ABSTRACT
This instructor's guide outlines a model program designed to provide middle school students with an opportunity to participate in exploratory activities regarding the world of work and to understand the relationships between education and work. Described in the first part of the manual are the following futures week activities: a job interviewing skit; a futures career day; a business, industry, or government field trip; and a parent program. The second half of the guide consists of classroom materials for use in helping 9th- and 10th-grade students investigate careers while developing writing, social studies, reading, and math skills. Included in this section of the guide are a series of lesson plans, suggested learning activities, student exercises and handouts, information and guide sheets, and answers to selected activities. (MN)
This publication was prepared through a contract with the Texas Education Agency in Sex Equity in Vocational Education under Title II. The opinions expressed herein should not be construed as representing the opinions of the United States Government, the State of Texas or the Texas Education Agency.

DISCRIMINATION PROHIBITED

No person shall, on the basis of race, color, creed, national origin, sex or handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity.
FUTURES WEEK

A middle school program to provide students with the opportunity to investigate future careers, especially nontraditional careers.

August, 1984

Ysleta Independent School District
8455 Valdespino
El Paso, Texas 79907

Armenia Smith
Vocational Equity Project
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INTRODUCTION

Exploring the world of work and increasing occupational awareness can provide students with a base of information to make future education and career decisions.

Implementing a school-wide "Futures Week," creates an opportunity for students to take part in exploratory activities regarding the world of work and allows students to see clearly the relationships between the academic content he/she is being asked to master and his/her tentative occupational choices.

This guidebook is the product of the Ysleta Equity Program. This model program was implemented at the Summer School Program held at Ysleta Junior High School for approximately 300 middle school students who were two or more years behind and at least 15 years of age. This was an excellent place to test "Futures Week."

This project was funded under contract for the U. S. Department of Education, under the Discretionary Funding of Vocational Program Improvement Activities of the Texas Education Agency.

Ms. Susan Crews, a counselor in the program, was responsible for implementing "Futures Week." Special thanks go to Ms. Crews for providing her talent and support for this project.

Armenia Smith
Vocational Equity Project
Ysleta Independent School District
Strategies: Training

FUTURES WEEK

Purpose: To provide students with an opportunity to investigate future careers, especially non-traditional careers.

Sponsor: Vocational Equity Project

Time: One Week

Place: Middle School

Methodology:

1. The sponsor should meet with school administrators and counselors to discuss details and plans for Futures Week.

2. Each of the following tasks should be coordinated by the sponsor, counselors, and faculty.

   a. Announce to staff the plans for Futures Week
   b. Set up Schedule of Events (attached)
   c. Provide classroom materials to each teacher
   d. Implement
      1) Special classroom activities
      2) Field Trip
      3) Our Future Careers Day
      4) Parent Program
# Futures Week - Schedule of Events

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>All Writing Classes</td>
<td>TEAM</td>
<td>TEAM II</td>
<td>TEAM III</td>
<td>&quot;Our Future Careers&quot;</td>
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<tr>
<td>&quot;Job Interviewing Skit&quot;</td>
<td>B. I. G.</td>
<td>B. I. G.</td>
<td>B. I. G.</td>
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<td>Field Trip - ½ day</td>
<td>Field Trip - ½ day</td>
<td>Field Trip - ½ day</td>
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<td>7:00PM - Parent Program</td>
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<td>ALL DAY</td>
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## Classroom Activities by Subject Matter

**Writing**  
- 1. "Vocational Education Pays"  
- 2. "Forms for the Future"

**Reading**  
- "A Guide to Today's Hottest Careers--Job Market"

**Social Studies**  
- "Career Game"

**Math**  
- "Odds on You"

**Science**  
- (2 day presentation) - "Family Planning/Decision Making"
Strategies: Training
"Job Interviewing Skit"

Purpose: To help students recognize a proper as well as an improper job interview.

Sponsor: Vocational Equity Project

Time: One class period

Place: Lecture Room

Methodology:

1. The classroom teacher and sponsor of Futures Week invited two college students (male and female) to role play a job interview.

2. The following tasks should be completed by the classroom teacher:
   a) Schedule a meeting place for all participating classes.
   b) Invite interested teachers.
   c) Provide an orientation to each class regarding a job interview.
   d) Coordinate activities for the day of the skit.
   e) Send thank-you letters to presenters.
Strategies: Interactive Activities

OUR FUTURES CAREER DAY

Career days have become a common event in the high schools and have been useful in helping students to understand the world of work; however, eighth grade students are being asked to make critical decisions about their futures as they leave the middle school and go on to high school. Therefore, a career day was held at the Summer School Program held at Ysleta Junior High School for approximately 300 middle school students.

Purpose: To expose the students to as many careers as possible and to get them to think about a career in nontraditional ways.

Sponsor: Vocational Equity Project

Time: One Day

Place: Middle School

Methodology:

Identification of Speakers

By sending out request forms to parents and faculty members, a variety of speakers' names and phone numbers were collected. Each person was contacted by phone to see if they would consider being involved with the career day. The confirmation of speakers took approximately two weeks.

Scheduling

After the list had been completed, a schedule was developed for the class presentations.

Student Preparation and Participation

The program was explained to the students several days before it took place. Signs were placed in the hall listing the speakers according to each career cluster.

Program and Presentation

People began arriving at 7:30 AM in the library. Each presenter was given a packet of materials which included the following:

1) name tag
2) an outline to follow during their presentation
3) class schedule
4) thank-you letter
5) lunch ticket
After signing in and receiving their materials, the speakers were greeted by the teacher whose class they were to address. The teacher then escorted them to the appropriate classroom.

Comments

The program was very successful. Seventy-seven speakers participated.
Welcome Career Day Guests
**TIME LINE FOR "OUR FUTURES CAREER DAY"**

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Person in Charge</th>
<th>Completion Date</th>
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<tbody>
<tr>
<td>1. Post chart in lounge asking for speakers.</td>
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<td>2. Notes to faculty and students asking for speakers.</td>
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<tr>
<td>3. Collect request forms two to three weeks prior to activity.</td>
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<td>4. Call suggested speakers.</td>
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<td>5. Make chart of rooms by period.</td>
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<td>6. Assign speakers to rooms.</td>
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<td>7. Pass out to teachers the student dittos.</td>
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<td>8. Make card on each speaker w/phone # and room assignments.</td>
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<td>9. Make posters of career clusters for hall with sign with arrow (directing speakers) on front doors.</td>
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<td>10. Make a folder for each speaker.</td>
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<tr>
<td>11. Address thank-you letters.</td>
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<td>12. Arrange for packets at table in library.</td>
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<tr>
<td>13. Folder, thank-you letter, room assignment, map, nametag, suggested speakers outline.</td>
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<td>14. Order lunch and arrange for coffee and refreshments in reception area for speakers.</td>
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</table>
HELP!!!

We need speakers for Career Day, Friday, June 29, 1984. If you have relatives, friends or acquaintances who would be willing to speak to S.S.F.Y. students for 1 hr. or more please sign their name, profession and your name. Thanks. We need as many "legitimate" fields as we can find.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Profession</th>
<th>Phone #</th>
<th>Your Name</th>
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</table>

BEST COPY AVAILABLE
SPEAKER REQUEST FORM TO FACULTY

FACULTY

Our Future Career’s Day will be held Friday, June 29, 1984 from 8:30 - 3:30. We need 252 presentations in order to provide two presentations per class, so we need your help!

Please contact your relatives, friends, and acquaintances who would speak for one period or more (at their convenience). If you will list the information below, we'll contact them with all details. We need this back by Friday. (June 22).

Thank You.

<table>
<thead>
<tr>
<th>Name of Speaker</th>
<th>Occupation</th>
<th>Phone # where speaker can be reached</th>
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Speaker Request Form to Students

Name of parent

Name of company where parent works

Work telephone number

Home telephone number
Career Clusters

Agri-Business and Natural Resources
Business and Office
Communications and Media
Construction
Consumer and Homemaking Education
Environment
Fine Arts and Human ties
Health
Hospitality and Recreation
Manufacturing
Marine Science
Marketing and Distribution
Personal Services
Public Services
Transportation
Posters in Hall/Speakers by Career Cluster

Hospitality and Recreation
1. Tere Alvarado, Restaurant Owner
2. Gary Mazziotti, Track Coach
3. George Rivero, Waiter, Sombra Del Pasado

Fine Arts and Humanities
1. Becky McVay, Actress
2. Michael Myers, Actor

Construction
1. Tony Hidalgo, Sales Manager, Feather Corp. Bldg. Products
2. Walt Hammar, Skilled Laborer
3. Jim Nelson, Heating, Air Conditioning & Ventilating
4. Albert Alvarado, Pipeliner

Communications & Media
1. Johnny Thompson, KFIM Radio
2. Denise Quintana, Photographer
3. Margie Bullis, Pro. Director ETCOM Radio
4. Raul Gonzalez, Chief of Cartography
6. Jeffrey Scott, KLAQ Radio
7. Frank Lopez, El Paso Electric

Health
1. Jim Moore, Nurse
2. Richard Marquez, Dentist
4. Art Gutierrez, Dentist
5. Chip Ponsford, Doctor-VET
6. Kathy Paxson, Nurse
7. Jose Rodriguez, M. D.
8. Lupe Rey, Dental Assistant
9. C. Jaime, MSW

Transportation
1. Greg Garcia, Mechanic
2. Pat Hernandez, Transportation, Tonka Toys
Public Services

1. Officer Acosta, Police Department
2. Margie Bullis, ETO, Radio Program Director
3. Randy Bullis, Lawyer
4. Richard Contreras, Lawyer
6. Robert Duran, Judge
7. Jorge Rascon, Army Recruiter
8. Tomas Silva, Criminal Investigator Immigration
10. Rita Peregrino, PIC
11. Carlos Sermeno, Detective
12. Waynenne Spradlin, Utilities
14. Sp4 James S. McDowell
15. Sp5 Durred Francher
16. MSG Arthur Chandler
17. SSG Ruben Madrid

Agri-Business and Natural Resources

1. Joe Carrasco, The Feed Store
2. Peggy Madrid, Water District #1

Personal Services

1. Carrie Allbert, Mortgage Banker
2. Kaylene Beech, Bartender
3. Cecilio Jaime, Counselor, La Fe
4. Cathy Riggs, Cafeteria Manager
5. Luis Rojas, Orthodontist
6. Irma Monroy, Cosmetologist
7. Phyllis Armijo, Asst. Hospital Director, Thomason Hospital

Marketing & Distribution

1. Alan Hammar, Branch Mgr., Bowles & Edens
2. Ruben Mata, Real Estate
3. Margaret Valdez, Real Estate
4. Sammy Gonzalez, Buyer, Merchandising
5. Marta Provenghi, Supply Coordinator
6. Danny Simental, Warehouseman

Business & Office

1. Gary Ivory, Dept. of Research & Evaluation
2. Mary Yanez, Print Shop
4. Adrian Armijo, Insurance Executive
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| M. Phillips  
1 Rd. Lab | S. Knipp  
124 Rd | L. Mott II  
127 Math Lab | K. Ansara I  
131 Math | J. Munkathcy  
108 Science | D. Serna  
142 Soc. Studies | I. Vass II  
116 Rd. Lab | E. Gonzalez II  
128 Math Lab |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Carlos Semeno | Tere Alvarado  
Judge Duran | Numerology | Driven  
S-4 | EOD | Rosa Morales  
Walt Hammer | Ruben Mata RE  
Tomas Silva | |
| G. Martinez II  
137 Math | R. Johnson II  
110 Science | L. Vanley II  
139 Soc. Stu. | I. Ortiz III  
117 Rd. Lab | C. Vass III  
126 Rd | S. Hopson III  
130 Math Lab | R. Bilbe III  
109 Math | G. Toothman III  
103 Sci III |
| Cook Aviator | Wayne Spradlin  
Richard Contreras | RJ Figueroa  
Denise Quintana  
Kaylene Beech | | | | | |
| | | | | | | | |

**CLASS SCHEDULE**

2nd Period 9:25-10:15
### CLASS SCHEDULE

<table>
<thead>
<tr>
<th>Period</th>
<th>Time</th>
<th>Class</th>
<th>Room</th>
<th>Instructor</th>
<th>Subject</th>
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<td>Lab</td>
<td>110 Rd.</td>
<td>V. Casablanca</td>
<td>Math</td>
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<td>I. Ortiz</td>
<td>C. Vass</td>
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<td>S. Hopson</td>
<td>130 Math Lab</td>
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<td>R. Bilbe</td>
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**Faculty Names:**
- Rosa Morales, Mike Myers: Truck Driver Aviator
- Becky McVay, Mike Myers: Truck Driver Aviator
- E. Gonzalez, Jim Moore, Richard Contreras: Truck Driver Aviator
- Margaret Valdez, Penny Hamilton: Truck Driver Aviator
- Art Gutierrez, Danny Semental: Truck Driver Aviator
- Tony Hidalgo, Joe Carrasco: Truck Driver Aviator
- Kaylene Beech, Denise Quintana: Truck Driver Aviator
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Art Gutierrez  
Rosa Morales  
Margie Bullis  
Frank Lopez  
Kathy Paxson  
Office Acosta  
Richard Marquez  
Jeffrey Scott  
Dentist  
Irma Monroy  

V. Vass II  
116 Rd. Lab  
125 Reading  
S. Davis II  
128 Math Lab  
G. Toothman | 103 Science  
M. Dickson III | 138 Soc. Stu.  
V. Casas III | 143 Writing  
I. Ortiz III | 117 Rd. Lab  
C. Vass III | 126 Reading  
S. Hopson I | 130 Math Lab  

Randy Bullis  
Jorge Rascon  
Gary Ivory  
Dr. Ponsford  
Vet.  
Mary Yanez  
Dr. Rodriguez  
Cecilio Jaime  
RJ Figueroa  
Penny  
Hamilton  

3j
### Class Schedule

**6th Period 1:40-2:30**

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7th Period 2:35-3:30

Rita Peregrino
Marta Provenghi
Randy Bullis
Jeffrey Scott
Mary Yanez
RJ Figueroa
Dear Faculty & Staff of SZPP,

Friday, June 29, 1984, is "Our Future Careers" Day.

