



Dr. John D. Barge, State School Superintendent
"Making Education Work for All Georgians"

Georgia Department of Education
Grade 4 Career Development Activity
Manufacturing
Estimated time: 45 minutes

Goal

- Students will identify **Manufacturing** as a Georgia career cluster

Objectives

- define a career cluster as a grouping of occupations with common skills and knowledge
- identify sample occupations aligned with the **Manufacturing** career cluster

Aligned Indicators and Standards

National Career Development Guidelines Indicators

- CM3.K4 Identify several ways to classify occupations
- PS2.A1 Demonstrate effective communication skills
- PS2.K2 Recognize the benefits of interacting with others
- ED2.A7 Demonstrate participation in informal learning experiences

American School Counselor National Standards

- C:B1.4 Know the various ways in which occupations can be classified
- PS:A2.6 Use effective communication skills
- A:A3.5 Share knowledge

Related Georgia Performance Standard

- SS4E1 The student will use the basic economic concepts of trade, opportunity cost, specialization, and voluntary exchange, productivity, and price incentives to illustrate historical events. (f) Give examples of technological advancements and their impact on business productivity during the development of the United States (such as the steamboat, the steam locomotive, and the telegraph)
- ELACC4SL1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly

Materials

- Georgia's Career Cluster chart
- occupational frame
- origami box materials (Please, visit the activity website [prior](#) to the activity for directions.)



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Activity

- Say: "Remember Georgia has 17 Career Clusters, and you have been introduced to some of them already." *Remind students:* "A career cluster represents a large grouping of occupations that are similar. Today we are going to learn about the **Manufacturing** career cluster. People, who work in this cluster, produce things like cars, furniture, computers, appliances, and airplanes. Think of all of the products you use in your life from a hairbrush to a mattress. Manufacturers produce many products which consumers like you and I want such as household appliances, furniture, foods, cosmetics, paper, cleaning goods, TVs, and computers to name just a few."
- *Divide the class into groups of 3 to 4 students. Ask each group to list all the manufactured items they can find in the classroom. Allow students time to explore the room and make their list. After they have made their list, compare each list marking off the items that the group before listed (try to eliminate repeating the same products; this can become a listening activity when you ask students not to repeat something that has already been listed).*
- *Distribute the list of **Manufacturing Occupations**. Say: "This list represents occupations in the **Manufacturing** cluster." Ensure students understand that because of manufacturing, we have a variety of items/products that we can purchase to make our lives more enjoyable and productive. Say: "We have many job opportunities in manufacturing like those occupations listed on your handout." Pose this scenario for students to think about, "Imagine being on an island in the middle of the ocean without manufacturing." Ask probing questions such as: "What would you have? What would you see? Where would you sit?" Allow students time to imagine. Allow students to discuss their images.*
- Say: "Now let's really get creative and manufacture a box called an origami box with our own hands and one piece of paper. We will follow a process one step at a time." *Explain:* "Origami is a type of paper art." *Allow students to produce the origami box by following the instructions at <http://www.origami-instructions.com/origami-box.html>. The instructor should prepare the initial materials, print the instructions and display the instructions with pictures so students can see them. The instructor should make an origami box prior to delivery of the activity. Allow students time to make their box one step at a time similar to a manufacturing process. As an option, divide the class into groups of 3-4. Give each group a part of the process to complete. At the end, you should have a process similar to an assembly line. Upon completion, ask the class if any of them might consider working in manufacturing. (Optional: fill the box with some type of candy perhaps M & Ms)*
- Say: "Here is a great website for you to learn more about manufacturing <http://www.manufacturingiscool.com/>." Write the website on the board. Say: "You will like this one. It is really cool." Allow student's time to record the web site in their notebooks.
- Say: "I hope you enjoyed making your origami box. There are major manufacturing plants that produce thousands of paper boxes daily as well as other goods that you and I enjoy every day. If you think you might be interested in exploring occupations in this



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cluster, you can find more information at www.GAcollge411.org (*write the website on the board*) or the media specialist can help you find more information in the media center. In addition, you might ask a member of your family to help you find information on the internet about careers in manufacturing. Have a great day. See you again when we discuss another Georgia career cluster."

