



Automation Creation



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Part I: Overview of Workplace

Background: Pella Corporation was founded in 1925, by Pete and Lucille Kuyper. Originally named Rolscreen Company after the innovative product: Rolscreen® which is a retractable screen that rolled up like a shade. Pella began constructing their windows in 1937 and sliding doors in 1960. In 1992 Rolscreen Company changed their name to Pella Corporation to be more inclusive for other products. Pella Corp is still ran by the Kuyper family.

Mission: To perpetuate Pella Corporation as a privately held company that benefits customers, team members, partners, shareholders and the communities in which we participate.

Vision: To be the desired brands of choice with an unrivalled passion for what we do and how we do it.

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Hearing Conservation

For hearing protection to be effective it must be worn properly.



To properly insert hearing protection devices:

- Compress plugs by rolling between finger and thumb
- Raise your opposite side arm over and across your head
- Grasp the back part of the ear at the top, gently pull back and up while inserting the protector into ear
- Hold plug in ear for a few seconds allowing the foam to expand

To check for proper insertion:

- Once your plugs have expanded, cup your hands and place them over your ears
- Slowly move your hands away from your ears
- If you hear a noticeable change in sound, you do not have a good fit

VIEWED TO BE THE BEST

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Shoe Policy

Acceptable Shoes must

- Have sturdy upper material
- Protect the top and front of the foot
- Cover the foot in its entirety.

Shoes that are not acceptable include

- Clogs/ Crocs
- Sandals/ Flipflops
- Footwear with worn out uppers or toes.
- Loth or canvas shoes
- production areas require steel-toed shoes.
- astics requires steel-toed shoes or shoe covers





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Discouraged Jewelry in Production

Restrictions:

- Ear rings, nose rings, eyebrow rings, etc., must be snug to the skin and are piercings without extensions.
- Hoop jewelry is **NOT** allowed
- Dangling jewelry may not be worn while working in production.

Gauges may be worn if they are solid.





Extensions or bars provide catch points

Hoop earrings create

Part II: Workplace Focus

- Onboarding
- Quality
- Measurements/Gauges
- Safety
- Tool and Die – Facility
- Layout
- Continuous Improvement
- Safety
- Carpentry
- Welding/Machine Build

Part III: Introduce the Problem

In many technical fields, problem solving is the biggest hurdle. Students difficulty understanding logic formulas and switches. Students need practice troubleshooting problems and researching solutions. I would like to create a project where students have to analyze the cost and time of making a part or parts by hand versus automation. This can be done in a carpentry shop with a CNC router and a host of power tools. We would measure the benefits of automation and examine the efficiency of human labor.



Part IV: Standards, Driving and Essential Questions

- Students will investigate the evolution of engineering, technology, and trade and industry on products, structures, and systems.
- Students apply safety practices in the lab and on worksites
- Students will apply engineering principles when planning, developing, implementing and analyzing technological solutions.
- Students will apply the principles of automation and robotics.
- Students select, use, create, and evaluate manufacturing technologies

Part V: Extern Host Role

Breonna Ussery - *Talent Acquisition Coordinator*

Rudy Clark - *CNC Technologist/Operator*

Possible Field Trip Opportunity.

Pella Corp offers ShopBot CNC Training to employees in house and may be willing to train educators on Software and Hardware.



Part VI: Student Learning

Do they have some level of voice and choice? While getting started it is important to probably limit the choices, too many choices can derail an activity. One project should be selected. Students should reverse engineer that project in CAD Software, Export to G-Code for Cutting.

Are there opportunities for revision? After each presentation of the project this process should be revisited.

Are there opportunities for reflection along the way?

Students should have an opportunity to express aspects of the project they had difficulty completing. Discuss what skills or knowledge do they wish they had prior to this project.