The following are the speakers assigned to your classroom.

Good Luck and enjoy the day.

Susan Crews
Student Form to complete for each guest speaker

CAREER AWARENESS

Name of occupation ____________________________

Education required: High School ________
Technical Vocational Training ________
Community College ________
4 Year University ________
Graduate School ________
Post Graduate School ________

Approximate cost of education ____________________________

Recommended classes to take in high school to prepare for this job ____________________________

Part-time jobs or volunteer work that applies to this job ____________________________

Areas of the country where these jobs are located ____________________________

What are the hours for this occupation ____________________________

Special requirements for this job: Physical ________
Mental ________
Language ________
Special equipment (if it is provided) ________

Cost of equipment ____________________________

Salary range for this occupation ____________________________

Advancement opportunities in this field ____________________________

Employment outlook ____________________________

Related jobs ____________________________

What are the benefits and hazards/advantages of job ____________________________

How do you get a job like this? ____________________________
Letter to Guest Speaker

Career Awareness Day

Thank you for volunteering to speak to our students. The students will be trying to acquire the following information about your career:

- Education required
- Approximate cost of education
- Recommended classes to take in high school to help prepare for this job.
- Part-time or volunteer work that applies to this job
- Areas of the country where these jobs are located
- Working hours for this occupation
- Special requirements for this job - physical, mental language, special equipment, cost of equipment
- Salary range for this occupation
- Advancement opportunities in this field
- Related jobs
- Employment outlook for this profession
- The benefits, hazards and advantages of this job
- How do you get a job like this?

You will be meeting with at least 15 students for approximately 50 minutes, per presentation.

Thank you for your contributions to our program.
"Our Future Careers"

Dear

Thank you for participating in the Ysleta Independent School District Summer School Pilot Program Career Awareness Day, Friday, June 29, 1984 at Ysleta Junior High School.

Your sharing of the details of your profession helped our students better understand the world of work.

We really appreciate your interest in the youth of El Paso.

Thank you for your time and effort.

Yours truly,

[Signature]

Principal
Staff & Faculty of the SSP

3C/DC
June 29, 1984

Commanding General
U.S. Army Air Defense Center & Ft. Bliss
Ft. Bliss, TX 79906

I would like to express my appreciation to the soldiers of the 70th Ordnance Battalion who participated in our Job Fair on July 29, 1984.

These soldiers added greatly to our understanding of the U.S. Army and its members. They all represented the U.S. Army in an outstanding manner and clearly explained how they became involved with the service. Our students certainly have a better appreciation of what it takes to be a soldier today.

Again, thank you and please extend our thanks to the soldiers who came to talk with us.

Sincerely yours,

Carol Allen, Principal
Strategies: Interactive Activities

Business, Industry and Government Field Trip (see next page)

Some of the most beneficial learning experiences that students value the most come as the result of their participation in field trips. First-hand experiences obtained by participating in real-life situations and on-the-job working conditions provide the students with insights that can hardly be matched by traditional teaching methods, such as lecturing or classroom discussions. Whenever it is feasible or possible, teachers should arrange to take their classes to visit community organizations, businesses, etc. that will reinforce how the educational concepts learned in school are used in "the real world." This form of application of the learning concepts to the world around us serves as an excellent tool, especially when a teacher wishes to help the students to learn the application of basic skills or to explore the basic educational requirements for certain careers. There are eye opening experiences just waiting to be discovered in the community. Help bring those experiences to the students by letting field trips bridge the gap between the school and the outside world.

Purpose: To help students learn as much as possible about job opportunities that are available in El Paso.

Sponsor: Vocational Equity Project

Time: Half a Day

Place: City of El Paso

Methodology:

Bus transportation and tour guides were provided by Gray Line Tours. The tour was a view of El Paso which focused on the major businesses and industries in El Paso (see attached outline).

Comments: The students learned a great deal, and enjoyed visiting places they had never seen before.
BUSINESS/INDUSTRY/GOVERNMENT BIG FIELD TRIP

(Information provided to students during field trip.)

I. Business

29 Boot Factories
Tony Lama makes 4,400 pairs of boots per day

165 Electronic Assembly Plants
Farah puts out 100,000 pants per day
We have 300 pant factories

25% of all copper in the world is refined here in El Paso

II. Industries

These are the five top money-making industries in El Paso. Rank them in order by greatest money maker to the 5th greatest.

a. Boots
b. Electronics plants
c. Tourism
d. Pants
e. Ft. Bliss

III. Government

Ft. Bliss has 100,000 inhabitants including White Sands Missile Ranch, Biggs, and Holloman Base. It is the largest air defense center in the free world.

Ft. Bliss was established in 1848.

Ft. Bliss has had six sites.
B.I.G. Field Trip part of Social Studies Curriculum/Summer School Pilot Program

C. Age Makeup

1. Use newspaper obituaries, births, marriages - plot information on maps, graphs, etc.

2. County Health Department - find out causes of death in El Paso.


4. Discussion over the age breakup of El Paso - use last census.

5. Research life expectancy changes of man and the role science has played to change it.

6. Graphs to illustrate man's physical changes and how better nutritional habits have helped.

D. Business/Industry of Special Interest and Importance

1. What are the major industries in El Paso, their products, profits, etc?

2. Using phone book and/or newspapers, list the oldest, newest businesses in El Paso.

3. Guest speakers from ASARCO and other industry.

4. Discuss value of advertisement to industry business.

5. Using classified ads, newspapers - figure cost of running ad - locate advertisement under subjects - etc.

6. Classified ads - project - find a job, find a place to live, figure budget, etc.

7. Discussion - how science has aided business and industry.

E. Post - Secondary Educational Opportunities

1. Professional - nonprofessional careers in science, etc. (Work with counselors.)

2. Guest speakers - notice provided later.

3. Graph -or numbers - post-graduation occupation.

Strategies: Information Dissemination

PARENT PROGRAM

A parent program was held on Wednesday night to provide information about vocational education and high school graduation requirements.

Purpose: To provide information to middle school parents regarding various high school programs.

Sponsor: Vocational Equity Project

Time: One Hour

Place: Middle School

Audience: Parents

Methodology:

Invitations were mailed to the homes of all 300 students. The counselor designed the following agenda:

AGENDA - PARENT PROGRAM
PRESENTATION BY COUNSELOR'S

I. Information and introduction of program

II. Educational Plans

III. Sample of Graduation Plan

IV. Vocational Programs - Slide/Tape Presentation

V. Grading System

VI. Question/Answer

VII. Tips for Parents

Refreshments were provided as well as hand-out materials.

Comments: The program was presented in Spanish. Approximately twenty parents attended. Most parents stayed after the presentation and asked the vocational counselor many questions.
What's Available for my Child in High School in the Ysleta ISD in the Future

Wednesday, June 27, 1984
7:00 p.m.
Ysleta Junior High School
Topics include vocational ed., high-school planning, new requirements for freshmen, much more.

Refreshments & Nursery provided
INVITATION
(Spanish Translation)

De que puede aprovechar mi hijo e hija
en la escuela secundaria del distrito escolar
de ysleta?

viernes 27 de junio del 1984
7:00 de la noche
Ysleta Junior High School

Tareas:

1) Educación de vocaciones.
2) Nuevos requisitos para estudiantes
del grado nueve.

Refrescos se serviran!
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<td>Electives</td>
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Sample Planning Sheet for Students Schedule

For Grade 11:
- Must have a minimum of 6 honors courses
- Must have a minimum of 4 credits

For Grade 12:
- Must have a minimum of 6 honors courses
- Must have a minimum of 4 credits

BEST COPY AVAILABLE

HIGH SCHOOL GRADUATION PLANS

ADVANCED

with honors (must have minimum of 6 honors courses)
New Grading System

95-100   A
85-94    B
75-84    C
70-74    D
69-Below F

Only numerical grades will be used

Other Topics of Concern

1. TABS
2. Diploma and transcripts
3. Attendance
4. Summer School
5. Evening School
6. Reading Program
7. Special Education
8. English for Speakers of Other Languages

Tips for Parents

1. Get to know your son's/daughter's counselor.
2. Be informed about the new graduation requirements.
3. Get directly involved with your son's/daughter's selection and planning of high school classes.
4. Read the student handbook issued to your son/daughter at registration.
5. Visit your son's/daughter's teacher whenever there is a concern.
6. Become aware of other school services (tutoring, evening classes, summer school, etc.)
Dear Armenia,

Thank you for being a vital part of our successful “Future Career Day.” Your help was invaluable and deeply appreciated.

Sincerely,

Doris, Susan, Bernie, Tony

Carlos

July 2, 1984
Classroom Materials utilized for "Futures Week"

I. Writing
1) Job Interviewing Skit
2) Vocational Student Handbook
3) Bright Idea - Day Dreams
4) Magazine Survey: Instructions and Data Sheet

II. Social Studies
1) B. I. G. Field Trip (Business, Industry and Government Tour of El Paso)
2) Population/Business and Industry/Education

III. Math
1) Who's Where in the Workforce
2) Odds on You
3) Year 2,000

IV. Reading
1) How to Locate Job Openings
2) Your Interview
3) "A Guide to Today's Hottest Careers, Job Market"

V. Science
1) Guest Speaker - Family Planning Expert

VI. Other Resources
1) Film from Local Educational Service Center
2) Idea #23
VOCATIONAL STUDENT HANDBOOK

The Ysleta Equity Program, Division of Instruction, Ysleta Independent School District developed a vocational handbook for students. It was prepared under the Discretionary Funding of Vocational Program Improvement Activities of the Texas Education Agency.

Vocational Education Pays is a handbook of activities and information for use with 9th and 10th grade students. The activities are designed to enhance student's awareness of vocational education and career planning. It also encourages them to explore nontraditional career choices. The content includes information on vocational education, interests and abilities, inventories, and national and state employment opportunities.

To help students investigate their career choices, there is also a comprehensive career list grouped into the areas of mathematics, science, speech, arts and crafts, homemaking and foreign language.

District Vocational Counselors and five English teachers helped develop the book. Students did the art work and layout.

This handbook is designed to be used with vocational students as well as students in their regular academic classes. Recruitment efforts into vocational programs are facilitated by integrating this handbook into the regular curriculum.

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Teachers should read the handbook and lesson plan carefully so that you will be familiar with the content as well as the activities in the handbook. Also, the teacher should be aware of the jobs that are pertinent to their particular vocational course (See handout -- Activity Five).

At the conclusion of this unit, encourage students to take their handbooks home and share them with their parents.
I. Activity One
   A. Introduction
      1. Complete a brainstorming activity (Brainstorming includes all responses from students. No evaluation of the correctness of a response should be done. Encourage "far-out" or unconventional responses). Have students brainstorm vocational education.

      2. Provide the students the following definition of vocational education:

         Vocational education is a program of instruction designed to prepare individuals for paid or unpaid employment in a specific occupation.

   B. Take a quick survey. The questions can be read orally to the class and as they answer, the teacher can write their responses on the board. Use the following questions.
      1. What electives are you taking?
      2. What extracurricular activities are you involved in?
      3. What is your favorite academic subject?
      4. What job would you like to have in the future?

II. Activity Two
   A. Pass out a copy of the handbook to each student.
   B. Give the names and locations of appropriate academic and vocational counselors and have them place the information on the bottom of page 24.
   C. Preview the book by having the students first look at the front cover and back cover. Discuss with the students the following:
      1. What is the title of book?
      2. What message is the front cover conveying?
      3. What message is the back cover conveying?
   D. Have the students look through the entire book and read major headings and pictures. Give the students several minutes to do this and then ask the following:
      1. What headings caught your attention? (List on Board) (The teacher should pay careful attention that all major headings are identified by the students)
      2. Give the students the following definitions.