Evaluation

- Students will be evaluated on their responses and participation

Enhancement

- Show video on **Manufacturing** at http://www.careerinfonet.org/videos/COS_videos_by_cluster.asp?cluster=&videoUrl=http://wpc.2A70.edgecastcdn.net/002A70/CareerVideos/00-0000.13.flv&v_code=00-0000.13
NOTE: Vocabulary is at a fairly high level.
- Simulate a manufacturing process (a step by step process) such as building a sandwich or creating a birthday card.
- Facilitator should consult the medial specialist at the local school to help select books related to the career cluster being taught. This will ensure books are appropriate for the grade level and for the learner.

DISCLAIMER

The sources and web links listed in the activities may be of help to you as you consider the career awareness activities. While these sources are provided to assist you in your search, it is your responsibility to investigate them to determine their value and appropriateness for your situation and needs. These sources are provided as a sample of available resources and are for informational purposes only. THE GEORGIA DEPARTMENT OF EDUCATION DOES NOT MONITOR, EVALUATE, OR ENDORSE THE CONTENT OR INFORMATION OF THESE RESOURCES. NONE OF THESE RESOURCES SHOULD BE CONSIDERED THE ADVICE OR GUIDANCE OF THE GEORGIA DEPARTMENT OF EDUCATION.



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 Careers in Manufacturing	
Assembler	
Bookbinder	
Electrical Installer and Repairer	
Grinding and Buffing Machine Operator	
Hand Packers and Packager	
Hoist and Winch Operator	
Large Printing Press Machine Setter and Set-Up Operator	
Machine Operator	
Manager, Supervisor	
Medical Appliance Maker	
Painter	
Pattern & Model Maker	
Precision Layout Worker	
Production Associate	
Sheet Metal Worker	
Welder	
Design Engineer	
Electrical and Electronics Technician and Technologist	
Electronics Engineer	
Engineering Technician	
Industrial Engineer	
Labor Relations Manager	
Manufacturing Engineer	
Manufacturing Technician	
Power Generating and Reactor Plant Operator	
Precision Inspector, Tester, and Grader	
Process Improvement Technician	
Production Manager	
Purchasing Agent	
Supervisor	
Environmental Engineer	
Safety Coordinator	
Safety Engineer	
Safety Team Leader	



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Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.



Occupational Frame					
<ul style="list-style-type: none"> • Assembler • Automated Manufacturing Technician • Bookbinder • Calibration Technician • Electrical Installer and Repairer • Electromechanical Equipment Assembler • Extruding and Drawing Machine Setter/Set-Up Operator • Extrusion Machine Operator • Foundry Worker • Grinding, Lapping, and Buffing Machine Operator • Hand Packers and Packager • Hoist and Winch Operator • Instrument Maker • Large Printing Press Machine Setter and Set-Up Operator • Machine Operator • Manager, Supervisor • Medical Appliance Maker • Milling Machine Setter, Set-Up Operator • Millwright • Operator, Tender, Cutter Bearer, Solderer • Machine Operator • Painter • Pattern & Model Maker • Precision Layout Worker • Precision Optical Goods Worker • Production Associate • Sheet Metal Worker • Solderer and Bearer • Tool and Die Maker • Welder 	<ul style="list-style-type: none"> • Design Engineer • Electrical and Electronics Technician • Technologist • Electronics Engineer • Engineering and Related Technician and Technologist • Engineering Technician • Industrial Engineer • Labor Relations Manager • Manufacturing Engineer • Manufacturing Technician • Power Generating and Reactor Plant Operator • Precision Inspector, Tester, and Grader • Process Improvement Technician • Production Manager • Purchasing Agent • Supervisor 	<ul style="list-style-type: none"> • Biomedical Equipment Technician • Boilermaker • Communication System Installer/Repairer • Computer Installer/Repairer • Computer Maintenance Technician • Electrical Equipment Installer/Repairer • Facility Electrician • Industrial Electrician • Installer/Repairer • Industrial Facilities Manager • Industrial Machinery Mechanic • Industrial Maintenance Electrician • Industrial Maintenance Mechanic • Instrument Calibration and Repairer • Instrument Control Technician • Job Fixture Designer • Laser Systems Technician • Maintenance Repairer • Major Appliance Repairer • Meter Installer/Repairer • Millwright • Plumber, Pipefitter and Steamfitter • Security System Installer/Repairer 	<ul style="list-style-type: none"> • Calibration Technician • Inspector • Lab Technician • Process Control Technician • Quality Control Technician • Quality Engineer • SPC Coordinator 	<ul style="list-style-type: none"> • Communications, Transportation and Utilities Manager • Dispatcher • Freight, Stock, and Material Mover • Industrial Truck and Tractor Operator • Logistical Engineer • Logistician • Material Associate • Material Handler • Material Mover • Process Improvement Technician • Quality Control Technician • Traffic Manager • Traffic, Shipping, and Receiving Clerk 	<ul style="list-style-type: none"> • Environmental Engineer • Environmental Specialist • Health and Safety Representative • Safety Coordinator • Safety Engineer • Safety Team Leader • Safety Technician

