1. **Big Idea –**
   - Design and create your own tool to measure rainfall, just like a meteorologist would use, and show the amount of rainfall over time.

2. **Goals & Objectives -**
   a. Show inquiry prior to creation using description and illustration
   b. Test inventions
   c. Evaluate the results product design
   d. Model measurement results over time using graphic representation
   e. Show inquiry prior to creation using description and illustration
      - Students will work on brainstorming for their design in the journals.
      - Students should include a written description of their projected design.
      - Students should include illustration(s) of their projected design.
      - Discuss with other team members your design idea and create a plan for your invention.
   f. Test inventions
      - Students will make a list of materials with their team members.
      - Students gather materials and construct their design.
      - Students conduct trial with their invention and problem solve.
      - Students will test inventions over a period of time.
   g. Evaluate the results product design
      - Students will evaluate their invention at least weekly, depending on amount of rainfall.
      - Students will record amount of rainfall on given calendar.
      - Students will record any changes they made to their invention and why.
   h. Model measurement results over time using graphic representation
      - Students will create a bar graph including the results from their calendar.
      - Students will share their results with the class.

3. **Timeline –**
   a. **Week of September 19:**
      - Asking Questions
      - Talk about inquiry questions
      - Challenge introduction
      - Gathering Materials
b. **Week of September 26:**
   - Brainstorming and create design

c. **Month of October:**
   - Testing, recording, and evaluation of design

d. **Week of October 31**
   - Plot data on bar graph and presentations to class

4. **Assessments**
   a. Teacher will use daily observation.
   b. At the end of the process, the teacher will use the following rubric to assess students’ journal.
      What does my journal look like?
      4 points-My brainstorming ideas have detailed descriptions and clear illustrations; My calendar and graph are complete and accurate
      3 points-My brainstorming ideas have detailed descriptions and clear illustrations; My calendar and graph are mostly complete and accurate
      2 points-My brainstorming ideas have descriptions and illustrations; My calendar and graph are partially complete and accurate
      1 point-My brainstorming ideas have little description and few illustrations; My calendar and graph are not complete

5. **Resources**
   a. Individual student journals
   b. Youtube video
   c. Variety of bottles
   d. Duct tape/electrical tape
   e. rulers
   f. Pre-made calendar
   g. Pre-made bar graph outline
   h. Scissors
   i. Small saws
   j. Water
   k. Gloves
   l. Smocks
   m. Rocks/Pebbles
   n. Ties, blazers, professional clothing
   o. Pointers
   p. Other resources that students may need for their design after our whole class brainstorm.
6. **Learning Experiences**
   - **Introduction**
     - Use youtube video as introduction to asking questions, introduce challenge, brainstorm as a whole group on materials that we may need for the project.
   - **Brainstorm and built**
   - **Evaluate and record ti**
   - **Present it**
     - Have ties, blazers, pointers, etc to present as professionals