         A nontraditional occupation for a man refers to an occupation in which the majority of the jobholders are women. Examples of men in nontraditional areas are male secretaries, nurses and elementary teachers.

         A nontraditional career for a woman is a career usually held by men such as doctor, drafter and astronaut. Look at pictures on page 8, 10, 12, 15, 16, 19, 20, and 22. Have the students list the pictures that are depicting nontraditional jobs. (Example on page 8 is the woman who is the welder. Example on page 10 is the man who is the make-up artist.)
III. Activity Three
   A. Ask the students to turn to the cartoon on page 3. Have the students read it and answer the following questions:
      1. What is the artist's viewpoint?
      2. What does the cartoon mean to you?

   B. Ask the students to read pages 2-5. Before reading these pages, place the following questions on the board, and tell the students to be prepared to answer them.
      1. What is vocational education?
      2. Why do you need to graduate from high school?
      3. Why should women prepare for work?
      4. Why combine vocational and academic programs?
      5. What is the difference between a job and a career?
      6. Why is it important to develop "career awareness"?
      7. What are the 3 R's of yesterday?
      8. What are the 3 R's of today/tomorrow?
      9. Where will the jobs be in the future?

   After the students have completed this reading assignment, place the students in groups of 4 to 5 members. Give each group 5-10 minutes to share their answers. Have each group select a group reporter. Depending on the number of groups, assign each group one or two of the questions. Have the reporter of each group answer their assigned question.

   C. Have the class or in small groups discuss the following statements:
      (If small groups are used, groups should report findings to class)
      1. The typical 25 year old woman will work for 34 years.
      2. Eighty eight percent of job openings in Texas are related to vocational education.
      3. People can expect to change careers 6 times in a lifetime.
      4. Besides the jobs that we know about now there will be three to four times as many new jobs that we do not yet know about.

IV. Activity Four
   A. Have students read the bottom of page 5 to the class. Explain that on pages 6 and 7 the students will be identifying their personal interests and abilities.
   B. Have the students place a check mark after each interest or ability.
   C. Have the students rank order the subjects in school they like by placing a "1" by the subject you like best, "2" by the next best, etc.

   After the students have completed this activity, have them write one or two paragraphs about what things they enjoy and what things they do well.

V. Activity Five
   A. Have students read the bottom of page 7.
   B. Have the students look through pages 8-23.
   C. Have each student turn to the page of the course they most enjoy. Ask them to read the paragraph after the subject heading. Do their interests and abilities correspond? If so, have them read the career list and place a check mark beside these careers they are most interested in.
   D. Have a few students share their choices.
E. At this time, the teacher could highlight jobs for high school graduates using the attached lists.

F. Or have students complete one or more of the following activities:
   1. A visit from the vocational counselor to discuss specific careers
   2. Career films
   3. Guest speakers
   4. Handouts on specific careers
   5. Books - at their home school
   6. Library Activity - read about or research a specific career of their choice.

VI. Activity Six
   A. Have students turn to page 24 and complete the blanks. After the students have completed this activity, the students could share their responses in small groups. Each group should select a reporter who will report. The teacher should stress that individual names and responses should not be mentioned in this summary report.

VII. Activity Seven
   A. Have students turn to page 26 and check off the courses they have completed and are presently enrolled. Have students list what subjects they will need to take to graduate from high school.
   B. Have students complete the crossword puzzle on page 27.

VIII. Activity Eight
   A. Place the following incomplete statements on the board and have the students complete and turn in as an evaluation:
      1. The things that I liked best about this handbook were _______________________.
      2. The things that I learned about career were _______________________.
      3. I suggest that this handbook be _______________________.
      4. Other Comments _______________________.


Jobs for High School Graduates

The Bureau of Labor Statistics, U.S. Department of Labor, has developed five pamphlets that discuss job opportunities for a group of occupations for which a particular educational or training background is applicable. The titles in this series are —

Jobs for Which You Can Qualify If You’re a High School Graduate

Jobs for Which You Can Train Through Apprenticeship

Jobs for Which You Can Qualify If You’re Not A High School Graduate

Jobs for Which You Probably Will Need Some College or Specialized Training

Jobs for Which You Probably Will Need A College Education

These pamphlets give an excellent overview of job opportunities based on various levels of education and should be a good resource for high school counselors and teachers as they work with students.

The pamphlet on job opportunities for high school graduates was published in 1979 and contains a long list of occupations selected from the 1978-79 Occupational Outlook Handbook. Job availability will vary from community to community, but review of this pamphlet by students could assist them in realizing the many career opportunities that are available to them. Most of the jobs listed for high school graduates require nothing more than a high school diploma, but some of the jobs require skill training in high school such as drafting, typing, shorthand, auto mechanics, machine shop, vocational agriculture, or other vocational training. Some of the jobs do not necessarily require high school graduates, but high school graduates are preferred. In some cases an individual can train for a job by on-the-job training (OJT) or an apprenticeship program. Listed below is a sample of the many jobs for high school graduates that the Bureau of Labor Statistics has identified.

Occupations in Transportation Activities

Flight Attendants
Reservation, Ticket and Passenger Agents
Merchant Marine Sailors
Locomotive Enginers
Station Agents
Busdrivers
Truckdrivers

Mechanics and Repairers

Line Installers and Cable Splicers
Telephone and PBX installers and Repairers
Appliance Repairers
Electric Sign Repairers
Farm Equipment Mechanics
Locksmiths
Shoe Repairers

Health Occupations

Dental Assistants
Medical Record Technicians and Clerks
Optometric Assistants
Physical Therapist Assistants

This list is just a small sample of the thousands of jobs that are available to high school graduates.
Jobs Requiring Specialized Training Beyond High School

Jobs requiring specialized or technical training currently offer the greatest opportunities for high school graduates. In fact, technicians are more in demand than college graduates. These jobs require training in an apprenticeship program, a vocational-technical program in a community/junior college, or a trade and technical school. Listed below are samples of jobs available to individuals who have some specialized training beyond high school. A college degree is usually not required for these jobs.

**Industrial Production and Related Occupations**
- Patternmakers
- Molders
- Instrument Makers (Mechanical)
- Tool-and-die Makers
- Lithographers
- Photoengravers
- Printing Press Operators
- Millwrights
- Motion Picture Projectionists
- Welders

**Office Occupations**
- Computer Personnel
- Office Machine Operators
- Executive Secretaries
- Claim Representatives
- Buyers

**Service Occupations**
- Meatcutters
- Barbers
- Cosmetologists
- Funeral Directors and Embalmers

**Sales Occupations**
- Real Estate Agents and Brokers
- Automobile Service Advisers
- Insurance Agents

**Construction Occupations**
- Cement Masons and Terrazzo Workers
- Electricians
- Elevator Constructors
- Glaziers
- Structural Ironworkers
- Operating Engineers (Construction Machinery Operators)
- Plumbers and Pipefitters
- Sheet-Metal Workers

**Occupations In Transportation Activities**
- Air Traffic Controllers
- Airplane Mechanics
- Airplane Pilots

**Scientific and Technical Occupations**
- Forestry Technicians
- Broadcast Technicians
- Drafters
- Engineering and Science Technicians
- Surveyors

**Mechanics and Repairers**
- Computer Service Technicians
- Instrument Repairers
- Television and Radio Service Technicians
- Air-Conditioning, Refrigeration and Heating Mechanics
- Automobile Body Repairers
- Automobile Mechanics
- Diesel Mechanics
- Jewelers
- Piano and Organ Tuners and Repairers

**Health Occupations**
- Dental Hygienists
- Dental Laboratory Technicians
- Electrocardiograph (EKG) Technicians
- Electroencephalographic (EEG) Technicians
- Emergency Medical Technicians (EMT's)
- Medical Laboratory Workers
- Radiologic (X-ray) Technologists
- Respiratory Therapy Workers
- Licensed Practical Nurses

The sources of the above list were the Bureau of Labor Statistics' pamphlets entitled Jobs for Which You Can Qualify If You're A High School Graduate and Jobs for Which You Probably Will Need Some College or Specialized Training. This list is just a sample of the great variety of jobs available to individuals who have some kind of specialized training. The jobs listed do not require a baccalaureate degree, but they do require specialized training. The salaries for individuals filling these positions are usually excellent. High school students need to be aware of the fine opportunities that will be available to them if they develop a specialized skill.
CROSSWORD PUZZLE

ANSWERS

Across
1. Vocational
11. Skills
18. Painter
22. Career
24. Abilities
27. Pays
28. Science
31. Reading
32. Math
35. Advancement
39. Welder
41. Chef
42. Goals
44. Government
46. Tools
47. Job
49. Drafter
50. Dentist
51. Hospital
52. Write

Down
1. Veterinarian
3. Carpenter
5. Typing
8. Newspaper
10. Librarian
11. Sales
13. Ideas
15. Lawyer
17. People
19. Teach
20. Works
23. Repairer
25. Interest
26. Teacher
29. Speech
30. Plumber
32. Mechanic
33. Hands
34. Knowledge
36. Accounting
37. Choices
38. Masonry
40. Unskilled
43. Auto
45. English
48. Plant

BEST COPY AVAILABLE
TITLE: Day Dreams

CONTRIBUTED BY: Betty Norman (Our Lady of the Valley - Catholic Diocese of El Paso)

APPROPRIATE TO GRADES: 6-8

OBJECTIVE:
The student will write an informative composition about what his/her future job will be or future home will look like.

MATERIALS NEEDED:
newspapers, magazines, paper, scissors, tape or glue

APPROXIMATE TIME NEEDED:
1 - 2 class periods

PROCEDURE:
1. PREWRITING
Tell students to pick one of the topics - future job, future home - and begin gathering pictures from newspapers and magazines to make a poster that represents aspects of their topic.

In groups or in front of the whole class, have students discuss their posters. Allow the group or class to comment on the clarity of the information and suggest additions that would help make the composition clearer.

2. WRITING
Have each student write up a description. Remind them their purpose is informative, not expressive, and that they will be evaluated by their peers on how clearly the reader can understand the information.

3. POSTWRITING/EVALUATION
Place the students into small groups and have groups exchange papers to read and evaluate one another's descriptions. Have students use a 5 point scale (5-very clear to 1-very unclear) to give each composition a score. The whole group must agree on the score. If the score for a paper is 3 or below, the group must identify the places in the composition that were not clear and why they were not clear.

Source: Unknown
Step I: Select your people. Choose twenty people from a variety of backgrounds to survey. Find people from different age groups and educational levels. Include people from varying income levels with a range of occupations from unskilled to professional. Talk to men and women. If possible, include city dwellers, suburbanites, and people from rural areas. These descriptive categories are more clearly defined for you in Step II. If you consider all of these factors, you will have a fairly good sample of the population. Of course it won't be possible to cover all of these categories with only twenty people, but keep the categories in mind when you make your selections.

Step II: Describe your people. Describe each person you interview by filling in the first six boxes of the data sheet. Use the terms listed below in deciding how to describe someone.

Age: 6-12, 13-16, 17-21, 22-35, 36-50, 51-60, 61-70, 71 and older
Sex: F (female), M (male)
Education: grade school, high school, two-year college or technical school, four-year college, graduate school
Occupation: unskilled, semi-skilled, skilled, technical, professional
Income: high, middle, low
Residence: urban, suburban, small town, rural

Step III: Collect the magazine data. Ask each person the following question, "What two magazines do you read most frequently?" Be sure the person understands that the magazines do not have to be ones that are subscribed to for home delivery. Record the names of those two magazines in the last box of the data sheet.

Step IV: Draw your conclusions.
1. Make a bar graph showing the magazines most frequently read by the people you surveyed. Each magazine mentioned will not be included in this presentation. Choose the top five or eight or ten, depending upon the results of your tally.
2. Write a paragraph in which you draw a conclusion about the relationship between age or income or job categories and the magazines people read. Residence, sex, and education are other possibilities. Here's an example to get you started.
Most people in the middle and high income levels indicated that they read magazines related to their jobs. The magazines listed by these people were often professional journals or trade publications. For example, an English teacher listed The English Journal, an electronics engineer indicated she read Solid State Technology, and a graphic designer said he read Communications Arts. Eight of the twelve interviewed in the middle and high income groups named at least one professional or trade publication. People in the lower income level did not read as many job-related magazines. Only one of the eight low-income interviewees named a professional or trade publication. Therefore, it appears people with high and middle incomes are more likely to read publications related to their work than are people with low incomes.

