 Pythagorean Theorem	Unit 21 Using Right Triangle Relationships

Saxon	Applied Math
ALGEBRA 2 (2nd Edition)	
Lesson B Perimeter, Area, Volume Surface Area, Sectors of Circles	Unit 8 Working with Shapes in 3 Dimensions
Lesson 41 Unit Multipliers	Unit 3 Measuring in English and Metric Units
Lesson 53 Metric Unit Conversions, English Units to Metric Units	Unit 3 Measuring in English and Metric Units
Lesson 57 Ideal Gas Laws	Unit 15 Using Formulas to Solve Problems
Lesson 66 30-60-90 Triangles	Unit 21 Using Right Triangle Relationships
Lesson 79 45-45-90 Triangles	Unit 21 Using Right Triangle Relationships

COURSE OUTLINE
Biology I

I. ORIENTATION AND INTRODUCTION.....1 Week

Subject Content:

- Familiarization with grading, behavior, and attendance requirements.
- Nature and magnitude of topics studied.
- Definition of prominent biological fields of study.

Reference Sources:

1. Bio. I lecture notes - (see files)
2. Student handbook.

Activities: Question/answer discussion accompanied by short, informative lectures.

Evaluation: A brief, written quiz.

II. SELECTED, ESSENTIAL SCIENCE TERMINOLOGIES.....2 Weeks

Subject Content:

- A selected list of essential science terms and their relationships.

Reference Sources:

1. Bio. I lecture notes: (see files)

Activities: Lectures/discussion; numerous hand-outs.

Evaluation: Periodic quizzes culminating in a major, written exam.

III. BASIC CHEMISTRY AND PHYSICAL SCIENCE CONCEPTS.....5 weeks

Subject content:

-Nature and composition of matter.
-Chemical reactions.
-pH and composition of acids and bases.

Reference Sources:

1. Bio. I lecture notes (see files)
2. Bio. I text (Chapter 3) (Biology, Silver-Burdett)
3. Periodic chart.

Activities: Lecture/discussion; numerous homework problems; demonstrations.

Evaluation: Numerous quizzes; credit for completion of homework; hourly exam.

IV. HISTORY OF BIOLOGY.....1 week

Subject Content:

-Biological milestones and their significance.
-Identification of famous biological figures (scientist).
-A chronological overview.

Reference Source:

1. Bio. I Text.
2. Lecture notes (see files).

Activities: Lecture/discussion.

Evaluation: Written exam.

V. CELL MORPHOLOGY AND REPRODUCTION.....3 weeks

Subject content:

-Basic cell morphology.
-Organelle function.
-Mitosis.

Reference Source:

1. Bio. I Text.
2. Lecture notes.
3. Cell schematics.

Activities: Lecture/discussion; cell & mitosis lab.

Evaluation: Quizzes, preparation of a mitosis slide, major exam.

VI. ORGANIC COMPOUNDS.....1 week

Subject Content:

-Basic organic compounds and their composition.
-Organic compounds and ones' diet.
-Biological function of organic compounds.

Reference Sources:

1. Bio. I text (Chp. 3)
2. Lecture notes.

Activities: Lecture/discussion.

VII. ENERGY (ATP).....1 week

Subject Content:

-Patterns of energy obtainment.
-Photosynthesis and cell respiration.
-Krebs's cycle.

Reference Sources:

1. Bio. I text (chp 5).
2. Lecture notes.

Activities: Lecture/discussion.

Evaluation: Topic exam.

VIII. Hereditary molecule (DNA).....1 week

Subject Content:

-Identification of DNA as the hereditary molecule.
-Structure and function of DNA.
-Impact of DNA discovery on modern science.

Reference Sources:

1. Bio. I text (chp 5)
2. Lecture notes.

Activities: Lecture/discussion.

Evaluation: Topic exam.

IX. BASIC ECOLOGY.....1 week

Subject Content:

-Introduction to basic ecology terms and concepts.

Reference Sources:

1. Bio. I text (chp 4)
2. Lecture notes.

Activities: Lecture/discussion.

Evaluation: Topic exam.

X. TAXONOMY.....2 weeks

Subject Content:

-Selected Latin/Greek prefixes/suffixes.

-Principles of classification.
-Familiarization with a basic taxonomy classification scheme.
-Application of taxomical scheme to selected lab specimens.

Reference Sources:

1. Bio. I text (chp 9).
2. Lecture notes.
3. Numerous ditto hand-outs.

Activities: Lecture/discussion; laboratory exercises

Evaluation: Quizzes, lab practice exam, and a culminating topic exam.

XI. REPRODUCTION.....2 weeks

Subject Content:

-Levels of reproduction.
-Patterns of reproduction.
-Human reproduction.

Reference Sources:

1. Bio. I text (chp 7).
2. Lecture notes.
3. Reproductive schematics.
4. Sterility operations.

Activities: Lecture/discussion; preview of pig repro. anatomy.

Evaluation: Quizzed culminating in a major topic exam.

XII. EVOLUTION.....1 week

Subject Content:

-Pre-Darwinian theories.
-Overview of Darwin's research.
-Principles and application of Darwinian evolution.

Reference Sources:

1. Bio. I text (chp 8).
2. Lecture notes.

Activities: Lecture/discussion.

Evaluation: Topic exam.

XIII. GENETICS.....6 weeks

Subject Content:

-Review of Mendel's research.
-Principles of Mendelian genetics.
-Population genetics.
-Drosophila genetics.

Reference Sources:

1. Bio. I text (chp 22).
2. Lecture notes.

Activities: Lecture/discussion; Genetic problems (homework); drosophila lab.

Evaluation: Numerous quizzes major topic exam, and Drosophila research paper.

XIV. BASIC ANATOMY & PHYSIOLOGY.....9 weeks

Subject Content:

-Basic physiological processes (Chps 13 & 14).
-Principles of digestion and digestive anatomy (chp. 15).
-Principles of circulation and circulatory anatomy (chp. 16).
-Principles of respiration and respiratory anatomy (chp 18).

Reference Sources:

1. Bio. I text (chps. as indicated).
2. Lecture notes.
3. Lab manual.
4. Lab reference material for each dissected specimen.

Activities: Lecture/discussion; dissection labs.

Evaluation: Numerous quizzes;major exam for each of the vital processes; (2) major lab practicles.

Tech Prep Class Syllabus
Donna Youngblood
Herrin High School

The following is a partial syllabus for 3 different courses. I have listed some of the major topics of these classes and have indicated the CORD materials I feel would be very beneficial to incorporate at these points. After some topics I have also listed the related areas that could be tied in through team teaching or by bringing in people to speak to the students.'

There are many areas where this could be done, but I felt I would do a better job and accomplish more by concentrating on fewer areas. While the lesson numbers may vary according to the textbook being used, the topics should remain fairly constant for the particular course.

Algebra 1/2

Lesson Number	Topic	Cord Unit #
30	Graphs Social Sciences or business classes	4
57	Decimals, Fractions, and Percents Cooking and business classes	B
66	Ratio Word Problems	9
97	Points, lines rays and angles Drafting, shop, and art	6

Algebra I

Lesson Number	Topic	Cord Unit #
38	Ratio	10
76	Scientific Notation Physics and chemistry	12
81	Operations with Scientific Notation Physics and chemistry	12
83	Writing the equation of a line	17
91	Intercept slope method of graphing	17
98	Pythagorean Theorem	21

It would be beneficial to have the shop teacher talk to the students about applications of pythagorean Theorem.

Algebra II

Lesson Number	Topic	Cord Unit #
30	Area Shop classes	15
35	Volume	15
41	Unit Multipliers Biology and physics	3
53	Metric Unit Conversions Physics	3

