

**Chicago Math Project Tasks: A Community School Resource**

*These tasks involve students in realizing that there are many different jobs in the city as they review/re-use math skills. Research confirms that if students re-use math skills they learned they will be able to maintain their math abilities.*

| <b>Task</b> | <b>Competence</b>   | <b>Learning Plan</b>   |
|-------------|---|--|
| 1           | Interpreting a data table<br>Addition, subtraction and multiplication with decimals<br>Estimation                       | <ol style="list-style-type: none"> <li>1. Complete the math survey.</li> <li>2. Choose a job you'd like.</li> <li>3. Compare and contrast amounts paid for different jobs—how much more than another worker would you earn?</li> <li>4. Figure out weekly wage; estimate annual income</li> <li>5. Make up a word problem based on the information in the activity.</li> </ol> <p>RESOURCE: TASK GUIDE 1 Plus JOBS TABLE (2 pages)</p> |
| 2           | Interpreting a data table<br>Multiplication with decimals<br>Multiplication with percentages                            | <p>Some workers are part-time. Figure out what a worker in a job you would like would earn if the worker works on a part-time basis for 20 hours a week. That worker gets a raise of 6%. How much does the worker earn after that raise? Then make up word problems based on different numbers of hours for a part-time worker. And give the worker a raise!</p> <p>RESOURCE: TASK GUIDE 2 plus JOBS TABLE (2 pages)</p>               |
| 3           | Calculating area<br>Converting yards to feet<br>Multiplying decimals<br>Calculating cost including materials and wages. | <p>Landscaper task—simulation of a realistic situation in which a landscaper has to purchase sod for playground. Then (extra challenge) make up a math problem based on the same information.</p> <p>RESOURCE: TASK GUIDE 3 plus Multiple Choice Problem Maker Plus salary from JOBS Table</p>   |
| 4           | Constructing and analyzing a bar graph  | <p>Make a bar graph in which you show the number of jobs in five different categories you would like to have. Write a math problem based on the graph.</p> <p>RESOURCE: Use the jobs table plus graph paper or the graph maker.</p>  |
| 5           | Multiplying with percentages  | <p>Think about jobs that will increase. They predict and support their idea. Then they calculate what the number of workers in those jobs will be in 2020 if there is a 7% increase in the number of jobs in those categories. Then they figure out raises—explain that if there is increased demand for a kind of job then workers may get a higher salary.</p> <p>RESOURCE: TASK GUIDE 5 plus JOBS TABLE</p>                         |

## Chicago Area Jobs

The first column lists **some** of the **many kinds of jobs** in the Chicago area.

Column 2 lists **the number of jobs in the Chicago area** in each field in 2014. Column 3 lists the hourly wage. *To get information about these jobs and many more, go <http://www.bls.gov/ooh/a-z-index.htm>*

