

## Middle School Edition

COMMONWEALTH OF PENNSYLVANIA



pennsylvania

DEPARTMENT OF LABOR &amp; INDUSTRY



# Introduction

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The ***Pennsylvania Career Guide*** has helped students and job seekers explore their career options for nearly 25 years. For the first time, the 2014-15 publication will be comprised of a series of three publications targeted to specific audiences – Intermediate School students, High School students and Adult Job Seekers. This customization allows the guides to better serve each audience by addressing their specific needs.

You are holding the very first Pennsylvania Career Guide: Middle School Edition. This guide is designed to introduce middle and intermediate school students to the wide variety of careers that await them in the future. Information in the publication will help students answer the age-old question: “What do you want to be when you grow up?”

To start, a quick interest assessment will examine the student’s interests and hobbies and match them to jobs that best fit their personalities. Students can learn more about those jobs in the Occupational Data Bank, which contains employment, wage, and job outlook information on more than 100 occupations in Pennsylvania.

There are also several articles that explore a variety of career options while giving students a realistic picture of the job market and dispelling some career myths. Jobs in the Natural Gas, Transportation and Manufacturing sectors are also highlighted to help students discover in-demand occupations that they may have not previously considered.

Activities are provided in the final section that allow the student to navigate through the articles and data provided in the guide. Overall, this publication provides the first steps toward helping young students make informed career decisions.





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# Getting To Know Yourself

## What do you want to be when you grow up?

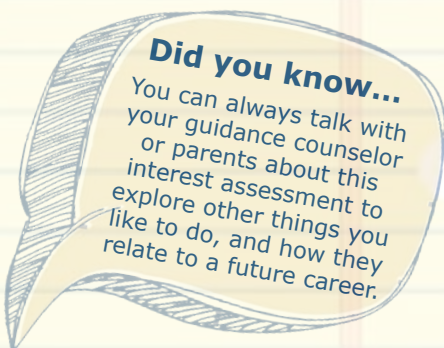
Planning for your future can be difficult. Where do you even begin? Well, the first step can always be to evaluate your own likes and dislikes, and find out what types of jobs fit your personality.

That's why we've provided a self-assessment tool to help you determine which careers are a good fit for you. The goal is to find a rewarding job that uses your unique set of skills, talents and abilities. People who choose careers that match their interests are more likely to achieve job satisfaction and success. However, self-assessments are just one part of the entire career puzzle. You should consider your results in combination with information from career counselors and other sources.

Let's get started.

### Step 1:

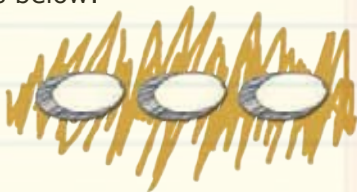
In each group, select the items that describe you. Then count up your choices in each column and fill in the total. Be as honest as you can. Remember: There are no wrong answers!



### Step 2:

Using your totals, identify the three letters that have the highest scores. Record them in the spaces below:

**My Interest Code**



### Step 3:

Descriptions for each of the six interest codes are found on page 8. Take a minute to read the descriptions for the areas that match your interest codes from Step 2.

# ARE YOU:

| - R -                                       | - I -                                | - A -  | - S -                                      | - E -                                | - C -                               |
|---|--------------------------------------|--|--|--------------------------------------|-------------------------------------|
| <input type="radio"/> Practical             | <input type="radio"/> Scientific     | <input type="radio"/> Imaginative            | <input type="radio"/> Helpful              | <input type="radio"/> Sociable       | <input type="radio"/> Orderly       |
| <input type="radio"/> Mechanically inclined | <input type="radio"/> Precise        | <input type="radio"/> Intuitive              | <input type="radio"/> Idealistic           | <input type="radio"/> Ambitious      | <input type="radio"/> Accurate      |
| <input type="radio"/> Shy or modest         | <input type="radio"/> Observant      | <input type="radio"/> Romantic               | <input type="radio"/> Generous             | <input type="radio"/> Witty          | <input type="radio"/> Conscientious |
| <input type="radio"/> Reliable              | <input type="radio"/> Curious        | <input type="radio"/> Creative               | <input type="radio"/> Cooperative          | <input type="radio"/> Argumentative  | <input type="radio"/> Efficient     |
| <input type="radio"/> A nature lover        | <input type="radio"/> Analytical     | <input type="radio"/> Independent            | <input type="radio"/> Friendly or cheerful | <input type="radio"/> Persuasive     | <input type="radio"/> Methodical    |
| <input type="radio"/> Athletic              | <input type="radio"/> Self-motivated | <input type="radio"/> Sensitive or emotional | <input type="radio"/> Responsible          | <input type="radio"/> Self-confident | <input type="radio"/> Careful       |

# CAN YOU:

|   |   |   |   |  |   |
|---|---|---|---|--|---|
| <input type="radio"/> Work on cars              | <input type="radio"/> Solve math problems     | <input type="radio"/> Play a musical instrument | <input type="radio"/> Teach others                  | <input type="radio"/> Convince others to see things your way | <input type="radio"/> Keep accurate records     |
| <input type="radio"/> Solve mechanical problems | <input type="radio"/> Conduct research        | <input type="radio"/> Act or perform            | <input type="radio"/> Mediate disputes              | <input type="radio"/> Lead a group                           | <input type="radio"/> Write a business report   |
| <input type="radio"/> Start a campfire          | <input type="radio"/> Analyze data            | <input type="radio"/> Write stories or poems    | <input type="radio"/> Lead a group discussion       | <input type="radio"/> Sell things or promote ideas           | <input type="radio"/> Make charts and graphs    |
| <input type="radio"/> Read a blueprint          | <input type="radio"/> Think abstractly        | <input type="radio"/> Dance                     | <input type="radio"/> Work with others              | <input type="radio"/> Entertain guests                       | <input type="radio"/> Operate office machines   |
| <input type="radio"/> Fix electronic equipment  | <input type="radio"/> Perform laboratory work | <input type="radio"/> Sketch, draw or paint     | <input type="radio"/> Plan or supervise an activity | <input type="radio"/> Manage people or products              | <input type="radio"/> Work well within a system |
| <input type="radio"/> Play a sport              | <input type="radio"/> Do complex calculations | <input type="radio"/> Work independently        | <input type="radio"/> Offer others guidance         | <input type="radio"/> Give talks or speeches                 | <input type="radio"/> Use a computer            |

