

11. I am the button that you push when you want to ride your bicycle on the bike path across the freeway. I make the "Walk" sign come on. I make \$12.50 per hour, and I worked $31\frac{1}{2}$ hours last week. I did not receive a bonus because I am not fast enough for the speed-racers.

12.-17. Assume that the "employees" of Exercises 6-11 received overtime pay of $1\frac{1}{2}$ times their regular rate for all hours they worked over 20. Write an equation to represent their weekly earnings of the form

$$E = 20r + (h - 20) \cdot 1.5r + t$$

where r represents the regular hourly rate, h represents the number of hours worked, and t represents any tip or bonus. Determine the total earnings for each employee.

Create a spreadsheet to calculate the hourly, weekly, monthly, and yearly earnings for each of the jobs described below.

40 hours = 1 workweek
 52 weeks = 1 year
 12 months = 1 year

18.

Health Care
NURSES
 RNs UP TO \$35/h.

19.

Maintenance
 MECHANIC Center
 Manuf. is in need of a
 person with 3-5 years
 exp. in machine repair/
 punch press. \$10.70/h.

20.

Sales!
 Interesting inside
 sales position. Start
 at \$5.75/h.

21.

Hairdresser
 English and Spanish
 speaking. Guaranteed
 pay \$300/wk. to start.
 Apply in person only.

22.

General Retail Clerk
 Are you getting no-
 where with that same
 old job? Earn \$600
 per week. No exp.
 nec.

23.

DRIVERS
 Drivers for local mes-
 senger. Earn \$450 per
 week. Must have own
 car and good driving
 record.

24.

Pharmacist
 Unlimited opportunity
 with growing drug
 store chain. Starting
 salary \$33,000.

25.

Executive Asst.
 Investment comp.
 seeks experienced and
 motivated individual
 to run office. Submit
 resume. From \$40K.

26.

CHIEF CHEMIST
 Will pay up to \$55,000
 for the right person
 with at least 15 years
 experience.



EMPLOYMENT OPPORTUNITIES: SO MANY CHOICES



Daphne is one year younger than Alex. Her older brother Darrin has had trouble finding a career. Daphne and Darrin have had long talks about “life after high school,” and Daphne hopes to learn from Darrin’s experience.

Ever since he and his family visited Cape Canaveral when he was 11, Darrin’s ambition was to become an astronaut. When he knew that his eyesight was not good enough for astronaut training, he decided to try to participate in the space program in some other way.

He went to State University to major in aeronautical engineering. About mid-October, he began to wish that he had not skimmed through the science and mathematics courses he had taken in high school. Actually, he had taken them only because his friends had.

After only a year at State he came home and enrolled in a community college. Then he dropped out of college, took a job, and moved into an apartment. He had planned to save his money and return to State, but he discovered that living in an apartment was too expensive for him. He moved back home.

Daphne is glad to have Darrin at home but is troubled by the upsetting effect that all the changes have had on the family. She would like to have a clearer picture of what is waiting “out there” before she wastes a lot of time and money. She wants to train for a career that interests her and for which she has the required skills. She also wants to have some reason to believe that she will be able to find a job at the end of her training.

OBJECTIVES: *In this lesson, we will help Daphne discover how to:*

- *Identify career fields suited to talents and interests.*
- *Investigate jobs and their educational requirements.*
- *Predict what the job market will be like in several years.*
- *Understand what benefits an employer may offer in addition to a paycheck.*

CHOOSING A CAREER

Daphne wonders why Darrin is having such a hard time choosing a career. She knows that it is probably one of the most important decisions in a person's life. What she may not know is that surveys indicate that fewer than 50% of people who work enjoy their jobs. This figure would surely be much higher if young people entering the workplace took more time to assess their abilities and interests. Fortunately, Daphne does realize that her choice of career is important, not only because it directly affects how she will be spending most of her waking hours, but also because it will have a direct impact on the overall quality of her personal life. Unlike many people, Daphne knows that she can make choices. She intends to focus on fields that not only will offer her an attractive income, but also will provide her with a sense of satisfaction and self-esteem.

