



# Stem #2

## Windmill Challenge

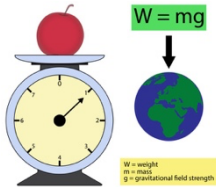


Name \_\_\_\_\_

Section \_\_\_\_\_

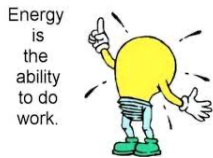


# STEM Vocabulary



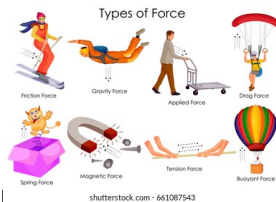
**Mass** is the measure of the amount of matter an object contains.

**Weight** is the measure of how hard gravity pulls down on an object.



**Work** is done when a force is applied to an object and moves the object.

$$\text{Work} = \text{Force (N)} \times \text{Distance (m)}$$



**Force** is a push or a pull on an object.



**Power** is the rate of doing work.  

$$\text{Power} = \text{Work (J)} / \text{Time (s)}$$



**Distance** is the distance between objects.



## STEM-Windmill Challenge

**Building Background Knowledge**

**Working Packet**

**Directions:**

**Respond**



## STEM-Windmill Challenge

Research

Working Packet

Group # \_\_\_\_\_ Section: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
Partner's Name: \_\_\_\_\_  
\_\_\_\_\_

Challenge:

### Research



Group # \_\_\_\_\_

Section: \_\_\_\_\_

Student Name: \_\_\_\_\_

Partner's Name: \_\_\_\_\_

\_\_\_\_\_

Give your project a title:

\_\_\_\_\_

Design the Prototype

(Create a **labeled** diagram of your prototype.)

Materials

|  |  |
|--|--|
|  |  |
|--|--|

Group # \_\_\_\_\_

Section: \_\_\_\_\_



**Student Name:** \_\_\_\_\_

**Partner's Name:** \_\_\_\_\_  
\_\_\_\_\_

**Test your Prototype – Collect your Data**



Group # \_\_\_\_\_

Section: \_\_\_\_\_

Student Name: \_\_\_\_\_

Partner's Name: \_\_\_\_\_

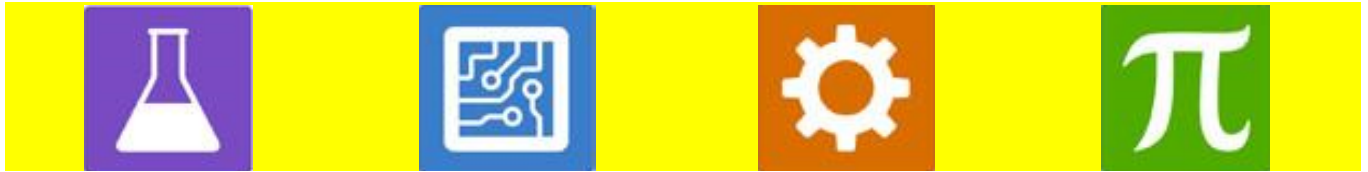
\_\_\_\_\_

Improve the Prototype

(Re-design your Prototype. Create a **labeled** diagram of your improved prototype.)

Materials

|  |  |
|--|--|
|  |  |
|--|--|



|                              |                       |
|------------------------------|-----------------------|
| <b>Group #</b> _____         | <b>Section:</b> _____ |
| <b>Student Name:</b> _____   |                       |
| <b>Partner's Name:</b> _____ |                       |

**Reflection Questions**

|   |
|---|
| 1. What worked well and what didn't in your first design?       |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
| 2. What modifications you did in the improved design?           |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
| 3. Did you succeed in completing the challenge, yes/no and why? |
|   |
|   |
|   |
|   |
|   |
|   |
|   |
|   |