# DO YOU LIKE TO:

|   |  |  |   |   |   |
|---|--|--|---|---|---|
| <input type="radio"/> Hunt or fish                | <input type="radio"/> Use computers                | <input type="radio"/> Decorate                       | <input type="radio"/> Do volunteer work             | <input type="radio"/> Belong to clubs                     | <input type="radio"/> Play board games                  |
| <input type="radio"/> Build or repair things      | <input type="radio"/> Read scientific magazines    | <input type="radio"/> Take photographs               | <input type="radio"/> Organize parties              | <input type="radio"/> Start or lead a social organization | <input type="radio"/> Collect items                     |
| <input type="radio"/> Operate tools and machinery | <input type="radio"/> Use a telescope              | <input type="radio"/> Attend concerts or plays       | <input type="radio"/> Play team sports              | <input type="radio"/> Meet important people               | <input type="radio"/> Work on home improvement projects |
| <input type="radio"/> Be physically active        | <input type="radio"/> Experiment or observe events | <input type="radio"/> Collect artwork                | <input type="radio"/> Babysit or work with children | <input type="radio"/> Make decisions affecting others     | <input type="radio"/> Build models                      |
| <input type="radio"/> Work outdoors               | <input type="radio"/> Play chess                   | <input type="radio"/> Read fiction, plays and poetry | <input type="radio"/> Be the center of attention    | <input type="radio"/> Win awards                          | <input type="radio"/> Work with numbers                 |
| <input type="radio"/> Use your hands              | <input type="radio"/> Work independently           | <input type="radio"/> Work on crafts                 | <input type="radio"/> Attend meetings               | <input type="radio"/> Run a political campaign            | <input type="radio"/> Be responsible for details        |

Total for "R" =

Total for "I" =

Total for "A" =

Total for "S" =

Total for "E" =

Total for "C" =

### **R = Realistic**

Skilled at working with tools, mechanical or electrical drawings, machines or plants and animals. Generally avoids social activities like teaching, healing and informing others. Sees self as practical, mechanical and realistic.

#### **Possible occupations include:**

- Welders (pg. 29)
- Electricians (pg. 27)
- Truck Drivers (pg. 29)
- Mechanical Engineers (pg. 30)

### **I = Investigative**

Good at understanding and solving science and math problems. Generally avoids leading, selling or persuading people. Sees self as precise, scientific and intellectual.

#### **Possible occupations include:**

- Pharmacy Technicians (pg. 28)
- Financial Analysts (pg. 30)
- Clinical & School Psychologists (pg. 30)
- Medical Scientists (pg. 30)

### **A = Artistic**

Strong in areas such as creative writing, drama, crafts, music or art. Generally avoids highly ordered or repetitive activities. Sees self as expressive, original and independent.

#### **Possible occupations include:**

- Architects (pg. 30)
- Graphic Designers (pg. 30)
- Hairstylists (pg. 30)
- Self-Enrichment Teachers (pg. 29)

### **S = Social**

Good at teaching, counseling, nursing or giving information. Generally avoids using machines, tools or animals to achieve a goal. Sees self as helpful, friendly and trustworthy.

#### **Possible occupations include:**

- Child Care Workers (pg. 27)
- Registered Nurses (pg. 29)
- Residential Advisors (pg. 30)
- Elementary School Teachers (pg. 30)

### **E = Enterprising**

Good at leading people and selling things or ideas. Generally avoids activities that require careful observation and scientific, analytical thinking. Sees self as energetic, ambitious and sociable.

#### **Possible occupations include:**

- Telemarketers (pg. 29)
- Real Estate Agents (pg. 29)
- Gaming Dealers (pg. 27)
- Public Relations Specialists (pg. 30)

### **C = Conventional**

Good at working with written records and numbers in a systematic, orderly way. Generally avoids ambiguous, unstructured activities. Sees self as orderly and good at following a set plan.

#### **Possible occupations include:**

- Billing Clerks (pg. 27)
- Library Assistants (pg. 28)
- Legal Secretaries (pg. 28)
- Cost Estimators (pg. 30)






# So You Want to Be a Star?



Many young people dream of fame in the entertainment or sports world. Yet the number of people aspiring to these glamorous jobs far outnumbers the actual openings. In the case of sports, experts estimate that only one out of every 1,000 high school senior athletes will make it to the pros. And even if you do get drafted, there's no guarantee you will become rich and famous.

If you excel at sports, don't give up on your dream – but be realistic at the same time. There are still many occupations that allow you to work in professional sports and stay close to the game you love. Here are just a few examples of sports-related careers you may want to consider and prepare for:

- **Broadcaster/Journalist** – Whether they are broadcasting the game live, recording a highlight reel for television or discussing trade deadlines in the newspaper or online, sports reporters and broadcasters are the eyes and ears of the people.
- **Photojournalist** – Uses a still or video camera to catch the action.
- **Coach/Umpire** – Requires a broad knowledge of the sport to teach and motivate players, or to observe and regulate the players' actions.
- **Facilities Manager** – Oversees the day-to-day operations of an arena or sporting venue.
- **Physical Therapist** – Develops exercise programs to help in the recovery from injuries and to prevent future injuries. A license is required to practice this occupation.
- **Sports Statistician** – Collects and analyzes sports data for individual games, seasons and careers. Sports announcers rely on statisticians for information.
- **Sports Turf Specialist** – Tends to grass in stadiums, golf courses and tennis courts.



This career guide includes information about many careers in Pennsylvania – both sports-related and non-sports related. Take a look at our Occupational Data Bank on pages **26** through **31** for more information about many of the occupations that are in demand throughout Pennsylvania

## High School Student Athletes



**Men's Basketball**

538,676  
Students



**Women's Basketball**

433,120  
Students



**Football**

1,086,627  
Students



**Baseball**

474,791  
Students



**Men's Ice Hockey**

35,198  
Students



**Men's Soccer**

411,982  
Students

## Odds High School Seniors to the Pros



**1 in 3,300**



**1 in 2,700**



**1 in 1,250**



**1 in 200**



**1 in 1,400**



**1 in 1,100**

**Drafted from NCAA**

- Men's Basketball 46
- Women's Basketball 32
- Football 254
- Baseball 678
- Men's Ice Hockey 7
- Men's Soccer 101

## High School Senior Athletes



**Men's Basketball**

153,907  
Students



**Women's Basketball**

123,749  
Students



**Football**

310,485  
Students



**Baseball**

135,491  
Students



**Men's Ice Hockey**

10,057  
Students



**Men's Soccer**

117,423  
Students



# How Entertainment Portrays Careers

What you do and how you think is influenced by print, television, radio and even social media. This phenomenon is the central philosophy behind advertising, and is the reason commercials, ads, and pop-ups exist. It should be no surprise then that the entertainment media also affects the sorts of careers you may find interesting and worthwhile.