The types of occupations in the United States can be counted in the thousands. Some of these require long periods of education or training. In fact, most jobs require post-high school education or training. Perhaps some workers, like Darrin, missed an opportunity to benefit from the education they were being offered. Of the 40 occupations with the largest projected job growth in the next decade, only one in four will require a college degree or specialized training, according to employment projections published by the U.S. Bureau of Labor Statistics. This agency groups occupations in 13 clusters of related jobs, as follows:

- Industrial production
- Service
- Sales
- Transportation
- Technical and repair jobs
- Social science
- Art, design, and communication
- Office
- Education
- Construction
- Scientific and technical
- Health
- Social service

ASSESS YOURSELF

With the large number of occupational choices in front of her, Daphne wonders, "Where do I begin?" If you are asking yourself that same question, start with what you know about your own interests and abilities. Do you like frequent contact with other people, or do you prefer to spend a lot of time alone? Are you a good follower, or do you prefer directing others in a work effort? Identify your personal skills and interests.

- Do you communicate effectively with others?
- Are you comfortable with computational tasks?
- Do you enjoy conducting a research project or investigation?
- Do you prefer working with your hands?
- Have others complimented you on your creative talent?
- Do you relate unusually well with other people?
- Have you shown talent in leading others in social or athletic activities?



You also need to match your individual talents, interests, and goals with those demanded by various fields of work. A good place to begin your research is with the *Occupational Outlook Handbook* published by the U.S. Bureau of Labor Statistics. Many other sources are also available in school and public libraries. You may also find answers to your questions by interviewing people in fields that interest you.

EDUCATION AND INCOME

The amount and kind of education you receive greatly affects your choice of occupation and thus your current and lifetime income. People who have received postsecondary education can expect to earn more than \$1,400,000 during their lifetimes. This is nearly two and a half times the \$600,000 that is likely to be earned by workers with fewer than eight years of schooling and more than one and a half times as much as high school graduates. To maximize income, it pays for you to acquire additional education and training.

As the demand for goods and services changes, workers often have to change jobs. It is estimated that college-educated workers change jobs from four to eight times in their lifetimes. Workers with only a high school education change jobs even more frequently.

TECHNOLOGY

Job opportunities and occupational trends are being changed by technology. **Technology** enables goods and services to be produced more efficiently through the use of machines and labor-saving methods. As a percent of the total work force, the number of blue-collar workers (carpenters, plumbers, and factory workers, for example) is decreasing while the demand for white-collar workers (office workers, salespeople, and technicians, for example) is increasing. Technology requires workers to have better training to fill new types of jobs.

FRINGE BENEFITS

Wages and salary are just one kind of financial reward for work. Many companies also offer other benefits such as paid vacations, life and health insurance, free uniforms, retirement plans, stock options, and discounts on company products. These are examples of **fringe benefits**. A fringe benefit is like a hidden paycheck within a paycheck, amounting to between 10% and 25% of total employee compensation.

What do you get for this 10% or 25%? First of all, there are benefits that the company is compelled to offer by law, such as taxes to fund your state's

unemployment compensation system, which provides temporary income for workers who are temporarily out of work through no fault of their own. A company must also pay for worker's compensation insurance (to cover work-related injuries or illnesses) and for part of your Social Security/Medicare tax. This last tax is called the **FICA tax**, since it is imposed as a consequence of the *Federal Insurance Contributions Act*.

Examples of nonmandatory employee benefits include paid sick leave, paid holidays, and paid vacation time. However, many companies go well beyond these commonly offered benefits. For example, some companies pay part or all of the premiums for your health insurance or life insurance. A company might also supplement funds that you put into a company retirement plan by matching your contributions with funds of its own.