PROPOSED SYLLABUS FOR ALGEBRA I

MURPHYSBORO HIGH SCHOOL

MARY LOU HICKAM

TEXTBOOK: ALGEBRA I by JOHN SAXON

Addition and subtraction of fractions

Real numbers and the number line

Sets and operations; decimal numbers

Absolute value; addition on the number line

Rules for addition; definition of subtraction

Opposites and multiple signs

Rules for multiplication of signed numbers

Inverse operations

Division by zero

Reciprocal and multiplicative inverse; order of operations

Symbols of inclusion; order of operations

Multiple symbols of inclusion

More on order of operations; products of signed numbers

Evaluation of algebraic expressions

More complicated evaluations

Terms and the distributive property

Like terms; addition of like terms

Exponential notation

Evaluation of exponential

Product theorem for exponents; like terms with exponents

Statements and sentences; conditional equations

Equivalent equations; additive property of equality

Multiplicative property of equality

Solution of equations

More complicated equations

More on the distributive property
Fractional parts of numbers

Negative exponents

Zero exponents; decimal parts of a number

Algebraic phrases

Equations with parentheses

Word problems

UNIT ONE OF THE CORD MATERIALS

Products of prime factors; statements about unequal quantities

Greatest common factor

Canceling

Multiplying fraction; minus signs and negative exponents

Graphing inequalities

Ratio

UNIT TEN OF THE CORD MATERIALS

Trichotomy axiom; negated inequalities

Quotient theorem for exponents

Distributive property and negative exponents

Like terms and negative exponents

Solving multivariable equations

Least common multiple

Least common multiples of algebraic expressions

Addition of rational expressions

Addition of abstract fractions

Conjunctions

Percents less than 100

Polynomials; addition

Multiplication of polynomials

Percents greater than 100

Rectangular coordinates

Graphs of linear equations

Vertical and horizontal lines

Addition of rational expressions

Power theorem for exponents

Substitution axiom

Dividing fractions

Set notation

Percent word problems

Rearranging before substitution

Subsets

Square roots

Product of square roots theorem

Domain

Additive property of inequality

Addition of radical expressions

Simplification of radical expressions

Elimination

More about complex fractions

Factoring trinomials

Trinomials with common factors

Factors that are sums

Difference of two squares

Scientific notation

UNIT TWELVE OF THE CORD MATERIALS

Consecutive odd and even integers

Rational equations

Systems of equations with subscripted variables

Operations with scientific notation

Graphical solutions

Writing the equation of the line

Coin problems

Multiplication of radicals

Division of polynomials

More on systems of equations

More on division of polynomials

Solution of quadratic equations by factoring

Value problems

Intercept-slope method of graphing

UNIT SEVENTEEN OF THE CORD MATERIALS

Word problems with two statements of equality

Multiplicative property of inequality

Uniform motion problems about equal distances

Rational expressions

Uniform motion problems

Difference of two squares

Pythagorean theorem

UNIT TWENTY-ONE OF THE CORD MATERIALS

Distance between two points

Uniform motion with unequal distances

Square roots of large numbers

Rounding off

Square root tables

Factorable denominators

Absolute value inequalities

Rational equations

Abstract rational equations

Equation of a line through two points

Functions

Functional notation

PROPOSED SYLLABUS FOR ALGEBRA 1/2
MURPHYSBORO HIGH SCHOOL
MARY LOU HICKMAN

TEXTBOOK: ALGEBRA 1/2 BY JOHN SAXON

Whole number place value; reading and writing whole numbers

Rounding off whole numbers

Austrian subtraction

Multiplication

Division

Decimal numbers

Multiplying and dividing by powers of 10

Rounding off decimal numbers; dividing decimal numbers

Perimeter

Divisibility

Word problems about sums and differences

Prime numbers and composite numbers; products of primes

Three-digit divisors; multiplication word problems

Fractions; reducing to lowest terms; division word problems

Fractions to decimals

Decimals to fractions

Rectangular area

Products of primes in cancellation

Multiplying fractions; dividing fractions

Multiples

Average

Multiple fractional factors

English units; unit multipliers

Metric length conversions

Area as a difference

Mode, median and mean; average in word problems

Areas of triangles

Improper fractions and mixed numbers

Multiplying fractions and whole numbers; fractional part of a number

Graphs

UNIT FOUR OF THE CORD MATERIALS

Least common multiple

Adding fractions

Order of operations

Variables and evaluation

Multiple unit multipliers

Adding mixed numbers; two step problems

Mixed number subtraction

Understanding fractional parts

Equations; answers and solutions

Equivalent equations; addition-subtraction rule for equations

Multiplication-division rule

Reciprocals; equations with fractional coefficients

Symbols of inclusion; conversion of units of area

Multiplying and dividing mixed numbers

Exponents and roots

Volume

Order of operations with fractions

Evaluation of exponential and radicals

Fractional part of a number; fractional equations

Surface area

Multiple symbols of inclusion

Complex part of a number

Fractions and symbols of inclusion

Percent

Ratio

Decimals, fractions and percent

UNIT B OF THE CORD MATERIALS

Equations with mixed numbers

Rate

Proportions with fractions

Dividing fractional units; three forms of the distance equation

Circles; circumference and pi

Using both rules to solve equations

Fractional - part word problems

Semicircles

Ratio word problems

UNIT 9 OF THE CORD MATERIALS

Price per unit

Forms of the percent equation

Signed numbers; adding

Video numbers

Rule for addition

Graphing inequalities

Inserting parentheses

Percents greater than 100

Multiplication and division of signed numbers

Algebraic addition

Opposites

Evaluation with signed numbers

Formats for equations; negative coefficients

Algebraic phrases

Trichotomy; symbols of negation

Number word problems

Operations with signed numbers; roots by cut and try

Order of division

Variables on both sides

Two step problems

Unequal quantities

Exponents and signed numbers

Advanced ratio problems

Multiplication of exponential

Terms; adding like terms

Distributive property; estimating higher-order roots

Base 2

Percent word problems

Exponential with negative bases

Multiple-term equations

Points, lines, rays, angles, copying angles by construction

UNIT 6 OF THE CORD MATERIALS

English volume conversions

Perpendicular bisectors; angle bisectors

Base 8

Metric volume

Adding in base 10 and base 2

Probability

Numerals and numbers

Adding in base 8

Products of probabilities

More construction

Negative exponents

Rectangular coordinates

Advanced equations

CARTERVILLE HIGH SCHOOL

INTEGRATION PLAN

English III

I. Composition Unit

A. Applied Comm. Module 7 Lesson 3 (Following & Giving Directions)
B. Letter Writing
C. Resume' Writing
D. Guest Speakers from business and industry on "How English Skills Are Used in the Work Place"
E. "How To" essays - use vocational topics

II. Mechanics Unit

A. Editing - use co-operative learning with actual Civil War letters
B. Applied Comm. Module 3 (Problem Solving) Meets LAP Goal 3, objective A B C D E F

III. Vocabulary Unit

A. Uni on vocabulary from business

IV. Listening Unit

A. Applied Comm. Module 6 (Participating In Groups) Meets LAP Goal 2, objective A & B

V. Speaking and Literary Fiction Unit

A. Applied Comm. Module 12 Meets Goal 4, objective A B C D

INSTRUCTOR: SHERI HUNTER

Linda Homan / English

Murphysboro High School

Proposed Use of Tech - Prep Materials

Units	Tech - Prep Modules
Notetaking and Listening Skills	# 2, 7
Library Use	# 2
Speaking	# 9, 10, 11, 12, 13
Short Story	# 3, 6, 15
Romeo and Juliet	# 12, 13
To Kill a Mockingbird	# 3, 12
Writing	# 1, 2, 5, 8, 9

Food Science and Biology I
Team Teaching
Herrin High School
Nilson & Collins

First 2 weeks

Introduction to Science

Metric
Nutrition - classes of nutrients
RDA
Laboratory Equipment
Calibrating measuring equipment
Thermometers
Triple beam balance
Volume measurement

Experiments: Students will do both in both rooms on different days.

Collins - How to use a triple beam balance and an electronic balance

Nilson - How to use a graduated cylinder and the reasons for precision in measurement

2 weeks - Units apart

Collins - History and careers
Nilson - Sensory evaluation

4-5 weeks - Basic Science/Acids & Base

Matter
Mixtures
Parts of the atom
Chemical, symbols, formula and equations
Formula
Equations
Chemical Bonding
Physical Changes
Phase Changes
Acids and Bases
Ionization of Water
Properties of Acid and Bases
pH scale
Moles
Molarity
Atomic Mass
Experiments

Physical and Chemical Changes
Neutralization

1 1/2 - 2 weeks Apart
Collins - cell
Nilson - energy

Organic Compounds overview

CHO - Sugar, glucose, hydrolysis, supersaturated solution, starch

Lipids - Fatty Acids, Saturated and unsaturated fats, triglycerides

Proteins - Amine group, polypeptide, peptide, denaturation, amino acids

Experiments

Denature protein
Carmelization of CHO

MARION HIGH SCHOOL

PRINCIPLES OF TECHNOLOGY CLASS

INSTRUCTOR: CARL MAINER

Course - Physics and Principles of Technology

Text - Modern Physics, Williams, Trinklein, and Metcalfe, Holt, Rinehart, and Winston, 1989.

Credit - 1

Prerequisites - Geometry or equivalent

RATIONALE

The purpose of this course is 4-fold: 1. To make the student aware of the unifying principles in physics that describe our ordered and structured universe. 2. To have the student learn the nature and use of hypotheses. 3. To make the student aware of the history of scientific development and that science is a dynamic study. 4. To help the student to develop analytical thought patterns to describe physical phenomenon in mathematical terms.

PHYSICS

Course Objectives:

1. Understand the mechanics of the physical phenomenon of his everyday life.
2. Develop a methodology of scientific inquiry through experiments and hypotheses testing.
3. Have the student realize that there is a definite order and structure to the universe.
4. Analyze physical phenomenon in terms of mathematical expressions.
5. Realize that the resultant of physical phenomenon in time, space, matter, and energy can be predicted through mathematics.
6. Realize that science has compiled a vast amount of knowledge and every day we add new knowledge of yesterday's unknowns.