Occupational frames can be printed at www.careertech.org under the tab Career Clusters.



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<u>Georgia's Career Clusters:</u> Groupings of occupations with common knowledge and skills	
Cluster	Cluster Description
Agriculture, Food & Natural Resources	Careers with common knowledge and skills related to production, processing, marketing, financing, distribution, and development of agricultural commodities and resources. These commodities include food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.
Architecture & Construction	Careers with common knowledge and skills related to the designing, planning, managing, and building of structures.
Arts, A/V Technology & Communications	Careers with common knowledge and skills related to designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.
Business, Management & Administration	Careers with common knowledge and skills related to the preparation of students with computer skills for future college and career plans. Cluster skills mastered include planning, organizing, directing, and evaluating as well as owning and operating a successful business.
Education & Training	Careers with common knowledge and skills related to planning, managing, and providing education and training services as well as related learning support services.
Energy	Careers with common knowledge and skills related to preparing individuals for careers in the design, planning, maintaining, generating, transmission and distribution of traditional and alternative energy.
Finance	Careers with common knowledge and skills related money management, including planning, investing, and spending. Students gain career development skills for the finance world with opportunities that expand beyond basic business skills into financial literacy, banking, investing, insurance, and risk management.
Government & Public Administration	Careers with common knowledge and skills related to the planning and performing of government management and administrative functions at local, state, and federal levels. Careers are available in national security, foreign service, revenue, and regulations.



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Health Science	Careers with common knowledge and skills related to planning, managing, and providing services in therapeutics, diagnostics, health informatics, support areas, and biotechnology research and development
Hospitality & Tourism	Careers with common knowledge and skills related to the management, marketing, and operations of restaurants, and other food services, lodging, attractions, recreation events, and travel related services.
Human Services	Careers with common knowledge and skills related to family and human needs such as nutrition and food science, counseling and mental health services, family and community services, personal care, and consumer services.
Information Technology	Careers with common knowledge and skills related to the preparation for careers that create, use, modify, and engage technology skills. Graphics, multimedia animation, web design, game and application development, networking, and computer repair are all possibilities.
Law, Public Safety, Corrections & Security	Careers with common knowledge and skills related to employment in emergency and fire services, legal services, protective services, and homeland security.
Manufacturing	Careers with common knowledge and skills related to the processing of materials into intermediate or final products and related professional and technical support activities, such as production control, maintenance, and process engineering.
Marketing	Careers with common knowledge and skills related to the process of anticipating, managing, and satisfying consumers' demand for products, services, and ideas. The Marketing career cluster generates the strategy that underlies advertising and promotional techniques, business communication, and business development.
Science, Technology, Engineering & Mathematics	Careers with common knowledge and skills related to planning, managing, and providing scientific research and professional and technical services.
Transportation, Distribution & Logistics	Careers with common knowledge and skills related to planning, managing, and moving people, materials, and goods by road, pipeline, air, rail, and water, and also includes other related professional and technical support services.