The curriculum guide is designed for a basic skills course for machine maintenance workers. The 12-week course is divided into three segments: English as a Second Language and vocabulary development; technical vocabulary and mathematics; and technical symbols, trouble-shooting, and word problems. For each of the three segments, a list of performance objectives is provided. A 5-week test and a 12-week test are also included. Each contains language skill items, tool vocabulary items, typical problems, and items involving the interpretation of pictures or diagrams. (MSE) (Adjunct ERIC Clearinghouse on Literacy Education)
Juno Lighting Inc.

Curriculum • Basic Skills for Maintenance Workers

Worker Education Program
Chicago Teachers' Center of Northeastern Illinois University and
the Amalgamated Clothing and Textile Workers Union

July 1994 • Sabrina Budasi Martin

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Basic Skills for Maintenance Workers

Jul. 11 - Aug. 17  ESL & vocabulary development
Aug. 22 - Sept. 7  Technical vocabulary and Math for first hour of class
Sept. 12 - Sept. 28 Technical symbols, trouble shooting and word problems

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Week 1  Maintenance brainstorming, writing principles, and capitalization & punctuation.
Week 2  Tools identification, their use, and begin journal writing.
Week 3  Preventative Maintenance work forms, Milford machine parts identification, using Milford machines and parts index. Begin describing defects.
Week 4  More Milford parts, tools, preventative maintenance forms, spelling and describing defects.
Week 5  More Milford parts, Milford operating problems, reasons for using tools, capitalization, punctuation, spelling, and prepositions. Quiz.
Week 6  Using indexes and table of contents using the Milford Operating Instructions and Maintenance Manual. Maintenance Work Request forms and Tool Request form. Concentration on reading and writing work problems and solutions.
Week 8  Math. Same as week 7.
Week 9  Math. Same as week 7 & 8
Week 10  Milford parts identification, (review), electrical symbols, and trouble shooting.
Week 11  Trouble shooting and word problems.
Week 12  Problem solving, review, and testing.

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Course Objectives
Juno Lighting, Inc. Basic Skills for Maintenance Workers

Week 1 - 6

-- Understand and put to use general punctuation and capitalization rules by correcting a short dialogue with less than five errors.

-- Understand how to use Milford Parts Manual by successfully labeling numbered diagram parts with correct technical term and (with minimal assistance by the instructor), by working in teams to verbally identify parts on machines.

-- Understand, use and write tools requested for Tool Sign Out form by pointing out the appropriate items in the tool room when asked by the instructor and by writing a specific tool, with less than 3 spelling errors, next to its appropriate function.

-- Verbally identify defects when presented with photographs of a variety of physical problems with miscellaneous work materials.

-- Orally describe three problems with riveting machines with less than 3 grammar and/or spelling errors.

-- Orally describe three problems related to other problems, not related to the riveting machines, that occur on the assembly lines.

-- Use a parts list to verify that a set of parts is complete and/or defective.

-- Write six vocabulary words related to defects with less than 3 spelling errors.

-- Write the location of job specific tools with less than errors using learned prepositions.

-- Write five typical problems at Juno when someone needs to use a specific tool with less than 5 grammatical and punctuation errors.

-- Understand the concept of alphabetization by writing 15 words in their correct alphabetical order and by looking up new vocabulary words identified in assigned reading.

-- Explain job description for the Class C Maintenance position by verbally communicating related responsibilities to the instructor.
-- Name and identify machine parts on four Preventative Maintenance schedules by pointing out machine parts on riveting machines when asked by the instructor and by labeling a diagram with less than five errors.

-- Identify and use the table of contents and/or index in Milford (and other) maintenance manuals.

-- Write three problems with riveting machines with less than 3 grammar and/or spelling errors.

-- Write three problems related to other problems, not related to the riveting machines, that occur on the assembly lines with less than 3 grammar and/or spelling errors.

-- Further understand general punctuation and capitalization rules by writing a paragraph about a problem at work with 5 or less errors.

-- Develop problem solving skills by choosing and using correct manual to find solutions to problems conceptualized in previous objectives.

-- Orally explain and write current job description by completing a writing sample and the beginning and end of the course.

**Week 7 - 12 (Math)**

-- Use basic math skills (addition, subtraction, multiplication & division) by calculating word problems related to paychecks.

-- Solve 4 each, large division and multiplication equations with no more than 3 errors.

-- Provided with oral instructions, correctly divide circles and rectangles by half, fourths, eighths etc.