PHYSICS (OUTLINE)

1. Physics: The Science of Energy
2. Measurement and Problem Solving
3. Nature and Cause of Motion
4. Resolution and Composition of Forces
5. Curvilinear and Harmonic Motion
6. Conservation of Energy and Momentum
7. Phases of Matter
8. Thermal Effects
9. Heat and Work

10. Waves
11. Sound Waves
12. The Nature of Light
13. Reflection
14. Refraction
15. Diffraction and Polarization
16. Electrostatics
17. Direct-Current Circuits
18. Heating and Chemical Effects
19. Magnetic Effects
20. Electromagnetic Induction
21. Alternating - Current Circuits
22. Electronic Devices
23. Atomic Structure
24. Nuclear Reactions
25. High - Energy Physics

MARION HIGH SCHOOL

PT AND PHYSICS

MATERIALS (HARDWARE) USED COOPERATIVELY BY PT AND PHYSICS

A.	Thermal Devices:	Calorimeters, hot plates, and Boilers, thermometers, specific heat samples
B.	Optical Devices:	Lasers, lens, mirrors, universal sources, optical benches
C.	Force Devices:	Pulleys, force tables, inclined planes, air tanks
D.	Electrical Devices:	Power supplies, resistance blocks, wiring diagrams, generators, electrical motors

MATERIALS (SOFTWARE) ENRICHMENT BOTH PT AND PHYSICS

A. JETS Handbook on applied projects
B. JETS team competition
C. JETS Engineering and technology designs
D. JETS critical writing guide
E. Handbook "What's Next" a guide to successful employment

Introduction to Home Economics

1/2 credit

I. Course description

This orientation course incorporates the principles of Practical Math, Applied Math, Pre-Algebra and basic applying of math. As it related to Food and Clothing and Interior Design, the Practical Math concepts covered will be related to computational skills, whole numbers, fractions, decimals, and percents and conversions related to food, clothing, and interior design. Pre-algebra concepts will be related to ration, graph proportions, and scales in the interior design portion of the class.

II. Rationale for granting math-related credit for the course:

In many vocational programs, mathematics becomes the main language of the course. For many students, this is the first time they have realized the practical application of mathematics, which they have studied many years.

Successful completion of this course will equip the student with the math abilities and fundamentals needed to handle the hands on experience relationship of the math concepts.

COURSE SYLLABUS

Introduction to Home Economics
Unit 2: The Family
Weeks 1 - 4

Home Economics Topics

1. Identify various types of families.
2. Explain how families are similar to and different from one another.
3. Determine how family life is different today from the family life experienced by previous generations.
4. Identify stages in the family life cycle.
5. Describe typical changes in families during each stage in the family life cycle.
6. Give examples to show how roles of family members change as stages in the family life cycle change.
7. Point out how changes in society affect family life.
8. Explain why children in the same family may develop very different personalities.
9. Two examples to show how people's personalities affect their families.
10. Respond to the needs of older family members and or to older people in the community by spending time with them or by keeping in touch with them.

11. Give examples to show how people cooperate in families.
12. Identify patterns of child growth and development.
13. List the physical needs of children.
14. Describe how to make a house or an apartment safe for children.

Mathematics Topics

1. Read and interpret graphs.
2. Read whole numbers.
3. Read symbols from time measurement.
4. Read symbols from distance measurement.
5. Solve problems involving time measurement.
6. Solve problems involving distance measurement.
7. Solve word problems involving time measurement.
8. Solve word problems involving distance measurement.
9. Read symbols using time measurement scales.
10. Read symbols using distance measurement scales.
11. Solve problems using time measurement scales.
12. Solve problems using distance measurement scales.
13. Solve word problems using time measurement.
14. Solve word problems using distance measurement scales.

Unit 3: The Home
Weeks 5 - 9

Home Economics Topics

1. List the physical needs that are met by housing.
2. Explain how housing can help meet emotional needs.
3. Give examples of social needs that are met by housing.
4. Analyze the relationship between aesthetic and self-expression needs that is reflected in housing.
5. List the factors to consider when arranging furnishings in a room.
6. Describe the ways that design elements can be used to change the appearance of a room.
7. Make suggestions for using accessories effectively in home decorating.
8. Develop some interior decorating guidelines for people who move frequently.
9. Suggest ways to increase storage efficiency in closets.
10. Give examples of efficient ways to organize items that are stored flat.
11. Determine the best place to store items based on where and how often they are used.
12. Create new ways to store and organize articles for greater efficiency in available space.
13. Give examples of ways to personalize a room.
14. Show how color and texture can be used by change in the appearance of room.
15. Suggest methods for taking care of various rooms in a home.
16. Make a schedule for room-by-room home care.
17. Use commercial and homemade home-care products appropriately

so household tasks are performed easily, quickly, and efficiently.
18. List the steps that can be taken to lessen the likelihood of falls in a home.
19. Identify procedures that can be taken to make a home as safe from fires as possible.
20. Follow health-care guidelines that help prevent illness.
21. List careers in areas related to the home that require no special education and others that require paraprofessional training or licensing or a college degree.
22. Give examples of people who work in careers related to the home.

Mathematics Topics

1. Using measurement.
2. Perimeter and area of rectangles.
3. Circumference and area of circles.
4. Surface area of rectangles.
5. Measurement of line segments.
6. Converting units.
7. Scale drawings.
8. Read and write numbers of symbols from distance measuring scales.
9. Use a measure device to determine distance.
10. Solve problems using distance measurements.
11. Compute averages.
12. Determine if a solution to a problem is reasonable.
13. Read and write decimals.
14. Graph interpretation.
15. Solve problems using decimals.
16. Solve problems using area measurement.
17. Read and write fractions.
18. Addition/Subtraction/Multiplication/Division of fractions.
19. Estimate area measurement problems.
20. Determine if solutions to a problem are reasonable.
21. Read numbers or symbols from time measurement scales.
22. Solve problems using time measurement.
23. Read and write decimals.
24. Addition of decimals.
25. Subtraction of decimals.
26. Multiplication of decimals.
27. Division of decimals.
28. Solve word problems involving decimals.
29. Solve decimal problems using order of operations.

Unit 4 Resources

Weeks 10-15

Home Economics Topics

1. List the reasons that people wear clothes.
2. Determine how first impressions are affected by clothing.

3. Define the terms classic and fad.
4. Explain why fashions change.
5. Describe the ways in which various factors affect fashion trends.
6. Define terms associated with the color wheel.
7. Select colors, textures, and lines that are personally becoming.
8. Identify the steps required to take a clothing inventory.
9. Summarize guidelines for mixing and matching styles, colors patterns, and fabrics in clothing.
10. Develop a wardrobe plan.
11. List the advantages of planning ahead before shopping for clothing.
12. Explain why upkeep should be considered when buying a garment.
13. Analyze situations to determine when making compromises might be advantageous in buying.
14. List general characteristics to consider when selecting fabrics.
15. Summarized the characteristics of various natural and synthetic fibers.
16. Point out the advantages of different fabric finishes for various garments and kinds of wear.
17. List points to consider when choosing a sewing project.
18. Select a pattern appropriate for a class sewing project.
19. Analyze patterns to determine how difficult they will be to sew.
20. List factors to consider when buying fabric.
21. Determine the amount of fabric needed to make various garments.
22. Tell in their own words what each part of the sewing machine does.
23. Give the purpose of various sewing machine attachments and accessories.
24. Explain how the information of the pattern instruction sheet is helpful.
25. Make simple adjustments on patterns.
26. Use correct procedures to cut out pattern pieces.
27. Define terms used clothing construction.
28. Explain when pressing is needed during construction.
29. Demonstrate how to press correctly.
30. Transfer pattern symbols to fabric.
31. List tips for routine care of clothing.
32. Show how to remove common spots and stains.
33. Use energy saving methods when caring for their own clothing.
34. Give examples to show how resources are recycled.
35. Identify careers in home economics related to clothing and textiles.

Mathematics Topics

1. Read and write whole numbers.
2. Add whole numbers.
3. Solve problems involving whole number.
4. Solve word problems involving whole numbers.

23. Summarize the advantages and disadvantages of different types of food stores.
24. Describe different types of restaurants.
25. Summarize the advantages and disadvantages of different types of restaurants.
26. List procedures to follow when working in the foods lab at school.
27. Make a lab plan for preparing a recipe.
28. Use time-saving techniques when preparing foods.
29. Point out similarities and differences between working in the kitchen at home and working in the foods lab at school.
30. Describe small appliances used in the kitchen.
31. Distinguish among various types of measuring, mixing, preparing, cooking, and baking equipment.
32. Identify the various types of recipe forms.
33. Summarize ways to store and prepare foods safely.
34. Distinguish between safe and unsafe practices in preparing foods and working in the kitchen.
35. List procedures to follow when working with quality meats.
36. Summarize the points to consider when buying meat.s
37. List the types of poultry.
38. Determine the functions of eggs in various food products.
39. Read numbers and symbols from wt./time. volume scales.
40. Solve word problems involving measurements of wt/ time/ volume.
41. Name the nutrients found in mild and milk products.
42. Demonstrate how to cook with milk.
43. Describe how to cheese is made.
44. Match vegetables and parts of plants.
45. List guidelines for buying fruits and vegetables.
46. Name the various types of cereals and breads.
47. Prepare cereal and cereal products correctly.