Step V: Put it all together. Turn in the completed data sheet, the bar graph, and the paragraph of conclusion in a file folder or between covers of your own design.
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III. Population/Business and Industry/Education

A. Population density

1. In El Paso in Pictures are pictures showing growth of El Paso - various exercises can be done with these.

2. Find out when your parents, grandparents, etc., lived and how large city was at that time.

3. Why did city expand into some areas and not others?

4. Find out what causes slum areas?

5. Conduct a survey of individual classes to determine average family size.

6. Discuss over-population vs population growth.

7. Graph population at different time periods.

B. Ethnic makeup

1. Take a poll of neighborhood and how ethnic makeup, age, number of people in family - graph.


3. Get a guest speaker from UTEP sociology department.

4. Trace the movement of your family as far back as you can go and illustrate with maps, charts, family tree, etc. A written narrative could be included.

5. Classify people into groups on a world scale and illustrate traits of races according to latitudes.

6. Genetic traits of groups to individuals.

7. Classify animals into groups by traits.

8. Written - or discussion - discuss rights and responsibilities of young adults between 2 groups of people, each speaking different languages.

9. Compile a booklet of folk tales from different languages. Can be in original language - can be illustrated.

10. Trace and graph the growth of business in El Paso.

11. Circular graph - showing population by ethnicity.
C. Age Makeup

1. Use newspaper obituaries, births, marriages - plot information on maps, graphs, etc.

2. County Health Department - find out causes of death in El Paso.


4. Discussion over the age breakup of El Paso - use last census.

5. Research life expectancy changes of man and the role science has played to change it.

6. Graphs to illustrate man's physical changes and how better nutritional habits have helped.

D. Business/Industry of Special Interest and Importance

1. What are the major industries in El Paso, their products, profits, etc?

2. Using phone book and/or newspapers, list the oldest, newest businesses in El Paso.

3. Guest speakers from ASARCO and other industry.

4. Discuss value of advertisement to industry business.

5. Using classified ads, newspapers - figure cost of running ad - locate advertisement under subjects - etc.

6. Classified ads - project - find a job, find a place to live, figure budget, etc.

7. Discussion - how science has aided business and industry.

E. Post - Secondary Educational Opportunities

1. Professional - nonprofessional careers in science, etc. (Work with counselors.)

2. Guest speakers - notice provided later.

3. Graph -or numbers - post-graduation occupation.

7. Military

1. Recruiters to talk about educational opportunities in military.

2. Using maps, phone books, etc., find out size, population, etc. of Ft. Bliss.

3. Map of the Fort Bliss area and draw in points of interest.

*Refer to Teacher Directed Activities for Reading from computer lab for writing activities on cause/effect, logical order, compare/contrast, sequence of events, etc., on above activities.

*There is a set of cassettes and ditto masters available from Lind Morgan. They are consumer math - can be used for math, social studies, English. Also, it correlates with the Math Tabs. Has discussion questions.

1. Shopping
2. Paycheck
3. Budget
4. Savings
5. Checkbook
6. "Easy" Credit
7. Borrowing
8. Tax
9. Driving
10. Car Buying
11. Insurance
12. Housing

Also, word problems available for each of above topics.
HOW TO LOCATE JOB OPENINGS

SUGGESTIONS FROM FRIENDS AND RELATIVES

+ Let friends and relatives know you're looking for a job
+ Employees usually know about openings before outsiders do
+ More than one-half of the jobs are found this way

PERSONAL APPLICATIONS

+ Work hard - make as many calls as possible - choose your prospects carefully. You may request an interview even if you are unsure if there is an opening.
+ Sell yourself
+ Second best method of finding a job

CONTACTS WITH FORMER EMPLOYERS

+ Ask for advice and suggestions
+ Contact former teachers
+ Keep your contacts open with all former employers

EMPLOYMENT AGENCIES

+ Local employment office of your state employment service (Texas Employment Commission)
+ Private employment offices charge a fee - be sure of reliability
+ Check guidance counselor in your school

NEWSPAPERS

+ Read "Help Wanted" ads
+ Place a "Situation Wanted" ad yourself
+ Don't delay in answering "Help Wanted" ads

UNION HIRING HALLS

+ Contact the business agent or union representative
+ Procedures differ from industry to industry
+ Obtain information concerning - apprenticeships, probationary requirements, methods of hiring, and job opportunities

GOVERNMENT PERSONNEL OFFICES

+ Civil Service examination posted in Post Office or Newspaper
+ City and State government maintain personnel offices
+ Information at City Hall or County Seat
YOUR INTERVIEW

PERSONAL CLEANLINESS
1. Be sure your body is clean.
2. Clean and manicure your fingernails.
3. Comb your hair—it must be clean and well trimmed—no extremes.
4. Brush your teeth.

PERSONAL APPEARANCE
1. Shine your shoes.
2. Wear conservative business-like clothes.
3. Avoid loud colors and high school fads.
4. Girls—tailored dress, hose, suitable shoes. Avoid too much make-up or costume jewelry.
5. Boys—conservative trousers, shoes and shirt (coat and tie if job requires it.)

APPLICATION BLANK
1. Read carefully the entire blank before starting to write.
2. Write or print neatly in ink.
3. Spell words correctly.
4. Fill out all blanks, including date. If question does not apply, write "no" or "none".
5. Write and take with you:
   a. Social Security Number
   b. Names, addresses, and telephone numbers of three references
5. Answer all questions accurately, honestly, frankly, and promptly.
7. Don't cross out mistakes or erase—rewrite application.
8. Give a continuous record of all your jobs:
   a. Dates of employment
   b. Nature of your work
   c. Wages received
   d. Reason you left
1. Greet personnel director by name. Do not take anyone with you. The employer wants to talk only to you.

2. Introduce yourself—"I am John Smith from High School." Present referral slip or card given to you by the coordinator.

3. Be able to state why you seek employment in this occupation and with this company.

4. Remain standing until requested to be seated.

5. Sit erect—do not sprawl.

6. Be pleasant, polite, courteous; smile and look at the person to whom you’re speaking.

7. Do not smoke or chew gum, even though offered either one. Decline politely and thank person.

8. Speak distinctly and correctly—don’t mumble. Speak with confidence and enthusiasm.

9. Be "at ease"—avoid mannerisms such as snapping handbag, tapping pencil, popping knuckles, twisting hair, giggling, or covering face with hands.

10. Never talk about your personal, family, or financial troubles. Do not criticize former employers or associates.

11. If hired, ask a few questions—day and hour you are to report for work, and what you should wear on the job.

12. Leave when employer seems satisfied with the information given him.

13. Thank him for the interview—"Thank you for the interview, Mr. Brown; I appreciate your consideration."

Do not be discouraged during your first interview. Most employers understand teenagers and make some allowances. Study your presentation after each interview and try to improve. Call your distributive education coordinator after each interview and report your progress.

GOOD LUCK

Questions frequently asked during the Employment Interview

1. What are your future vocational plans?

2. In what school activities have you participated? Why? Which did you enjoy the most?

3. How do you spend your spare time? What are your hobbies?
4. In what type of position are you most interested?
5. Why do you think you might like to work for our Company?
6. What jobs have you held? How were they obtained and why did you leave?
7. What courses did you like best? Least? Why?
8. Why did you choose your particular field of work?
9. What do you know about our company?
10. Do you feel that you have received a good general training?
11. What qualifications do you have that make you feel that you will be successful in your field?
12. What extracurricular offices have you held?
13. What are your ideas on salary?
14. Is it an effort for you to be tolerant of persons with a background and interests different from your own?
15. How did you rank in your graduating class in high school?
16. What do you think determine a man's progress in a good company?
17. What personal characteristics are necessary for success in your chosen field?
18. Why do you think you would like this particular type of job?
19. Are you looking for a permanent or temporary job?
20. Do you prefer working with others or by yourself?
21. What kind of boss do you prefer?
22. Are you primarily interested in making money or do you feel that service to your fellow men is a satisfactory accomplishment?
23. Can you take instructions without feeling upset?
24. Do you live with your parents? Which of your parents has had the most profound influence on you?
25. How did previous employers treat you?
26. What have you learned from some of the jobs you have held?
27. Can you get recommendations from previous employers?
28. What interests you about our product or service?
29. Do you feel you have done the best scholastic work of which you are capable?
30. What do you know about opportunities in the field in which you are trained?
31. How long do you expect to work?
32. Have you ever had any difficulty getting along with fellow students and faculty?
33. Have you saved any money?
34. Do you have any debts?
35. Do you like routine work?
36. Do you like regular hours?
37. What is your major weakness?
38. Do you have an analytical mind?
39. What do you do to keep in good physical condition?
40. Have you had any serious illness or injury?
41. What types of books have you read?
42. Have you plans for graduate work?
43. What types of people seem to "rub you the wrong way"?
44. What jobs have you enjoyed the most? The least? Why?
45. What are your special abilities?
46. What job in our Company do you want to work toward?
47. Do you like to travel?
48. How about overtime work?
49. What kind of work interests you?
50. What are the disadvantages of your chosen field?
A Guide to Today's Job Market

The office of today differs greatly from cen- *limn n c decade. Ratner nan du.
tronics occupations, such as graphic engineering or biomedical instrume-
mentation, and the more traditional occupations, such as electrician,
having been promoted because they are growing faster than the average. Others are featured because they have continued over time to be stable sources of jobs.

Job Market contains facts about trends, including the fields where there will be the most opportunities, the areas of the country where job hunters' best and the number of positions likely to be available in the occupations cited. Many occupations included here were selected because they are growing faster than the average. Others are featured because they have continued over time to be stable sources of jobs.

Articles deal with broad occupational areas, with detailed descriptions of specific jobs within the category provided at the end of each article. These descriptions include information about the kind of skills you will need to succeed and the kind of education required for the position.

Job Market also includes tips on selecting a career. The focus of this issue is on jobs requiring vocational education. Preparation for most of the positions cited here is available in your community through public and private vocational educational programs. Information about programs in your area is provided below. You may want to investigate what options these programs can offer.

The media tell us that robots and computers are taking over more and more jobs and that the average worker will find a "high-tech" position to be standing in the unemployment line. Hearing such stories, young people still in school may think a good job will be beyond reach by the time they complete their educations. Those already working may have an even worse fear—that the jobs they currently hold will disappear.

Knowledge is the best cure for such fears. It is true that technology is changing the workplace and worker requirements. According to the Bureau of Labor Statistics, the average worker will switch occupations seven times, and some of these changes will be beyond teaching by the time they complete their educations. Those already working may have an even worse fear—that the jobs they currently hold will disappear.

The media tell us that robots and computers are taking over more and more jobs and that the average worker will find a "high-tech" position to be standing in the unemployment line. Hearing such stories, young people still in school may think a good job will be beyond reach by the time they complete their educations. Those already working may have an even worse fear—that the jobs they currently hold will disappear.

Knowledge is the best cure for such fears. It is true that technology is changing the workplace and worker requirements. According to the Bureau of Labor Statistics, the average worker will switch occupations seven times, and some of these changes will not be voluntary. But to the person willing to give careful thought to picking a career and obtaining the best training, new and challenging job opportunities will be available.

What does high technology mean, anyway? A frequently used synonym is "the electronics revolution," which dates back 33 years to the invention of a silicon chip about the size of a fingernail. This chip, or crystal, in the form of a microprocessor, made possible a computer that fits into a pocket rather than filling a room. The result was a vastly increased potential to process/store and communicate information at a moderate cost.

High Technology Jobs (continued on page 33)
Automobile Mechanic: Diagnosis mechanical or electrical problems in automobiles; repairs by making adjustments or replacing parts. Potential for specialization in areas such as automatic transmissions (which requires sophisticated knowledge of hydraulics). Automobile dealers and repair shops employ most mechanics. Some work for government, auto made and auto leasing companies. Jobs: 10,000 (1990). Most learn on job from experienced mechanics. Apprenticeship program and vocational training in auto repair coupled with work experience are other possibilities. Average wage: 55.36/hr. (1980—journeyman mechanic); 17.6/hr. (apprentice mechanic). Can advance to shop supervisor, service manager, or automotive repair service estimator.

Contact: Automotive Services Industry Association, 444 N. Michigan Ave., Chicago, IL 60611.

Technicians need up-to-date training to repair computer systems.


Certification by Association of Computer Technicians of America, 5930 S. Pulaski Rd., Chicago, IL 60638.

Computer Service Technician: maintains, orders needed parts, trains users, keeps records for computer manufacturers, maintenance companies. Government agencies.

Jobs: 15,000 (1990).

Two-year college or technical institute. Certification by American Institute for Certification for Computer Technicians.

Trainee: $9,000 (1990). Employment projected to rise faster than average. Training: Vocational preparation in electronics or (occasional) apprenticeship program. Earnings: $15,000-$25,000/yr., depending on experience. Licensing required in some states. Contact: National Association of Television and Electronic Distributors of America, 130 W. Washington, Chicago, IL 60602.