It is perfectly normal for the careers you see depicted on television to have caused you to consider pursuing them. However, you don't always see the details surrounding the career, just the parts of the job that are entertaining to watch on television. Shows like *NCIS*, *Law & Order*, and *Grey's Anatomy* portray their characters with action, suspense, and drama. All of these things you may find enjoyable, but all may be lacking if you decide to follow the career yourself. Lawyers spend countless hours reading and doing research prior to the few hours a month they may stand in a courtroom. Police officers have to fill out paperwork and document events and evidence, something typically passed over for a more dramatic car chase on TV. These are not bad jobs, but the nature of work is portrayed inaccurately, and we wouldn't want you to pursue your future career with unrealistic expectations.

"Reality television" perpetuates these issues as well. Channels like A&E with shows *Duck Dynasty* and *Storage Wars*, or Food Network with all of their cooking shows, give a false sense that all you have to do is cook or make duck calls or bid on storage units and you can become rich and successful overnight. They don't show the amount of work people have to go to **sell** all the junk they acquired in the storage lockers. They also gloss over the years chefs put into learning their craft and honing their skill prior to going on TV.

On the next page is a list of careers that you might have seen on TV or in a movie. They are all good careers with promising outcomes for those who work hard at them. All of these occupations have a few things in common: only the highlights or most glamorized parts of the jobs are shown on TV and movies, and the amount of new people hired in these jobs tends to be small, making them very difficult and competitive to break into.

If you are interested in any of these careers, find out as much as you can about them. Use O\*Net ([www.onetonline.org](http://www.onetonline.org)) to learn about working conditions, training requirements and similar occupations. Also, please look closely at the Occupational Data Bank on pages **26** through **31**. Increasing your exposure to additional occupations may lead you in a new direction when planning for your future.

## Average Incomes



**Chefs** \$43,090



**Detectives** \$51,950



**Psychologists** \$73,670



**Psychiatrists** \$191,810



**Fashion Designers** \$55,500



**Kindergarten Teachers** \$55,500



**Agents** \$69,700

## Annual Openings & Education Requirements



**104** - Related work experience required



**99** - Postsecondary degree plus work experience



**251** - Doctoral degree required



**46** - Doctoral degree required



**7** - Long-term on-the-job experience



**198** - Bachelor's degree required



**N/A** - Bachelor's degree plus work experience

# *Have A Career In Mind, Try It Out First*

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## **Find something you enjoy doing, then find a way to get paid for doing it.**

That was the simple, yet profound, advice a mentor once offered his young student. Too often, however, students decide on a high-paying or high-prestige job first, then try to make themselves “like” the job or the education they need to do it. Or they choose an occupation based on what sounds good, what is popular, or what someone else wants them to pursue, rather than a career that’s actually something they’d enjoy doing.

The key is to learn more about various occupations and determine which ones you would enjoy. But if you’re still in school how do you do that? Luckily, there are several ways to learn about fields you might find interesting.

### **Community Agencies**

If there is a YMCA, YWCA, community center, township center or similar agency in your community, check to see what type of classes they offer. This is a way for you gain exposure to a wide range of experiences, one of which could inspire you enough to consider a career in the field.

### **Volunteer Work**

While it doesn’t provide a paycheck, volunteering is another way to learn about a field before deciding to pursue it as a career. Many employers welcome enthusiastic volunteers who offer their time in exchange for work experience. Charities and community organizations are a great way to gain experience, learn new skills and build your résumé, all while helping your local community.

### **Job Shadowing**

Job shadowing allows you to directly observe someone at work. You can observe first-hand the day-to-day activities you would be performing in a particular job and learn what skills you would need to obtain it. Job shadowing also gives you a chance to ask any questions you might have about the job and how to prepare for it.

### **School Clubs**

Many schools have clubs that focus on specific careers and cater to students interested in those fields. Student clubs often host guest speakers, arrange workplace tours and sponsor trips to conferences

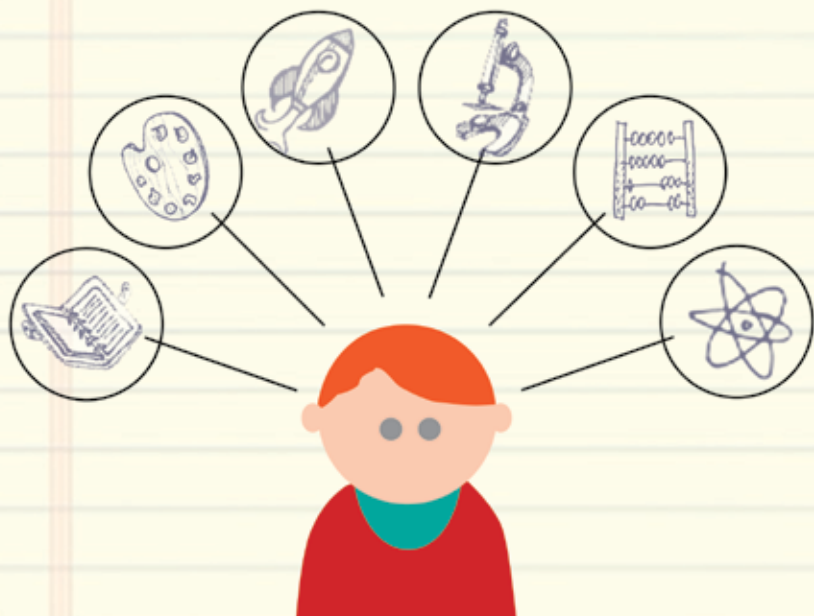
and competitions – all of which are excellent opportunities for asking questions about a specific field, résumé building and networking. If your high school doesn't have the club you are looking for, talk to a teacher or guidance counselor about starting one.

### **Part-time Employment**

A part-time job offers many advantages beyond earning some extra money. It's also a way to gain valuable experience in a particular field – experience that will allow you to judge whether you'd like to make the job your career. As a bonus, performing well at your job will earn you good references and transferable skills for future employment. In Pennsylvania, your job choices will be limited until you reach age 16 and in some cases, age 18.

***"One important key to success is self-confidence.  
An important key to self-confidence is preparation."***

***– Arthur Ashe***



# *Spotlight on Natural Gas Occupations*

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## **Natural gas...**

- Supplies about 24 percent of all energy used in the U.S.
- Heats more homes in the U.S. than electricity
- Flows through about 2.2 million miles of underground pipelines
- Travels through pipelines at 15 miles per hour
- Has no odor in its natural state (utility companies add a chemical odorant to help make gas leaks more noticeable)

## **Why should I consider a natural gas occupation?**

Natural gas is the most rapidly growing industry in Pennsylvania. More than 24,000 employees are currently working in occupations related to natural gas and 1,300 job openings are expected every year. The majority of these jobs are located in the Marcellus Shale region (northern and western parts of Pennsylvania). Advances in extraction technology have made the recovery of shale gas deposits buried 9,000 feet below ground both possible and economically viable. As a result, Pennsylvania has seen an increase in good-paying jobs and can expect decades of residual workforce and economic benefits.