Mathematics Topics

1. Read and write whole numbers.
2. Read and write percentages.
3. Add whole numbers.
4. Add percentages.
5. Solve word problems using percentages.
6. Solve word problems whole numbers.
7. Interpret percentages.
8. Solve word problem involving weight.
9. Interpret percentages.
10. Solve word problems involving weight.
14. Determine if solution to a problem in reasonable time.
15. Interpret and apply metric system.
16. Read numbers and symbols from volume scale.
17. Read numbers and symbols from weight measurement scales.
18. Use measurement devices to determine weight.
19. Use measurement devices to determine volume.
20. Solve problems using weight scales.
21. Solve problems using volume devices.
22. Solve word problems using weight measurements.

23. Read and write whole numbers.
24. Add whole numbers.
25. Solve problems using whole numbers.
26. Read and write symbols from volume and weight measurement scales.
27. Compute averages.
28. Convert fractions.
29. Solve problems using distance measurement.
30. Solve problems using area measurement.
31. Add/ subtract/ multiply/ divide/ decimals, metric measurements.
32. Read numbers and symbols for time measurement.
33. Solve problems using time measurement.
34. Determine if solution to a time measurement problem is reasonable.
35. Read number and symbols from weight/ time/ volume/ scales.
36. Solve problems using weight/ time/ volume/ scales and devices.
37. Give equivalent measures for standard measurements used i recipes.
38. Distinguish between the customary and the metric systems of measurement.
39. Analyze the ways to reduce sugars and fats in the diet.
40. Read numbers and symbols from weight.
41. Analyze labels from cereal and bread products using per cents.

23. Read and write whole numbers.
24. Add whole numbers.
25. Solve problems using whole numbers.
26. Read and write symbols from volume and weight measurement scales.
27. Compute averages.
28. Convert fractions.
29. Solve problems using distance measurement.
30. Solve problems using area measurement.
31. Add/ subtract/ multiply/ divide/ decimals, metric measurements.
32. Read numbers and symbols for time measurement.
33. Solve problems using time measurement.
34. Determine if solution to a time measurement problem is reasonable.
35. Read number and symbols from weight/ time/ volume/ scales.
36. Solve problems using weight/ time/ volume/ scales and devices.
37. Give equivalent measures for standard measurements used in recipes.
38. Distinguish between the customary and the metric systems of measurement.
39. Analyze the ways to reduce sugars and fats in the diet.
40. Read numbers and symbols from weight.
41. Analyze labels from cereal and bread products using per cents.

Course Name - Adult Living

Department - Home Economics

Recommended Social Studies Credit - 1/2 credit Sociology

I. Course Description

The adult living course should seek to bring the principles of behavior to students to help them in performing their vital tasks of relating more intelligently to their fellow human beings. The course emphasized the knowledge, skills and attitudes of interpersonal relationships, to assist individuals and families in assuming their responsibilities as adults and in achieving their personal goals through their multiple roles in the home, community and place of employment. Other units include values, goals, decision making, social concerns and responsibilities, legalities, meeting crises, community and social services, and the interaction between personal relationships and employability.

II. Rationale for granting social studies credit for this course:

All the course topics meet the social studies outcome statements. Since it was stated in the purpose of schooling that topics covered did not have to be taught in the particular area listed, this course definitely qualifies as a social studies course.

ADULT LIVING

Suggested topics:

I. Relationships in a Changing Society
   - A. Societal factors affecting relationships of adults.
   - B. Causes and effects of stress on relationships.
   - C. Developing new relationship skills.

II. Understanding Self
   - A. Individual differences.
   - B. Developing a self-concept.
   - C. Accepting self.

III. Developing Self Independence
   - A. Understanding self needs.
   - B. Skills for meeting needs.
   - C. Understanding values and sources of values.
   - D. Developing a self-value system.
   - E. Decision-making skills.

IV. Relationships with Others
   A. Developing satisfying relationships.
   B. Developing communication skills.
   C. Understanding role relationships.
   D. Understanding and handling conflicts in relationships.

V. Family Relationships
   A. Functions of families.
   B. Family life styles and cultural patterns.
   C. Relationships in the family between family members.
   D. Dealing with family crisis.
   E. Dealing with family relationships through changing life cycles.

VI. Establishing Your Own Family
   A. Starting your own family.
   B. Establishing your family values, patters, and life styles.
   C. Managing family resources.

VII. Handling Family Crisis
   A. Death.
   B. Separation or Divorce.
   C. Health disabilities.
   D. Financial crisis.

VIII. Changing Life Styles
   A. Single person families.
   B. Single parent families.
   C. Changing marriage patterns.

IX. Relationships Outside of the Family
   A. Relationships in groups.
   B. Relationships in the job.
   C. Relationships in community situations.
   D. Relationships with in-laws and relatives.

Unit 3

Air and Other Gases

Biology I Course Outline Incorporate Applied Biology

Subunit 1: Applied Biology/Chemistry What is Air?
Add to Unit 3 Biology Basic Chemistry and Physical Science Concepts

Subunit 2: Applied Biology/Chemistry How does Air Support Life?

Pg 42-45 Gas Cycles Add to Unit 9 Biology Ecology

Pg 47 & 55 Respiration Applied Biology Add to Unit 7 Energy (ATP)

Water: Applied Biology/Chemistry

Subunit 1: How does the structure of water affect the way it can be used? Pg 20-23 Add to unit 3: Chemistry Biology

Subunit 2: How does water support Life? Pg 29

Pg 42 Plants Add to Bolary unit Bio II

Pg 44-48 Animals - Add to Circulatory unit Biology II

Subunit 3: How is water used? Lab 2
When should I sweeten my tea?
Add to unit 2 Biology: Solutions

Subunit 4: What Are Acids & Bases: Pg 110-130
Add to Unit 3 Bilolgy/Inorganic Chemistry

Lab 6, 7,, 8, 9

Child in the family
1/2 Credit
1/2 year Course.....Recommended Psychology Credit

Course Description:

The major aim of this in depth course is to become knowledgeable of the numerous factors affecting the physical, social, emotional and intellectual development of the child within a family unit. the student should develop an understanding of the responsibilities involved in parenthood; the physical, psychological, economical.

The curriculum includes principles of development, moral behavior, values, decision making and independent thinking, teaching and learning and parenting.

Broad Objectives

Students who have completed the course should be able to:

1. illustrate concepts contributing to a positive self-image.
2. compare positive and negative aspects of roles, responsibilities and alternatives of parenthood.
3. explain the physiology of reproduction.
4. relate information on physiological, psychological, emotional, and intellectual development and care of children.
5. interpret relationship of the child with members of the extended family.
6. describe alternatives to solving common childhood problems.
7. display a working knowledge of the decision-making process.
8. explain ramifications of the child an family in crises.

I. Parenting
II. Development
    A. Conception
    B. Genetics
    C. Prenatal Development
    D. Environmental Influences
III. Birth
    A. Sensory Abilities
    B. Reflexes
    C. Needs
        1. Maslow's theory
        2. Erikson's theory
IV. Physical Development
    A. Cephalo-caudal
    B. Proximal distal
    C. Coordination

V. Cognitive and Language Development

A. Piaget's theory

1. Sensorimotor
2. Preoperational
3. Concrete Operational
4. Formal Operational

B. Language

VI. Social and Emotional Development

A. Theories of Social and Emotional Development
B. Bonding and relationships
C. Emotions
D. Fears
E. Role of Play
F. Sex Roles
G. Moral Development

VII. Intellectual Development

A. Methods
1. Differential Reinforcement
2. Discrimination Training

VIII. Discipline

A. Styles
B. Alternatives
C. Misbehavior
D. Alternatives to Punishment

IX. Parenting

A. Goals and Objectives

1. Child-rearing
2. Behavioral

B. Observing Children

1. Measuring behaviors
2. Charting

C. Self-control techniques

D. Crisis in parenting

1. Death
2. Divorce
3. Conflict

E. Teaching skills

1. Small muscle
2. Large muscle
3. Language
4. Self-care
5. Self-confidence; self-esteem
6. Decision-making
7. Creativity

X. Careers

FOOD SCIENCE I

1/2 CREDIT (MEETS 1/2 CREDIT SCIENCE REQUIREMENT)

1/2 YEAR COURSE

COURSE DESCRIPTION

THE FOOD SCIENCE COURSES TEACH SCIENCE PRINCIPLES USING FOOD AS THE VEHICLE TO DELIVER THE SCIENCE CONCEPTS. THESE FOODS COURSES INCORPORATE THE PRINCIPLES OF PHYSICS, CHEMISTRY, BIOLOGY, BACTERIOLOGY, PHYSIOLOGY AND NUTRITION AS IT RELATES TO FOODS. PHYSICS CONCEPTS COVERED WILL BE RELATED TO CONVECTION, CONDUCTION, RADIATION, VOLUME, DENSITY, CALORIES, LEVERS, WHEELS AND AXLES, PULLEYS, AND INCLINE PLANES. CHEMICAL CONCEPTS COVERED WILL RELATE TO ACIDS, BASES, SALTS, SUCROSE, GLUCOSE, SOLUTIONS, SUSPENSIONS AND COLLOIDAL DISPERSIONS. THE BIOLOGICAL AND PHYSIOLOGICAL CONCEPTS RELATE TO THE DIGESTION, ABSORPTION AND ASSIMILATION OF FOOD. BACTERIOLOGICAL CONCEPTS WILL BE COVERED IN THE CANNING OR FREEZING OF FOOD. NUTRITION CONCEPTS WILL BE COVERED IN THE PLANNING OF MEALS TO MEET THE USRDA FOR GOOD HEALTH.

