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|  **Dominguez Martinez, Miriam**  **EED 480 PBL with 5E Framework**  |
|      | 1. Title and Grade Level: Bean Seed Experiment. Grade Kinder
2. *BIG IDEAWhy is?* Looking at the bean seed that grew the most, why might it have grown the most?

*Let's investigate. . .* which bean seed grew the most, and which bean seed grew the least. *Let's be engineers, scientists . . .* we will record our data according to the bean seed’s length. Then we can look at the spaces for our school garden and answer the question:*Where?* Where do we think bean seeds will grow the best?1. JUSTIFICATION This lesson series . . . (STEAM and Social Studies Integration) TASKS: Brief description: We will A. Begin an open discussion about what the students know about what plants needs to survive. Then we will read a book called *How a Seed Grows* by Helene J. Jordan. After that we will begin with the experiment of growing bean seeds. We will gather our materials and set it up, so that each bean seed receives their correct amount of sunlight and water. B. We will observe and record each team’s bean seed’s growth throughout a period of two weeks. Students will water the bean seeds according to directions. C. Finally, . . . we will record our data on a graph and share our results.
2. STANDARDS: Grade Level and Subject Area: Kindergarten to 5th   Science, Social Studies, Language Arts, Mathematics and the Arts Standards

 **NGSS (Next Generation Science Standards)** K-LS1-1: Use observations to describe  patterns of what plants and animals (including humans) need to survive. *Disciplinary Core Ideas*: LS1.C: Organization for Matter and Energy Flow in Organisms *Science and Engineering Practices*: Analyzing and Interpreting Data *Crosscutting Concepts:* Patterns   SOCIAL STUDIES K.5 Students put events in temporal order using a calendar  placing days, weeks, and months in proper order.  ELA/Literacy [CCSS.ELA-LITERACY.W.K.7](http://www.corestandards.org/ELA-Literacy/W/K/7/) Participate in shared research and  writing projects CCSS MATHEMATICS: [CCSS.MATH.CONTENT.K.MD.A.1](http://www.corestandards.org/Math/Content/K/MD/A/1/) Describe measurable attributes of objects, such as length or weight.  **V.** MEASURABLE OBJECTIVES  A. As student thinking drives this lesson, students can pursue their own inquiry B.  As the culminating activity of this PBL students OR: At the end of the lesson it is expected that it . . . students can identity what and where plants need to survive and have a successful growth. **VI** TOTAL TIME:  Launch event-One: Class or DAY=Periods of \_45\_minutes;  After the first day, this  project will dedicated for at least 15-20 minutes**VII**.   Social [Skills](http://www.csun.edu/~sb4310/PBL%20Handouts%20and%20Assessments_files/Social%20Skills%20and%20or%20Habits%20of%20Mind%20to%20Engage.docx) and or Habits of Mind to Engage/Assess to Promote Student Motivation and Success (Indicate which of SELs from the Placemat are relevant to your lesson) -Form groups quietly -Share materials -Follow role assignments -Use 6” voices**VIII**. Level of Voice Appropriate for Each Day/Period of the PBL  ([Download chart](https://images.search.yahoo.com/search/images;_ylt=Awr9IkzYco9epq4AHhNXNyoA;_ylu=X3oDMTE0MjJtcjZyBGNvbG8DZ3ExBHBvcwMxBHZ0aWQDQjI5NDRfMQRzZWMDcGl2cw--?p=voice+level+chart&fr2=piv-web&fr=mcafee) appropriate for you grade level) Voice Level Chart FREEBIE | Voice level charts, Voice levels ...**IX.** Materials List**Pinto Beans****Soil****Clear plastic cups****Water****Window that has sunlight/patio****Bin to place their pinto beans cups****Stickers to label their cups.** **Journal/Data sheets*****AFTER INSTRUCTOR RESPONDS TO OUTLINE CONTINUE TO DEVELOP THE PBL USING THE FOLLOWING PLAN:***   NASA/BSCS 5-e FRAMEWORK**X**.        ENGAGING CONTEXT: Hook- Launch activityDIRECT INSTRUCTION: Forming groups \_\_6\_\_groups of\_4 students.  Modified for class composition How will you form your groups??Assigning roles How will the roles be assignedDescribing roles and tasks **Materials Manager/ Spy** **Tasks:**    Will be in charge of getting all the materials to their group. **Checker's Tasks** - Make sure the time limits are observed.  Help others complete their tasks. Let instructor know when your team has completed the lab;**Recorder's Tasks:**  Carefully observes and tabulates any data; and will be the spokesperson of the group. **Encourager/Observer' s Task -**  Coach the team to persevere and stay together while sharing and turn-taking. Will be in charge of watering the seeds. EXPLORE Building Knowledge“We will use our inquiry skills of predicting (hypothesis testing) to see in which environment the bean seeds will grow the most. At the end of the two weeks of observation, we will compare the bean seeds to see which one is the longest and the shortest. At the end of the two weeks of observations, we will analyze why the bean seeds had a successful or unsuccessful growth. This PBL will be led over two weeks. The first day will take 45 minutes. While the following days will consist of 15-20 minutes.  EXPLAIN Students have the following opportunities in Showing and Sharing Knowledge from Group Work or Individual Work. Here is where NGSS Claims and Evidence is activated and measured. As students complete the launch, inquiry, culminating activity they share their prior knowledge, observations and questions about what plants need to grow, record the growth of the bean seeds, and ask themselves what do plants need in order to have successful growth.  Every third day, students will have the opportunity to pair up with a different group, where they will share their observations about their bean seed’s growth. They will compare if they have the same results or different results.  EXTEND/ELABORATE Students follow-up on their learning outcomes and are given opportunities to further develop and revise products and/or performances  In small groups and in the final performance students have opportunities to extend their knowledge and to elaborate on their ideas. The teacher provides mini-lessons as needed to scaffold student thinking and understanding.EVALUATE There are several formative and summative ways to assess learning in this engaged learning PBL.  The first is in the individual’s work. Through drawings students will predict what plants need to survive. The students will also keep a journal where they will record their drawings, and notes about their bean seeds.At the end of the experiment students will draw a timeline of a been seed and their growth throughout the two weeks.  Content Summative Assessment: Individual information detailing student learning takeaways from the Launch activityFormative Assessment of Non-Cognitive Factors: Self-Assessment Using the Habits of Mind Check Sheet and Write-up Form (Course Docs).Self-Assessment of Collaborative Performance**This is how I think I am doing**

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Peer AssessmentMy group member, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was…

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**XI.** Children's Literature that Supports the PBL: How a Seed Grows by Helene J. Jordan**XII**. Criteria to Assess the Value of Your PBL:1. Does it include a driving question in any of the identified disciplines?2. Does it include at new STEAM vocabulary words?3. Does it propose the development of a project--students/unit plan? This PBL starts as a classroom project, but with time it can develop into a unit plan about not only what plants need to survive but also animals and humans. 4. Does it assure that students show evidence that all team members were involved? At different points of the experiment, each student will be able to involved. 5. Have you inserted a comment when submitting that shows evidence that you reviewed Koch chapters to assist in the NGSS aspects of the PBL? In Chapter 3, it talks about students having a log/journal to write down their observations. Which this PBL allows them to do.

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