



MINI GRANT PROJECT
NYSED ELA TEACHER LEADER
MANUFACTURING CAREER KIT

Jennifer Kent-Isaacs, Cayuga-Onondaga BOCES
Kathy Lent, Syracuse City School District



INTERPRETING BAR GRAPHS UNIT 1, SECTION 4

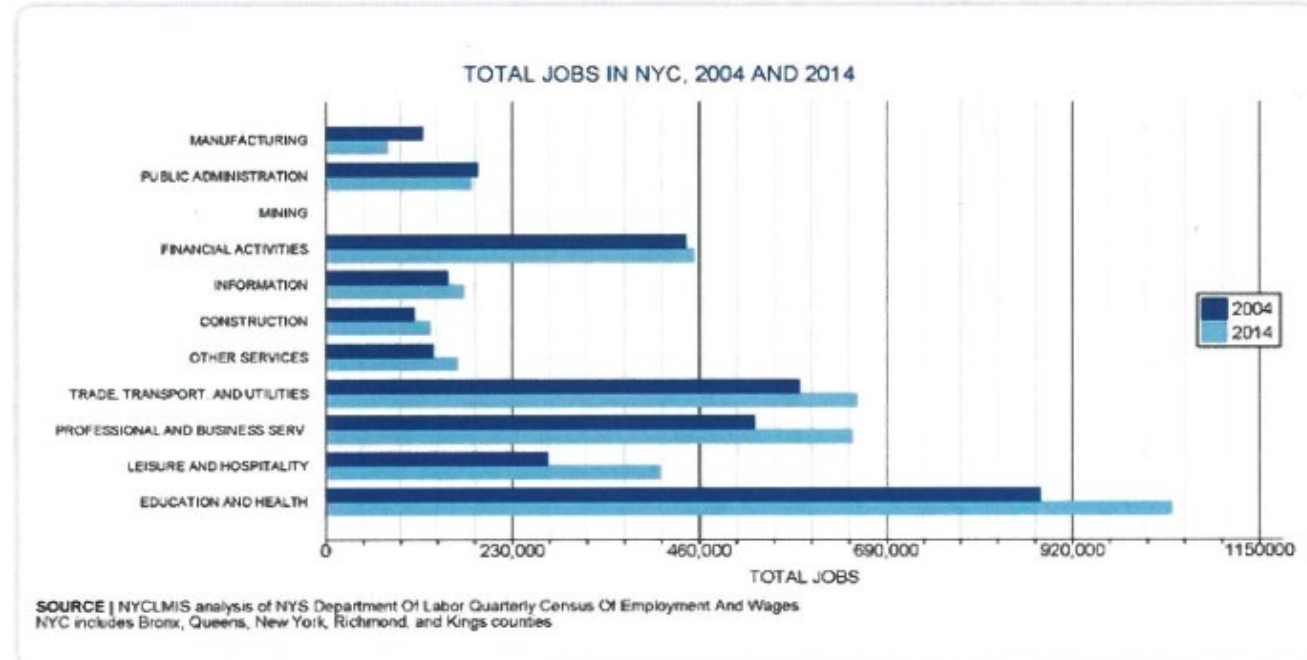
Job Losses and Gains
across sectors


HOW DO WE MAKE IT RELEVANT TO OUR STUDENTS?



Job Losses and Gains Graph: How Did You Do?*

Read the graph below* noting the employment numbers for each industry sector in 2004 and 2014.



The background is a grayscale aerial photograph of a city with numerous skyscrapers. Overlaid on this is a graphic consisting of a green rectangular area on the left and top, and a white rectangular area on the right and bottom. A thick black L-shaped border separates the green and white areas. The text is centered within the white area.

**SOURCE:
NYS DEPARTMENT OF
LABOR QUARTERLY
CENSUS OF AND
WAGES**



NYS Department of Labor Quarterly census of and wages



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About 4,680,000 results (0.57 seconds)

Quarterly Census of Employment and Wages (QCEW) - New York ...

<https://labor.ny.gov> > Labor Statistics ▼

Quarterly Census of Employment and Wages (QCEW). NAICS Based Industry Employment and Wages New York State, Labor Market Regions, Metropolitan ...

QCEW Technical Notes - New York State Department of Labor

<https://labor.ny.gov> > Labor Statistics ▼

The Quarterly Census of Employment and Wages (QCEW) program (also known as ES-202) collects employment and wage data from employers covered by ...

NYS DOL Quarterly Census of Employment and Wages



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Home > Labor Statistics > Quarterly Census of Employment and Wages (QCEW)

Labor Statistics

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Wages >

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Employment ▼

Compare Employment Data >

Current Employment by Industry >

Employment, Firms and Payrolls by Industry

Resident Employment >

Occupational Employment and Wages >

Staffing Patterns: New York State >

Local Employment Dynamics >

Unemployment >

New York State Data Center >

Contact a Labor Market Analyst >

Quarterly Census of Employment and Wages (QCEW)

NAICS Based Industry Employment and Wages

New York State, Labor Market Regions, Metropolitan Areas, Local Workforce Investment Areas and Counties
Data for 2000 to latest available

Industry Employment and Wages	
Step 1. Select a Geographic Area:	
<input type="text" value="New York State"/>	▼
Go to Step 2	

Historical Data (1975-2000)

Employment information by place of work is based on quarterly reports from employers covered under New York State's Unemployment Insurance Law. Data by industry (using the new NAICS classification system) include employment, total and average wages; and, the number of establishments for the time period selected (annual or quarterly.) Data is available for New York State, metropolitan areas, and counties. State law prohibits us from disclosing information that would reveal the identity of individual employers. Data is available about six months following the end of the reported quarter and is less current than non-farm employment estimates.

The entire set of currently available NAICS-based Quarterly Census of Employment and Wages (QCEW) data from 2000 to the present is available by downloading the file [qcew.zip](#). This compressed archive consists of two comma-separated-value (CSV) data files (qcew_annual.txt and qcew_quarter.txt) and a layout file (readme.txt). It can be uncompressed with either the [winzip](#) or [plunzip](#) utility programs. After extracting the files from the archive, they may be imported into a spreadsheet application. The text and data should parse automatically into columns.

