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| **Course:** Investigating STEM Skills | | | | | | |
| **Unit:** Exploring Engineering | | | | **exercise:** Conduct an Interview | | **Time Frame:** 3 - 4 Hours |
|  | Preparation: *Summary of “to do’s” that the teacher should understand and prepare before bringing this lesson to the classroom.* | | | | | |
| **Resources:**   * Internet | | | | | | |
|  | Safety: *Summary of safety strategies in the lesson.* | | | | | |
| Please use this space to describe safety procedures or highlights for this lesson. | | | | | | |
|  | Desired Results: | | | | | |
| Established Goals: | |  | Transfer: | | | |
| *Problem Solving Techniques and Applications Standards:*  Teachers should use the STEM Academy Standards Correlation System available in the STEM Connections area of a unit to extract specific standards and insert these standards here. | | *Students will be able to independently use their learning to…*   * Properly conduct an interview | | | |
| Meaning: | | | |
| Understandings  *Students will understand that...*   * The design process * What an engineer is * Engineers improve people’s lives * Scientists explore and engineers create * Engineering researchers are interested in the application of a breakthrough * Scientists are concerned with the knowledge that accompanies a breakthrough * A successful person will develop the ability to communicate well with others * Employers look for people who have activities in their lives outside of work | | Essential Questions  *Students will keep considering...*   * What gap do development engineers create a bridge for? * What do development engineers do with researchers’ findings? * What does test engineering involve? * When do we need a systems engineer? * Who do construction workers work with? * Who must operations and maintenance engineers interact with? * Why do sales engineers need interpersonal skills? * What are important skills needed to be a well-rounded engineer? | |
| Acquisition OF KNOWLEDGE AND SKILL: | | | |
| *Students will know...*   * The job of an engineer * The engineer versus the engineering technologist * The engineer versus the scientist * Development engineers * Test engineering * Design function/design engineer * Systems engineering * Manufacturing and construction engineers * Operations and maintenance engineering * Technical support engineer * Sales force engineers * Consulting * Management * Key skills and qualities in an engineer | | *Students will be skilled at...*   * Demonstrating the differences between an engineer and a scientist * Analyzing their energy use | |
|  | Evidence: | | | | | |
| Evaluative Criteria: | |  | Assessment Evidence: | | | |
| * Graded rubric | | | *Performance Task(s):*  **Your First Interview**  Students will practice conducting a proper interview for a job. | | | |
| * Thoughtful, clear, thorough * Graded on accuracy, multiple-choice questions * Completed on time | | | *Other Evidence:*   * Online end-of-unit test | | | |
|  | Learning Plan: *Summary of Key Learning Events and Instruction* | | | | | |
| **Pre-Assessment:**  Exploring Engineering Pre-Test  **Outline:**   1. <Set induction> 2. Online reading + section quiz+ discussion 3. Activity 4. Overview 5. Section 1 6. Section 2 7. Section 3 8. Evaluation   **Learning Experiences:**   1. <Set induction> Pick a student at the beginning of class to conduct a mock interview with. 2. Direct each student to open the document STEM Unit1A. Within this section, students will need to first read pages 2–8 before they complete the associated activities. You may choose to do this as a class or individually. Discuss the covered material as a class. 3. At the completion of the reading assignment have students complete online section quiz. This will assess their knowledge from their reading. 4. Once students have completed both the reading and quiz, prepare them for the section activity. This activity will help them to apply what they have learned from the readings. 5. Review the instructions for the section activity, and provide adequate time to complete it. 6. This activity is divided into three sections. Students should be given time limits for each section and allowed room to move around in-between sections. 7. Collect all materials at the end of each section for grading. 8. If time permits, bring in a guest speaker during this activity to discuss with students various interview skills.   **Progress Monitoring:**  Teacher observes students and provides on-going feedback during the activity. While introducing the unit, the teacher will pause and ask for questions to make sure everyone understands.  Students will complete self-assessment and brainstorm how they could improve their skills in the future. At the end of the unit, there will be a quiz to measure their overall understanding. | | | | | | |
|  | Differentiation: *Summary of Key Differentiation Techniques* | | | | | |
| Please use this space to insert your differentiation techniques. Depending on the needs of students, various techniques might be needed in a classroom, therefore use the information below and experts in the area needed to design your plan for differentiation.  The ASCD Study Guide for Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids.  by Carol Ann Tomlinson, Jay McTighe  Integrating Differentiated Instruction and Understating by Design: Connecting Content and Kids.  by Carol Ann Tomlinson, Jay McTighe  ISBN-13: 978-1416602842  ISBN-10: 1416602844  Differentiating Reading Instruction  by Laura Robb.  ISBN13: 9780545022989  A Teacher's Guide to Differentiating Instruction  The Center for Comprehensive School Reform and Improvement | | | | | | |

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|  | career Connections: *Summary of Career Opportunities Associated with this Lesson* |
| Please use this space to insert careers that might be connected to this lesson. This section will need continuous updating as new careers and emerging technologies change the opportunities available in the workforce.  Good sources for career connections:  Occupational Outlook Handbook  <http://www.bls.gov/ooh>  The National Career Clusters® Framework  <http://www.careertech.org/career-clusters> | |
|  | Keywords: *Please Insert Keywords from this Lesson with their Definitions* |
| Please use this space to insert keywords and their definitions  Use resources like [dictionary.com](http://dictionary.reference.com/) to find definitions to your keywords | |