Electronics Technician (Television and Radio Service Technician). Services and repairs television and radio equipment. Trainee: $8,000 (1990). Employment is projected to rise faster than average. Training: OJT.

Contact: National Association of Television and Electronic Distributors of America, 130 W. Washington, Chicago, IL 60602.
Mutes. comprehends the schools and

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I seveal program graduates What can do to find a job once the training is complete. (continued from page 1)

companies, manufacturers, turn out silicon circuits, semiconductors, software, optical machines and component energy management systems to control heat and light in buildings. The telecommunications business will boom, with a great demand for the manufacture of Earth stations to pack TV programs, electronic mail and other communications conveyed by satellite.

Seif in its infancy, biotechnology may affect our world as much as the changes in electronics technology. Genetic engineering seems almost like magic, for it can convert waste to fuels, sugar to plastics and cheese to sweeteners. Scientists are working on the transportation of accident that fight diseases without dangerous side effects, anticoagulants, insulin and other pharmaceuticals. In agriculture, genetically altered plants could work nitrogen directly from the air, eliminating the need for fertilizers.

Generic engineering technicians, a new occupational category, will test and produce these substances, often under conditions more similar to a laboratory than to a farm.

Other opportunities will exist for sales representatives to market the new products.

The new biotech jobs usually require special training, but in many cases people may be able to obtain "add-on" training to supplement the knowledge they already have. The reason is that many of the jobs are actually subspecialties of established occupations. For example, a laser-electro-optics technician is simply an electronics technician who specializes in a particular kind of equipment.

Hi-tech careers are not for everyone. Most of the jobs will continue to be concentrated in Boston, Columbia (South Carolina), California's Silicon Valley and a few other places. And it is important to look carefully at long-term employment prospects, for the glamorous career of today could become a dead end several years down the line. But for those who want to be on the cutting edge of business or industry, one of these hi-tech jobs may be just the kind of stimulating career they are seeking. More detailed information on many specific jobs appears throughout this newspaper.
A person who likes to work outdoors, has good manual dexterity and possesses the ability to solve mechanical and structural problems should give strong consideration to a construction career. Precision and skill in working from a blueprint are also important.

In the future, more construction workers will be building and renovating mass transit systems and power plants and working on new construction projects in the suburbs. If the high cost of housing continues to encourage renovation of existing housing, many workers may become "housing rehabilitation technicians," a new job category.

A mass transit construction worker attends the Washington, D.C. subway line to the suburbs.

Bricklayers build walls, fireplaces and other structures with brick or other masonry materials. Jobs: 163,000 (1990—figure includes nonenforcement). Employment expected to grow faster than average as a result of greater use of brick for decorative work and load-bearing walls. Training: Informal on-the-job training is normal: some complete apprenticeship training. Average hourly wage: $12.64/hr. Related occupations with comparable employment prospects are cement masons and related workers.

(continued on page 5)

4 Job Market
The field of agriculture encompasses many occupations, of which production agriculture, or farming, is only the most obvious. In 1980, there were 1,447,000 farmers, according to the U.S. Bureau of Labor Statistics. But the number of farmers will actually decline in the future. The type of farm where brothers and their families do most of the physical labor themselves will be rare, replaced by large commercial enterprises.

Profitably owning and operating a farm today requires not only managing a tremendous financial investment (with no guarantee of profit), but also keeping up with new advances in technology. Automated equipment, such as milking parlors or harvesting machines, can do work in half the time people can, and computers can help farmers with record keeping. In general, farmers need a good grasp of sciences such as biology, conservation techniques, and business skills such as accounting.

Farmers must depend upon other people for supplies and services—for every farmer, several people work in related businesses. Agriculture includes occupations as varied as processing and marketing farm products, writing for agricultural magazines; granting loans to farmers; selling equipment, seeds or fertilizers; operating a plant nursery; spraying pesticides onto fields from airplanes; preserving forests—the list goes on and on. Certain occupations require a state license, such as nursery dealer, manufacturer of fertilizer or livestock feed, and inspector of dairy products, fruit, vegetables and poultry. Research-related occupations, such as agricultural engineering, are growing rapidly. Average pay in agriculture is comparable to that of similar jobs in non-agricultural businesses, falling within a range of $10,000 to $30,000 a year.

Students interested in agricultural careers can find programs at area vocational-technical schools, community colleges, state agricultural colleges and universities, where, they are expected to either have some farm background or to get experience by working summers or part time. Adults wishing to upgrade their skills can attend the day or evening classes often provided by government extension workers, who are familiar with the latest research developments.

Agricultural Salesperson: Sells products such as fertilizer, machinery, seeds, chemical pesticides, castle feed; also schedules deliveries, keeps records, explains to customers how to use products. Works for sales department of food, fertilizer, machinery and equipment stores or manufacturers. Training: Two-year agriscience program at community college or technical institute. Some on-the-job training after being hired. Can advance to sales manager or start own business.

Animal-Health Technician: Works for veterinarians at hospitals and clinics (e.g., preparations, sterilizing equipment). Also works as research assistant at public or private agencies that seek to improve livestock; for example, conducts experiments to find cures for diseases. Also works as inspector at government agencies. Demand for veterinarian's assistant currently greater than supply, owing to popularity of pets. Training: Two-year program at community or junior college. Programs offer field experience at animal clinics and must be accredited by American Veterinary Medical Association. Some states require certification. Can advance by supervising others or, with further education, become veterinarian. Contact: American Veterinary Medical Association, 930 M. Meacham Rd., Schaumburg, Ill. 60196.

Farm Mechanic: Maintains and repairs equipment used to plant, harvest or process crops. Works for commercial farms, farm power companies, machinery companies, farm management agencies, or has own business. Training: One or two-year program at community college or technical institute. Technical training in electronics important. Some farm equipment manufacturers offer on-the-job training. Can specialize in rural electrification, wiring and lighting of farm buildings. Occupation growing at average rate to keep pace with increased complexity of equipment to be serviced. Needs mechanical aptitude plus farm experience.

Typical wages: $11.00-56.00/hr. With further education, can become agricultural engineer.

Farm Operators: Owns farm or works as manager for cooperative. Hires and supervises workers, purchases equipment, keeps financial records, decides which crops to plant and when, what to fertilize and harvest, which pesticides to use. Occupation growing more slowly than average as costs go up. Training: Two-year program at community college, four-year program at agricultural college, agricultural courses at vocational high school. Business skills essential. Should like being own boss, living in rural environment. Average earnings: $19,000 yr. Contact: American Farm Bureau Federation, 225 Towne Ave., Park Ridge, Ill. 60068 or Future Farmers of America, P.O. Box 15610, Alexandria, Va. 22309.

Horticulture Technician: Works for private and public research organizations to develop higher quality fruits, vegetables, fertilizers and pesticides; for fruit growers as orchard manager; and for agricultural government agencies to inspect fruit and vegetables before shipping to customers. Some specialize in ornamental horticulture, work as florist, landscaper, greenhouse manager. Training: Two-year program with lab and field work at community or junior college. Knowledge of botany and chemistry important.

Research Technician: Assists agricultural scientists in experiments taking place under actual growing conditions (such as fields or greenhouses) or in laboratories. Prepares samples for tests, sets up equipment, records data. Works for government agricultural agencies, agricultural supply companies, experimental farms. Training: Two-year program at junior or community college. Typical salary: $12,000 yr. Soil Conservation Service, U.S. Department of Agriculture, employs students during summers as technician trainees. Contact: Information Office, U.S. Dept. of Agriculture, Washington, D.C. 20250.

American Vocational Association

Modern agriculture benefits from laboratory research work done by technicians.

Job Market 5

Best copy available
Advanced technology has made a significant impact in production industries. Numerically-controlled machine tools, which use computers to control machine operations, have made it possible to produce more safely. These machines eliminate some tedious work, but they also take jobs away from tool-and-die makers, machine tool operators and machinists. Robotics has been a success in industries such as the auto industry, which uses automated equipment to construct, weld and paint cars. In addition, the current economic slump has made the number of jobs available from year to year uncertain. Yet there are still many good opportunities.

Highly skilled workers are usually not affected as much by automation. For example, there is a shortage of tool-and-die workers at present, although robot-welding will eventually replace many welding machine operators. Skilled welders will continue to be needed. In addition, employers are usually reluctant to lay off highly skilled workers, fearing they might not be available again once the economy improves.

The best job opportunities of the future may be in new and emerging industries. Welders could work for nuclear power plants in the aerospace industry or producers of synthetic fuels. Because these fields require a high degree of reliability in welding, workers entering them need to get some additional training. Production workers with an above-average aptitude and good hard work habits are in demand in most industries.

Many production jobs do not require a high school diploma, although employers prefer to hire those who have. As a result, an individual can work his way up to the top in many of these positions, which combine classroom instruction with on-the-job training. Technical institutes and community colleges offer useful courses in blueprint reading, math and electronics. Mechanical aptitude, manual dexterity and the ability to concentrate are essential to success in production work.

Some of the new or high-demand careers in production industries include:

**Lithographer:** Four kinds. Camera operator makes negatives from material that is to be printed. Lithographic artist uses chemicals and dyes to make image on negatives clearer. Assembler attaches negatives to layout sheet. Platemaker makes a printing plate from the film and operates machine that processes plates. Jobs: 4,000 (1980).

Two-year program in printing technology at technical institutes and community colleges, plus apprenticeship training. Typical wage: $12/hr. Some overtime work may be necessary to meet publication deadlines. Contact: Printing Industries of America, Inc., 1730 N. Lynn St., Arlington, Va. 22209.

**Machine Tool Operator:** Uses machine tools (lathe, grinding machines, drill presses) to shape metal products. Includes skilled operator (planned work from blueprints, adequate speed on machines), and semi-skilled operator (carries out routine operations). Employed by factories that produce fabricated metal products. Jobs: 122,000 (1980).


**Tool and Die Maker:** Produces tools and dies used by other workers to make metal parts. Employed by manufacturing and construction companies: tool-and-die shops, automobile, aircraft and electrical machinery industries. Jobs: 66,000 (1980). One third of work is in Detroit, Flint, Chicago, Los Angeles. One of the few growing occupations but current shortage of workers. Training: Four-year apprenticeship training. Average salary $10.3/hr. Advance to supervisor or tool designer or own shop. Contact: National Tool, Die and Precision Machining Association, 3200 Livingston Rd., Washington, D.C. 20022.


Real Estate Agent or Broker: Assists clients in buying or selling homes or other property. Broker also qualifies to rent and manage properties. Make appraisal, develop new building projects. Agents are independent sales workers. No objects required. Winter job: Office, licensed broker job $10,000 (1980). Employment prospects to rise faster than business. Starting salary: $12,000 (1980)—works on commission after 60 days. State licensing necessary. Can be offered by community colleges, business courses. Starting salary: $15,000. Would rise to sales manager or own firm.

Contact: American Council of Life Insurance, 1550 K St., N.W., Washington, D.C., 20006, Insurance Information Institute, 210 William St., N.Y., N.Y., 10038.

Travel Agent: Helps design business and travel plans for customers. Helps with travel arrangements, foreign travel, tickets, hotel reservations. Contact: American Society of Travel Agents, 15th Fl., 37 E. Wacker Dr., Chicago, Ill.

One of the newest fields is that of hospital home health. Aides. They visit people in their homes and offer homemaking services, health care and sympathy. Their clients range from the elderly others help ill mothers who need temporary help for the small children. In many states work with the elderly: others help ill mothers who need temporary help for the small children. In many areas this occupation includes a flexible schedule, a flexible availability of part-time work, and the satisfaction of being responsible for caring for someone. Contact: National Council for Homemaker-Home Health Aides Service, Inc., 27 Irving Pk., 6th Fl., New York, N.Y., 10003.

Homemakers' aides are medics of the elderly and their families. They help in the home, but also provide companionship, to help them adjust to illness, a new disability, or the loss of a loved one. These workers can be found in many different settings, from hospitals to private homes. Employment prospects are expected to grow faster than average. Starting salary: $10,000 (1980). Employment prospects to rise faster than average. Employment outlook through the 1980s: Training: One- or two-year program offered by community colleges.

Children's hospital nurses, who help care for children, are also in great demand. Employment prospects are expected to grow faster than average. Starting salary: $10,000 (1980). Employment prospects to rise faster than average. Employment outlook through the 1980s: Training: One- or two-year program offered by community colleges.

Bakery bakers are in great demand. Employment prospects are expected to grow faster than average. Starting salary: $10,000 (1980). Employment prospects to rise faster than average. Employment outlook through the 1980s: Training: Two-year program offered by junior colleges or technical schools.

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Though jobs in energy industries account for about two percent of all employment in the country, the growth potential is enormous—particularly in emerging fields such as solar energy and conservation.