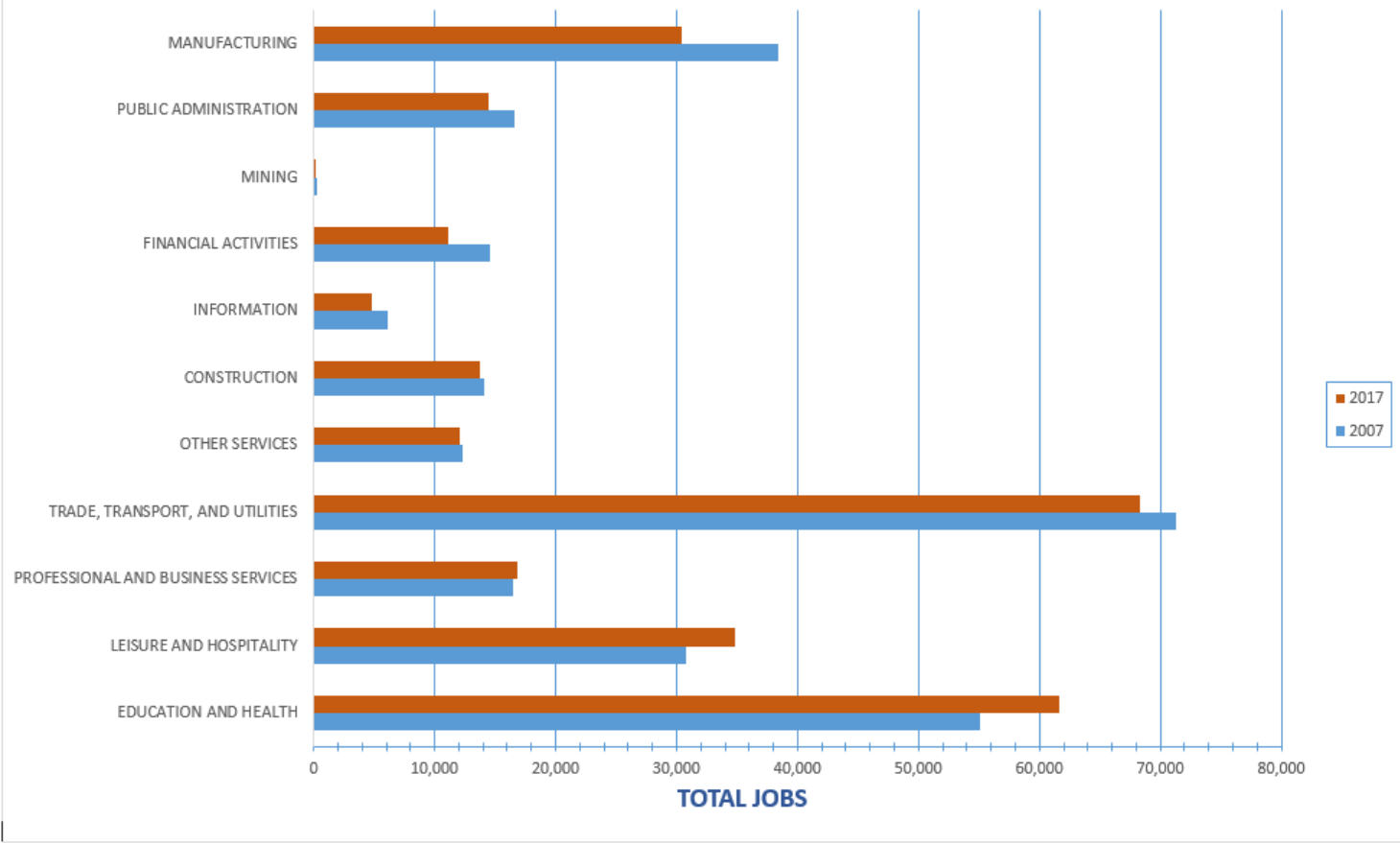
For more information concerning the Quarterly Census of Employment and Wages (QCEW), see [Technical Notes](#). For additional information on the various sources of employment data, see [comparing sources of employment data](#).

Data Source: Quarterly Census of Employment and Wages, developed through a cooperative program between the State of New York and the US Bureau of Labor Statistics.