## **What can I expect in natural gas careers?**

The drilling of a single well requires about 400 people working in nearly 150 different occupations. Most entry-level positions require little more than a high school diploma. New employees gain knowledge and learn job skills by working alongside more experienced workers through a significant period of on-the-job training. Once training has been completed, these occupations typically pay well, making natural gas careers an attractive option for students whose plans do not include postsecondary education or college.

Since oil and gas drilling rigs usually operate 24 hours a day/7 days a week, employees may work daytime, evening or overnight hours, and in some cases, rotating shifts. While an 8-hour shift is the standard, it's not uncommon for employees to work as many as 12 hours in a shift. Part-time work is rare and overtime is abundant. Many natural gas employees work in remote locations outdoors and around heavy machinery.

In this field, employers are looking for mechanically-inclined candidates with strong knowledge in mathematics, public safety & security and production & processing. Many natural gas occupations can be labor-intensive, so candidates should be in very good physical condition. Candidates that possess higher-level skills in equipment maintenance, critical thinking, operation & control, quality control & analysis and troubleshooting are more desirable to prospective employers.



## What are some of the occupations and what do they normally do?

### **Derrick Operators, Oil & Gas**

Rig derrick equipment and operate pumps to circulate mud through drill hole.

### **Rotary Drill Operators, Oil & Gas**

Set up or operate a variety of drills to remove underground oil and gas, or remove core samples for testing during oil and gas exploration.

### **Service Unit Operators, Oil, Gas & Mining**

Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools or other obstructions from drilling wells. May also perform similar services in mining exploration operations.

### **Explosives Workers & Blasters**

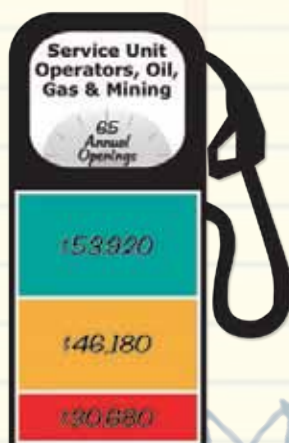
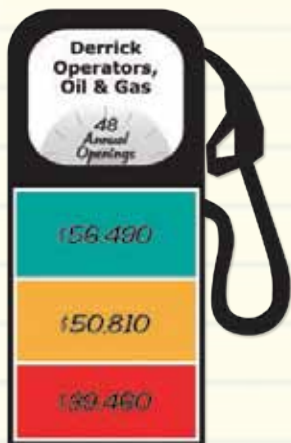
Place and detonate explosives to demolish structures or to loosen, remove or displace earth, rock or other materials. May perform specialized handling, storage and accounting procedures.

### **Roustabouts, Oil & Gas**

Assemble or repair oil field equipment using hand and power tools.

### **Welders, Cutters, Solderers & Brazers**

Use hand-welding, flame-cutting, hand soldering or brazing equipment to weld or join metal components or to fill holes, indentations or seams of fabricated metal products.

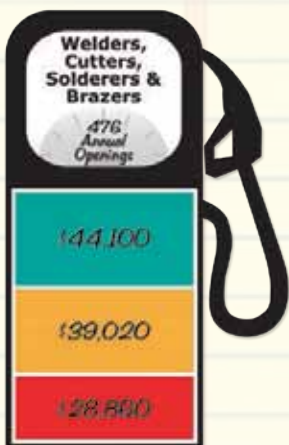
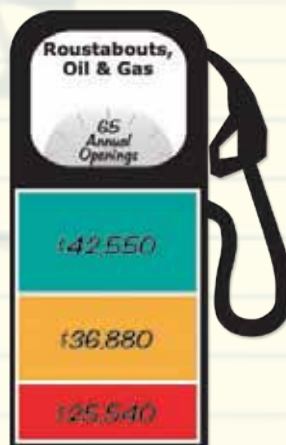


## Natural Gas Occupations

 Experienced Level Wage

 Average Annual Wage

 Entry Level Wage





# Spotlight on Manufacturing

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## Career Spotlight: Manufacturing Your Future

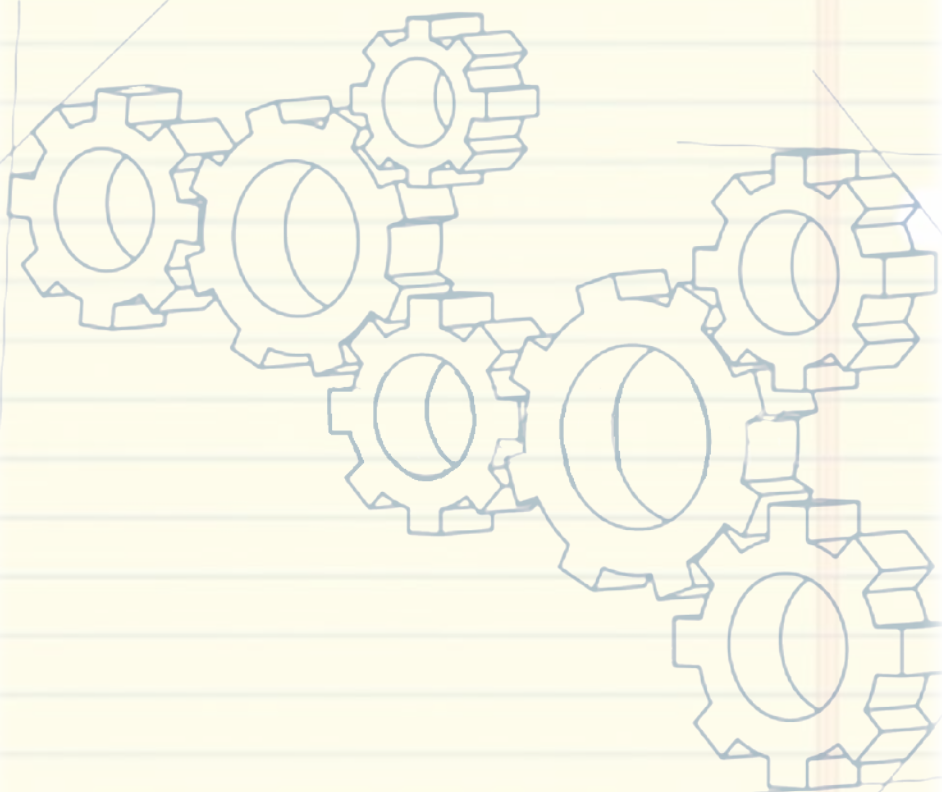
Today's careers in manufacturing are clean, filled with high technology, automation and robots. Manufacturing offers excellent process-improvement strategies to lead the country out of its economic downturn, employing a highly skilled, highly motivated workforce. The industry is filled with high-demand and rewarding occupations. Whether your interests lie in improving the layout and efficiency of a company through industrial engineering, or in designing custom tools that enable a company to produce its product as a tool and die maker, the manufacturing sector has something for you.