Many companies encourage employees to enroll in study programs such as college courses, seminars, workshops, or training programs. Often, a company will partly or entirely subsidize education or training programs because it considers such programs to be a benefit for the company as well as the employee.

As Daphne continues her search for employment and career opportunities, she will take into account not only the fact that fringe benefits are a part of her total compensation package, but also the fact that they are a significant part of her potential employer's costs.

Ask Yourself

1. According to the U.S. Bureau of Labor Statistics, 40 occupations have the largest projected job growth in the next decade. How many of these will require a college degree or specialized technical training?
2. You may begin considering the choice of a career by identifying your own interests and abilities. Name eight skills in which you are strong.
3. One step in deciding on a career is to match your interests and talents with those required by various fields of work. What publication by the U.S. Bureau of Labor Statistics can you consult for this information?
4. How has technology affected the percent of blue-collar workers in the total work force?
5. What fringe benefits would you consider to be the most important in choosing a company to work for?

ALGEBRA REVIEW

Solve each proportion.

To solve a *proportion*, use the *Rule of Proportions*:

$$\text{If } \frac{a}{b} = \frac{c}{d}, \text{ then } ad = bc.$$

Example $\frac{x}{14} = \frac{65}{7}$

$$x \cdot 7 = 14(65) \quad \begin{array}{l} x \cdot 7 \text{ is "ad,"} \\ \text{and } 14(65) \\ \text{is "bc."} \end{array}$$

$$7x = 910 \quad \begin{array}{l} x \cdot 7 \text{ and} \\ 7x \text{ are} \\ \text{equivalent} \\ \text{expressions.} \end{array}$$

$$x = 130 \quad \begin{array}{l} \text{Divide both} \\ \text{sides by 7.} \end{array}$$

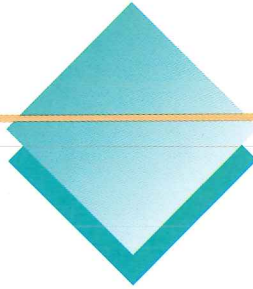
$$1. \frac{x}{6} = \frac{4}{5} \qquad 2. \frac{x}{6.2} = \frac{3}{31}$$

$$3. \frac{4}{5} = \frac{x}{15} \qquad 4. \frac{2.1}{9} = \frac{x}{6}$$

$$5. \frac{3.6}{9} = \frac{80}{x} \qquad 6. \frac{132}{x} = \frac{6}{7}$$

$$7. \frac{52}{5200} = \frac{x}{17,500}$$

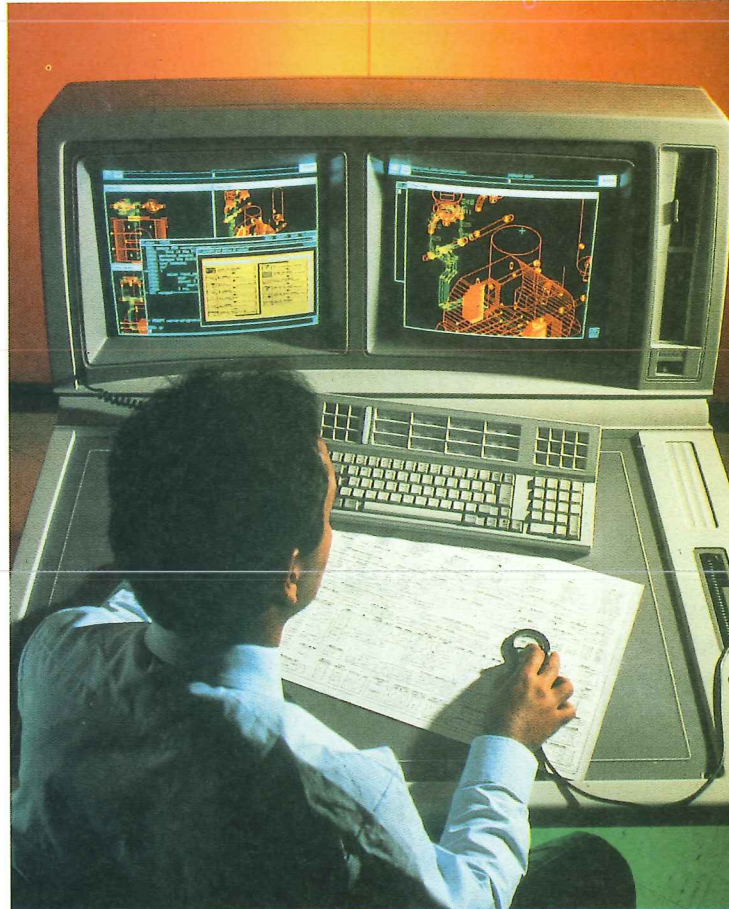
$$8. \frac{26}{x} = \frac{260}{34,000}$$