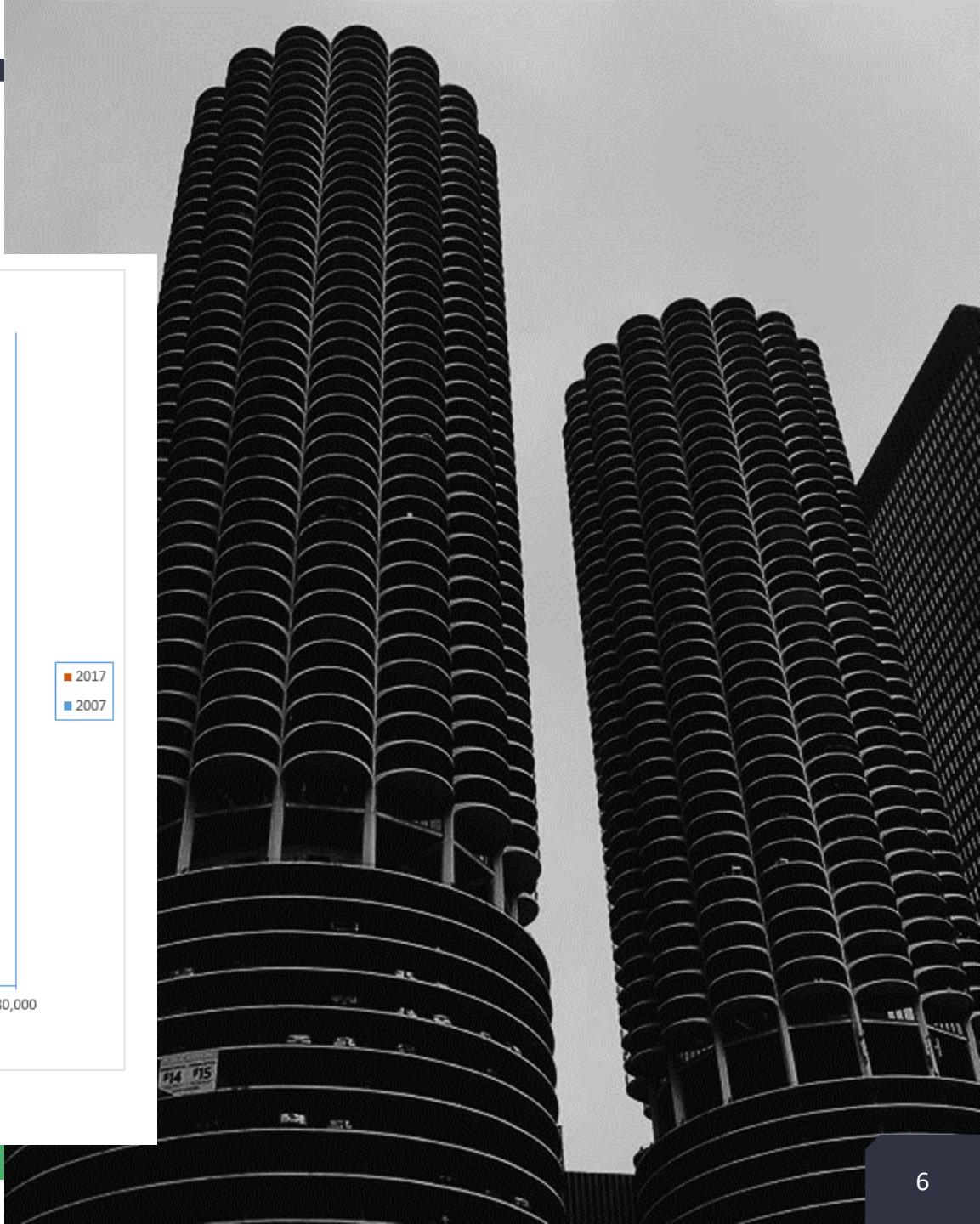
RECREATE GRAPH FOR REGION

Chart Area

Total Jobs in Central New York Region, 2007 AND 2017



SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages



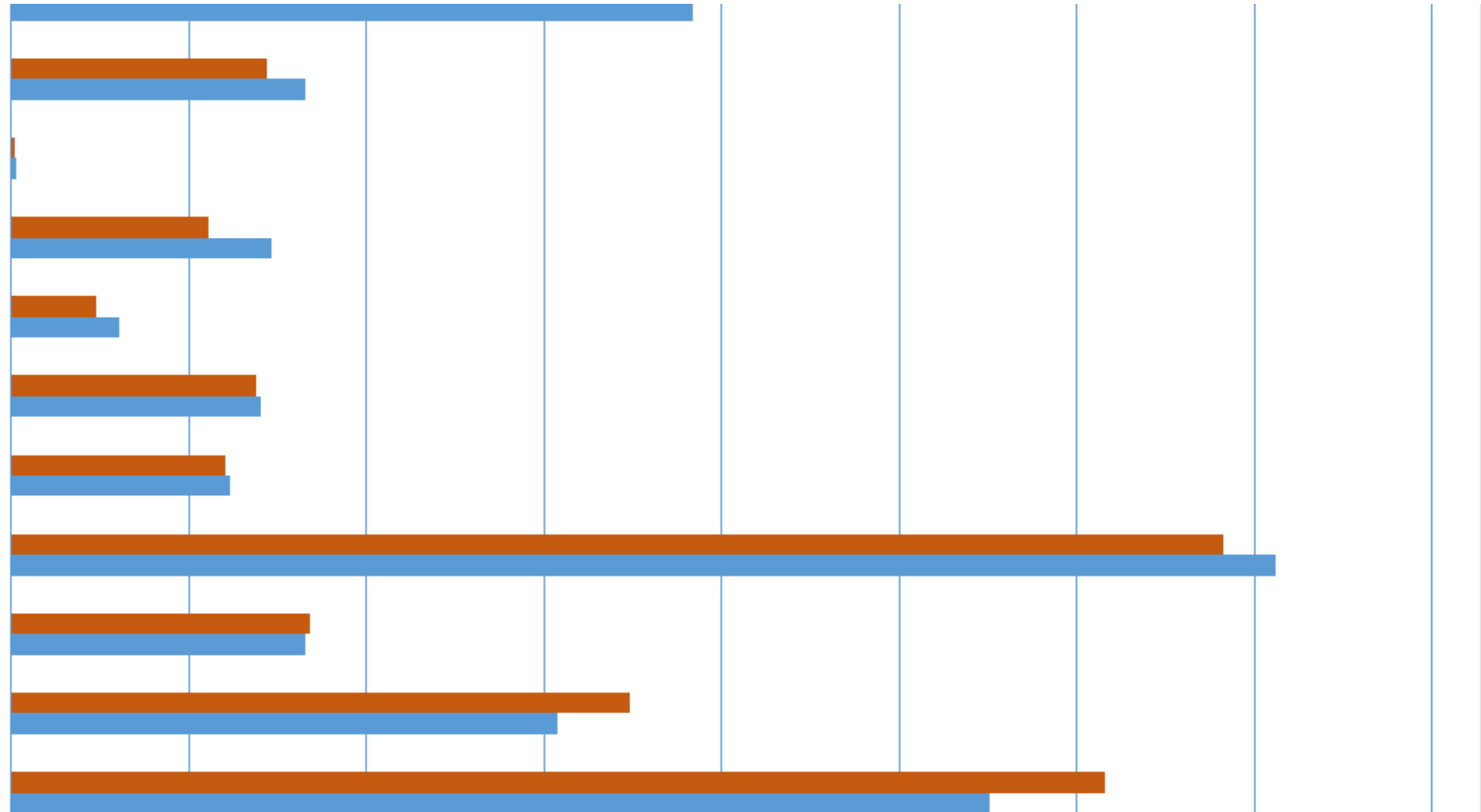


DIFFERENTIATED INSTRUCTION FOR ALL LEVELS

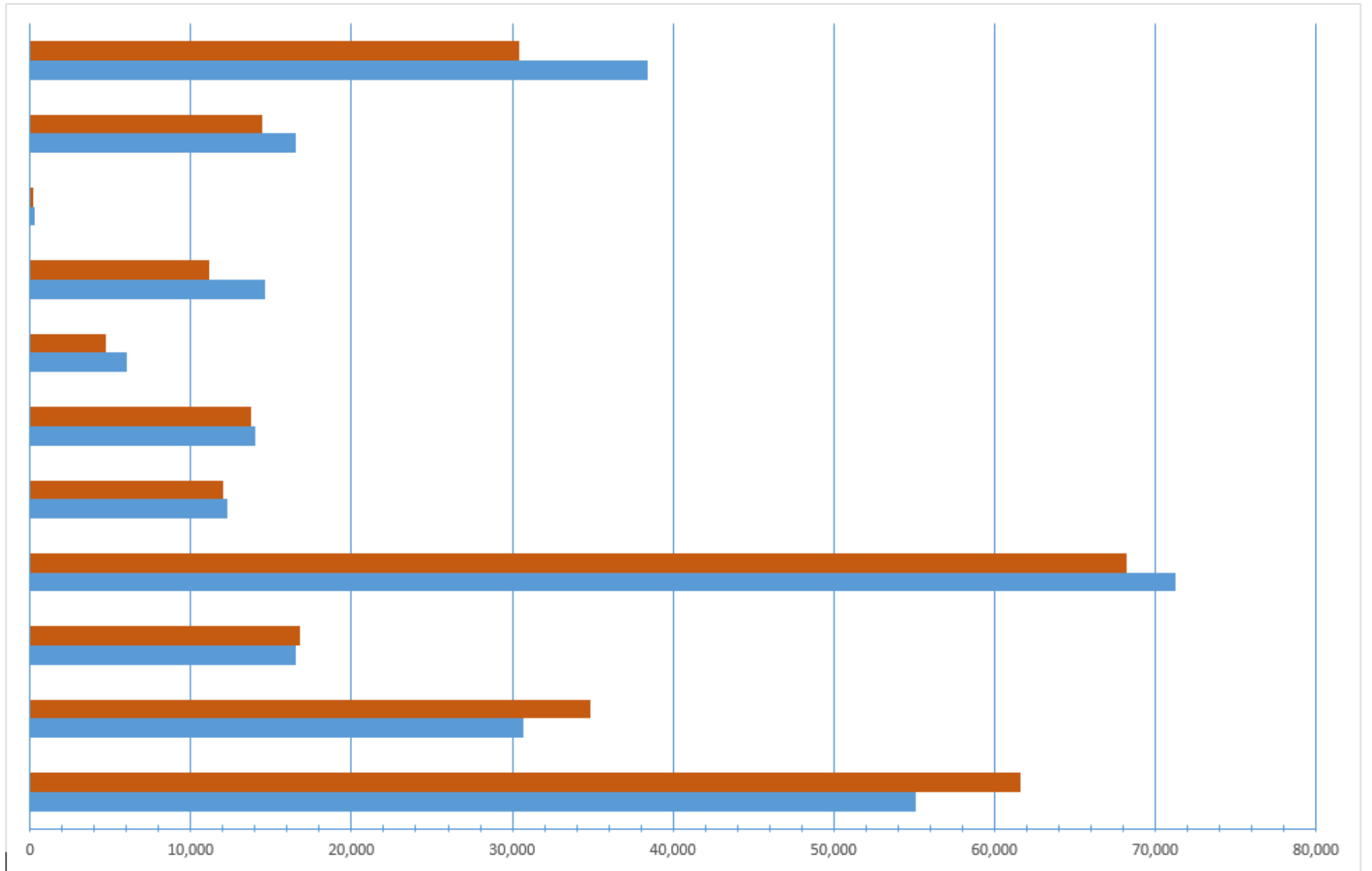
Create graphs for scaffolding instruction

- Variety of Graphs to introduce interpreting graph concept
 - Address abilities of all students
 - Break down all aspects of graphs
 - Allows for in depth understanding
 - Understanding of how to put a graph together

- Looking at the graph, what do you think the two different bar graphs stand for?
- What do the numbers along the bottom mean?
- How could we label the X (horizontal) and Y (vertical) axis?
- Anything else that you notice?