BROAD OBJECTIVES

STUDENTS WHO HAVE COMPLETED FOOD SCIENCE I & II SHOULD BE ABLE TO:

1. TO DEVELOP AN APPRECIATION AND UNDERSTANDING OF THE SCIENTIFIC METHOD AS IT RELATES TO FOODS.
2. TO UNDERSTAND THE ROLE OF PRECISE MEASUREMENT IN FOODS. EXPERIMENTS.
3. TO UNDERSTAND THE ROLE OF SANITATION AS IT RELATES TO FOODS.
4. TO UNDERSTAND THE VARIOUS METHODS OF HEAT TRANSFER.
5. TO UNDERSTAND THE PHYSICS CONCEPTS IN THE OPERATION OF BASIC KITCHEN EQUIPMENT.
6. TO UNDERSTAND THE ROLES OF VARIOUS INGREDIENTS IN FOOD EXPERIMENTS.

SPECIFIC INSTRUCTIONAL OBJECTIVES

UPON COMPLETION OF THE READING, DISCUSSION, LABORATORY EXPERIMENTS, INDIVIDUAL PROJECTS, LECTURES, WORKSHEETS, GROUP WORK, STUDY QUESTIONS, AND DEMONSTRATIONS PERTAINING TO EACH UNIT IN FOOD SCIENCE AND WHEN ASKED TO DEMONSTRATE, LIST, IDENTIFY, PRESENT, PREPARE OR RESPOND EITHER ORALLY OR ON A WRITTEN TEST, STUDENTS WILL BE ABLE TO:

1. DEVELOP MENUS FOR A ONE-TWO WEEK PERIOD MEETING THE BASIC FOUR FOOD GROUP REQUIREMENTS SET BY THE U.S.D.A. AND THE REQUIREMENTS FOR VARIETY ACCORDING TO THE HANDOUTS GIVEN TO STUDENTS.
2. PREPARE AND EVALUATE FOOD EXPERIMENT PROJECTS RELATED TO EACH UNIT.

3. SHOW PROPER SANITATION PROCEDURES WHEN CARRYING OUT ALL FOOD EXPERIMENTS.
4. QUESTION, EXPLORE AND DEVELOP EXPERIMENTS TO ANSWER QUESTIONS USING FOOD AS THE EXPERIMENTAL MEDIUM.
5. BE ABLE TO PREPARE FOOD EXPERIMENTS USING VOLUME AND WEIGHT AND DENSITY MEASUREMENTS.
6. BE ABLE TO PREPARE FOOD EXPERIMENTS USING CONDUCTION, CONVECTION AND RADIATION.
7. USE VARIOUS PIECES OF KITCHEN EQUIPMENT AND SHOW THE PHYSICS CONCEPTS USED IN THEIR OPERATION.
8. PREPARE VARIOUS FOODS EXPERIMENTS SHOWING THE CHEMICAL CONTRIBUTIONS OF VARIOUS INGREDIENTS.

COURSE OUTLINE

I. MENU PLANNING
* A. NUTRITIVE VALUE
* B. USRDA VALUE
C. TEXTURE, FLAVOR, COLOR, TEMPERATURE
D. BUDGETING-COSTING
E. GROCERY SHOPPING

II. WATER
A. MOISTURE CONTENT OF FOODS
* B. NATURE OF WATER
* C. BOILING OF WATER
* D. WATER AS A DISPERSING MEDIUM
* 1. SOLUTIONS
* 2. COLLOIDAL DISPERSIONS
* 3. EMULSIONS
* 4. SUSPENSIONS

* III. HEAT
* A. ENERGY TRANSFER
* 1. RADIATION
* 2. CONDUCTION
* 3. CONVECTION
* B. PROBLEMS IN HEAT TRANSFER

* IV. MEASUREMENTS
* A. VOLUME
* B. WEIGHT
* C. DENSITY
* D. METRIC

* V. GLUTEN
* A. FORMATION
* B. GLUTEN IN BAKED PRODUCTS
* C. EFFECTS OF HEAT ON GLUTEN
* D. EFFECTS OF SUGAR ON GLUTEN
* E. EFFECTS OF FAT ON GLUTEN
* F. PROPERTIES OF GLUTEN

* VI. STARCH
- * A. SUGAR SEPARATES STARCH GRANULES.
- * B. EFFECT OF LIQUID ABSORPTION WITH HEAT APPLICATION
- * C. EFFECT OF HIGH TEMPERATURE ON COAGULATION OF FLOUR PROTEIN
- * D. EFFECT OF ACIDS ON STARCH
- * E. FUNCTIONS OF STARCH IN RECIPES

* VII. PROTEIN
- * A. HYDROLYSIS OF COLLAGEN
- * B. METHODS TO BREAK DOWN COLLAGEN AND ELASTIN
- * C. EFFECT OF HEAT ON MUSCLE FIBER PROTEIN
- * D. PURPOSE OF BREADING
- * E. SOURCES OF COLLAGENOUS CONNECTIVE TISSUE
- * F. CHEMICAL COMPOSITION (FATTY ACIDS) OF FATS
- * G. COAGULATION
- * H. AMINO ACIDS

* VIII. LEAVENING AGENTS
- * A. AIR
  - * 1. STABILITY
  - * 2. COAGULATION
  - * 3. EFFECT OF TEMPERATURE
  - * 4. STRUCTURE
- * B. YEAST
  - * 1. EFFECT OF TEMPERATURE
  - * 2. FOODS FOR YEAST
  - * 3. FERMENTATION
  - * 4. PROOFING
  - * 5. KNEADING
  - * 6. GAS PRODUCED
- * C. BAKING POWDER
  - * 1. RESIDUES REMAINING
  - * 2. GAS PRODUCED
  - * 3. EFFECT OF SIFTING, ROLLING, AND/OR STIRRING ON DENSITY
- * D. BAKING SODA
  - * 1. GAS PRODUCED
  - * 2. RESIDUES REMAINING
  - * 3. INGREDIENTS REQUIRED FOR REACTION

* IX. SANITATION
- * A. FOOD SANITATION & POISONING
- * B. SANITATION PRACTICES IN FOOD HANDLING
- C. PROCEDURE FOR DISHWASHING
- * D. CLEANING S. SANITATION
- * E. STORAGE, REFRIGERATION REQUIREMENTS

* NOTE: ITEMS WITH AN ASTERISK ARE SCIENCE CONCEPTS.
NON-ASTERISK ITEMS ARE FOOD PREPARATION CONCEPTS.

Electronics I
Objectives

At the end of the Electronics I program, the student will be able to :

1. Identify 75% of the symbols to which he has been introduced.

2. Solve unknown values of voltage, current, and resistance with 75% accuracy.

3. Calculate voltage drops and total voltage, total and individual current flows, and total individual resistance with 75%.

4. Read all scales on a VTUM, select the proper ranges and function to measure voltage and resistance.

5. Prepare and object for a presoldered connection so that it is ready for re-soldering.

6. Unsolder and clean a presoldered connection so that it is ready for re-soldering.

7. Heat sink and solder an electronic component without inflicting damage to heat sensitive junctions.

8. Calculate the value of a resistor using a color code chart with 75% accuracy.

9. Operate various pieces of basic electronics test equipment built into test benches choosing the right device for the needed test and exhibiting proper set-up.

10. construct a preplanned kit or a project form schematic only ending with a functional unit.

11. Construct a printed circuit board from a basic schematic ending up with a fully conductive and properly designed layout.

Mathematics Objectives Met in Electronics

1. Perform numerical operations with and without a calculator.
2. Translate word problem situations to mathematical expressions or sentences and solve.
3. Apply computational and problem-solving skills to common life situations.
4. Interpret percents in various settings.
5. Measure in a variety of contexts using appropriate units.
6. Estimate measurements.
7. Apply selected measurement systems, instruments and techniques.
8. Apply given formulas.
9. Convert units within a system and between systems, given a conversion rule.
10. Evaluate, solve and apply formulas.
11. Apply various techniques of graphing.
12. Interpret data collected form an experiment.
13. Interpret tables, graphs charts, arrays, schedules, experiments and surveys.
14. Estimate and check solutions to given problems.
15. Use deductive reasoning.

