

ROBOTIC ARM END EFFECTORS



Introduction: Robots are used daily in industry and are designed for the “3 D’s,” Dull, Dirty, Dangerous jobs. Robots never get tired, bored, care about getting dirty, nor are concerned about getting hurt on the job. Robots have reduced labor costs and added a high level of precision which was unattainable by humans before their creation.



Task:

- Using the supplied NASA handout your team will build a Styrofoam robotic arm and complete a series of tasks
- Your team will then complete a series of three sketches for the construction of an end effector using tubing, syringes and the supplied materials
- Once completed, your team will build a working end effector as sketched... You must decide which will be most likely to work!
- When your End effector is completed a set of tasks will be given to complete as part of your grade
- Once the tasks are completed a set of plans to complete an entire syringe robot will be completed and turned in. This robot must be capable of moving eggs in and out of water without breaking them as quickly as possible.



Guidelines/Parameters:

1. All designs must be original
2. Levels of completion can be checked against the scoring rubric/guide
3. All sketches must be clearly labeled with each part showing a label as to what it is
4. Tasks must be completed with both end effectors before continuing on to next activity
5. Final drawing need only be sketches unless stated otherwise by teacher
6. Final career presentation must be done in PowerPoint and saved to a 3.5” disk

Extra Credit:

Mount end effector to a base so it is still functional and can perform the assigned tasks