5th Grade STEM

**Title: Comparing Bags**

**Description:** Students will design and perform tests that compare plastic to paper bags.

**Time needed:** 30 minutes

**Materials:** May include but not all are necessary: strips of paper and plastic bags. books (for weight), masking tape, water, paper and plastic bags, ruler, scissors, scale or balance, computer

**Procedures:**

1. Read the introduction with the students. Group them in 3’s or 4’s.
2. Allow the groups to brainstorm the test they want to do. You may have to limit them to one test.
3. Students can share their test before beginning if you want to ensure that they all design different tests. They can write the purpose of the test as a question. Examples:
4. Are paper bags stronger than plastic bags?
5. Are paper bags bigger than plastic bags?
6. Is paper stronger than plastic?
7. Does paper stretch more than plastic?
8. Is paper more waterproof than plastic?
9. Do paper bags weigh more than plastic?
10. Do paper bags cost more than plastic?
11. Are paper bags better for the environment than plastic?
12. If a group gets stuck for an original test, you can help them but, otherwise, allow them to design tests even if you know it might not help meet the purpose of this activity.
13. Assess the activity with the group reports. Insist that all students speak about their tests.

5th Grade STEM Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Title: Comparing Bags**

**Introduction:** When shoppers go to the grocery store they are faced with a choice: paper bags or plastic? How will the groceries be carried home? In the past, bags were made of paper and some people used cloth bags. Plastic bags have become widely used in recent years and grocery stores prefer them. In this activity, you will design a test to see which property of plastic or paper the “bag engineers” used to develop these bags.

**Materials:** strips of paper and plastic bags. books (for weight), masking tape, water, paper and plastic bags, ruler, scissors, scale or balance, computer

**Directions:**

1. Talk in your group and decide what property of the bags you want to test. Describe what you will do here:

2. Describe what happens when you do your test:

3. Be ready to share what you learned with the class. What will each member of the group say? Think about who will tell about the testing you did, about what happened during the test and what conclusions your group can make.