Science Objectives Met in Electronics

1. Acquire an understanding of the concept of human cooperation to achieve common goals and the necessity of this cooperation.
2. Develop awareness and concern to the rights and well-being of others.
3. Develop an understanding of the relationship between individuals and groups.
4. Display an ability to evaluate sources of information.

Language Arts Objectives Met in Electronics

1. Provide specific information or reasons to support and elaborate the main point.

2. Use clear, coherent, logical organization of ideas.

3. Use standard written English conventions.

ACCOUNTING I

Unit 1: Introduction

Week 1

Accounting Topics

1. Accounting as a career.

Mathematics Topics

1. Competency pre-test including:
    a. Equations with addition or subtraction.
    b. Equations with multiplication.
    c. Equations with fractions and/or percentages.
    d. Comparison of columns.
    e. Cross-footing columns of figures.
    f. "Money matters"
        1) Making change
        2) Comparison shopping

Unit 2: Accounting for a Service Center

Accounting Topics

1. Balance sheet.
2. Journal entry.
3. Posting.
4. Six-column work sheet.
5. Income statement.
6. Closing the ledger.
7. Writing checks.
8. Reconciling bank statements.

Mathematics Topics

1. Equations with concepts of addition and subtraction.
2. Writing whole numbers -- placement within "ruled format" -- number justification at right.
3. Number comparison -- transfer of whole numbers to various forms.
4. Cross footing -- horizontal addition and subtraction of columns.
5. Use of numbers as "codes" i.e., account numbers.
6. Application of equation -- (A = L + P).
7. Number recognition.
8. Application of formula utilized for writing checks and bank reconciliation.
9. Practical application of basic mathematics skills as applied to basic accounting.

10. Justification and verification of added and subtracted numbers.

Unit 3: Reinforcement Activity I -

Week 9

Accounting Topics

1. Accounting Cycle for a Sale Proprietorship Using a Cash Journal.
2. Reinforcement Activity I Part A-D
   a. Recording and posting opening entry.
   b. Recording transactions in cash journal.
   c. Prove cash posting to ledger.
   d. Completion of trial balance and work sheet.
   e. Completion of financial statements.

Mathematics Topics

1. Review and reinforce:
   a. Columnar addition and subtraction of cash journal and financial statement.
   b. Number comparison -- transfer of numbers through various forms through posting.
   c. Cross-footing of columns on six-column work sheet.
   d. Application of formula. (A = L + P) to make sure accounting equation is intact.

Unit 4: Sail Away Practice Set

Week 10

Accounting Topics

1. Practical application of all previously-learned concepts.

Mathematics Topics

1. Analyzing various transactions.
2. Identifying mathematical procedures (each transaction is a complete procedure in itself.
3. Error identification and correction -- use of audit trails.
4. Identification and application of number placement in overall accounting equation.
5. Reinforcement of basic mathematical skills utilized in basic accounting through the use of the complete accounting cycle.

Unit 5: Chapters 11-16

Weeks 11-15

Accounting Topics

1. Combination journal.
2. Accounts payable ledgers.
3. Accounts receivable.
4. Eight - column work sheet.
5. Distribution of net income statement.

Mathematics Topics

1. Multiplication of whole numbers. (Use of percentages).
2. Calculation of sales tax rates.
3. Percentage greater than 100%.
4. Review of horizontal addition of columns -- cross-checking.
5. Extrapolation of equations through adjusting entries on 8-column work sheet.
6. Introduction of automated accounting machines through computers, adding and calculating machines.
7. Continued use of addition and subtraction concepts.
8. Use of proportions and complementary percentages through completion of distribution statement.
9. Continued practical application of mathematical skills as applied to basic accounting.

Unit 6: Reinforcement Activity 2

Week 16

Accounting Topics

1. Accounting Cycle for a Partnership Using a Combination Journal.

Mathematics Topics

1. Review and reinforce the following concepts: (see Unit 5)
   a. Columnar addition and subtraction of columns, cross-checking of figures in combination journal.
   b. Addition and subtraction through reconciling bank statement.
   c. Number recognition and coding; concept of accounting equation completed through posting.
   d. Columnar addition and subtraction; cross checking through us of six-column work sheet.
   e. Extrapolation of equations through adjusting entries on eight-column work sheet.

Unit 7: Maxwell Jewelry Practice Set

Weeks 17-18

Accounting Topics

1. Simulation of merchandising business organized as a partnership. Transactions are recorded in combination journal and posted to general ledger. Work sheet and financial statements are prepared.

Mathematics Topics

1. REPEAT TOPICS from Unit 6.

Unit 8: Chapters 17-19

Week 19

Accounting Topics

1. Use of date flow through a computer.
2. Systems flow chart introduced.

Mathematics Topics

1. Use of all mathematical concepts through simulated applications.
2. Number recognition for data entry.
3. Coding of numbers on chart of account set-ups.
4. Multiplication and division through identifying file and field dimensions on a disk.
5. Geometric lines, line segments and rays/polygons through use of flowchart symbols i.e., parallelogram, rectangle, trapezoid.
6. Number comparison and verification between source documents and computer output data.
7. Analyzing numeric trends in end of fiscal period reports -- graphing, charting.

Unit 9: Reinforcement Activity - 3

Weeks 20-26 (on-going)

Accounting Topics

1. Accounting cycle using Automated Data Processing (software available through Southwestern).

Mathematics Topics

1. Review and reinforce the following skills: (see Unit 8).
   a. Learning basic data input techniques.
   b. Classifying entries - coding.

c. Generating statistical data for comparative analysis.
d. Geometrical lines, segments, rays/polygons through data flow through system.

Unit 10: Chapters 20-27

Weeks 20-29

Accounting Topics

1. Purchases journal.
2. Cash payments journal.
3. Sales journal.
4. Cash receipts journal.
5. Figuring discounts.
6. Payroll register.
7. Time cards.
8. Writing checks.
9. Earnings records.
10. Accounting for accounts uncollectible.
11. Plant assets and depreciation.
12. Accounting for notes and interest.
13. End of fiscal period work for corporation.
14. Software for practice in change-making (own program) (automatic cash register).

Mathematics Topics

1. Continued use of columnar adding and subtracting of whole numbers.
2. Use of percentages through trade and cash discounts.
3. Rounding off numbers to nearest cent.
4. Use of numbers as code to identify accounts when posting.
5. Use of percentage through calculation of sales tax.
6. Use of fractions on time cards.
7. Analyzing and using government withholding forms -- number recognition and coding -- to calculate deductions.
8. Multiplication - base pay times hours worked.
9. Horizontal and vertical calculation (payroll register) cross-checking of figures.
10. Percentages and decimal equivalents as applied to employees share of payroll taxes.
11. Number recognition and application of equation of payroll entries.
12. Percentage of various account balances to determine adjusting entries for bad debts.
13. Number recognition and application for posting.
14. Numerical linear relationships as shown by aging accounts receivable.
15. Division as applied to calculation of salvage value; reinforcement of subtraction techniques to find bank value.
16. Addition, subtracting, cross-checking = plant-asset records.
17. Date calculation and fraction of years (disposal of fixed assets).

18. Extrapolation of monetary values relating to adjusting entries relating to adjusting entries relating to bad debts and depreciation.
19. Interest calculations - positive and negative integers.
20. Use of fractions when dividing (parts of years).
21. Reinforce addition and with calculation of maturity value.
22. Extrapolation of numbers for work sheet -- all adjusting entries learned.
23. Percentages - federal income tax on corporation work.
24. Proportional division based on percentages -- declaration of dividends.
25. Currency reduction of monetary amounts to minimum denominations -- payroll in cash.
26. Practical applications of change-making.

Week 30

Accounting Topics

1. Pegboard system provides experience in preparing payroll time cards, payroll register and earnings record.

Mathematics Topics

1. Geometric concepts of lines, polygons explored through the use of flow chart symbols illustrating flow of data through system.
2. Use of fractions to complete time cards and overtime rates.
3. Multiplication -- of base pay times hours worked to obtain total earnings.
4. Columnar addition and cross-checking of amounts on payroll register and earnings record.
5. Number recognition and coding through use of government forms used to calculate deductions.

Unit 14: Chapters 28-30

Weeks 35-36

Accounting Topics

1. Voucher register.
2. Check register.
3. Petty cash records.
4. Inventory procedures.
5. Determining cost of inventory.
6. Cost or market -- which - ever is lower.
7. FIFO = LIFO comparison.

Mathematics Topics

1. Addition and cross-footing columns.

2. Subtraction - balance of check.
3. Percentage - purchase discount.
4. Adding and subtraction skills -- cross-footing.
5. Number recognition and coding; application of equation.
6. Use of monetary values through establishing petty cash drawer.
7. Practical applications of making change.
8. Using numbers for coding.
9. Multiplication = quantity + unit price.
10. Decimal and fraction as unit measure.
11. Analysis for method of determining greatest profit.
12. Analysis of method of determining greatest profit.
13. Number comparison extensions -- quantity + price.
14. Multiplication quantity times amount on hand = cost of inventory.