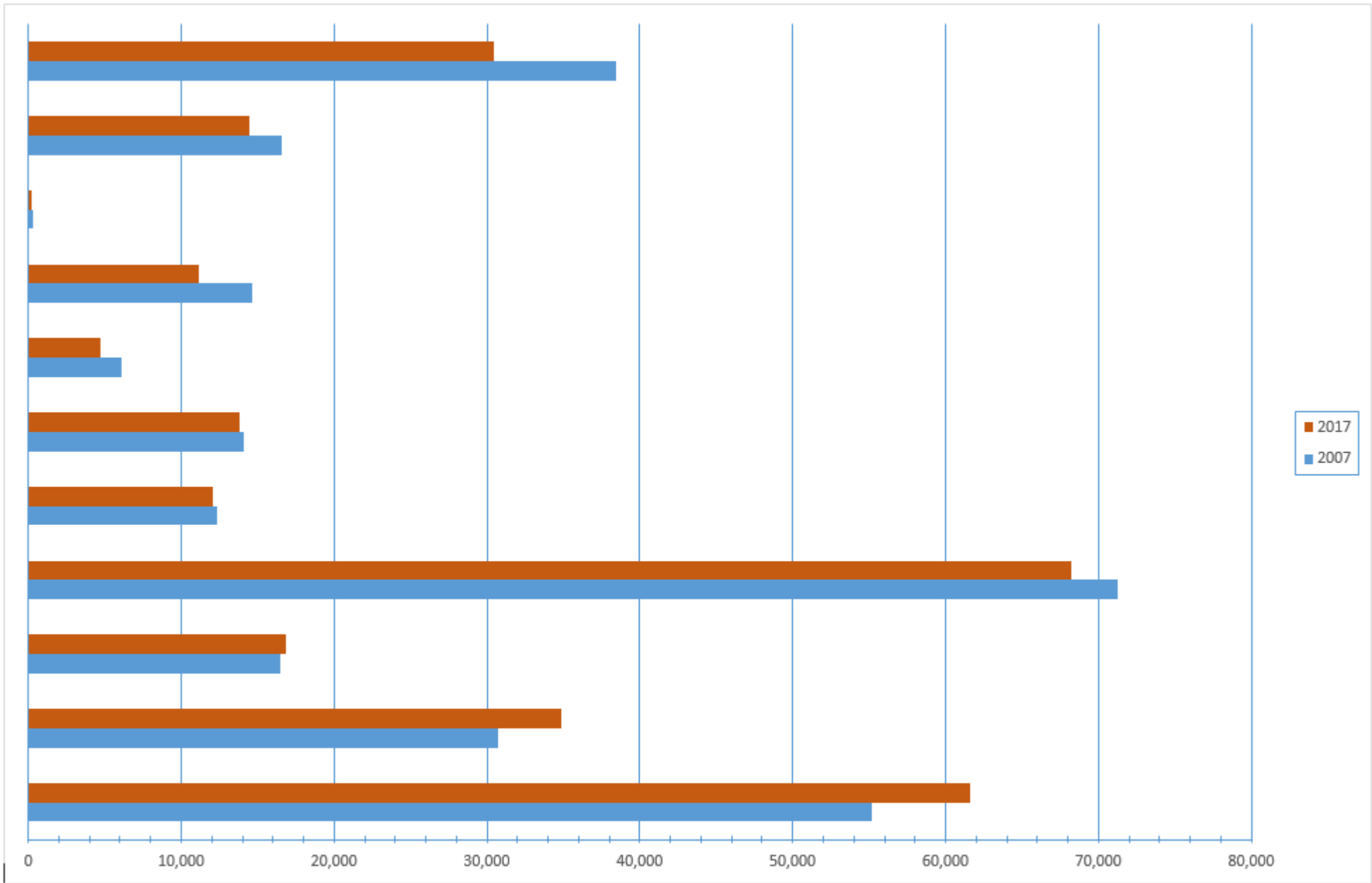


- What has been added to the graph?
 - Does this help in identifying the graphs?
- Does this change your prediction on what the graph is telling us?
- What could the numbers represent?
- Why are the two bar graphs different color?
- What questions do you have?



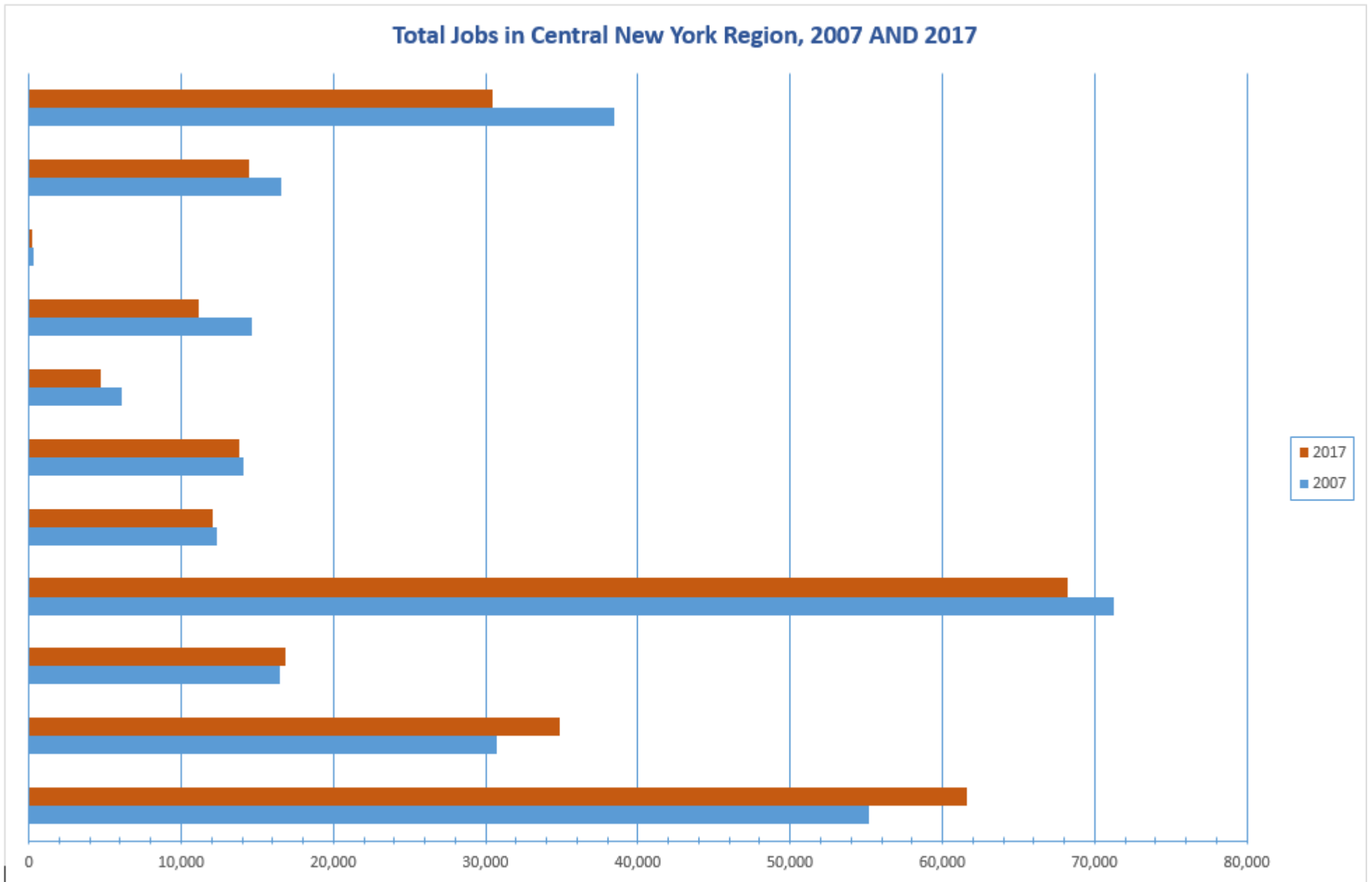
SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages

- What has been added this time?
 - Does this give you any more information?
- Any change in what you think the graph is telling us?

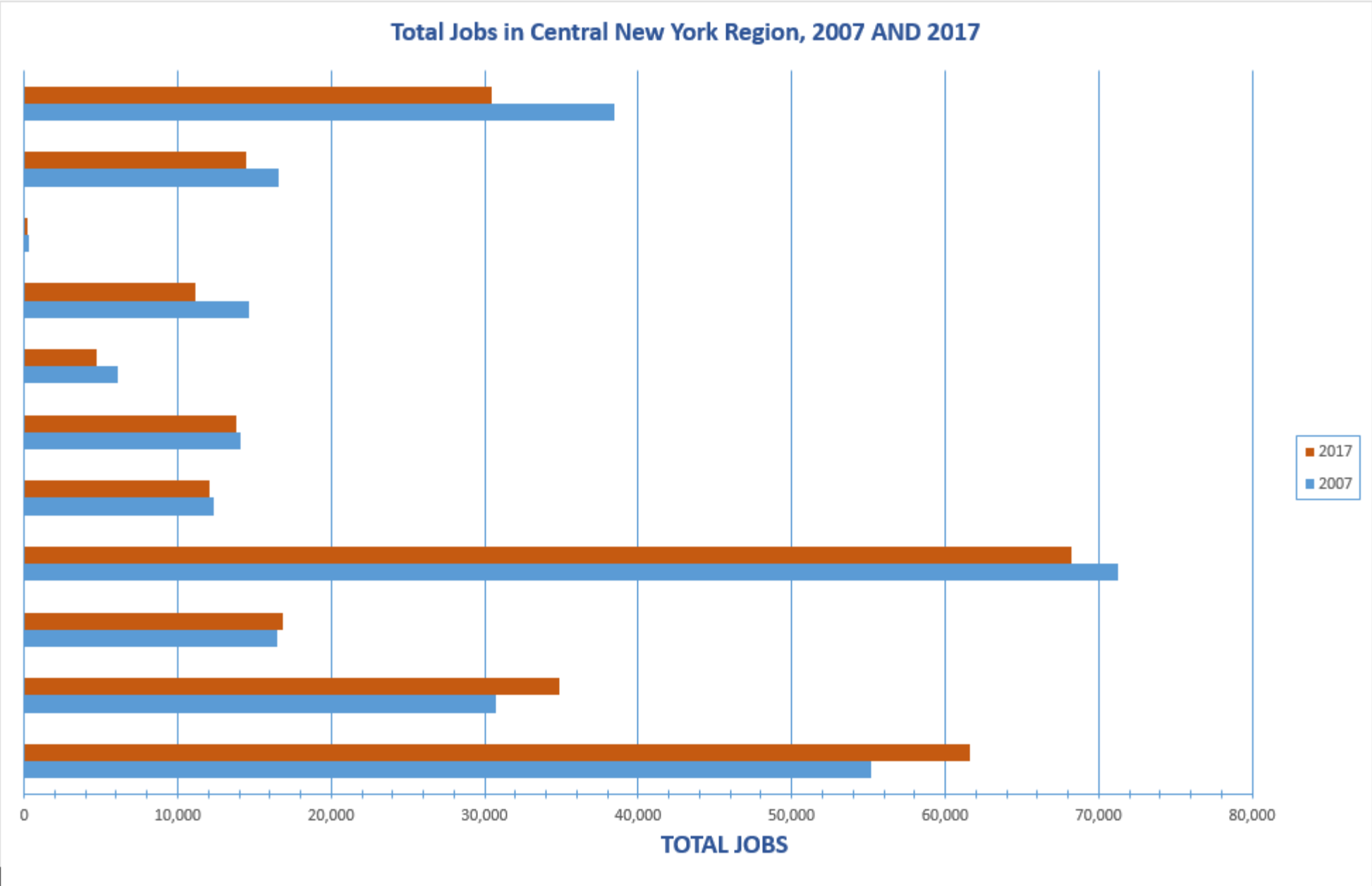


SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages

- What has been added this time?
 - Does it help you to work with the graphs better?
- What other information would you like about the graph?
- Could you pose questions that could be answered from the graph yet?
 - What might they be?
- What do you notice? What do you wonder?