| <b>KINDS OF JOBS</b>                                     | <b>Number of Chicago Jobs</b> | <b>Hourly Wage</b> |
|--|-------------------------------|--------------------|
| Aerospace Engineers                                      | 230                           | \$45.84            |
| Anesthesiologists  | 1,310                         | \$94.26            |
| Arbitrators, Mediators, and Conciliators                 | 200                           | \$36.78            |
| Architects   | 3,140                         | \$35.12            |
| Audio and Video Equipment Technicians                    | 2,090                         | \$19.90            |
| Bookkeeping, Accounting, and Auditing Clerks             | 34,270                        | \$19.31            |
| Broadcast Technicians                                    | 740                           | \$19.83            |
| Camera Operators, Television, Video, and Motion Picture  | 660                           | \$27.71            |
| Chemists   | 1,700                         | \$34.97            |
| Child, Family, and School Social Workers                 | 9,430                         | \$26.42            |
| Choreographers   | 40                            | \$24.20            |
| Clergy   | 1,180                         | \$20.04            |
| Clinical, Counseling, and School Psychologists           | 3,040                         | \$31.61            |
| Community Health Workers                                 | 1,870                         | \$18.31            |
| Computer Network Support Specialists                     | 4,290                         | \$30.58            |
| Computer Programmers                                     | 16,480                        | \$36.41            |
| Computer User Support Specialists                        | 13,790                        | \$25.25            |
| Customer Service Representatives                         | 74,600                        | \$18.06            |
| Dancers  | 420                           | \$19.31            |
| Dental Hygienists  | 4,660                         | \$33.99            |
| Dentists, General  | 2,550                         | \$62.86            |
| Dietitians and Nutritionists                             | 1,330                         | \$24.82            |
| Editors  | 3,340                         | \$26.31            |
| Educational, Guidance, School, and Vocational Counselors | 5,930                         | \$31.51            |
| Electrical and Electronics Drafters                      | 420                           | \$28.44            |
| Electrical Engineers                                     | 3,220                         | \$43.03            |
| Emergency Medical Technicians and Paramedics             | 8,570                         | \$28.20            |
| Environmental Engineers                                  | 820                           | \$38.70            |
| Film and Video Editors                                   | 570                           | \$26.89            |
| Food Preparation and Serving                             | 345,110                       | \$10.47-21.47      |
| Forensic Science Technicians                             | 320                           | \$38.85            |
| Health Educators   | 1,190                         | \$25.63            |
| Healthcare Social Workers                                | 2,760                         | \$24.42            |
| Hotel, Motel, and Resort Desk Clerks                     | 4,080                         | \$11.54            |
| Interpreters and Translators                             | 1,420                         | \$16.94            |

**Chicago Math: Learn More about Your City and Expand Your Skills**

| <b>KINDS OF JOBS</b>                               | <b>Number of Chicago Jobs</b> | <b>Hourly Wage</b> |
|--|-------------------------------|--------------------|
| Landscapers  | 230                           | \$25.77            |
| Lawyers  | 23,310                        | \$65.83            |
| Marriage and Family Therapists                     | 110                           | \$20.51            |
| Medical and Clinical Laboratory Technicians        | 3,420                         | \$20.01            |
| Mental Health Counselors                           | 2,950                         | \$22.85            |
| Microbiologists                                    | 160                           | \$40.66            |
| Music Directors and Composers                      | 710                           | \$31.36            |
| Musicians and Singers                              | 1,120                         | \$17.91            |
| Nurse Practitioners                                | 1,890                         | \$42.03            |
| Occupational Therapists                            | 3,200                         | \$35.45            |
| Optometrists                                       | 1,010                         | \$50.34            |
| Orthodontists                                      | 710                           | \$55.25            |
| Paralegals and Legal Assistants                    | 10,470                        | \$24.10            |
| Payroll and Timekeeping Clerks                     | 4,160                         | \$20.88            |
| Pharmacists  | 6,800                         | \$55.17            |
| Pharmacy Technicians                               | 11,070                        | \$13.70            |
| Photographers                                      | 1,760                         | \$15.87            |
| Physical Therapists                                | 7,180                         | \$36.84            |
| Physician Assistants                               | 1,580                         | \$37.98            |
| Plumbers   | 11,350                        | \$34.59            |
| Podiatrists  | 340                           | \$64.27            |
| Private Detectives                                 | 800                           | \$21.76            |
| Public Relations Specialists                       | 4,870                         | \$32.30            |
| Radio and Television Announcers                    | 810                           | \$24.66            |
| Real Estate Sales Agents                           | 4,320                         | \$39.80            |
| Registered Nurses                                  | 69,050                        | \$34.46            |
| Reporters  | 1,160                         | \$23.64            |
| Respiratory Therapists                             | 2,760                         | \$27.35            |
| Sales Representatives                              | 49,570                        | \$33.29            |
| Social and Human Service Assistants                | 5,750                         | \$14.17            |
| Software Developers, Applications                  | 21,170                        | \$40.82            |
| Sound Engineering Technicians                      | 350                           | \$21.24            |
| Speech-Language Pathologists                       | 4,900                         | \$37.93            |
| Supervisors of Office Workers                      | 29,980                        | \$27.67            |
| Survey Researchers                                 | 830                           | \$27.26            |
| Switchboard Operators, Including Answering Service | 3,540                         | \$14.33            |
| Technical Writers                                  | 1,040                         | \$33.04            |
| Telemarketers                                      | 3,660                         | \$13.34            |
| Urban and Regional Planners                        | 360                           | \$36.87            |
| Veterinarians                                      | 1,590                         | \$43.03            |
| Veterinary Technologists and Technicians           | 1,870                         | \$14.46            |
| Web Developers                                     | 2,610                         | \$31.89            |

## Chicago Math TASK GUIDE 1

Competence: Interpreting a data table.