Integration of Tech Prep Activities:

Once a week for the entire year except semester exam weeks an activity is chosen from the following list:

OFFICE READING EXERCISES by the National Business Education Association

READING FOR WORKPLACE SUCCESS by Paradigm Publishing

WRITING FOR WORKPLACE SUCCESS by Paradigm Publishing

MATH FOR WORKPLACE SUCCESS by Paradigm Publishing

Sustained Reading (Student selects material)

Miscellaneous handouts and questionnaires gathered by instructor which point out the importance of social skills in the office.

TECH PREP - CARBONDALE HIGH SCHOOL

Sample Nonfiction Unit

The sophomore English curriculum is genre based with writing as an intrinsic part of the literature that is studied. This unit typically runs four weeks in length and is usually taught during the first quarter. The skills taught in this unit are certainly applicable to the workplace, and the content can be changed to meet varied goals.

Sample Objectives:

1. Students will be able to increase their reading speed 100% in a 10 minute timing.
2. Students will be able to write descriptive, informative, and evaluative summaries of various nonfiction writings.
3. Students will be able to integrate information from three or more sources into an essay and/or an oral report.
4. Students will be able to write a five paragraph theme with thesis and developed paragraphs. (See scoring grid, Attachment C).

Sample Activities:

1. To increase reading speed, students practice "accelerated reading" in a "trash" novel of their choice. Everyday for three weeks, students force themselves to read slightly faster than their comfort level for 10 minutes. Students keep charts of their rates. In addition, students are shown that they have a variety of reading rates depending on their purpose for reading.

2. Using models and techniques based on Technical English (Pickett, N.A. and A.A. Laster. New York: Harper & Row, 1980.), students are taught to write three typed of summaries: the descriptive summary, a one sentence description of what an article is about; an informative summary, the major facts and conclusions of an article; an evaluative summary, the major facts and conclusions of an article plus qualitative judgements by the student.

   The articles used in this unit vary widely depending on the students interests, what's happening in the world, and the teacher's preferences. Usually there is a mix of newspaper and magazine articles, chapters or sections from nonfiction books, research articles, and literary essays. Topics have included articles on sexism in the work place by Joan Beck and Phyllis Shafely, chapters from Studs Terkel's book Working, editorials from local newspapers, and a series of essays on education by Paulo Frere, John Goodlad, and Immanuel Kant. The variety of summaries and topics encourages the students to become more versatile readers.

3. Again, depending on the articles read, students are asked to summarize three articles and than use those summaries to write their own article. The first such essay is based on instructor supplied articles; a second is based on articles students find in the library. Depending on time constraints and student interest, students are sometimes asked to present their essays orally to the class.

4. The students read Elie Wiesel's Night and write a five paragraph theme. In addition they read a research article by Stanley Millgran titled "Obedience to Authority."

Attachment C

Scoresheet-Night Essay

	0 1	2	3	4	5x =
A.	Introduction and Thesis. You don't have them or they aren't connected.		Opening moved me thesis. Try a new approach in next draft. O.K. thesis and conclusion.		Caught my attention. Introduces ideas very well. Very good conclusion. Thesis is thought provoking.
	0 1	2	3	4	5x =
B.	Paragraph Organization: You wander all over. Missing topic sentences and concluding sentences.		Most paragraphs focus on a point and have T.S. and C.S. Good.		Tightly focused. Excellent transitions.
	0 1	2	3	4	5x =
C.	Paragraph Development: Few examples or support of any kind. Try more free writing, jot lists, or just think more.		Ideas are supported with examples.		Powerful examples prove your ideas. You made me think about your ideas.
	0 1	2	3	4	5x =
D.	Spelling, Usage and Punctuation: Very difficult to follow because of the number and variety of errors.		Two major errors. A few minor errors. A little more time editing needed.		No major errors. Two minor errors. A top quality job.
	0 1	2	3	4	5x =
E.	Content Essay doesn't say much. Go through your notes and ideas again.		Covered most of the main ideas covered in class		New thought and approaches to subject. I am impressed.

COMMENTS:

Total:
Grade:

English II

I. Writing Skills - Module 7
   A. Process of Writing
   B. Creative Writing

II. Short Stories
   A. "The Boar Hunt"
   B. "A Visit to Grandmothers" - Module 15
   C. "The Monkey's Paw"
   D. "The Piano"
   E. "Forgiveness In Families"
   F. "Lamb To The Slaughter"
   G. "The Other Wife"
   H. "The Story of The Widow's Son"
   I. "The Necklace"
   J. "The Interlopers"
   K. "The Rocking-Horse Winner"
   L. "Through The Tunnel"

III. Our Town by Thornton Wilden (Projects and groups)
   A. Act I - Daily Life
   B. Act II - Lone and Marriage
   C. Act III - Death

IV. Twelve Angry Men - Reginald Rose - Module 6 and 9
   A. Act I (Importance and selection of a good jury)
   B. Act II

V. Julius Caesar - Module 13
   A. Act I
   B. Act II
   C. Act III
   D. Act IV
   E. Act V

VI. Huckleberry Finn - Mark Twain - Module 12

In each unit, various projects and activities are used to incorporate other subjects.

Group discussions are used.

Oral book reports are given. Students choose books from the "Tech-Prep" reading list.

Vocabulary words are divided into 17 subject units. (ex - Food, Agriculture, Household items, clothing, art and architecture, etc).

I also show the following videos:

Why English Is Important
Why Reading Is Important
Writing For Results

A packet of various forms are given in the Writing Skills unit.

Semester Projects

All students must do one project. Any extra project will go toward extra credit.

Maximum Points		
8	1.	Make a replica of the raft from Huck Finn or "Pap's Cabin".
10	2.	Direct and record a radio tape of Huck Finn. (Mrs. Rottschalk has the script.
10	3.	Make a board game for any of the plays or stories we've read.
3	4.	Make a collage depicting a story we have read.
5	5.	Design a book jacket for Huck Finn. Include inside info. Also, design a book mark and create a slogan.
10	6.	Compose a 100pt. examination based on our readings. Prepare an answer sheet to all the questions. Include: true and false, multiple choice, matching, and at least 3 essay questions.
5	7.	Draw a portrait of your favorite character from Huck Finn.
4	8.	Write out the title decoratively and for each letter write a phrase or word about the story.
5	9.	Write a poem about Huck Finn - at least 14 lines.
5	10.	Write (2 pages) different ending to Huck Finn.
8	11.	Make a map of the Mississippi River and mark the place of "action" from the book, Huck Finn. (poster board size).
5	12.	Make a list of 20 superstitions not mentioned in the book, Huck Finn.
8	13.	Write a 5 page report "Slavery in the U.S. in the 19th Century".
10	14.	Bulletin Board for one of the following: "Julius Caesar", Huck Finn.
5	15.	Make a poster advertising Huck Finn as if it were a movie.
10	16.	Create a newspaper with stories, ads, sports, etc. centering around Huck Finn.
8	17.	You are directing a new film called Huck Finn in DuQuoin. Who would you cast as the characters? Tell why (Character sketches).
5	18.	Write a detailed chronology of Huck Finn.
3	19.	Write an obituary for a character in Huck Finn.
15	20.	Make a scrap book of 15 postcards or pictures of important scenes in Huck's life.
8	21.	Make a crossword puzzle (25 questions) and hidden word puzzle (25 words) for Huck Finn.
10	22.	Make a replica of the Pap's Cabin.
10	23.	Five page book report on one of Twain's novels. (Check with Mrs. Rottschalk.)
25	24.	Go to Hannibal, MO - visit all homes of Mark Twain, etc. and report to the class.

Our Town Projects

1. Make a picture album of significant buildings in DuQuoin (churches, schools, hospital, city hall, library, etc.) at least 12 pictures - label each.

2. Make a VCR tape of DuQuoin and narrate it. At least 15 minutes long.

3. List the past 10 mayors of DuQuoin and write a one page report on one of them.

4. Write a four page report on the History of the DuQuoin State Fair.

5. Attend a city council meeting and report on it (one page).

6. Write a 3 page essay entitled, "DuQuoin - A Good Place to Live".

7. Interview someone (preferably older) who has lived in DuQuoin all of their life. Ask questions about how DuQuoin has changed: their childhood, school, etc. At least 15 questions. (This can be taped or written.