During the past decade, the momentum to use energy more efficiently has led to the creation of new occupations such as energy auditors, solar technicians and energy managers. This trend towards conservation has also benefited established industries such as those that install and maintain heating and cooling systems. Employment in the oil and gas, coal, nuclear, and utility industries is expected to remain steady or to grow slightly during the 1980s.

Only a handful of solar jobs exist now, but the fledgling industry may generate three to four million jobs by the end of the century. The workers could train in one of the new two-year energy technology programs that have sprung up in many postsecondary institutions. Alternatively, they may learn a traditional construction trade and only then acquire additional knowledge about energy technology. With some extra preparation, the oil, gas, and wind workers could enter the solar energy field: carpenters, cement masons, electricians, plumbers, sheet metal workers, glaziers, crane operators, and heating and air conditioning technicians.

The westernization of buildings to conserve energy is another relatively new occupational field. The skills required to install insulation, weather stripping, and storm windows can be learned in a vocational or on-the-job training program. Such jobs exist throughout the country, but are more concentrated in urban areas.

Electric utilities are the largest employer among the energy industries, with about 600,000 people on the payroll. Of these, 33 percent are skilled craft workers, operators and laborers in greatest demand are electric power line installers and repairers, construction workers, machine operators, mechanics, cable splicers and meter readers.

Oil and gas production companies employ nearly 700,000 people. About half are skilled craft workers, heavy equipment mechanics, truck drivers, welders and laborers. After a five-year period of rapid growth, employment leveled off in 1981 and, unless interest rates go down and world oil prices go up, the slump could continue indefinitely. Many oil and gas industry jobs are in remote areas in Alaska, Louisiana, Oklahoma, Texas and Wyoming. The new federal leasing program may lead to more offshore field jobs in waters bordering the Gulf of Mexico.

Because about one-third of the nation's coal reserves remain untapped, the government predicted only two years ago that coal mining would be the biggest source of energy-related jobs during the 1980s. But declining use of this fuel, partly for environmental, health and safety reasons, has clouded its future. A breakthrough in the technology of making synthetic fuels from coal could create more jobs, however.

Some of the new or high-demand careers in the energy field include:

Air Conditioning and Heating Technicians: Designs, manufactures, installs, sells or services heating and air conditioning systems. Jobs: 179,000 (1980). Employment prospects good through 1980s as result of trend to design, install and maintain energy efficient equipment. Most jobs will be in the independent contractor field. Requires problem solving ability; aptitude in mathematics, electricity, physics and science; and ability to work with minimum supervision. Training: apprenticeship program or postsecondary program in technical institute or community college. Average union wage $12.515/hr. Contact: Air Conditioning Contractors of America, 1228 17th St., N.W., Washington, D.C. 20036.

Energy Auditor: Assesses energy efficiency of homes and businesses, recommends ways to conserve energy. Employed by utilities and private industry (mechanical contractors, engineering or insulation companies). Future prospects depend on world energy prices and degree to which federal government enforces legislation requiring utility companies to offer free or low-cost audits to consumers. Training: Varies widely. Auditors who do routine residential audits. Auditors for large commercial facilities perform more sophisticated functions (e.g., determining flow rates); they often have engineering backgrounds.

Energy Manager: Plans and implements strategies to save energy in plant operation; may include maintaining energy consumption records, analyzing capital investment strategies for conservation, scheduling and overseeing preventive maintenance, supervising operation of computerized energy management control system. Occupations too new for reliable employment forecasts or salary data, but appears to be growing. Training: Engineering or two-year engineering technology degree preferred.

Sociology Technician: Monitors instruments that supervise work of machine in power plants, refineries, oil and gas wells, pipelines, other energy-related facilities; makes corrections if automatic controls not handling situation; may repair defective instruments in field or shop. Also works for highly automated, non-energy industries such as chemical, pharmaceutical, packaging plants. Training: Two-year technical program, with emphasis on electronics, physics, chemistry, drafting, math. Needs on-the-job training to master instruments in particular industry. Can advance to instrument design, more complex technical work, sales or management.

Instrumentation and Process-Control Technicians: Monitors instruments that supervise work of machine in power plants, refineries, oil and gas wells, pipelines, other energy-related facilities; makes corrections if automatic controls not handling situation; may repair defective instruments in field or shop. Also works for highly automated, non-energy industries such as chemical, pharmaceutical, packaging plants. Training: Two-year technical program, with emphasis on electronics, physics, chemistry, drafting, math. Needs on-the-job training to master instruments in particular industry. Can advance to instrument design, more complex technical work, sales or management.

Solar Technicians: Manufactures, installs and maintains solar units. May design routine systems for homes or small-scale commercial operations. About 600 companies, many small, employ 20,000 people currently. Growth prospects depend on national policy and energy demand, but potential great only one percent of houses are currently solar equipped. Most available positions in California and other southwestern states, but could become more evenly distributed throughout country. Training: Conventional preparation in construction trades or completion of energy technology program. Typical wage estimated at $10.94/hr. Contact: Consol Energy Inquiry and Referral Service, P.O. Box 1607, Rockville, Md. 20850.

BEST COPY AVAILABLE
41. THE YEAR 2000: MATH

Materials: Calendar for the year 2000 (page 43), pencils, paper, research facilities with back issues of newspapers or magazines.

Procedure: The teacher distributes calendars for the year 2000 to each student and asks the class to reflect on the following questions: On what day does your birthday fall in the year 2000? How old will you be on this day? Choose a holiday that you enjoy celebrating such as Christmas, Thanksgiving, or the Fourth of July. Locate this on your calendar and then reflect on how you might be spending this holiday. Identify some dates for your summer vacation. What do you expect to do during your summer vacation in the year 2000?

Research Projects: Subtract the present year from the year 2000, and then subtract that answer from the present year. This answer is the year that is as far in the past as the year 2000 is in the future. Use magazines and newspapers to research lifestyles and living conditions in that year to see what sorts of changes have occurred in that period of time. Then make projections for the year 2000 based upon a similar rate of change. (To be more specific, students can pick categories such as transportation, food, clothing, etc.)

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<td>28 29 30 31</td>
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<td>S M T W T F S</td>
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<td>24 25 26 27 28 29 30</td>
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<tr>
<td>31</td>
<td>. . . . . . . .</td>
</tr>
</tbody>
</table>
MATH

GOING TO THE WORKFORCE

In this activity students will learn the minimum amount of math courses required to enter various occupations.

SKILLS: Ordering Estimating
Working cooperatively Decision making

TIME: 20 - 30 minutes

MATERIALS: Ranking sheets

DIRECTIONS: Hand out the ranking sheets listing the eleven occupations. Briefly discuss the type of work done in each of these fields. What is the minimum amount of high school and undergraduate college math a student must take to enter one of these careers? The answers will be scored against information given by the University of California at Berkeley, Foothill College and the Occupational Outlook Handbook. Statistics and computer science courses have been counted as mathematics.

Working alone: The student's task is to rank the 11 jobs listed according to how much math a student is required to take in college and high school, starting with first year algebra. Place number 1 by the job title which requires the most math, number 2 by the one which requires the next most math, and so on through number 11, which requires the least math.

Working in Small Groups: After students have completed the task, have them form groups of 3 - 5. Give each group a new ranking sheet. They now have a second opportunity to rank the amount of math required for these occupations. This time they will be working with a small group of people, and the group will be asked to reach a consensus on each item. A decision process is most productive if it can make use of the resources of the group and resolve conflicts in a creative manner.

When the groups are finished, have one member of each group score the group ranking. Individuals can score their own sheets for comparison with the group.

To score: Take the absolute value of the difference between the correct ranking and the one the group has given, that is, subtract and drop any negative signs.

Example:
Electrical Engineer 4 1 3

Add all the differences for a total score.

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## GOING TO THE WORKFORCE

<table>
<thead>
<tr>
<th>Career</th>
<th>H.S.</th>
<th>College</th>
<th>Reference</th>
<th>Rank</th>
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<tr>
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<tr>
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<tr>
<td>geologist</td>
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<td>U.C. Berkeley General Catalog 1979-80</td>
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</table>

*Three years of high school math implies that trigonometry is taught during the same year as second year algebra.*

**BEST COPY AVAILABLE**
### GOING TO THE WORKFORCE

<table>
<thead>
<tr>
<th>Career</th>
<th>H.S.</th>
<th>College</th>
<th>Reference</th>
<th>Rank</th>
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<tbody>
<tr>
<td>electrical engineer</td>
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<td>U.C. Berkeley General Catalog 1979-80</td>
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<tr>
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<tr>
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<td>0</td>
<td>Occupational Outlook Handbook 1978-79</td>
<td>11</td>
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</tbody>
</table>

Three years of high school math implies that trigonometry is taught during the same year as second year algebra.
Rank the 11 occupations according to how many math courses a student must take in order to enter that field. Place number 1 by the job title which requires the most math courses, number 2 by the one requiring the next most math and so on through number 11, which requires the least amount of math.

<table>
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<tr>
<th>Job Title</th>
<th>Your Answer</th>
<th>Catalog Answer</th>
<th>Absolute Difference</th>
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</table>
Introduction

Our lives are filled with decisions. Some seem very important at the time but have little lasting effect. Others do not seem important at all and yet may have a major impact on our lives. Odds on You highlights some important decisions or turning points in your career development. The activity is not intended to predict your future life, but by starting with your academic goals and experiences, you might get an idea of what some possibilities are for your near future.

Odds on You uses a mathematical model. Mathematical models are common in fields such as business, economics, urban planning, science, and medicine. With the growing use of computers, mathematical models are becoming more common in other fields as well.

An example of a mathematical model:

Suppose you work as a buyer for a shoe store. It is time to order the spring shoe selection. Several styles are available in sizes 4 to 10. Should you buy 100 pairs of each size? Why or why not? If you wear a common or average size, think back to how hard it is to find suitable shoes that fit you.

It is anticipated that some will answer that 100 pairs of each size is a good order. Others will correctly argue that the number of people wearing each size is not the same, and that relatively large quantities of middle sizes (6,7,8) and very few of the other sizes (4,5,9,10) should be purchased. A good model will predict the number of shoes of each size the buyer needs to purchase.

To give a realistic view of what can happen to you and other students after high school, all decisions in Odds on You (those you make in real life) are left to chance (rolling of dice). The outcomes of these chance decisions are, however, based on statistics about young people. If you are female, there is one chance in ten that you will become pregnant during the ages 12 to 13. The outcomes in the “Cast Your Fate to the Wind” section reflect this statistic. If you are male, there is over a 90% chance that you will be fully employed during most of your life. If you are female and over 16 years of age, there is a 50% chance that you will be working at any given time. A woman can expect to work an average of 22.9 years. These are the types of data from which the Odds on You model was developed.

Special Notes to Teachers or Workshop Leaders

Thousands of statistics are available on what happens to young people as they pass through high school, in post-high school opportunities, and eventually, to the job market. Many of these statistics are surprising, even shocking. Endless lists of numbers turn many young people off. This activity places students in a position of experiencing the statistics. They may dropout of school, get pregnant, and experience failure in getting a job, or they may take substantial math, get professional training, and become a highly paid specialist. The possibility of these outcomes occurring is based on the statistics describing what young people actually do with their lives.

The introduction will give you additional background about the Odds on You activity. Some of the background should be shared with your students or participants before you begin the activity. Of particular importance are three items:

1. The activity reflects the decisions made by young people during the ages of 14-24.
2. The activity is a mathematical model of a real situation.
3. Participating in the activity as a member of the opposite sex is intended to give young people a better idea of the choices and outcomes available to their brothers and sisters or their girl or boy friends. Encourage students to look upon this aspect as a very important part of the activity.

Students should be allowed to work through the activity in small groups of three or four students. They should be encouraged to help each other and to discuss their results as they go along. Each student will need one pair of dice, a copy of the Odds on You pages, and a record sheet.

The activity ends with a salary determination. This should not be a young person’s ultimate goal but, with the realities of inflation and the necessity for people to work today, a young person might as well work in a job that gives both satisfaction and a reasonable income.

Source: Kaseberg, Alice EQUALS, Lawrence Hall of Science, University of California, Berkeley, 1980.

*Developed by Alice Kaseberg
ODDS ON YOU: COULD THIS BE YOUR LIFE?

Use this page to record your results.

TALLY EXPERIENCE POINTS HERE from Sections 3, 4, 7, 9, 11

1. Sex: Male _______ Female _______

2. Parents' income:
   Employed mother _______________________
   Employed father _______________________
   Total _______________________

3. Your income during high school: Do you work? _______ Annual Income _______

4. Your high school education:
   A. Graduate _______________________
   B. Math category _______________________
   C. More math? _______________________
   D. Electives (1) _______________________
   (2) _______________________

5. Cast your fate to the wind: Married? _______ Pregnant? _______

6. Post high school: Choose your next step.
   Armed forces _______________________
   Vocational school _______________________
   Community college _______________________
   Job market, Type _______ College _______

7. Community college training _______________________

8. College:
   A. Major: requires calculus requires no calculus
   B. Graduate? _______
   C. D., Out of labor force _______ Armed forces _______ Job market, Type _______
   Further degree? _______

9. Armed forces _______________________

10. Out-of-labor-force status _______________________

11. Vocational training _______________________

12. Job Market: Type I Type II Type III
   A. Delay in finding work _______
   B. Kind of job _______
   C. Salary _______

Are you satisfied with how chance decided your fate? _______________________

What decisions made with the dice in this game can you make for yourself?