Addition, subtraction, multiplication with decimals.

### Part 1. Earning Money

Job 1. Choose a job you'd like to have in the future--from the Chicago jobs table.

\_\_\_\_\_

Job 2. What is another job that pays less? \_\_\_\_\_

How much more will you earn each hour in the job you chose than in job 2?

\_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_

Weekly Income: Most workers work 35 hours a week.

*How much would you earn each week if you had job 1?*

*Figure out the answer here.*

Answer: \_\_\_\_\_

Annual Income: There are 52 weeks in a year. Estimate how much money you would earn in that job in a year.

\$ \_\_\_\_\_

### Part 2. Your Own Word Problem

Make up a word problem. In your problem, use real numbers from the table.

Make the problem about how much more one worker earns than another.

*You can make it an algebra problem!*

## Multiple Choice Question Maker

**Question Maker:** Write a challenging question here. Make it a WORD problem.



Write the correct answer and three other possible answers here:

|    |    |
|----|----|
| a. | b. |
| c. | d. |

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### **Problem Solver:**

What's the best answer? \_\_\_\_\_

Tell how to figure that out.

## Chicago Math TASK GUIDE 2

Competence: Interpreting a data table.  
Multiplying decimals.  
Multiplying with percentages.

Some workers do not work a full work week. They work part time.

Choose four jobs you would like to have while you are going to college.  
You can work 20 hours a week in the job to earn money to pay your tuition.

| Job | Hourly Wage | Weekly Earning |
|-----|-------------|----------------|
|     |             |                |
|     |             |                |
|     |             |                |
|     |             |                |

Choose the one job you would want to do the most.

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Good news!  
You do a great job.  
Your supervisor gives you a raise of 5%.

What will you earn then?

Hourly wage: \_\_\_\_\_

Weekly wage: \_\_\_\_\_

### Added Challenge: Make Your Own Word Problem

Make up a word problem.  
In your problem use real numbers from the table.

**CHICAGO MATH TASK GUIDE 3**

Competence: Calculating Area.

Multiplying cost per square foot to determine total cost.

Subtracting areas.

Calculating cost of materials plus wages.

You're a landscaper.

You get an order to put sod into a playground.

Sod is grass.

It comes in rolls of grass that you will unroll and lay out to cover the playground.

The playground dimensions are: 15 yards wide by 36 yards long.

Draw a diagram here showing the playground.

How many square feet are in the playground? \_\_\_\_\_

You go to Home Depot to get the sod. They tell you that you can buy it in pallets. The sod comes rolled up on a board called a pallet. Each pallet holds 500 total square feet. Each pallet of sod costs \$360.00.

How many pallets of sod do you need? \_\_\_\_\_

You estimate that it will take you 32 hours to unroll the sod and water it and make sure it is set up well. How much will you charge **for your labor** and **the sod**?

\$ \_\_\_\_\_

You figure out that you will have extra sod left. Figure it out here.