According to the "Blue Green Alliance Clean Energy Assembly Line Report 2009," more than 42,000 existing manufacturers could experience growth based on increased demand for component parts needed to produce clean energy, with Pennsylvania ranking among the top six states with the potential to create such jobs. Manufacturing industries in Pennsylvania are also very important to the natural gas sector. Machinery and replacement parts are necessary to maintain rigs, and an industry already prevalent in the state (plastics) can grow stronger as a number of chemicals required to make them are by-products of the Marcellus Shale drilling.

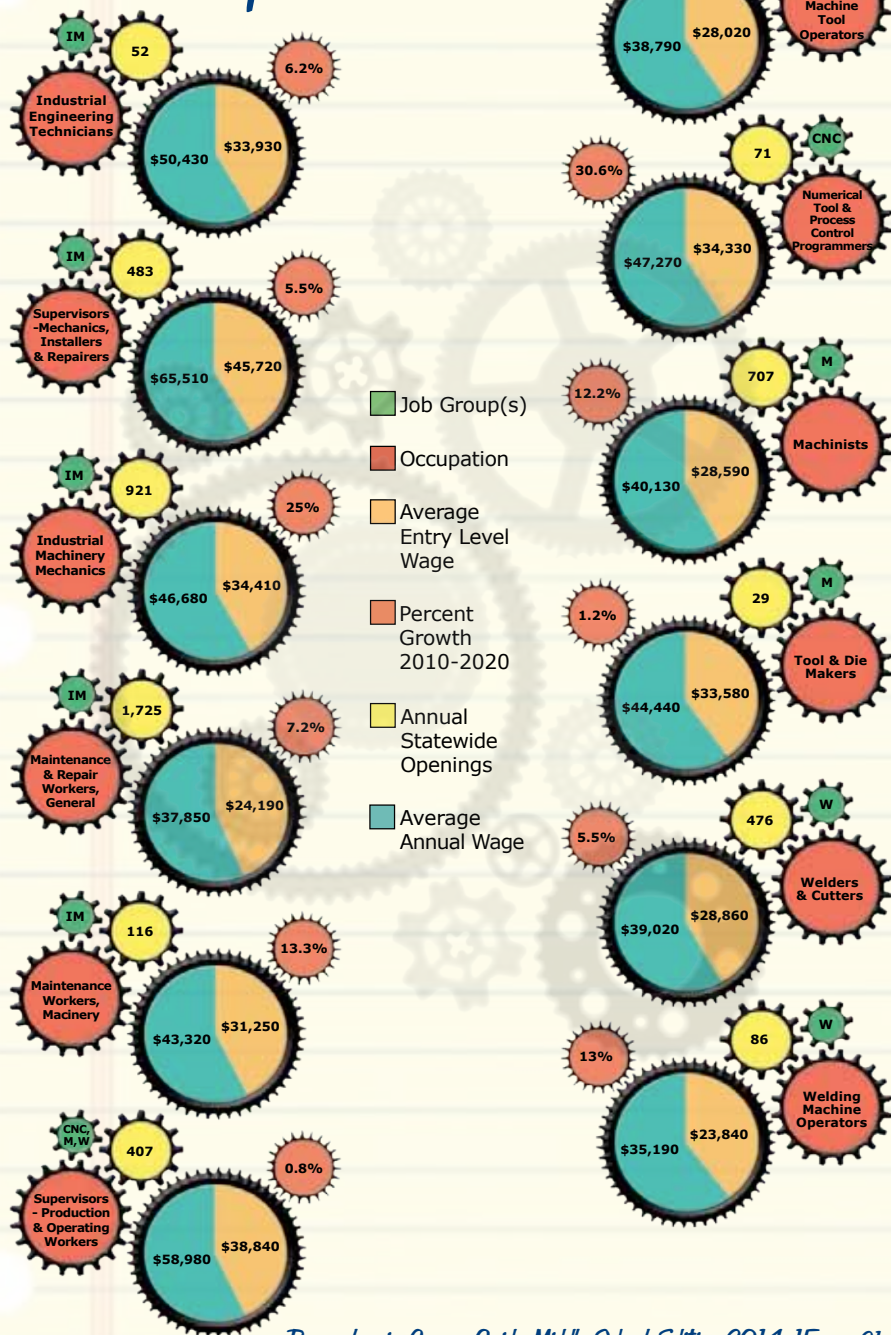
Faced with an aging workforce, and not enough skilled and adaptable workers to replace them as they retire in the coming years, manufacturing companies are eager to hire and train highly motivated individuals in key occupations: industrial maintenance (IM), CNC operations (CNC), machining (M) and welding (W). Industrial maintenance focuses on the careers that install, repair and perform maintenance on industrial machinery. CNC operators manufacture products by using computer-controlled machines and robots. Machining occupations require individuals to operate or program machine tools to produce a variety of products. Welding workers weld, braze and solder to manufacture products. The graphic on page 21 highlights 12 specific occupations across the four occupational groups.

Nearly 170,000 people work in these demand occupations throughout Pennsylvania. Projections indicate that there will be more than 4,500 openings each year across these occupations.

These 12 in-demand jobs require some postsecondary education and training, ranging from a year of on-the-job training to an associate degree. For many of these occupations, training is acquired through an apprenticeship, which often transfers to college credit. Industry-recognized credentials, such as those offered by the National Institute for Metalworking Skills (NIMS), are growing in popularity and often provide a benchmark by which an employer can qualify an individual with prior experience, and by which a postsecondary institution can justify the awarding of advanced-placement credit. With the right education and training, you can start on a career path that offers good pay, opportunities for growth and skills that are in high demand. Additionally, the knowledge you gain may lead to college credit, opening new doors for your manufacturing career.



# Select Manufacturing Occupations



## Spotlight on Transportation



Pennsylvania is the transportation corridor of the Northeast. Our ports, rail systems and highways make us highly competitive in the warehousing and shipment of goods. As these services become increasingly mechanized, a qualified workforce is vital to development efforts. More than one out of every three occupations in the transportation cluster is that of a truck driver, including both heavy-and light-truck drivers.

As the natural gas industry grows in Pennsylvania, the transportation cluster will also benefit. Heavy equipment and supplies such as cement, sand, water and wastewater are required for pipeline drilling and construction. Since natural gas drilling sites are often in undeveloped areas, the equipment and supplies must be transported to drilling sites by way of trucks and rail cars. This increased emphasis on transportation not only affects drivers and locomotive engineers, but also related occupations such as packers, laborers, mechanics, stock clerks and dispatchers.

