ELEMENTARY CAREER STUDIES
Teacher Notes

Elementary career studies emphasize career awareness and exploration – not career choice. Career exploration at the elementary school level should allow children to become more self-aware of their skills, abilities and interests and how those traits relate to future career goals. Integrating career conversations across the curriculum allows students to connect the classroom to the real world. The goal of elementary career studies is to provide:

- equal access to career exploration
- opportunities to explore interests, abilities, values and goals
- develop the mindset that learning is lifelong for any career they pursue

CAREER EXPLORATION CONTINUUM

PRIMARY GRADES

Students in kindergarten and 1st grade should be introduced to careers in their community. Students in the 2nd and 3rd grade can understand the similarities and differences between groups of careers making this an ideal time to introduce the **sixteen (16) career clusters**. This organizational framework is important to future career development and understanding future career pathways. INTERMEDIATE GRADES

Rather than focusing on a career, students in the 4th and 5th grades should begin the process of self-discovery through exploring the knowledge, skills and working environments common to careers within the 16 clusters. The resource within this document, "Dig Deeper," provides sample tasks that allow students to explore those skills and knowledge. The resource, "Is a Career in *(cluster)* for Me?" guides students to reflect to determine their interest in this cluster.

USING THIS DOCUMENT

These activities do not constitute a curriculum, rather they provide a variety of activities to be used within the context of a career studies program that spans K-5. Resources progress by grade level from kindergarten to 5th grade and may be modified to meet student needs. For each cluster, instructional routines may include:

- **Engage** students through videos, online activities, guest speakers or hands on activities
- **Explore** by using texts from the cluster book list as read alouds or part of the classroom library
- **Extend** learning by using resources from this document in learning centers, individual work or group projects

ACKNOWLEDGEMENTS

Special thanks is given to the **Delaware Career Resource Network** and the **Labor Market and Career Information (LMCI) department of the Texas Workforce Commission** for granting permission to revise and include their resources in this document.

MANUFACTURING
Teacher Resource

Note: Careers in Manufacturing are divided into pathways. Listed below are some of the careers found in each pathway and range from entry level to those that require post-secondary training, certificates and/or degrees. This list serves only to build educator background knowledge. Students are not introduced to career pathways until the 6th–8th grade band.

Production Pathway

People with careers in production work on the shop floor making parts or assembling them. They work with machines, making or assembling parts, performing welding jobs or printing materials.

- Automated Manufacturing Technician
- Electrical Installer and Repairer
- Machine Operator
- Millwright
- Tool and Die Maker
- Welder

Manufacturing Production Process Development Pathway

These individuals are responsible for product design and work to ensure products meet customer expectations.

- Design Engineer
- Electrical Technician
- Electronics Engineer
- Manufacturing Technician
- Production Manager
- Purchasing Agent

Maintenance, Installation and Repair Pathway

These specialists perform preventive maintenance procedures on machines tools and equipment. They also troubleshoot and repair electrical, electronic and mechanical systems.

- Biomedical Equipment Technician
- Boilermaker
- Facility Electrician
- Instrument Calibration and Repairer
- Major Appliance Repairer
- Plumber or Pipe Fitter

Quality Assurance Pathway

Quality Assurance professionals work to prevent mistakes and defects in manufactured products and avoid problems when delivering products or services to customers.

- Calibration Technician
- Inspector
- Lab Technician
- Process Control Technician
- Quality Control Technician
- Quality Engineer

Logistics and Inventory Control Pathway

Materials and parts required for a manufactured product must be purchased, stored and then moved from the warehouse to the production line. Finished products must be packaged and prepared for delivery. Coordinating this process is the responsibility of logistics and inventory experts.

- Dispatcher
- Industrial Truck Operator
- Logistical Engineer
- Logistician
- Quality Control Technician
- Traffic Manager

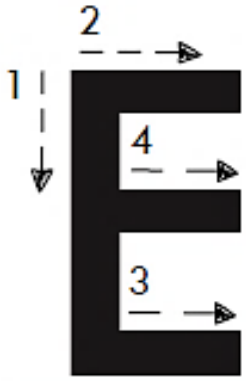
Health, Safety and Environmental Assurance Pathway

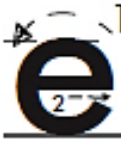
People with careers in this pathway work to ensure the safety of employees and the environment.