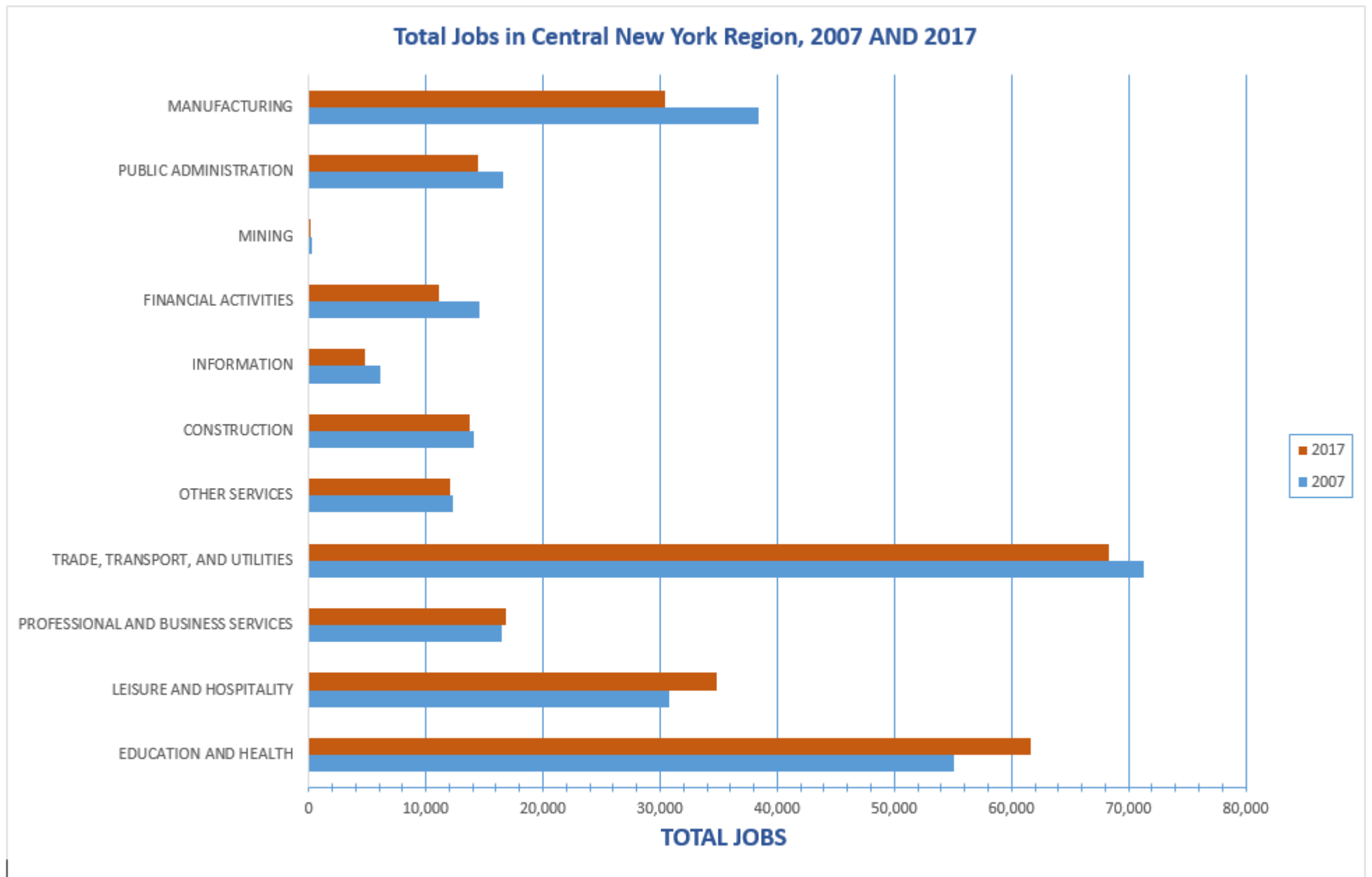
SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages



SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages

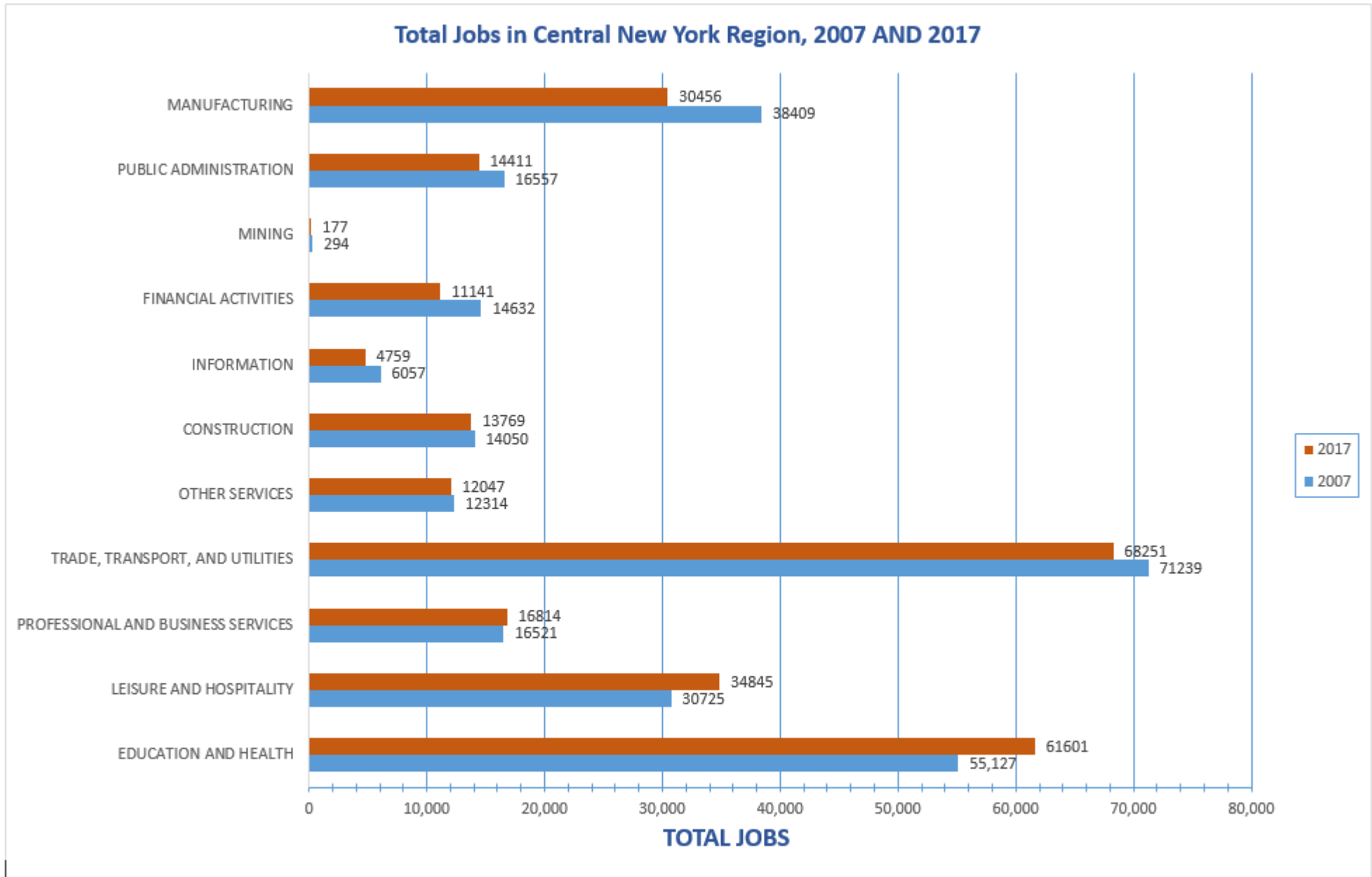
- What has been added this time?
- Where could these jobs be? What do you think the Y-axis could be labeled as?
- Are we missing any other information?

- It looks like all parts of graph have now been labeled. Are there any questions you have?
- Pretend you are the teacher, what questions could you ask to be answered from this graph?



SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages

- What was added to this graph?
- Which Graph 1-7 do you prefer and why?
- Is there anything that surprised you about the information in the last two graphs?



SOURCE: NYS Department of Labor Quarterly Census of Employment and Wages

Readings to accompany graph activity

➤ Re-write for lower leveled readers

Section 2

Student Handout 

Manufacturing Sector Profile

Written by the New York City Labor Market Information Service.

1. What is Manufacturing?

Establishments that work in Manufacturing convert raw materials or parts into finished goods. For example, a paper mill turns wood from trees or recycled materials into paper. A garment manufacturer turns fabric into clothing. Some manufacturers make parts for other manufacturers to use. For example, one manufacturer may make the parts another business needs to assemble an airplane or a computer. Manufacturers make products in different ways, for example, some make items by hand, others produce items using the latest technology and/or produce large amounts of standardized products using an assembly line. Establishments in this sector use these techniques to make a wide range of products such as apparel (clothes), computers and electronic equipment, aluminum, glass, concrete, tractors and televisions.