__________________________

You have probably already made several decisions about your life. If you have time, go back through the activity and make your own decisions without the dice. Use the dice for decisions from Section 6 to the end. Do you now come out with a more satisfactory job and salary?
ODDS ON YOU

Go through each section in order unless directed to skip. Keep track of your results on the “Could this be your life?” sheet.

1. Sex: Roll 1 die. Even number you are female, odd number a male.

2. Parents' income:
   Mother: Roll 1 die.
   Father: Roll 1 die.
   1-12 she is not employed.
   3 roll again.
   4-6 she is employed.
   If either or both parents are employed, roll two dice and sum. Use this scale to determine the annual income for each employed parent. Use the same roll for both incomes.
   Father: $2,000 x sum of dice.
   Mother: $1,000 x sum of dice.

3. Your employment during high school:
   Female: Roll 1 die.
   Male: Roll 1 die.
   1-2 employed
   3-6 not employed
   If you are employed, roll two dice and sum. Then calculate the annual income.
   Employed female: $300 x sum of dice = annual income.
   Employed male: $480 x sum of dice = annual income.
   Bonus: if sum of dice was over 8, collect experience points: 100 if female, 200 if male.


4A. High school:
   Roll two dice and sum.
   2-3 Graduate, top 8% of class (50 experience points)
   4-8, 10-12 Graduate
   9 Drop out of high school. Go directly to Section 5.

4B. High school math: Roll two dice and sum to determine your math experience.
   Female: 11
   6, 10 General Math
   8, 9 Algebra I
   2, 7, 12 Geometry
   4, 5 Algebra II
   3 Calculus or 4th year math
   (100 experience points)
   Male: 12
   7 General math
   5, 9 Algebra I
   3, 6 Geometry
   8, 10, 11 Algebra II
   2, 4 Calculus or 4th year math
   (100 experience points)
4C. High school math: Your determination to continue in math depends on many factors. See if you have any special reason to take more mathematics. Roll two dice and sum.

Female:
2 A teacher encourages you in junior or senior high. Repeat Section 4B and take the higher math of your two tries. Then go on to Section 4D.
3 You took Algebra in the eighth grade.
4 You enjoy math.
5 You have a clear career goal.
6-12 No reason to take more math.

Male:
2, 3 Your parents encourage you. Repeat Section 4B and take the higher math of your two tries. Then go on to Section 4D.
4 You have a career goal.
5 You are good at math.
6 Your parents expect you to take math.
7-12 No reason to take more math.

4D. High school electives: Roll two dice and sum. Select first elective based on this roll.

Female:
2 Computer Programming (200 experience points)
3, 5, 9, 11 Typing, Bookkeeping, Accounting (50 experience points)
4, 10 Art, Journalism, Music (25 experience points)
6-8 Home Economics (25 experience points)
12 Automotive, Drafting, Welding, Woodshop (150 experience points)

Male:
2-4 Typing, Bookkeeping, Accounting (100 experience points)
5, 10 Computer Programming (150 experience points)
6-8 Automotive, Drafting, Welding, Woodshop (100 experience points)
9 Art, Journalism, Music (25 experience points)
11, 12 Home Economics (25 experience points)

Roll again and select a second elective. Record your experience points.

5. Cast your fate to the wind: Roll two dice and sum.

Female:
2-4 Get married (Go directly to Section 10).
5 Get pregnant (Go directly to Section 10)
6-12 Go on to Section 6.

Male:
2-3 Get married (Go directly to Job Market, Section 12 as Type 1).
4-12 Go on to Section 6.
6. Post high school. Roll two dice and sum. Find out what you do after high school based on the appropriate math category determined in Section 4B.

If your parents and your together earn over $28,000 per year, take an extra roll and choose the result you prefer within your math category.

A. High School Dropout
   2-3   Get G.E.D. (Go to Section 6C)
   4     You are out of the labor force. (Go to Section 10)
   5-9   Go to the job market, Type I. (Go to Section 12)
   10-12 Go to armed forces. (Go to Section 9)

B. No math
   2-3   Go to armed forces. (→ 9)
   4     You are out of the labor force. (→ 10)
   5     Go to vocational school. (→ 11)
   6-10  Go to job market, Type I. (→ 12)
   11-12 Go to community college. (→ 7)

C. General Math or Algebra I
   2-5   Go to community college. (→ 7)
   6-7   Go to job market, Type I. (→ 12)
   8     Go to armed forces. (→ 9)
   9-10  Go to vocational school. (→ 11)
   11    You are out of the labor force. (→ 10)
   12    Go to college. (→ 8)

D. Geometry or Algebra II
   2-5   Go to college. (→ 8)
   6-8   Go to community college. (→ 7)
   9-10  Go to job market, Type I. (→ 12)
   11    Go to vocational school. (→ 11)
   12    Go to armed forces. (→ 9)

E. Calculus or 4th Year Math
   2     Go to job market, Type I. (→ 12)
   3-9   Go to college. (→ 8)
   10-12 Go to community college. (→ 7)

7. Community college: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5</td>
<td>2-5</td>
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<td>6-8</td>
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<td>8-10</td>
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<tr>
<td>11-12</td>
<td>11-12</td>
</tr>
</tbody>
</table>
8. College

8A. College major: Roll two dice and sum. Use your high school math category. Note: In many universities, up to 75% of all possible majors require calculus, including science, economics, business, engineering, and pre-medicine. Traditionally non-calculus majors (librarianship, music, elementary education, literature, and history) are being strongly influenced by computers and, hence, mathematics.

<table>
<thead>
<tr>
<th>General Math</th>
<th>Female</th>
<th>Male</th>
<th>Major requires no calculus.</th>
</tr>
</thead>
<tbody>
<tr>
<td>or Algebra I</td>
<td>2-11</td>
<td>2-11</td>
<td>Major requires no calculus.</td>
</tr>
<tr>
<td>Geometry</td>
<td>2-10</td>
<td>2-9</td>
<td>Major requires no calculus.</td>
</tr>
<tr>
<td>Algebra II</td>
<td>11-12</td>
<td>10-12</td>
<td>Major requires calculus.</td>
</tr>
<tr>
<td>Calculus</td>
<td>2-9</td>
<td>2-8</td>
<td>Major requires no calculus.</td>
</tr>
<tr>
<td>4th year math</td>
<td>10-12</td>
<td>9-12</td>
<td>Major requires calculus.</td>
</tr>
</tbody>
</table>

Bonus: If you took high school Algebra II or beyond, take another roll of the dice and see if you can get into a calculus major.

8B. College graduation: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-7</td>
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</tr>
<tr>
<td>2-3-8-12</td>
<td>3-8-12</td>
</tr>
</tbody>
</table>

8C. Did not graduate: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4-7-12</td>
<td>2-8-0-11</td>
</tr>
<tr>
<td>5-6</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

8D. You graduate! In Section 8A, you determined whether your major needed calculus. Use the major now to find out what you do after college.

Major required calculus:

<table>
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<tr>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
<td>2-7,10</td>
<td>2-7</td>
</tr>
<tr>
<td>8,12</td>
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</tr>
<tr>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
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</tbody>
</table>

Major required no calculus:

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
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</thead>
<tbody>
<tr>
<td>2-4-7</td>
<td>2-3-8-9</td>
</tr>
<tr>
<td>5-6</td>
<td>10</td>
</tr>
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<td>8,9</td>
<td>4-7</td>
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<tr>
<td>10-12</td>
<td>11-12</td>
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</table>


<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
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</thead>
<tbody>
<tr>
<td>2-7</td>
<td>2-6</td>
</tr>
<tr>
<td>8-10</td>
<td>7-9</td>
</tr>
<tr>
<td>11-12</td>
<td>10-12</td>
</tr>
</tbody>
</table>
10. Out of labor force: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8</td>
<td>4-8</td>
</tr>
<tr>
<td>4-5</td>
<td>3,9</td>
</tr>
<tr>
<td>2,3,9-12</td>
<td>2,10-12</td>
</tr>
</tbody>
</table>

Go to job market, Type I, at least 25 years of your life. (Type II if you have calculus). (→ 12)

Unemployed, not eligible for compensation. This is your life, well past the age of 24. What are your options now? Go to questions at end of record sheet.

Other unpaid positions. What might those be? What are your options now?

11. Vocational school or apprenticeship training: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>2</td>
</tr>
<tr>
<td>6-8</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>10-12</td>
</tr>
<tr>
<td>2</td>
<td>4,6</td>
</tr>
<tr>
<td>9-10</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>5,7</td>
</tr>
</tbody>
</table>

Service training (200 experience points)
Clerical training (200 experience points)
Fire or police protection (300 experience points)
Mechanic or repair (300 experience points)
Health occupations (300 experience points)
Machining, printing, industrial (300 experience points)
Electrical, carpentry, plumbing (300 experience points)

Now, go to job market, Type I. (→ 12)

12. Job market: First, you need to find out how long it takes you to get a job (12A). Then you will use your Type I, Type II, or Type III in the job category section (12B).

12A. Delay in finding a job: Roll two dice and sum.

<table>
<thead>
<tr>
<th>School Drop-Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>2-7</td>
</tr>
<tr>
<td>8-9</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>11-12</td>
</tr>
</tbody>
</table>

High school graduate

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
<th>Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6</td>
<td>2-6</td>
<td>1 to 4 weeks</td>
</tr>
<tr>
<td>7-8</td>
<td>7-8</td>
<td>5 to 14 weeks</td>
</tr>
<tr>
<td>9-10</td>
<td>9-10</td>
<td>15 to 26 weeks</td>
</tr>
<tr>
<td>11-12</td>
<td>11-12</td>
<td>more than 27 weeks</td>
</tr>
</tbody>
</table>

Education beyond high school

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
<th>Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6,9</td>
<td>2-6,10</td>
<td>1 to 4 weeks</td>
</tr>
<tr>
<td>7,8,10</td>
<td>7-9</td>
<td>5 to 14 weeks</td>
</tr>
<tr>
<td>11-12</td>
<td>11-12</td>
<td>15 to 26 weeks</td>
</tr>
</tbody>
</table>

For every 300 experience points, cut 4 weeks off delay time in finding a job.

BEST COPY AVAILABLE
12B. Jobs: If you are Type I and have 400 experience points, go on to Type II.

Type I: Roll two dice and sum.

<table>
<thead>
<tr>
<th>Category</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical (secretary, clerk)</td>
<td>4-6</td>
<td>4</td>
</tr>
<tr>
<td>Service Work</td>
<td>10-12</td>
<td>10</td>
</tr>
<tr>
<td>Professional, Technical</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Operative (machine op., drivers)</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Sales</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Managers, Administrators</td>
<td>--</td>
<td>11</td>
</tr>
<tr>
<td>Laborers</td>
<td>--</td>
<td>5,9</td>
</tr>
<tr>
<td>Craft Workers</td>
<td>3</td>
<td>2,12</td>
</tr>
</tbody>
</table>

Type II: Roll two dice and sum. (Includes educators)

<table>
<thead>
<tr>
<th>Category</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical</td>
<td>8-9</td>
<td>---</td>
</tr>
<tr>
<td>Service</td>
<td>2-4</td>
<td>3</td>
</tr>
<tr>
<td>Professional, Technical</td>
<td>6-7</td>
<td>6-7</td>
</tr>
<tr>
<td>Operatives</td>
<td>11</td>
<td>4-5</td>
</tr>
<tr>
<td>Managers, Administrators</td>
<td>5</td>
<td>8-9</td>
</tr>
<tr>
<td>Sales</td>
<td>10,12</td>
<td>2</td>
</tr>
<tr>
<td>Craft Workers</td>
<td>---</td>
<td>10-12</td>
</tr>
</tbody>
</table>

Type III: Roll two dice and sum. Professionals (Excludes educators)

<table>
<thead>
<tr>
<th>Category</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineers</td>
<td>12</td>
<td>9-12</td>
</tr>
<tr>
<td>Physicians</td>
<td>2,3</td>
<td>5</td>
</tr>
<tr>
<td>Other (Lawyer, veterinarian, C.P.A., M.B.A.)</td>
<td>4-11</td>
<td>2-7</td>
</tr>
</tbody>
</table>

12C. Salary

Salary is determined by your training, your experience, and your education. These salaries represent national average starting salaries. (1977)

<table>
<thead>
<tr>
<th>Category</th>
<th>Type I</th>
<th>Type II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical</td>
<td>Female</td>
<td>$7,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,600</td>
</tr>
<tr>
<td>Professional, Technical</td>
<td>9,300</td>
<td>13,400</td>
</tr>
<tr>
<td>Operative</td>
<td>6,500</td>
<td>11,500</td>
</tr>
<tr>
<td>Sales</td>
<td>5,300</td>
<td>12,700</td>
</tr>
<tr>
<td>Managerial, Administrative</td>
<td>8,700</td>
<td>14,400</td>
</tr>
<tr>
<td>Laborer</td>
<td>---</td>
<td>9,700</td>
</tr>
<tr>
<td>Craft Worker</td>
<td>---</td>
<td>13,100</td>
</tr>
<tr>
<td>Other</td>
<td>7,150</td>
<td>12,300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Type III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Physician</td>
<td>19,000</td>
</tr>
<tr>
<td>Other</td>
<td>12,000</td>
</tr>
</tbody>
</table>
SUMMARY ACTIVITIES

Recording Information

As students finish Odds On You, they should record the indicated information on charts (shown below) placed on an overhead or a blackboard. This provides a quick visual comparison of results.