8. A former principal of "DTHS", noted scholar and author was R. Paul Hibbs. Give a 3 page report on him.

9. Give a biographical report (2 pages each) on the following former DHS graduates.

   Ken Swafford - Actor
   Don Stanhouse - Baseball Player
   Billy "Hayes" Brosch - Actress

10. Make a folder containing 10 poems on "Love and/or Marriage".

11. Make a folder containing 10 poems on "Death".

12. Write a 3 page report on the causes and effects of alcoholism.

13. Write a 3 page report on the warning signs and prevention of suicide.

14. Write a comparison - contrast theme (5 paragraphs) on "Life in 1902 and Now".

15. Write a epilogue to the play telling how life goes on for the rest of the characters who are alive. (2 pages).

Art student selected as winner for Duck Stamp

By PETRA RUEHMKORFF
MDR Staff Writer

An art student at Marion High School was selected out of 400 entries from across the state as the "Best of Show" in the Federal Junior Duck Stamp design contest.

Dave Hurt, a junior, said he was very surprised to learn he had been selected as the winner. He is a third year art student at MHS and a first year commercial art student. His art teacher is Kaye Howell.

Selected as best of show was Hurt's gouache, watercolor medium, painting called "Spooked Goose." He drew a Canada Goose.

Howell will receive an air compressor and air brush compliments of Dick Blick Art Supplies for the art class. Hurt will receive numerous items compliments of sponsors and several magazine subscriptions.

Hurt's painting will be on display at the Illinois State Fair in Springfield, August 1-Sept. 29 and in the window of Marshall Field's in Chicago, July 1-26.

For the next year his stamp along with 12 top designs in each of

See ART, page ten

MARION ART STUDENT WINS STATE COMPETITION-- Dave Hurt, a junior at Marion High School, stands with his art teacher, Kaye Howell. Hurt's Federal Junior Duck Stamp Design Contest was selected the winner out of 400 entries statewide.**(PHOTO BY PETRA RUEHMKORFF)**

APPENDIX O

Art

Continued from page one

the four participating states will tour the United States on exhibition at wildlife festivals, museums , art galleries, refuges and at the Department of the Interior in Washington D.C.

In November, Hurt, a parent and his art teacher will receive an expense paid trip to Washington, D.C. While there they will visit the Smithsonian and the Bureau of Engraving and Printing. They will attend the Federal Stamp Design Contest and reception in the Capitol. At the reception the Junior Duck Stamp artists and the adult Federal Duck Stamp Contest winner will be honored.

There are 12 first, 12 second and 12 third place winners, 24 honorable mention awards, and one best of show award from each state.

The Junior Federal Duck Stamp started in 1990 in California. This is the second year students in kindergarten through 12th grade have competed in Illinois. In the next two years all 50 states will be involved in the duck stamp design.

Judging for entries in Illinois was held at the Crab Orchard Wildlife Refuge. Judges were Dennis Thornburg, chief waterfowl biologist, George Lee, chairman of Herrin Area Ducks Unlimited, John Rogers, U.S. Fish and Wildlife Service, Marilyn Zeigler, taxidermist and David Gooden, artist.

Judge John Rogers said he is pleasantly surprised with the students art work submitted.

"Considering the age and experience of the young artists their artwork is amazing," Rogers said. "Even some of the youngest are amazing."

Rogers said the parents should be commended as well for encouraging their children to participate.

Judges look for eye appeal, composition, anatomical accuracy, decorative design and action.

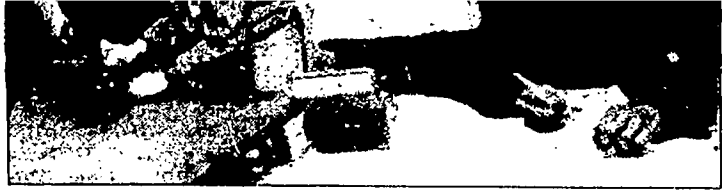
Acceptable techniques include scratchboard, airbrush, linoleum print, dry brush and cross hatch. Mediums could include paint, ink, pastel, crayon and pencil.

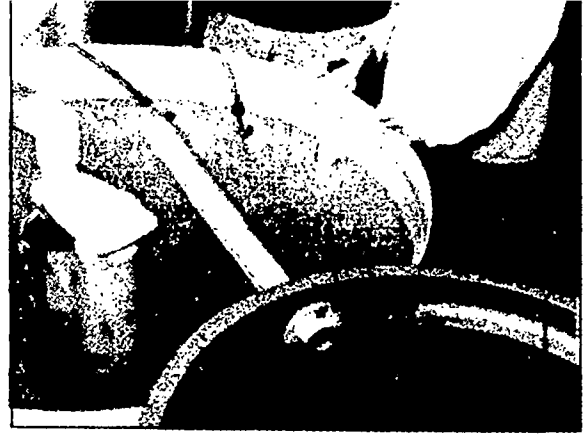
The Federal Junior Duck Stamp is sponsored by the U.S. Department of the Interior, Fish and Wildlife Service, Chief, Federal Duck Stamp Program, Federal Junior Duck Stamp Program, National Fish and Wildlife Foundation, Ducks Unlimited and Field and Stream Junior.

Money from the Federal Duck Stamp Program helps preserve four million acres of wetland habitat for North American waterfowl.

ECH-PREP

(From left) James Brandon, Brian Koelkner, industrial arts teacher Bob Wise, Scott Griffin, Cynthia Bogs and physics teacher Carl Manier discuss how the electric current produced by a motor is less that what is required to run the motor.





Chemistry teacher Don Smith (left) and agriculture teacher John Grant help students Tonya Holmes (left), Toni French and Clay Thompson conduct a nitrogen test of the water in a fish tank.

Grant and Toni French check the results of the nitrogen test.

I junior at Marion High School, made up his mind to enter a field that will never go out of style.

With an eye toward entering an electrical apprenticeship program in West Frankfort when he graduates. Wright is taking a "principles of technology" course that combines physics, chemistry and math principles with hands-on mechanics instruction.

Wright spends two hours every day learning how the principles of force, rate, resistance, energy and power relate to real-life applications in electrical engineering. It has the difficulty of a science class, but doesn't keep him mired in a textbook all period, he said.

"I liked the idea of being able to learn hands-on," said Wright. "In physics class, you tend to learn it all in big clumps. In this class, they break it into smaller parts, and you learn a little bit at a time."

Only a few years ago, this marriage of vocational classes and academic theory didn't exist for Illinois high school students who chose a vocational path. With an innovative federal program called Tech-Prep, teachers are breaking down the traditional walls between college preparation classes and vocational fields.

Tech-Prep, available in many Southern Illinois high schools, is aimed at what has been referred to as "the neglected majority" in high schools nationwide. While most high schools concentrate on preparing students to be college-ready, little has been available for the 50 percent of high school graduates who do not choose a four-year college.

The program is in full swing at Marion High School. In its agriculture program, for example, teacher John Grant is offering classes in the new wave of farming, aquaculture. The school installed two tanks and a biofilter in the agriculture classroom, where students are raising flathead minnows and a chubby food fish called Tilapia.

"What I'm trying to do is show some alternative types of agriculture," said Grant. "With the farm economy like it is, farmers are looking for alternative sources of income."

Along with fish-farming techniques, students are putting math, biology and chemistry skills to use. They learn to conduct water control tests, and determine feed ratios and water flow rates, Grant said.

The growth cycle of Tilapia should conveniently coincide with the length of the school year. Grant said the students plan to harvest their fish at year's end and have the high school food service prepare a Tilapia dinner.

Tech-Prep is a response to numerous social and academic trends that threatened to doom vocational education in high school. Enrollments in vocational classes plummeted in the 1980s because of tougher entrance requirements for Illinois public universities that forced students to abandon elective courses.

Brenda Ferguson, director of the Williamson County Regional Vocational System, said the problem was the wall between "academics" and "trades." Tech-Prep brings together teachers in chemistry, math and physics with vocational teachers to develop a curriculum that is both relevant to the job market and academically rigorous.

"The focus in Illinois has been to prepare the student for college," Ferguson said. "But how many really go to a four-year university? Only 25 to 30 percent of all graduating seniors ever complete a four-year degree."

That has left most high school graduates woefully under-prepared for a more demanding work force. Farming as a family business is almost dead, and low-skill factory jobs are nearly

See **TECH-PREP,** 3E

183

Photos by Jan Abbott ■ Story by Brian Mattmiller

184

Tech-Prep

Continued from 1E

extinct, so students need more training than high schools historically offered, she said.

Paul McInturff, the dean of vocational and technical education at John A. Logan College at Carterville, said industry has complained for years about the need for better-trained workers. Logan itself has to deal with high school students who need remedial training to enter a computer-integrated manufacturing or other vocational course.

Schools and parents need to look "honestly" about their students future, McInturff said: There are more jobs available in the "middle sector" of technology than anywhere else, unskilled jobs have vanished, and there can only be so many college-trained "chiefs" in the world.

Part of the challenge is to persuade parents of the value of vocational classes, he said, which have the image of being for kids who can't cut it academically.

"It had a pretty nasty connotation," McInturff said of the "shop" classes of old. "Parents all want better things for their kids, they want them to go on to college. They look at vocational classes as the thing for those students who can't do anything else."

McInturff said Tech-Prep will do just the opposite: Prepare students for more job opportunities than any other academic route.

"We're going to come out with people having a different perception of vocational programs," he said.