



### **Manufacturing Externship – Application in the Home School Acknowledgement\***

1. Educator Name: Jesse Heath
2. School District and School: Upper Dauphin Area High School
3. Date(s) of Manufacturing Unit:
4. Length of lesson or unit: 1 Class Period
5. Number of students: ~35
6. Grade level of students: 9-12

#### Description of Activity:

- 1) Students were given instructions, materials, and time to fold an origami swan.
- 2) Discuss what was done, how it could be made faster, and what machines/jigs could help.
- 3) Discuss the differences in the responsibilities of a mechanical engineer vs a manufacturing engineer.
- 4) Look at several different types of products and discuss the methods that could be used to produce them.
- 5) Discuss the skills and education necessary for manufacturing engineering.

What elements from your Manufacturing Externship were used in the preparation or delivery of the unit? (i.e. robot, PPTs provided, information gathered from discussions or tours, etc.)

I used the PowerPoint, and information gathered from our tours of Penn College facilities as well as the business tours.

How were students engaged with the unit? What hands-on activities occurred?

Students were given instructions to fold an origami model. This helped to get students engaged, and got them started thinking about what it takes to produce something.

Explain connections that were created/discussed between manufacturing careers and higher education.

I discussed the differences between the unskilled labor that I think many students associate with manufacturing, and the types of manufacturing careers that higher education can open up to students. I plugged Penn College's tiered approach to manufacturing education, where students can obtain a certificate and work toward an Associates/Bachelor's degree.

How did students respond to the unit?

They were all pretty interested, but I don't think I was able to definitely change any plans. I think it was accurate when we said that we need to start introducing students to this in the middle school. Most of the students I talked to seemed to be pretty well set in their future plans.

Were parents involved or aware of the unit? What was their response to the activities?

They were not.

*A goal of this program is to make advanced manufacturing education and information available to high school students. As such, Penn College is attempting to build a repository of activities that can be used across the K-12 environment. In the subsequent pages, please provide additional information on the lesson/units you implemented so that others can implement similar activities in their classrooms. Please be sure to include any material lists, photos/evidence of student work (not of student participants), and any other relevant information required to implement in another school.*

\*By submitting this form, you acknowledge all information is accurate and correct to the best of your knowledge and you agree to the sharing of this information via publicly accessible websites.