<table>
<thead>
<tr>
<th>Female</th>
<th></th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Math</td>
<td>Experience Points</td>
<td>Salary</td>
</tr>
<tr>
<td>High School Math</td>
<td>Experience Points</td>
<td>Salary</td>
</tr>
</tbody>
</table>

It is possible to change the outcomes in real life. Women do not have to settle for smaller salaries. Critical areas that can help include:

1. Mathematics taken in high school — Taking more math expands job options.
2. Elective choices in high school or post-high school education — Taking computer education or skill building courses expands job options (see which courses give experience points in Section 4D).
3. Recreational activities — Many activities provide opportunities for learning skills and developing the ability to work with people. These help in getting a job.
4. Type of training or college major selected — Some very popular college majors provide little employment opportunity. Some types of vocational training offer excellent job opportunities.
5. Working in part-time jobs during the educational years — Part-time jobs should require considerable learning or on-the-job training for skills usable in future jobs.
6. Taking a nontraditional job — The larger salaries are in fields not ordinarily entered by women.

Discussing Probability

To better understand the exact probabilities of the outcomes, students should work through the What Are The Odds page. Then, the dice outcomes in the Odds On You activity can be converted into probabilities. This will give students a better idea about the relative likelihood of their taking certain math courses, going to college, etc. This is best accomplished in small groups where interaction about the probabilities can arise naturally. It is not recommended that students be assigned to convert the dice outcomes to probabilities as an individual task.

Students should review how their individual outcomes compare with the overall range of outcomes on any given roll of the dice. Was their outcome typical of other students?

To explore theoretical versus experimental probabilities, a total class summary of results can be compared with the given probabilities for a selection of the sections.
For example, suppose sixty students participate in Odds On You. Approximately, thirty students would work through the model as females. In section 4B the actual results for these thirty females might differ considerably from the theoretical results (see chart). This provides a link between the Odds On You and important concepts in probability for the high school and postsecondary students.

<table>
<thead>
<tr>
<th>Dice sum</th>
<th>Math Taken</th>
<th>Percent Probability</th>
<th>Results for a class of 30 females</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,10</td>
<td>General Math</td>
<td>22%</td>
<td>5/30 17%</td>
</tr>
<tr>
<td>8,9</td>
<td>Algebra I</td>
<td>25%</td>
<td>7/30 23%</td>
</tr>
<tr>
<td>2,7,12</td>
<td>Geometry</td>
<td>23%</td>
<td>9/30 30%</td>
</tr>
<tr>
<td>4,5</td>
<td>Algebra II</td>
<td>19%</td>
<td>8/30 26%</td>
</tr>
<tr>
<td>3</td>
<td>Calculus or 4th year math</td>
<td>5%</td>
<td>1/30 3%</td>
</tr>
</tbody>
</table>

(Theoretical) (Experimental)

WHAT ARE THE ODDS?

When you roll one die, how many different ways can the die come up?

This means that the chance of getting one particular number is

What percent is this?

When you roll two dice and add them, what are the possible sums?

Are the sums equally likely? (Is an 11 as common as a 6?)

Use the next two activities to find or check your answer.

List all the 36 possible outcomes for two dice here:

<table>
<thead>
<tr>
<th>Sum</th>
<th>Number of Ways</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use your list above to find out how many ways each sum comes up.

Are the sums equally likely?

*Percent is the number of ways for each sum divided by the total possible ways (outcomes), 36.
Solutions to What Are The Odds?

When one die is rolled, each face is equally likely. There is one chance in six of a particular face turning up (16.7% each face).

For two dice, the sums are not equally likely, as the following table indicates.

<table>
<thead>
<tr>
<th>Sum</th>
<th>Frequency of Occurrence</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>8%</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>8%</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>3%</td>
</tr>
</tbody>
</table>

Notes and questions for discussion by section:

Section 1: Sex

Encourage students to accept the possibility of working through the activity as a member of the opposite sex. It is important that they understand others' options in life as well as their own.

Section 2: Parents' income

Why might it be reasonable that the same roll of dice determines the income for both parents? (Employment and income trends show that husband's and wife's incomes tend to be on similar levels within their sex-income range.)

Section 3: Your income during high school

What jobs provide skills or training for the future? What are the differences in learning opportunities between working in a restaurant or a movie theater, and working in a service station or on a road survey team?

Section 4: Your high school education*

A. Many students do not finish high school. Consider, for example, the data for persons not enrolled in school and not high school graduates as a percent of population for ages 14-24:

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black male</td>
<td>18.1%</td>
</tr>
<tr>
<td>Black female</td>
<td>18.9%</td>
</tr>
<tr>
<td>White male</td>
<td>9.9%</td>
</tr>
<tr>
<td>White female</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

B. What is the likelihood of male and female students in your school system completing a fourth year of high school math?

C. Males and females have different reasons for continuing in math. Parental and peer expectations may play a large role in student decisions. Why are your students in mathematics?

D. What types of skills are learned in elective courses? Why would some electives be given high experience points while others few or none? Why might there be differences between males and females in number of experience points awarded for the same elective?

Section 5: Cast your fate to the wind

A large number of students marry after high school. Ten percent of females ages 12 to 18 become pregnant. What happens after "they lived happily ever after?"

Be sure students record their job type (Type I, II, or III) when they go to the job market.

Section 6: Post high school

What is a G.E.D.? How do you get one?

What training is offered at a vocational school? Are there other ways to acquire this training without going to school?

Why might students with high family incomes have more choice (a second roll of dice) in what they do after high school?

Be sure students use the appropriate math category. If they are sent to the job market, they must record Type I, II, or III.

Section 7: Community College

Most universities and colleges require students to take several basic courses during their first two years. Many of these courses are also offered in community colleges. What are the relative costs of the two ways to take courses? How easy is it to transfer to a university after two years?

How do vocational training courses at a community college differ from vocational schools? What are the advantages or disadvantages of the community college versus the vocational school?

Be sure to record Type I, II, or III if sent to the job market.

Section 8: College

A. Many college students are reluctant to take calculus, but without calculus, they limit the choices they have for college majors. Non-calculus students often end up in overcrowded fields and have difficulty finding jobs.

B. C. D. Be sure to record Type I, II, or III if sent to the job market.

Supply and Demand Projections 1980-85

<table>
<thead>
<tr>
<th>School Year Ending</th>
<th>Supply of Beginning Teachers</th>
<th>Demand for Additional Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>222,000</td>
<td>117,000</td>
</tr>
<tr>
<td>1981</td>
<td>218,000</td>
<td>129,000</td>
</tr>
<tr>
<td>1982</td>
<td>214,000</td>
<td>135,000</td>
</tr>
<tr>
<td>1983</td>
<td>208,000</td>
<td>145,000</td>
</tr>
<tr>
<td>1984</td>
<td>203,000</td>
<td>167,000</td>
</tr>
<tr>
<td>1985</td>
<td>196,000</td>
<td>181,000</td>
</tr>
</tbody>
</table>


Section 9: Armed forces

A comprehensive set of tests that include Algebra and Geometry questions is given to new recruits in the armed forces to determine training programs. What effect would this training have on employment opportunities when one returns to civilian life?

Section 10: Out of the labor force

Many students will finish the activity at this section. Encourage them to reflect on their life situation at this point. They may be married, have a child, be on welfare, or be on unemployment. Do they want to enter the labor force? If so, what educational handicaps do they have? What opportunities are there to earn and learn a skill at the same time? What kinds of jobs are there for people with no skills at all?

Section 11: Vocational or apprenticeship training

Federal guidelines now require that an increasing percentage of women and minorities be hired on federally funded construction projects. For example, women must have a 6.9% participation rate by March 31, 1981 on construction sites where federal monies are involved. Thus, opportunities in the trades are improving. The features of mobility, earning while learning, variety of work environments, and good pay are appealing to a growing number of young women.

Section 12: Job Market

Even with an advanced degree, many people experience difficulty in finding employment. Job opportunities vary widely with geographic location and local economic conditions. Consider the following projections for elementary and secondary teachers, traditionally female, non-calculus professions.
**Members of the Community**

**Careers**

<table>
<thead>
<tr>
<th>CAREER AWARENESS: AUTOMOBILE INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC3270 J-S (C) 11 Min. (AIMS)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled as an automotive mechanic and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER AWARENESS: CONSTRUCTION INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2356 J-S (C) 11 Min. (AIMS)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled as a construction worker and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER AWARENESS: HOSPITALITY INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2371 J-S (C) 11 Min. (AIMS)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in the hospitality industry and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER AWARENESS: PERSONAL SERVICES INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC3272 J-S (C) 11 Min. (AIMS)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in the personal services industry and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREER AWARENESS: SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAREERS IN THE BUILDING TRADES (BASIC SKILLS)</td>
</tr>
<tr>
<td>RC2348 J-S (C) 11 Min. (AIMS)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled as a construction worker and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: ELECTRICIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2373 J-S (C) 12 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled as an electrician and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: INSTRUMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2374 J-S (C) 15 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in instrumentation and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: MILWRIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2375 J-S (C) 18 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in milwrighting and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: PIPEFITTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2376 J-S (C) 15 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in pipefitting and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: SECRETARIAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2377 J-S (C) 15 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in the secretarial field and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAREERS WITH A FUTURE: WELDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2379 J-S (C) 20 Min. (OTH)</td>
</tr>
<tr>
<td>Describes the training needed to become skilled in welding and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOOSING CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC2381 J-S (C) 15 Min. (OTH)</td>
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<td>Describes the training needed to become skilled in choosing and changing careers and the opportunities for further training and advancement, and examples of types of jobs encountered. It demonstrates the practical advantages of becoming skilled in this area.</td>
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<td>RC2382 J-S (C) 28 Min. (OTH)</td>
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Additional Suggestions for Futures Week

This activity is effectively held the week prior to preregistration to help students think carefully about their future courses and how those courses will lead to a fulfilling life and career. A Futures Week may involve teachers, students, counselors and others in the school and need not rely on outside visitors, such as a Career Seminar.

A Futures Week may include any combination of the following activities:

First Day: School band plays a "futuristic" song for students exiting the bus. A song such as the "Theme from Star Wars" or "Theme from 2001" would be effective.

In their English class students are asked to read a short story about two high school students who have decided to pursue a nontraditional career. The young man in the story has decided to be a nurse and the young woman, a business manager.

Second Day: Student officers perform a short audio dramatization over the intercom. As part of the morning announcements all students are asked to vote on their favorite cartoon posted in the hallway. These posters or cartoons could be ones the students themselves have produced on nontraditional careers, or posters and cartoons found in the Project VOTE materials.

Third Day: When students come to class on the third day, they are surprised to find the shorthand teacher in their metal shop class and the accounting teacher in their parenting class (see Idea #15).

Fourth Day: In English, Psychology and Sociology courses, students discuss the booklet, Looking Out For Life, and view the filmstrip that accompanies the booklet. They also experience "The Game of Life" (see Idea #25).

Fifth Day: In the auditorium all students are shown the filmstrip, Looking Out For Life. They are then asked to fill out a sample registration form, and then return to class. Upon returning to class the students are asked to discuss Futures Week and its impact on their choice of courses for the coming year.

Bibliography


Cornish, Edward, Careers Tomorrow The Outlook for Work In a Changing World, Bethesda, Maryland, World Future Society, 1983.


Dear Miss Allen,

I would like to let you know how I feel about the Summer School Pilot Program. It will help me in high school, to keep my studies up and just make school interesting. It will make me aware of the right way to apply for a job interview so I can make my impression outstanding.

Thank you,

[Signature]

BEST COPY AVAILABLE.
July 9, 1984
10153 Suez Ave.
El Paso, TX 79925

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