SHARPEN YOUR SKILLS

SKILL 1

Dinotech Engineering needs to hire a new engineer this year to help design some of the computer components used in the U.S. space program. The cost of the following extra taxes and fringe benefits will figure into their plans.



- a. 7.65% of gross pay for Social Security and Medicare (FICA)
- b. 5% of gross pay to match retirement contributions
- c. \$80 per month to help pay for health insurance
- d. \$10 per month for a life insurance policy

Dinotech operates 5 days a week, 52 weeks a year, or 260 workdays each year. Of the 260 workdays each year, the company grants its employees 10 vacation days, 6 holidays, and up to 10 sick-leave days.

EXAMPLE 1 Dinotech plans to offer the new engineer \$45,000 per year as a starting salary.

- QUESTIONS**
1. How much must the company budget to cover the engineer's fringe benefits?
 2. How much of the engineer's \$45,000 salary is paid for the nonworking days?

SOLUTIONS

1. a. $0.0765 \cdot 45,000 = 3442.50$
- b. $0.05 \cdot 45,000 = 2250$
- c. $80 \cdot 12 = 960$
- d. $10 \cdot 12 = 120$

Total additional costs: \$6772.50

- 7.65% of \$45,000 for FICA
- 5% of \$45,000 for the retirement plan
- \$80 per month for health insurance
- \$10 per month for life insurance

2. The number of nonworking days is

10 vacation days + 10 sick-leave days + 6 holidays, or 26 days

Write a proportion and solve it.

$$\frac{\text{Nonworking days}}{\text{total days}} = \frac{\text{dollars earned on nonworking days}}{\text{amount earned for entire year}}$$

$$\frac{26}{260} = \frac{x}{45,000}$$

$$\frac{1}{10} = \frac{x}{45,000} \quad \text{Simplify the left side.}$$

$$1 \cdot 45,000 = 10x \quad \text{Use the rule of proportions.}$$

$$\frac{45,000}{10} = \frac{10x}{10} \quad \text{Divide each side by 10.}$$

$$4500 = x$$

Dinotech pays \$4500 for nonworking days.

SKILL 2

EXAMPLE 2 Daphne's older friend Chloe has completed her engineering training and is considering accepting a position at Aerotech. Chloe has also been offered a position at Electron Research and has described the two offers to Daphne.

	Aerotech	Electron Research
Salary	\$48,000	\$48,000
Medical insurance	\$50/month	\$60/month
Retirement	3% of gross pay	2½% of gross pay
Education	\$1000/year	\$1200/year
Travel Allowance	\$120/month	\$100/month

QUESTION Which of the two companies is offering Chloe more money including fringe benefits?

