Hamilton-Junior lab-off-site learning packet day 3

Instructor Mark Hamilton **Date** _____

Program/Class AEM Jr. **Period** 1-4

State Indicator/Competency:

Unit 31: Grinding Machines

31.2 Explain the functions of grinding wheels and dressing devices

31.2.1 Identify different types of conventional grinding wheels and dressing devices.

31.2.2 Analyze the specifications for conventional grinding wheels.

Instructional Objective(s):

1: students will explain grinding wheel labeling system with 80% accuracy

2: Students will name 4 of 5 wheel colors and their uses

Materials:

Virtual machine shop

Method of Instruction:

Research

Activities:

Read through the hand out and answer the questions

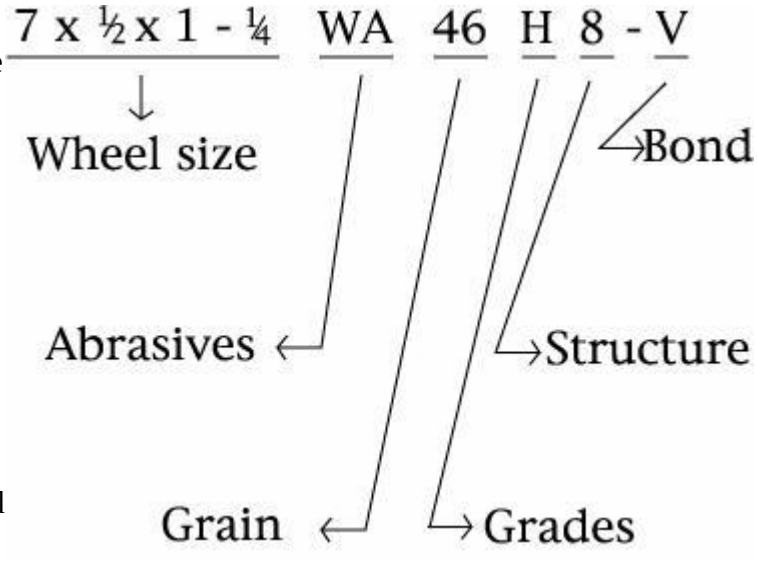
Closure:

Answer the questions on the last page

Assessment:

Answer sheet will be collected and is worth 10 points

Each grinding wheel comes with a paper label glued to its face. The label provides much information concerning the composition of the wheel.



The system is a series of numbers and letters which codify the composition of the wheel. The first letter indicates the type of abrasive used, using the letter A for Aluminum Oxide or C for Silicon Carbide. Next the manufacturer of the wheel will indicate the grain size, with appropriate numbers indicating a coarse, medium, or fine range. The grade is indicated in alphabetical form, with the softest grade being the A end of the alphabet, and the Z being the hardest.

Structure is indicated by a numerical rating, but its use is optional. Finally the bond type is indicated by an abbreviation of the type of bond used, V for vitrified, S for silicate, etc.

Wheels sometimes have different colors and can be representative of the type of wheel. If the Norton Company is used as a reference, the following color codes would apply for the best materials and processes for each wheel:

- White Aluminum Oxide – Used on tool steels and mold steels
- Pink or Blue Aluminum Oxide – Used on alloyed tool steels
- Off-White/Light Grey Monocrystalline Aluminum Oxide – Better for holding than the above, used on high speed steels as well
- Light Blue Synthetic Aluminum Oxide – Works on all ferrous materials, used in high production applications
- Gray Mixed Aluminum Oxide – Used on centerless or cylindrical applications
- Green Silicon Carbide – Used on non-ferrous materials such as aluminum and carbide tooling.

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Name_____

1. List the definitions of the wheel identification label listed (7x1/2x1-1/4 WA 46 H 8-V)

    a. 7x1/2x1-1/4=

    b. WA=

    c. 46=

    d. H=

    e. 8=

    f. V=

2. List the type of material the wheel color below is used on.

    a. White=

    b. Pink or Blue=

    c. Gray mixed aluminum oxide=

    d. Green silicon carbide=