The educational requirement for entry-level transportation occupations is usually a high school diploma. Upon hire, workers gain job knowledge through a considerable amount of on-the-job training. Transportation occupations that focus on driving vehicles weighing more than 26,000 pounds and/or transport large quantities of hazardous materials require a Commercial Driver's License (CDL). In many cases, the hiring company offers training to assist new employees in obtaining their CDL.

Employers look for mechanically-inclined candidates with strong knowledge in transportation, public safety & security and production & processing. Many occupations in the transportation industry include loading/unloading freight, so candidates should be in good physical condition. Occupations that focus on driving require candidates to meet vision and hearing requirements, and possess good hand-eye coordination. Drivers must maintain a clean driving record, and CDL drivers are subject to random drug & alcohol testing while on the job, as per federal regulations.



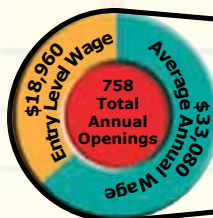
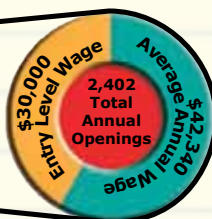


# Transportation Occupations

## Truck Drivers, Heavy & Tractor-Trailer

WK EXP  
Education  
Attainment

Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 lbs. Gross Vehicle Weight (GVW). May unload truck. Requires a CDL.



Drive a vehicle, such as a truck or van, with a capacity of less than 26,000 lbs. Gross Vehicle Weight (GVW), primarily to deliver or pick-up merchandise or to deliver packages. May load and unload vehicle.

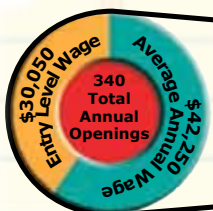
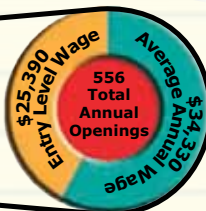
ST OJT  
Education  
Attainment

## Truck Drivers, Light

## Industrial Truck & Tractor Operators

ST OJT  
Education  
Attainment

Operate industrial equipment to move materials around a warehouse, storage yard, factory, construction site or similar location.



Diagnose, adjust, repair or overhaul buses and trucks, or maintain and repair any type of diesel engines.

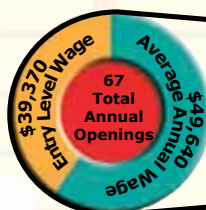
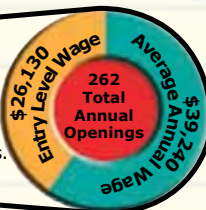
LT OJT  
Education  
Attainment

## Bus & Truck Mechanics & Diesel Engine Specialists

## Dispatchers

MT OJT  
Education  
Attainment

Schedule and dispatch workers, work crews, equipment or service vehicles for conveyance of materials, freight or passengers, or for normal installation, service or emergency repairs rendered outside the place of business.



Drive electric, diesel-electric, steam or gas-turbine-electric locomotives to transport passengers or freight. Interpret train orders, electronic or manual signals and railroad rules and regulations.

WK EXP  
Education  
Attainment

## Locomotive Engineers

# Getting There

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## What is career and technical education?

Career and technical education, or CTE, provides high school students with skills and education needed for successful employment graduation. Nearly half of the jobs in today's labor market require some form of advanced technical training. CTE programs and two-year college programs can help you with that training.

CTE programs offer a sequence of courses, as well as work-based experiences, such as internships or apprenticeships. These work-based experiences are offered during your senior year in high school, as long as you meet your local requirements.

Through these work-based experiences, CTE students have the opportunity to earn recognized industry credentials while still in high school. These credentials, in turn, can help students find jobs and be successful within their field of study. Research shows that students who enroll in a CTE program have a higher likelihood of finding a paid job and of attending a postsecondary CTE school in the early years after high school.

## How do I learn more about career and technical education?

The first step would be to talk to your school counselor, teacher, or parents about whether this type of education fits in with your career plans. If possible, visit a nearby CTE school and see firsthand what it offers.

## Pennsylvania Skills Certificate

If you pursue career and technical education in high school, you will graduate with a diploma and education in a specific career. However, earning your Pennsylvania Skills Certificate signals to potential employers that you have the skills to get the job done. To earn your certificate, you must complete a test that demonstrates your knowledge and technical abilities in your career program. Your teacher or counselor can provide you with more information.

## Benefits of CTE Programs of Study:

- Saving money on college tuition
- Saving time by shortening college attendance
- Getting on the right career pathway
- Entering the job market ready
- Getting an education

### **Will I be able to find a job with my CTE skills that pays well?**

Absolutely! Many occupations that require career and technical education pay living wages, and are expected to grow over the next ten years. Electricians, plumbers, pipe fitters, machinists, tool & die makers, maintenance mechanics and sheet metal workers are just a few of the CTE jobs that pay well and will continue to be in demand in Pennsylvania.

**To learn more about the different careers in  
Pennsylvania visit the PA Career Zone.  
[www.pacareerzone.com](http://www.pacareerzone.com)**



## *Using the Occupational Data Bank*

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As you consider your future occupation, many questions will arise. Does the job fit my interests and abilities? What does the job pay? How much competition will there be for openings? What kind of training will I need?

Our Occupational Data Bank (ODB) answers many of these questions. Information is provided for more than 130 occupations, which employ a large portion of Pennsylvania's workforce. To access similar data for other occupations or a specific area, please contact the Center for Workforce Information & Analysis (CWIA) at 877-4WF-DATA or by email at [workforceinfo@pa.gov](mailto:workforceinfo@pa.gov).

The ODB provides a closer look at occupations requiring a diverse range of education and experience. If you are unable to locate a specific occupation or would like more comprehensive information, check out the O\*Net website at [www.onetonline.org](http://www.onetonline.org).

