Create a Gadget Lesson Plan

1. **Grade/Age Level:** Third Grade (Age 8-9)

2. **Subject Area:** Science

3. **Time allotted for the lesson:** Two 45 minute class periods

4. **Short description of lesson:** In this lesson, the learners will create a new gadget by combining several simple machines. They will make an illustration of their new gadget and write a descriptive paragraph explaining why their new tool is beneficial and how it works.

5. **State Curriculum Standards met in this lesson:**
   a. Utah Third Grade Science Standard 3, Objective 1 C: Investigate how forces applied through simple machines affect the direction and/or amount of resulting force.
   b. Third Grade Language Arts Common Core Standard 8: Students write daily to communicate effectively for a variety of purposes and audiences.

6. **Instructional Objectives (Each instructional objective [learning outcome] for this lesson):**
   a. Students will be able to identify the basic uses of each type of simple machines.
   b. Students will be able to compose a descriptive paragraph with 80% accuracy in spelling, grammar, sentence structure, and proper use of scientific vocabulary.
   c. Students will be able to explain how combining simple machines can help decrease the amount of force required to perform a task.

7. **Instructional Procedures**
   a. **Lesson Set**
      i. Show students some “crazy contraptions,” such as the ones from Rube Goldberg or Wallace & Gromit.
         2. Wallace & Gromit
      ii. Discuss how combining simple machines can create crazy contraptions and useful machines.

   b. **Techniques and activities**
      1. Bring in several examples of compound machines. Have students look over them and see what types of simple machines they can identify in the compound machines.
      2. Talk about how advertisers and companies try to convince people to buy their products.
3. Give students the following writing prompt:

4. **Invent a gadget to help you with a job you have to do. It should use one or more simple machines and do some kind of work. Write a detailed description of how your machine works. Be sure to tell what it looks like and why it helps you. Make it sound so wonderful that other people will want you to make one for them, too.**

5. Have students create their gadgets and write their paragraphs.

c. **Lesson Closure**

   i. Have students give an oral presentation of their gadget and paragraphs to the class.

8. **Adaptations for special learners**

   a. For learners who have a difficult time reading and comprehending text from websites, they can watch the video clips at [http://www.neok12.com/Simple-Machines.htm](http://www.neok12.com/Simple-Machines.htm)

   b. Learners who have a difficult time expressing themselves in writing can record their description and explanation on iPads.

9. **Supplemental Activities: Extension and remediation**

   a. **Extension Activities**

      i. Students can learn more about Rube Goldberg and his inventions. Using common household items, they can create their own Rube Goldberg machine.

   b. **Remediation Activities**

      i. Bring in several simple machines to allow students to combine them in a more concrete manner. This will allow for more experimentation for students who are having a difficult time grasping the concepts from the videos and images provided.

      ii. Have students explore [http://edheads.org/activities/simple-machines/](http://edheads.org/activities/simple-machines/) to see how multiple simple machines are combined into more compound machines.

10. **Assessment/Evaluation**

    a. During the students’ oral presentations, teachers will be able to informally assess understanding of how simple machines can be combined to create compound machines. Students should be able to use scientific vocabulary appropriately and be able to clearly describe how their simple machines work within their gadget.

    b. The descriptive paragraph will be evaluated with a rubric.

11. **Learner Products**

    a. Diagram of a new gadget

    b. Descriptive paragraph explaining how their paragraph works and what need it fulfills.

    c. Use the posttest from the edheads site ([http://edheads.org/activities/simple-machines/](http://edheads.org/activities/simple-machines/)) to assess student understanding of simple machines. (The posttest is located under the “Teacher’s Guide” link.) Students should pass this test with at least 80% accuracy.

*Note for learners: This lesson plan template is adapted from the model that is recommended in the book Preparing to Use Technology: A Practical Guide for Technology Integration.*