- Environmental Engineer
- Environmental Specialist
- Health and Safety Representative
- Safety Coordinator
- Safety Engineer
- Safety Technician

Alphabet Letter Printing Worksheet

Practice writing each upper case and lower case lettter on the lines below as shown on the sample letters. Then write the name of the occupation.





Electrician

Alphabet Letter Printing Worksheet

Practice writing each upper case and lower case lettter on the lines below as shown on the sample letters. Then write the name of the occupation.

1 2 3 4

W

1 2 3 4

W

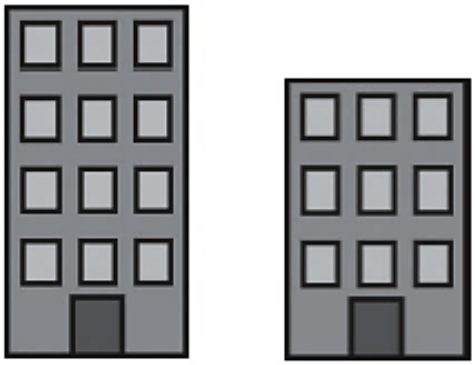
Welder

MEASUREMENT

Measurements matter in manufacturing. Follow the instructions for each of the pictures.

Draw a cloud that is **longer** than this one.

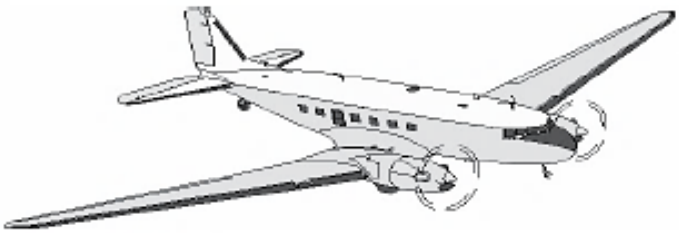
Circle the building that is **shorter**.



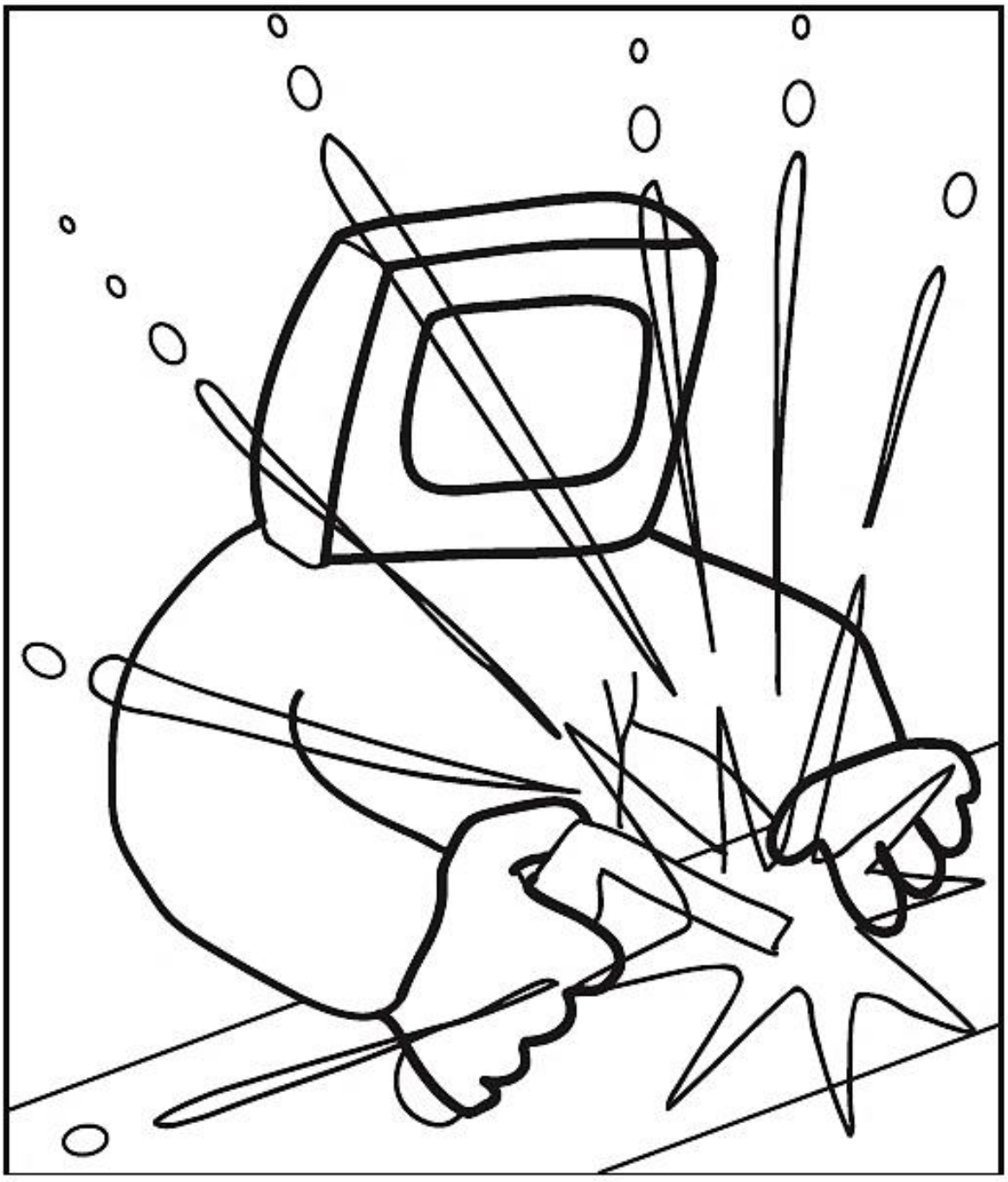
Draw a building that is **shorter than this one.**

