Halloween Animatronics Mini-Project
PLTW Engineering Design & Development

Name:__________________________  Semester:__________  Period:_______

Introduction:
Over the last few years you have taken a variety of courses including PLTW, materials processing woods, metals, construction, CAD, and etc. During your coursework, you have acquired new skills and knowledge which you will learn to apply in this Halloween Animatronics Mini-Project. Some of these skills include using hand & power tools, understanding of mechanics, materials science, soldering, welding, graphic design, computer modeling, and testing. Working in teams of three, you will utilize your acquired skills and previous knowledge from other courses to complete this mini-project. While completing this mini-project you will learn how to you keep deadlines using time management, utilize school laboratories, and locate resources.

While applying your previous knowledge, you will be researching, designing, and building your own animatronic Halloween prop to be tested in the innovation quad during the week of Halloween. After a review of laboratory and machine safety, you will have access to all Technology & Engineering laboratories. It’s a good idea to know what the capabilities are available here in our laboratories when designing your final solution. You may need to go elsewhere to render some of your team’s work to complete this mini-project.

Directions:
You will be working in teams on your Halloween Mini-Project.

• Answer the following questions in your Engineering Notebook: Due 9/19
  o Where have you seen animatronics in real-life?
  o What types of materials were used in the construction?
  o What type of engineers and experts worked on the design?

• Visit Websites for ideas (see example sites below) Due 9/19
  o http://www.spoookyblue.com/
  o http://www.haunteddriveway.com/
  o http://hauntproject.com/
  o http://www.horrorseek.com/home/halloween/wolfstone/Pneumatics/pnuint_PneumaticIntro.html
  o Record other websites in your “Resources” section in your journal

• Sketch and draw ideas of possible solutions in your engineering notebook Due 9/22
  o Sketch and draw ideas in your journal with annotations
  o Think about what type of reactions do you want from your audience
  o Share ideas with team and choose the teams top design and produce a detailed drawing in your journal
  o See instructor for approval

• Create mechanical drawing in CAD or Inventor and part list Due Friday 9/29
  o Include details of measurements in drawings
  o Parts list should include description, price, and supplier
  o Print these out in color
  o See instructor for approval

• Begin acquiring materials and build your final design ONGOING- after approval
  o You will need to supply your own materials, so keep the cost of your project down. Mrs. Snyder will have some materials available.
  o Follow Safety and laboratory guidelines
    ▪ No power equipment without instructor presence in lab
    ▪ Make appointment to use laboratories outside of class
    ▪ Safety glasses must me worn at all times
  o Document your design and build process by taking pictures
    ▪ Pictures will be use in a PowerPoint presentation
    ▪ Digital cameras and video are available to sign-out

Estimated Class Time: 20 Days
Mrs. Snyder
Halloween Animatronics Mini-Project
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Mrs. Snyder

• Test and modify your design
  o Document your testing procedures
    ▪ Type out test procedures in Microsoft Word
    ▪ Include a summary of results and include pictures
  o Make adjustments and modifications

• Halloween Week of Scare! Final assembled project **DUE OCT 23**
  o Set your animatronic in the haunted garden
  o Document with picture and video
  o Record the type of reactions you get
  o Obtain feedback
  o Have Fun

• Document your learning Experience in PowerPoint **DUE OCT 27**
  o Summarize your design process
  o Include pictures, video, and working drawings
  o Use bulleted list and follow proper formatting techniques
  o Each group will present their PowerPoint to the class

**Evaluation:**

After completing your mini-project, you will be evaluating your team’s process on an individual and group evaluation.

  o As a team you will rate your team’s progress (scale 1-10) on how well your team stayed on task, met deadlines, worked productively in class, quality of craftsmanship, and etc. You will describe in detail what the team did well, and what you would do different. This will be typed in Microsoft Word.

  o As an individual, you will rate yourself (scale 1-10) and each of your teammates (scale 1-10). This evaluation will be confidential. Criteria should include major contributions you made for the team, remember all comments should be backed by your Engineering Journal.