SOLUTION

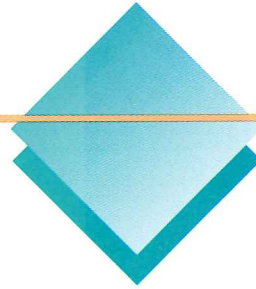
Aerotech is offering:

Salary	\$48,000	
Medical insurance: \$50/month	600	50 • 12
Retirement: 3% of 48,000	1,440	0.03 • 48,000
Educational expenses	1,000	
Travel allowance	1,440	120 • 12
Total offer	\$52,480	

Electron Research is offering:

Salary	\$48,000	
Medical Insurance: \$60/month	720	$60 \cdot 12$
Retirement: $2\frac{1}{2}\%$ of 48,000	1,200	$0.025 \cdot 48,000$
Educational expenses	1,200	
Travel allowance	1,200	$100 \cdot 12$
Total offer	\$52,320	

Aerotech's offer is slightly higher than Electron Research's.



TRY YOUR SKILLS

Fast Facts is a company that copies documents and creates brochures, charts, booklets, and other types of materials for other businesses. The company's compensation committee is submitting four possible fringe benefits options to the company's board of directors. For each employee and fringe benefits option,

- find the amount that Fast Facts must pay for extra taxes, retirement, health and life insurance, and other fringe benefits.
- find how much salary is paid for the given number of nonworking days in a total of 260 days.

	EMPLOYEE	SALARY	FRINGE BENEFITS OPTION
1.	Copier/collater	\$12,000	7.65% of gross for FICA taxes \$65/month for life and health insurance 26 nonworking days
2.	Clerk/receptionist	\$14,500	7.65% of gross for FICA taxes \$65/month for life and health insurance 2% of gross for retirement 24 nonworking days
3.	Graphics designer	\$33,000	7.65% of gross for FICA taxes \$65/month for life and health insurance 5% of gross for retirement \$1000/year for training 30 nonworking days
4.	Accountant	\$48,000	7.65% of gross for FICA taxes 5% of gross for retirement \$100/month for life and health insurance 15 vacation days and 6 holidays

For each of the following groups of employment opportunities,

- a. calculate the total amount of money being offered, including fringe benefits.
- b. determine which of the three positions offers the most money.

5.

Company	A	B	C
Salary	\$37,500	\$38,000	\$35,800
Retirement benefits	3.5% of gross pay	3% of gross pay	5% of gross pay
Medical insurance	\$55/month	\$45/month	\$50/month
Educational expense	\$500/year	\$800/year	\$1000/year
Travel allowance	\$2400/year	\$100/month	\$150/month

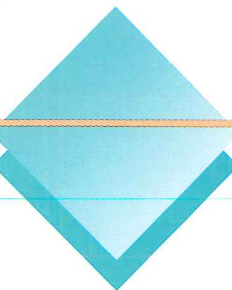
6.

Company	A	B	C
Salary	\$42,500	\$41,800	\$44,000
Stock options	5% of gross pay	6.5% of gross pay	4.5% of gross pay
Medical and life insurance	\$100/month	\$115/month	\$100/month
Car lease	\$250/month	\$280/month	\$240/month
Travel allowance	\$350/month	\$375/month	\$300/month

7. Mr. Grant receives a salary of \$34,000 and takes vacation days and holidays for 28 of the company's 242 operating days. How much of his salary is paid for the days during which he does not work?

EXERCISE YOUR SKILLS

1. What are some examples of jobs that are available even though people who are looking for employment cannot find jobs?
2. Why do you think that workers with a high school education change jobs more frequently than college-educated workers?
3. As an aid in answering some of your questions about a particular kind of job, it may be helpful to interview someone who is already working in that field. What are six questions that you might ask in such an interview?



KEY TERMS

FICA tax
fringe benefits
technology

For each company fringe-benefits policy described below,

- a. find the amount that the company must pay for extra taxes, retirement, health and life insurance, and other fringe benefits.
- b. find how much salary is paid for the given number of nonworking days in a total of 240 operating days.