-- Compute 8 problems using fractions (2 each, + - x ÷) with no more than 3 errors.

-- Demonstrate the ability to show the connection between numbers and ideas expressed by words such as half, third, fourth, fifth...buy verbally explaining a fraction math problem on the board.

-- Identify and use various measurement tools by naming a tool and why when presented with a situation by the instructor.

-- Using basic mathematical concepts, demonstrate understanding of problems at work by solving three word problems with no errors.

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Week 10 - 12

-- Given flash cards, identify 26 electrical symbols and what they represent by matching the appropriate symbol with its meaning.

-- Given the Milford Parts Catalog, identify all machine parts on Monthly and Weekly Preventative Maintenance Schedules by working in small groups and labeling diagrams.

-- Identify working parts and understand functions on the lines by answering questions on Monthly Line Check questionnaire.

-- Identify 26 electrical symbols and what they represent by writing the appropriate terminology next to the correct symbol with no more than 2 errors.

-- Given the vocabulary in no particular order, label Milford machine parts diagrams with no more than 2 errors.

-- Demonstrate ability to use Maintenance Manuals by writing solutions to 4 simple machine maintenance problems.
**Five Week Quiz**
Juno Maintenance

**Correct this dialogue. Put in capital letters and punctuation.**

Ninfa:  JUAN I need a hammer can you get it for me
Juan:  SURE I have to go to the tool room and ask JESUS
Ninfa:  NEVER MIND he's in MEXICO I can use a SCREWDRIVER
Juan:  ARE YOU SURE it will work ninfa
Ninfa:  HMMMMM I'm not sure let's try it and see if it works

**Write the tool needed for the following problems.**

1. Jose needs to tighten and loosen some bolts. __________
2. Ninfa wants to cut wires and connect them. __________
3. Juan needs to cut insulation and plastic bags. __________
4. Humberto wants to hit the roll set because it sticks. __________
5. Juan needs something to know the height and distance of a table. __________
Write down a typical problem at Juno when someone needs to use the following tools.

1. Screwdriver: ____________________________

2. Allen wrench: __________________________

3. Extension cord: _________________________

4. Drill: __________________________________

5. Saw: ___________________________________

There is something wrong in each picture. Write the name of the defect next to each item.

1. ____________________________

2. ____________________________

3. ____________________________

4. ____________________________

5. ____________________________

6. ____________________________
There are ten tools in the work room. Circle five, and tell me exactly where they are.

*Example:* The screwdriver is hanging on the left side of the pegboard.

1. 

2. 

3. 

4. 

5. 

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Write the names of all the circled items on the diagram for the Raceway Assembly.

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10.
TWELVF WEEK TEST

Name: ___________________________ Date: ____________________

Identify each symbol and write what they represent.

Example: ______ Ground ______

1. ______

2. ______

3. ______

4. ______

5. ______

6. ______

7. ______

8. ______

9. ______

10. ______

11. ______

12. ______

13. ______

14. ______

15. ______

Page 1
Answer the following math problems. Show your work.

1. \[ \frac{4987}{56} \]
   
2. \[ 8994.00 - 3755.90 \]

3. \[ 23 \div 8457 \]

4. You received your paycheck on Thursday for $300.00. Before you could spend your money, you needed to save $75.00 for rent and $50.00 for bills. Afterward, you spent $37.00 on Friday and $19.00 on Saturday. How much money do you have left?
Write the tool needed for the following problems.

1. Jose needs to tighten and loosen some bolts. ________________
2. Ninfa wants to cut wires and connect them. ________________
3. Juan needs to cut insulation and plastic bags. ________________

Write down a typical problem at Juno when someone needs to use the following tools.

1. Screwdriver: ____________________________________________

2. Allen wrench: __________________________________________

3. Saw: __________________________________________________

Using your Milford riveting machine manual, write down a solution to the following problem.

- The rivets are getting damaged in the hopper barrel. It looks like they are sticking in the hopper barrel slots. How are you going to fix it? What tools do you need?
Write the names of all the circled items on the diagram for the Jaw Slide & Spindle Block Assembly.

- jaws
- screw
- jaw spring
- jaw slide
- jaw slide drive
- shuttle return spring
- spindle & jaw slide block

1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________
Write the names of all the circled items on the diagram for the Jaw Slide & Spindle Block Assembly.

- jaws
- screw
- driver
- jaw spring
- jaw slide
- jaw slide drive
- shuttle return spring
- spindle & jaw slide block