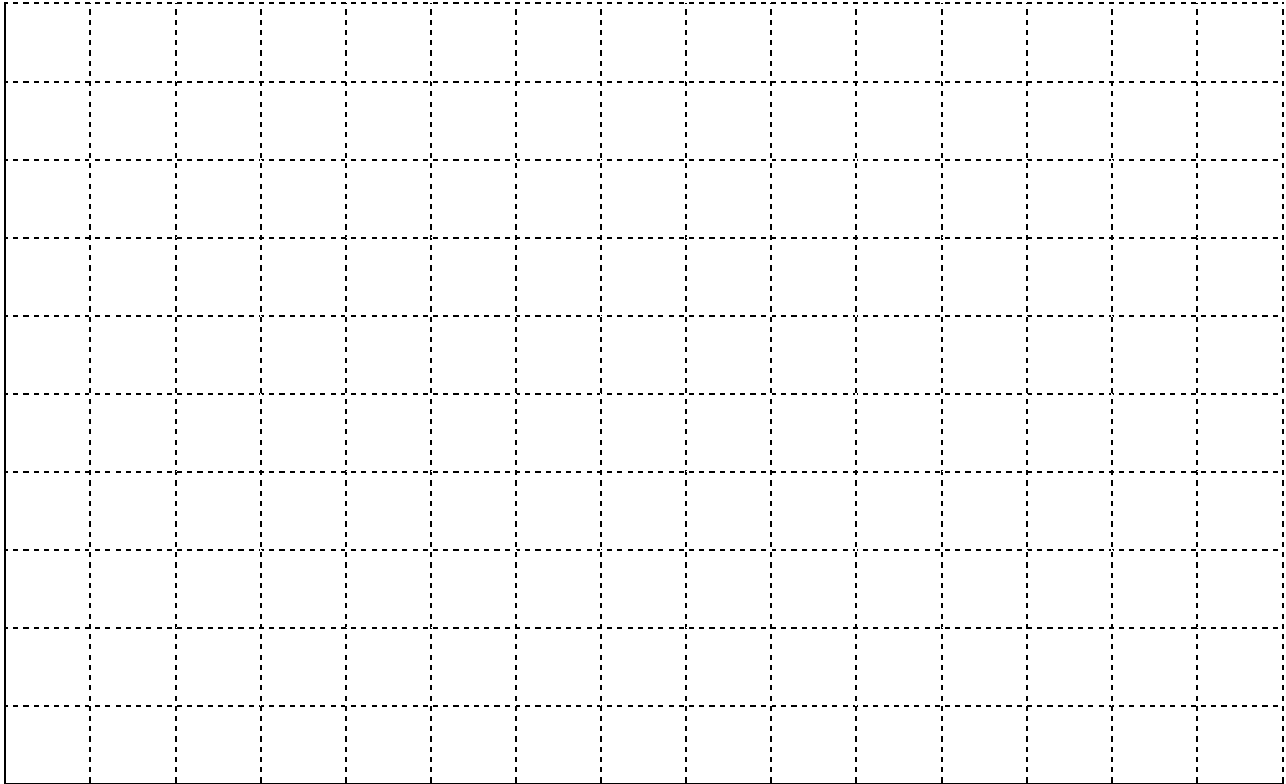
How much sod will be left over? \_\_\_\_\_ square feet

Extra Challenge: Make a math word problem of your own for another landscape project.

### Task 4: I Can Analyze Relative Quantities with a Bar Graph

*Choose five different jobs and show how many people work in those jobs in the Chicago area.*

**Title of the Graph:** \_\_\_\_\_



#### Analyze Patterns and Relationships

Explain the patterns or relationships it shows—or give it to another student and ask that student to explain it.

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*Ask a question based on the graph.*

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**CHICAGO MATH TASK GUIDE 5 Jobs can grow!**

Competence: Multiplying with Percentages

The economy can change based on what jobs people need.

Choose three jobs that you think will increase in the Chicago area and tell one reason you think each will increase.

| Job Category | Why I think it will increase. | How many there will be in 2020 if there is a 7% increase. |
|--------------|-------------------------------|---|
|              |                               |   |
|              |                               |   |
|              |                               |   |

Then predict what the number of workers in those jobs will be in 2020 if there is a 7% increase in the number of jobs in those categories.

Another thing that could happen to get more people to do that kind of work is a raise in salary. This is a challenging task: Figure out what one of those workers would earn if there is a raise in salary for that kind of job of 5%, 8%, and 12%.

Job Category: \_\_\_\_\_

Hourly Wage with an increase by 5% \_\_\_\_\_

Hourly Wage with an increase by 8% \_\_\_\_\_

Hourly Wage with an increase by 12% \_\_\_\_\_

Added Challenge: Make up a math problem about percentage changes in what a worker earns.