Circle the suitcase that is **longer**.

Use a red crayon to circle the airplane that is **longer**. Use a blue crayon to circle the airplane that is **shorter**.



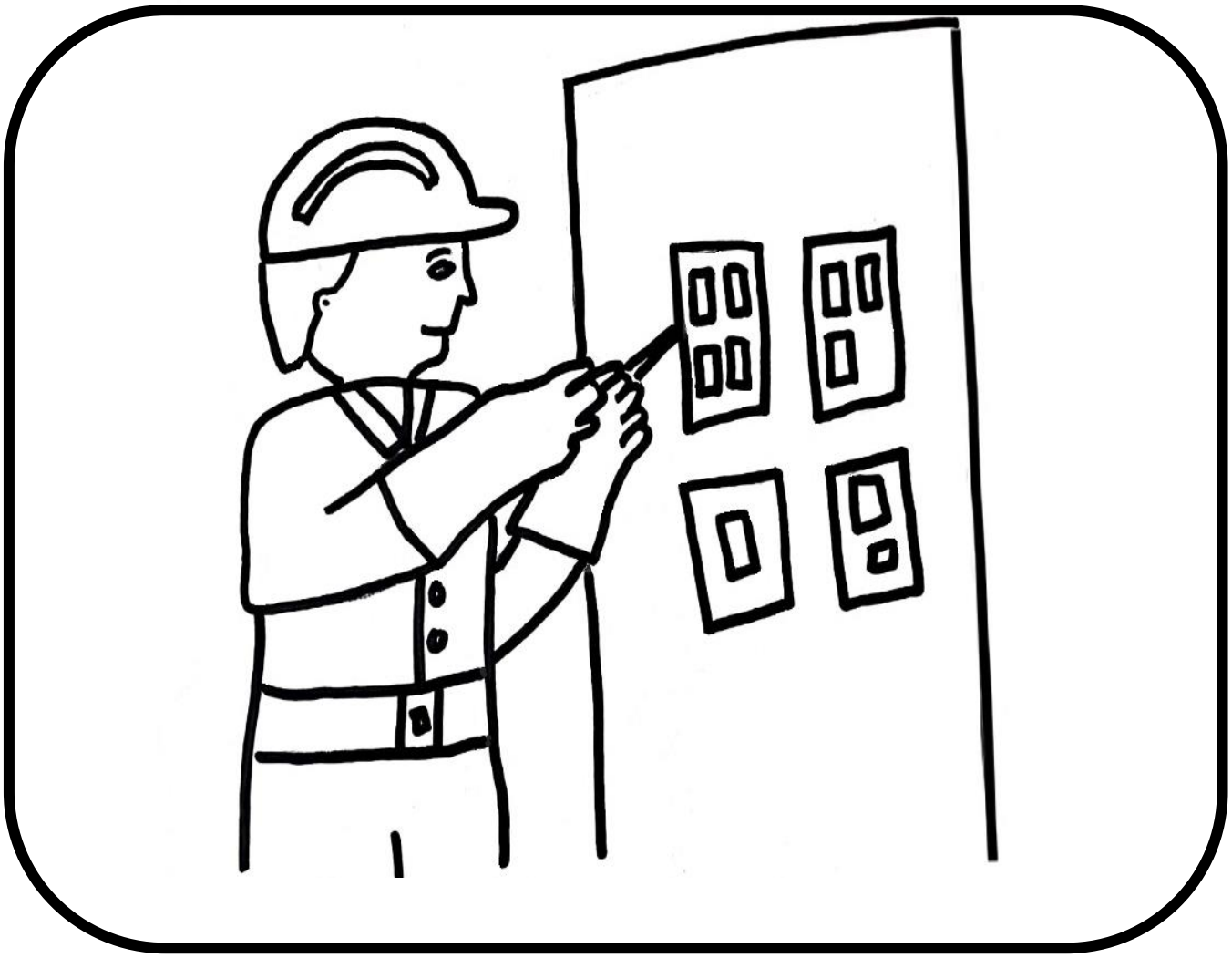
MANUFACTURING



WELDER

Welders are skilled professionals who specialize in cutting and joining metals and other materials together at factories or construction sites. They wear special protective equipment while working.

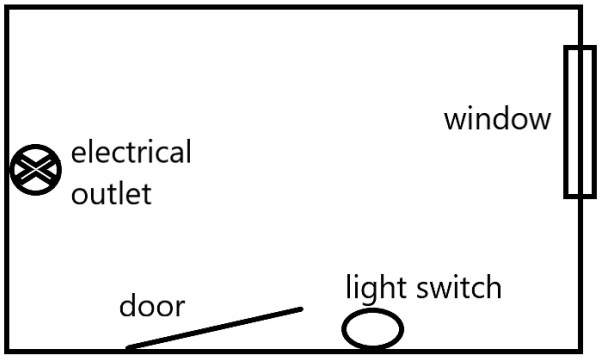
ELECTRICIAN



Electricians work to make sure lights, equipment and appliances work safely. They read technical documents and blueprints to install and troubleshoot electrical systems.

Technical Drawings

Blueprints are technical drawings used by skilled tradesmen to build things. In the space below, make a drawing of your classroom. Use the symbols in this diagram to show the location of doors, windows, light switches and electrical outlets.



Manufacturing

Sample Careers

1. Chemical Equipment Operator
2. Machinist
3. Welder
4. Electronic Assembler
5. _____

Can you think of another?

Careers in the Manufacturing cluster involve turning raw materials into final consumer products. People in these occupations can work with big machines, precision tools and computers to assemble parts or build products. They may work in large buildings, outdoors or in warehouses. You can be many types of engineer, machine operator, electrician or quality control technician and be in this career cluster.

ASSEMBLY LINE

Assembly lines are where factories make products and each person is responsible for making a different part of it or putting pieces together. At the end, someone inspects it for accuracy.

What would it be like to work on an assembly line making 20 greeting cards?

Get in a group with 8 people. Each person will be in charge of one task.

TASKS

1. Fold construction paper in half.
2. Color 4 daisy flowers yellow.
3. Color 4 stems green
4. Cut out flowers and stems.
5. Glue flowers on inside of card.
6. Write 'Have A Great Day!' inside card.
7. Write on back of card 'Made in USA'.
8. Inspect card for accuracy. Ones with errors go back to be corrected.

What are the pros and cons of working on an assembly line?