| Occupation Title   | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|--|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon W: Requiring Short, Moderate, or Long-Term On-the-Job Training</b> |               |                   |                  |              |
| Administrative Assistants  | CES           | 331               | \$37,140         | \$52,420     |
| Advertising Sales Agents   | ECS           | 200               | \$25,820         | \$55,150     |
| Amusement & Recreation Attendants  | RCE           | 878               | \$16,790         | \$19,780     |
| Automotive Body Repairers  | R             | 192               | \$28,210         | \$40,430     |
| Automotive Mechanics   | R             | 1,178             | \$23,210         | \$37,260     |
| Bakers   | R             | 268               | \$18,190         | \$25,980     |
| Bill & Account Collectors  | CE            | 553               | \$24,140         | \$35,070     |
| Billing Clerks   | C             | 827               | \$25,640         | \$33,910     |
| Bookkeeping & Accounting Clerks  | C             | 1,276             | \$24,130         | \$36,380     |
| Brick- & Blockmasons   | R             | 126               | \$34,290         | \$49,520     |
| Bus & Truck Mechanics  | R             | 340               | \$30,050         | \$42,250     |
| Butchers   | R             | 228               | \$22,640         | \$32,090     |
| Carpenters   | R             | 1,498             | \$28,870         | \$44,370     |
| Cashiers   | CER           | 6,747             | \$16,890         | \$19,570     |
| Child Care Workers   | S             | 2,303             | \$16,810         | \$20,470     |
| Claims Adjusters   | EC            | 352               | \$41,550         | \$61,830     |
| CNC Machine Operators  | R             | 308               | \$28,020         | \$38,790     |
| Coaches & Scouts   | ERS           | 355               | \$16,930         | \$33,300     |
| Construction Laborers  | R             | 1,547             | \$22,420         | \$35,130     |
| Cooks & Food Preparation Workers   | R             | 1,225             | \$16,790         | \$21,410     |
| Correctional Officers  | RS            | 500               | \$36,680         | \$48,430     |
| Counter & Rental Clerks  | CER           | 536               | \$17,770         | \$29,130     |
| Customer Service Representatives   | CES           | 3,709             | \$22,490         | \$34,070     |
| Dispatchers  | CR            | 262               | \$26,130         | \$39,240     |
| Electr. Equipment Assemblers   | R             | 121               | \$21,240         | \$31,990     |
| Electrical Power-Line Installers   | R             | 190               | \$50,640         | \$67,200     |
| Electricians   | R             | 683               | \$34,750         | \$53,990     |
| Equipment Cleaners   | R             | 398               | \$16,860         | \$23,350     |
| Extruding Machine Setters  | R             | 100               | \$26,820         | \$36,680     |
| Farmworkers  | R             | 1,068             | \$16,760         | \$24,680     |
| File Clerks  | C             | 144               | \$19,450         | \$27,800     |
| Fitness Trainers   | SRE           | 271               | \$17,400         | \$28,710     |
| Food & Beverage Servers  | SRE           | 724               | \$16,800         | \$20,430     |
| Gaming Dealers   | EC            | 135               | \$16,650         | \$27,210     |
| General Laborers   | R             | 4,437             | \$19,340         | \$28,990     |

| Occupation Title   | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|--|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon W: Requiring Short, Moderate, or Long-Term On-the-Job Training</b> |               |                   |                  |              |
| General Office Clerks  | CRE           | 3,274             | \$19,650         | \$30,610     |
| Highway Maintenance Workers  | R             | 206               | \$24,690         | \$37,170     |
| Home Health Aides  | SRC           | 3,184             | \$16,770         | \$20,750     |
| Hotel Desk Clerks  | CES           | 460               | \$16,880         | \$21,350     |
| Human Resources Clerks   | CES           | 194               | \$25,770         | \$36,770     |
| HVAC Mechanics   | R             | 542               | \$30,570         | \$45,650     |
| Industrial Machinery Mechanics   | R             | 556               | \$25,390         | \$34,330     |
| Industrial Truck & Tractor Operators   | R             | 864               | \$24,560         | \$33,590     |
| Inspectors & Testers   | RC            | 640               | \$26,260         | \$39,690     |
| Insurance Claims Clerks  | CES           | 373               | \$29,400         | \$39,920     |
| Insurance Sales Agents   | ESC           | 577               | \$32,450         | \$71,320     |
| Janitors & Cleaners  | R             | 2,541             | \$17,970         | \$26,280     |
| Landscapers & Groundskeepers   | R             | 1,479             | \$19,390         | \$27,900     |
| Legal Secretaries  | CE            | 132               | \$31,140         | \$43,890     |
| Library Assistants   | CR            | 236               | \$16,950         | \$24,060     |
| Loan Officers  | ESC           | 203               | \$39,570         | \$70,980     |
| Machinists   | R             | 707               | \$28,590         | \$40,130     |
| Maids & Housekeepers   | R             | 1,652             | \$16,790         | \$21,240     |
| Maintenance Helpers  | R             | 182               | \$18,800         | \$26,390     |
| Medical Assistants   | SCR           | 819               | \$23,360         | \$29,990     |
| Medical Secretaries  | CE            | 792               | \$24,170         | \$31,490     |
| Mobile Heavy Equipment Mechanics   | R             | 166               | \$36,780         | \$48,360     |
| Non-farm Animal Caretakers   | RS            | 183               | \$16,780         | \$20,680     |
| Non-Retail Sales Supervisors   | ECS           | 181               | \$54,150         | \$104,270    |
| Nursing Aides  | SRE           | 2,160             | \$22,020         | \$27,850     |
| Operating Engineers  | R             | 784               | \$32,620         | \$47,220     |
| Order Clerks   | CES           | 287               | \$18,990         | \$29,250     |
| Packaging Machine Operators  | R             | 440               | \$21,980         | \$33,150     |
| Packers & Packagers  | R             | 1,220             | \$17,850         | \$25,420     |
| Painters   | R             | 259               | \$28,080         | \$40,970     |
| Parts Salespersons   | ERC           | N/A               | \$21,210         | \$32,210     |
| Payroll & Timekeeping Clerks   | CER           | 271               | \$28,490         | \$38,360     |
| Personal Care Aides  | SRE           | 2,120             | \$16,990         | \$21,580     |
| Pharmacy Technicians   | CRI           | 317               | \$21,240         | \$29,320     |
| Plumbers & Pipefitters   | R             | 481               | \$35,330         | \$53,460     |

| Occupation Title   | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|--|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon W: Requiring Short, Moderate, or Long-Term On-the-Job Training</b> |               |                   |                  |              |
| Police Officers  | RES           | 957               | \$39,580         | \$60,130     |
| Postal Mail Carriers   | CR            | 458               | \$39,080         | \$50,580     |
| Procurement Clerks   | C             | 106               | \$28,450         | \$39,410     |
| Production Helpers   | R             | 577               | \$20,110         | \$27,740     |
| Purchasing Agents  | EC            | 336               | \$41,700         | 63,330       |
| Real Estate Agents   | ERI           | 192               | \$32,220         | \$57,750     |
| Receptionists  | CES           | 1,584             | \$19,300         | \$26,590     |
| Refuse Collectors  | R             | 205               | \$18,630         | \$32,100     |
| Registered Nurses  | SIR           | 4,800             | \$49,650         | \$66,010     |
| Retail Salespersons  | ES            | 7,036             | \$16,910         | \$25,950     |
| Sales Representatives  | ERS           | 1,949             | \$34,210         | \$63,690     |
| Sales Route Drivers  | ERS           | 422               | \$16,780         | \$26,990     |
| School Bus Drivers   | RSC           | 643               | \$18,760         | \$28,560     |
| Secretaries  | CES           | 2,256             | \$22,400         | \$32,720     |
| Security Guards  | SEC           | 1,167             | \$18,220         | \$25,400     |
| Self-Enrichment Teachers   | SA            | 282               | \$21,310         | \$39,420     |
| Shipping & Receiving Clerks  | CR            | 785               | \$23,190         | \$32,890     |
| Social & Human Service Assistants  | SC            | 915               | \$20,660         | \$28,150     |
| Stock Clerks   | CRE           | 2,344             | \$16,920         | \$24,270     |
| Substance Abuse Counselors   | S             | 366               | \$27,290         | \$39,450     |
| Taxi Drivers & Chauffeurs  | R             | 283               | \$17,350         | \$23,520     |
| Teacher Assistants   | SC            | 1,134             | \$17,900         | \$30,740     |
| Team Assemblers  | RC            | 843               | \$21,020         | \$30,740     |
| Telecommunications Line Installers & Repairers   | R             | 169               | \$34,060         | \$54,920     |
| Telemarketers  | ECS           | 204               | \$17,340         | \$26,920     |
| Truck Drivers, Heavy   | R             | 2,402             | \$30,000         | \$42,340     |
| Truck Drivers, Light   | R             | 758               | \$18,960         | \$33,080     |
| Ushers & Lobby Attendants  | SCE           | 257               | \$16,780         | \$21,560     |
| Welders  | R             | 476               | \$28,860         | \$39,020     |