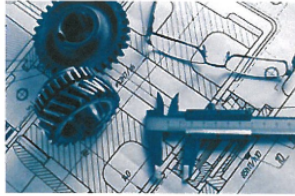


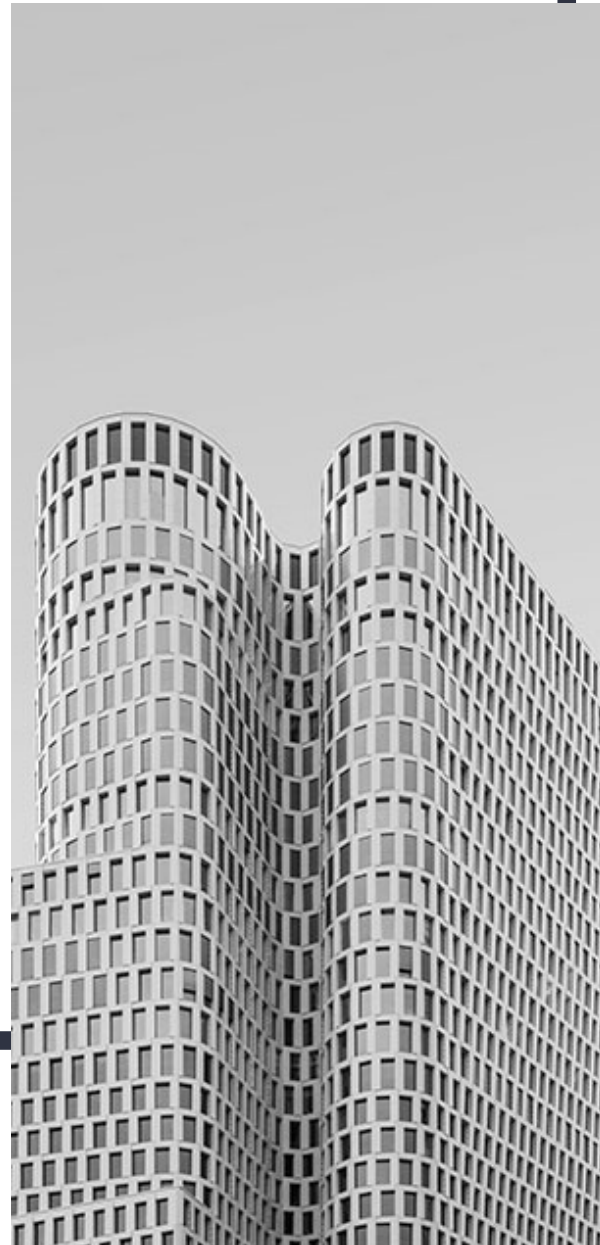
Image: <http://www.nabasoft.com/wp-content/uploads/2016/04/Manufacturing-MABlogImage.jpg>

2. The History of Manufacturing in New York State

For much of its history, New York State was a powerhouse of Manufacturing activity. New York City was its largest Manufacturing center, particularly known for apparel Manufacturing in the 'garment district', a neighborhood that is still known for fashion and design. Manufacturing jobs were also a source of economic prosperity for upstate communities that hosted large Manufacturing plants, such as Kodak and Xerox in Rochester, General Motors and the auto industry in Buffalo, and General Electric in Schenectady and Utica. Cities such as Binghamton, Elmira, Syracuse, and the Albany-Troy-Rensselaer area produced everything from shoes to aircraft simulators and automobile parts.

During the last 50 years, Manufacturing employment in New York State has steadily declined. Between 2000 and 2010, the number of jobs in Manufacturing in the State fell from 752,300 to 457,800. More recently, between December 2015 and December 2016, the sector lost 9,900 jobs. Despite these losses, Manufacturing still represents about 5% of total employment in New York State and is a significant industry in some regions. For example, the Capital Region gained 3,000 Manufacturing jobs between 2009 and 2014. These new jobs were concentrated in chemical Manufacturing, fabricated metal product Manufacturing, machinery

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Section 2

Student Handout

Manufacturing Sector Profile

Written by the New York City Labor Market Information Service

Rewritten for ABE/ESL level by Angela Locke

Note to teacher or student: Vocabulary words are capitalized in the following paragraphs. Under each paragraph, a definition of the vocabulary words is given. At the end of all six sections, there are questions which the teacher may use to test a student, or a student may use to review his/her knowledge.

1. What is Manufacturing?

Places that work in Manufacturing change **RAW MATERIALS*** into something finished that a person can use. **RAW MATERIALS** are things in their natural state, things from Nature, before they are changed. For example, a tree. A tree is **RAW MATERIAL**. A factory takes the wood from a tree and changes it to paper, something a person can use. A clothing factory takes cloth and changes it into clothes a person can buy in the store. Sometimes a factory makes parts of a machine that another factory might need. There are different ways to make things, for example, by hand, by assembly line, or by technology. Some examples of things that are made in manufacturing are clothes, computers, glass things such as windows or kitchen items, vehicles like cars or trucks, aluminum things such as pots and pans and aluminum foil, TVs, etc.



*VOCABULARY

1. **Raw materials:** Things in their natural state before they are changed into something people can use.

2. The History of Manufacturing in New York State

For much of its history, New York State was one of the most important states for manufacturing. New York City was New York State's largest manufacturing location. New York City had what is called "the garment district." This was a place in the city where there were many small factories where clothes were made. The garment district is still a center of fashion. Outside of New York City, manufacturing led to economic **PROSPERITY***. This means that many people had very good jobs and the economy was strong. For example, Rochester had Kodak and Xerox. Buffalo had the automobile industry. Many smaller cities produced everything from shoes to parts for cars and airplanes.

Readings to accompany graph activity

➤ Re-write for lower leveled readers

Section 3

Student Handout

Myths and Facts About Jobs in Manufacturing

By Lauren Flick, Wednesday, 17 Jun 2015

Adapted from "Debunking myths about manufacturing jobs" by Lauren Flick
<http://www.cnbc.com/2015/06/17/debunking-myths-about-manufacturing-jobs-.html>

Manufacturing jobs have a reputation—and it's often not a good one. The typical image of a Manufacturing job is of dirty, backbreaking, low-paying labor. It's also thought to be an industry dominated by men. But separating fact from fiction about the actual people behind the welder's mask and on the assembly line can be tricky.



Image: <http://cdn.moneyfeedsme.com/wp-content/uploads/2016/04/13155739/Production-Workers.jpg>

Manufacturing jobs are low-paying.

MYTH: According to a report by the U.S. Department of Commerce, hourly compensation is 16.5% percent higher on average in Manufacturing than in other industries. What does that translate to as an average annual salary? More than you might think. According to the U.S. Department of Commerce, the average Manufacturing worker in the United States earned \$79,602 annually, including pay and benefits.

A congressional report by the U.S. Joint Economic Committee also noted that "Manufacturing jobs are more likely to come with benefits, including medical and retirement benefits, than service-sector jobs. They also are more likely to require on-the-job training than jobs in other segments of the economy."

Sen. Amy Klobuchar (D-Minn.), who led the congressional report, noted that U.S Manufacturing accounts for 12 percent of gross domestic product (GDP) and employs 12 million workers nationwide.