What things around you do you think were made on an assembly line?

Adapted from *Elementary Career Awareness Guide* by North Carolina SOICC

Name_____

Can you design a better wagon? Draw your design below.

Would your wagon be made of metal, plastic, wood or a combination? If a combination, describe were each material is used.

_____

_____

_____

_____

Describe what makes your design better.

_____

_____

_____

_____

Manufacturing Careers

I	B	O	I	L	E	R	M	A	K	E	R	T	C
C	A	L	I	B	R	A	T	O	R	A	A	K	E
R	E	T	T	I	F	E	P	I	P	R	S	R	T
T	L	R	E	T	G	O	C	P	N	W	S	E	R
R	T	H	G	I	R	W	L	L	I	M	E	K	R
M	A	C	H	I	N	I	S	T	S	T	M	A	E
B	A	D	L	C	K	L	I	O	T	T	B	M	E
I	R	E	D	L	E	W	E	M	N	C	L	N	N
A	M	T	R	M	I	F	L	R	A	R	E	R	I
P	D	I	S	P	A	T	C	H	E	R	R	E	G
E	L	E	C	T	R	I	C	I	A	N	T	T	N
B	R	T	O	O	L	M	A	K	E	R	C	T	E
T	G	T	T	I	L	E	R	I	N	D	C	A	T
L	O	G	I	S	T	I	C	I	A	N	T	P	S

ASSEMBLER
MACHINIST
PATTERN MAKER
TOOL MAKER
MILLWRIGHT
ELECTRICIAN
ENGINEER
PIPE FITTER
LOGISTICIAN
BOILERMAKER
CALIBRATOR
DISPATCHER
WELDER

Play online at https://bit.ly/3wXobnm

DIG DEEPER

Note: These tasks serve only to generate ideas and connect real world actitivites to academic content. **Exploratory Tasks** may be teacher led through a class project, demonstration or assignment. **Extension Tasks** may be modified to align with ELA, math, science or social studies content through writing, determining/comparing costs, human impact, etc.

Exploratory Tasks	Extension Tasks
Materials used in manufacturing include wood, plastic, metal and glass. Create a visual image that shows items made from each tye of material.	Speak to local manufacturing professional to learn about the qualities of each material. Create a flipbook that shows the different materials, their qualities and examples of products made from each.
Experiment with different materials and designs to build a tower. What type materials or design was used to build the tallest tower?	Write detailed instructions of how to build the tower. Share with another student to duplicate the design.
Choose an object such as an ink pen, notebook or a small toy. Make drawing that shoew each part and lists the type of material.	Create a technical drawing of the object that shows exact measurements.
Use Legos to create an object. Make a materials list of the number and sizes that you used in your object.	How many Legos of each size would you need to create 10 objects? If each Lego cost $0.01, how much would it cost to build each one. If you wanted to make a 20% profit, what would you need to price the object?

Is a Career in Manufacturing for Me?

Would you be interested in a career in Manufacturing? Below are knowledge and skill statements related to the careers in this cluster. Read each statement. Decide if this describes you by checking the Yes, No or Maybe box.

THINGS I LIKE TO DO	YES	NO	MAYBE
Work with my hands to create or put things together			
Do routine, organized and accurate work			
Perform activities that produce real results			
Apply math to work out solutions			
Use hand and power tools			
Operate equipment or machinery			
Visualize objects in 3D from flat drawings			
PERSONAL QUALITIES THAT DESCRIBE ME	**YES**	**NO**	**MAYBE**
Practical			
Observant			
Physically active			
Step-by-step thinker			
Coordinated			
SCHOOL SUBJECTS THAT INTEREST ME	**YES**	**NO**	**MAYBE**
Math and geometry			
Chemistry			
Trade or technical courses			
Physics			
Language arts			

Did you check YES most often? If so, continue to explore careers and opportunities in this cluster. And don't forget to focus on your math and science classes to build the academic skills you need for these careers.

Did you check NO most often? If so, don't worry. There are hundreds of jobs to explore in the other 15 career clusters.

Did you check MAYBE most often? If so, continue to explore this cluster as well as investigating how your skills and interests may be a good match in other clusters.