	EMPLOYEE	SALARY	FRINGE-BENEFITS POLICY
4.	Computer operator	\$40,000	7.65% of gross for FICA taxes
			5% of gross for retirement
			\$100/month for life and health insurance
			\$2000/year for training
			24 nonworking days
5.	Delivery person	\$12,000	7.65% of gross for FICA taxes
			\$50/month for health insurance
			8 holidays and 4 sick days
6.	Office manager	\$56,000	7.65% of gross for FICA taxes
			\$150/month for life and health insurance
			\$200/month per diem expense allowance
			\$250/month car lease
			10% of gross in stock options
7.	Lab technician	\$28,000	18 nonworking days
			7.65% of gross for FICA taxes
			\$200/month for health insurance
8.	Theatre manager	\$35,000	26 nonworking days
			7.65% of gross for FICA taxes
			\$800/year for training
9.	Executive secretary	\$42,000	15 vacation days and holidays
			7.65% of gross for FICA taxes
			\$225/month for life and health insurance
10.	Copy Editor	\$25,000	8% of gross in stock options
			15 vacation days, 6 holidays
			7.65% of gross for FICA taxes
11.	Pharmacist	\$52,000	\$175/month for health insurance
			10 holidays and 10 vacation days
			7.65% of gross for FICA taxes
			\$275/month for health insurance
			6% of gross for retirement
			22 nonworking days

For each of the three employment opportunities A, B, and C,

- a. calculate the total amount of money being offered, including fringe benefits.
- b. determine which of the three positions offers the most money.

12.

Company	A	B	C
Salary	\$22,000	\$22,000	\$22,000
Retirement benefits	2% of gross pay	3% of gross pay	2.5% of gross pay
Medical insurance	\$25/month	\$20/month	\$40/month
Expense allowance	\$200/month	\$250/month	\$300/month

13.

Company	A	B	C
Salary	\$27,000	\$30,000	\$23,500
Retirement benefits	4% of gross pay	2% of gross pay	5% of gross pay
Medical insurance	\$100/month	none	\$150/month
Expense allowance	none	\$200/month	\$350/month

14.

Company	A	B	C
Salary	\$47,000	\$39,000	\$35,500
Retirement benefits	none	3.5% of gross pay	1% of gross pay
Medical insurance	\$50/month	\$125/month	\$200/month
Expense allowance	\$300/month	\$300/month	\$500/month

MIXED REVIEW

Write an equation of the form $E = rh + t$ where r represents the regular hourly rate, h represents the number of hours worked, and t represents any bonus or tip. Then find the weekly earnings for each of the following “employees.”

1. I am the gremlin who arranges for you to be stopped by every traffic light between your home and your job on any day that you are running a little late. I get paid only when I actually make you late for work. This week I worked 28 hours and got paid \$14.50 per hour. I get no bonuses because no one likes me.
2. I am the auto-focus camera that you took with you on your once-in-a-lifetime vacation to the South Seas. I worked for 32 hours at \$10.50 an hour helping you take 125 well-focused photos out of 128. I also received a \$35 bonus for one photo that earned you a prize in a local photography contest.

MIXED REVIEW (continued)

3.-4. Assume that the “employees” of Exercises 1–2 received overtime pay of $1\frac{1}{2}$ times their regular rate for all hours they worked over 20. Write an equation to represent their weekly earnings of the form

$$E = 20r + (h - 20) \cdot 1.5r + t$$

Where r represents the regular hourly rate, h represents the number of hours worked, and t represents any tip or bonus. Determine the total earnings for each employee.

Create a spreadsheet to calculate the hourly, weekly, monthly, and yearly earnings for each job described below.

40 hours = 1 workweek
52 weeks = 1 year
12 months = 1 year

5.

Do you know how to sell? Start with us at \$6.25/h and GROW!

6.

Laboratory Assistant
We are looking for a qualified worker trained in the daily operating procedures of a biotechnical laboratory. Two years experience desired but not necessary. Starting salary \$420/ week.

7.

COMPUTER PROGRAMMER
Experience required. Flexible hours can be arranged. Starting salary \$3,800/month.