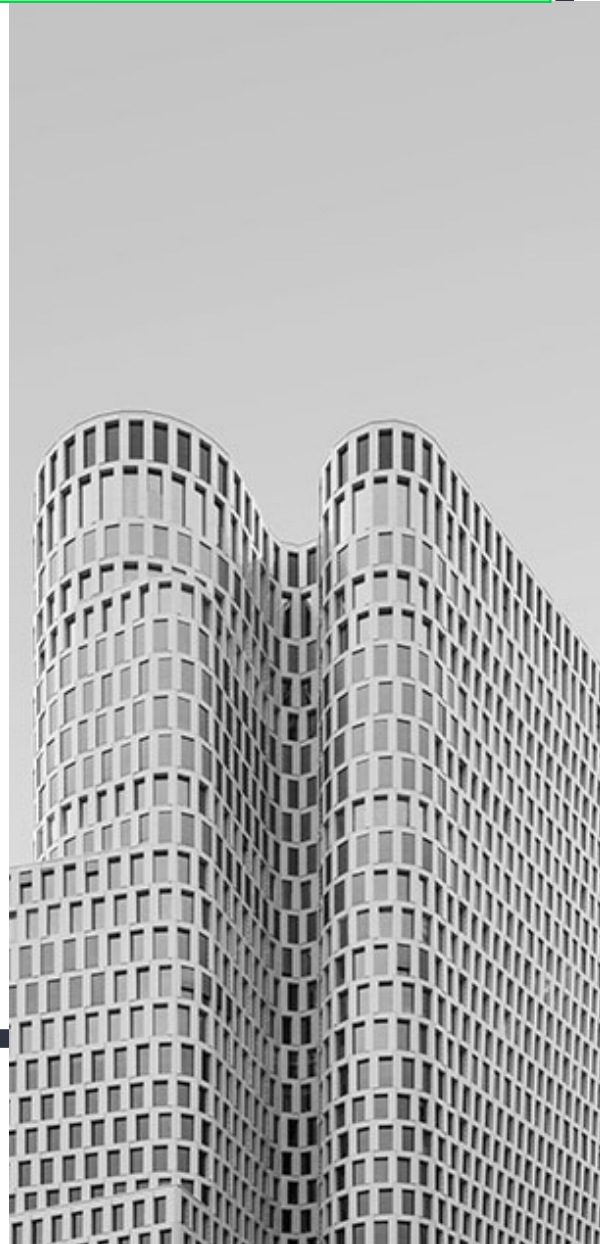
Manufacturing jobs tend to be low-skill positions, with limited opportunities.

MYTH: "The reality is that today's Manufacturing workers are as likely to operate robots as they are wrenches, and use math more than muscle—this isn't your grandpa's factory floor," Sen. Klobuchar said in her email.

A report released this February from Deloitte and The Manufacturing Institute, which included interviews with 84 percent of Manufacturing executives, said there is a significant talent shortage in the sector. Between now and 2022, the

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Work in Progress



Section 3

Student Handout

Myths and Facts About Jobs in Manufacturing

By Lauren Flick, Wednesday, 17 Jun 2015; adapted for ABE/ESL by Angela Locke, October, 2018

Adapted from "Debunking myths about manufacturing jobs" by Lauren Flick

<http://www.cnbc.com/2015/06/17/debunking-myths-about-manufacturing-jobs-.html>

Note to teacher or student: Vocabulary words are capitalized in the following paragraphs. Under each paragraph, a definition of the vocabulary words is given. If a vocabulary word appeared in a previous section, it is noted the first time in parentheses. At the end of the sections, there are questions which the teacher may use to test a student, or a student may use to review his/her knowledge.

What is a MYTH*? What is a FACT*? A myth is something that *is not* true. A fact is something that *is* true, and there is EVIDENCE* to show that it is true. Many people think bad things about manufacturing. People think that manufacturing jobs are always dirty, super-hard and low-paying. People also think that only men can work in manufacturing jobs. Let's look at some myths and some facts about manufacturing.



*VOCABULARY

1. **Myth:** Something that is not true, but often people think it is true.
2. **Fact:** Something that is true.
3. **Evidence:** Proof that something is true.

Myth #1: Manufacturing jobs do not pay well.

Fact: The United States Department of Commerce is an organization in the government that keeps track of data (*Section 2) in companies. Their data shows that workers in manufacturing make more than other workers, 16.5% more by hour. What does this mean for annual (*Section 2) salary? The average (*Section 2) annual manufacturing salary, including pay and BENEFITS*, was \$79,602. The United States Joint Economic Committee is a group of business leaders and government workers such as senators. They also keep track of data. Their

SAMPLES TABE 11/12 PRACTICE
 (BASED ON LEVEL E TYPE QUESTIONS)

1. Read this sentence from “Manufacturing Sector Profile”.

For much of its history, New York State was a powerhouse of manufacturing activity.

What does the word *powerhouse* mean as it is used in the sentence.

- A. Electricity tool
- B. Having great strength or success
- C. Place to live
- D. Power plant

2. According to the “Manufacturing Sector Profile” article, which are two companies that hosted large Manufacturing plants in New York State?

- A. Kodak
- B. Apple
- C. Google
- D. General Motors

3. Which two observations from the graph supports the main idea of the article, “The Decline of American Factories”?

- A. Education and Health Job Sector increased the most from 2007 to 2017
- B. There was approximately 30,456 manufacturing jobs in the Central New York Region in 2017.
- C. Leisure and Hospitality jobs increased by about 4,000 jobs from 2007 to 2017.
- D. There was a significant decrease in manufacturing jobs over the last 10 years.
- E. The Manufacturing sector has diminished the most from 2007 to 2017.

Section 2 Student Handout

The Decline of American Factories
Economic Commentary, 2013, Urban Decline in Rust-Belt Cities, Daniel Hartley
 Adapted from <http://www.encyclopedia.com/places/united-states-and-canada/miscellaneous-us-geography/rust-belt>

Many of the factories and steel mills that produced the “American economic miracle” during and after World War II (1939–1945) were locking their gears by the 1970s. This was more than a downward phase in the business cycle. It was a structural crisis brought about by the aging of a generation of factories, the relative decline of the Manufacturing sector, and increased global competition. Countries that had faced devastation during World War II and had to rebuild, developed modern, technologically advanced factories. Ultimately, U.S. factories could not keep up with this competition. Smaller industrial plants relocated to Mexico or to low-wage Southwestern U.S. areas. Big steel companies dating from the nineteenth century, like Bethlehem Steel and U.S. Steel Co., could not keep up with technological advances and competition from Japan and Germany (whose plants were built during the post-World War II period).

The term “Rust Belt” refers to the economic region roughly covering the states of Michigan, Wisconsin, Indiana, Illinois, Ohio, and Pennsylvania, known as the Manufacturing heartland of the nation. It also refers to a social crisis as well as a geographic region, mostly affecting urban areas. Due to the loss of jobs and closing of factories, rust belt cities experienced deepening unemployment, out-migration of



Bethlehem steel mill was once one of the top providers of steel around the world, providing 80% of the building materials in New York City buildings.
 Image from <http://static.panorama.com/photos/large/27030765.jpg>



An abandoned theater in Gary, Indiana
 Image from <http://static.us.sanazoo.com/wp-content/uploads/2014/09/25/165802/Theater-GaryInd.jpg>

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THANK YOU

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