| Occupation Title   | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|--|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon T: Requiring Postsecondary Training through a Technical School or Associate Degree</b> |               |                   |                  |              |
| Dental Assistants  | SRE           | 357               | \$24,350         | \$33,420     |
| Dental Hygienists  | SCR           | 350               | \$46,560         | \$60,940     |
| Emergency Medical Technicians  | SRI           | 683               | \$22,330         | \$32,150     |
| Hairstylists   | EAS           | 1,310             | \$17,700         | \$25,910     |
| HVAC Mechanics   | R             | 455               | \$31,300         | \$45,270     |
| Licensed Practical Nurses  | SRI           | 1,615             | \$33,010         | \$42,880     |
| Medical Laboratory Technicians   | RIC           | 303               | \$28,060         | \$38,650     |
| Paralegals   | ECS           | 314               | \$35,550         | \$54,530     |
| Preschool Teachers   | SA            | 586               | \$19,680         | \$27,800     |
| Residential Advisors   | S             | 346               | \$19,550         | \$26,130     |

| Occupation Title  | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|---|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon C: Jobs Requiring at least Four Years of Education in College</b> |               |                   |                  |              |
| Accountants & Auditors  | CE            | 2,294             | \$43,180         | \$70,380     |
| Architects  | ARI           | 124               | \$50,610         | \$83,840     |
| Civil Engineers   | RIC           | 589               | \$55,090         | \$81,600     |
| Clinical & School Psychologists   | ISA           | 251               | \$43,040         | \$73,670     |
| Cost Estimators   | CE            | 536               | \$41,420         | \$61,120     |
| Education Administrators  | SEI           | 202               | \$72,830         | \$98,150     |
| Elementary School Teachers  | S             | 1,474             | \$40,990         | \$60,000     |
| Financial Analysts  | ICE           | 418               | \$46,540         | \$76,120     |
| Graphic Designers   | AER           | 329               | \$29,540         | \$46,360     |
| Industrial Engineers  | EIR           | 438               | \$57,200         | \$81,520     |
| Lawyers   | E             | 844               | \$64,480         | \$134,250    |
| Logisticians  | EC            | 188               | \$47,770         | \$71,260     |
| Management Analysts   | CEI           | 691               | \$52,980         | \$88,390     |
| Mechanical Engineers  | RI            | 478               | \$56,050         | \$83,010     |
| Medical Scientists  | IRS           | 150               | \$55,630         | \$95,920     |
| Mental Health Counselors  | S             | 610               | \$29,720         | \$43,110     |
| Middle School Teachers  | S             | 570               | \$43,320         | \$58,950     |
| Occupational Therapists   | SRI           | 190               | \$53,000         | \$72,180     |
| Pharmacists   | IC            | 423               | \$84,570         | \$107,420    |
| Physicians & Surgeons   | IES           | 574               | \$106,020        | \$194,690    |

| Occupation Title  | Interest Code | Openings per Year | Entry-Level Wage | Average Wage |
|---|---------------|-------------------|------------------|--------------|
| <b>Career Path Icon C: Jobs Requiring at least Four Years of Education in College</b> |               |                   |                  |              |
| Postsecondary Teachers  | SI            | 88                | \$45,010         | \$73,320     |
| Public Relations Specialists  | EAS           | 344               | \$33,620         | \$661,760    |
| Recreation Workers  | SAR           | 290               | \$17,070         | \$25,970     |
| Rehabilitation Counselors   | S             | 254               | \$24,290         | \$38,360     |
| Secondary School Teachers   | S             | 1,329             | \$44,650         | \$61,470     |
| Securities Sales Representatives  | ECS           | 391               | \$36,280         | \$95,550     |
| Social Workers  | S             | 25                | \$43,700         | \$62,160     |
| Special Education Teachers  | SA            | 158               | \$43,120         | \$61,070     |
| Vocational & School Counselors  | S             | 296               | \$34,090         | \$54,040     |

# Media Activity

**List three of your favorite television shows:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**From these TV series, list 3 characters and the job or occupation they are supposed to have:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Of these, pick the one career that interests you the most, and write a paragraph about why you think you would like the job.**

If this career is not listed in this booklet (pages *26* to *31*) use [www.onetonline.org](http://www.onetonline.org) to determine the following information:

Average wage: \_\_\_\_\_

Education required: \_\_\_\_\_

Number of job openings: \_\_\_\_\_

Description of work environment: \_\_\_\_\_

Short job description: \_\_\_\_\_

Compare the above information with the paragraph you wrote based off of your perception of the career. What aspects of the job are portrayed accurately on tv, and which appear innacurate? How well does the TV character portray a typical worker in that job? Are you still interested in the career? Why or why not?



# *A Career Interview Activity*

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## **What do you do for a living?**

**Overview:** Select one occupation from the databank within this booklet. (Pages 26 to 31). Research the occupation with the interview questions below in mind. After the research is complete, record the answers.

**Research Source:** O\*Net OnLine - <http://www.onetonline.org/>

## **The Interview**

1. What are some of the main tasks your job entails?
2. Where are the conditions of your typical workplace?
3. What equipment or tools are necessary to perform your job duties?
4. Who do you most interact with while performing your job?
5. What skills and training are necessary to your job?
6. What do you like most about your job?
7. What do you like least about your job?

# Notes

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*Compliments of*  
**State Representative**  
**Dan Deasy**  
*27th Legislative District*

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[www.pacareercoach.org](http://www.pacareercoach.org)

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