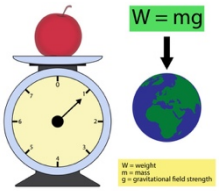
STEM #2
WINDMILL CHALLENGE

NAME _____

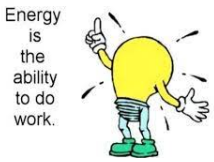
SECTION _____

STEM Vocabulary



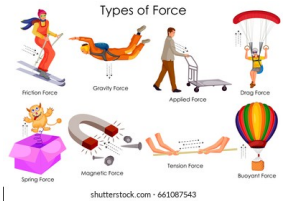
Mass is the measure of the amount of matter an object contains.

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.

Work = Force (N) x Distance (m)



Force is a push or a pull on an object.

Power is the rate of doing work.
Power = Work(J) / Time (s)

Distance is the distance between objects.

STEM-Windmill Challenge

Building Background Knowledge **Working Packet**

Directions: After watching the videos identify renewable and non-renewable resources we have in Florida and provide examples of how we can use them more efficiently.

Respond

STEM-Windmill Challenge

Research **Working Packet**

Group #_____ **Section: _____**
Student Name: _____
Partner's Name: _____
_____

Challenge: Build a Windmill using the materials provided that will spin using the air from a fan and will be able to lift the mass of 3 binder clips for at least 10 seconds.

Research

Paste pictures and write facts about the Windmills that will help you with your design.

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

Trial	# of binders	Time
1	1	
2	2	
3	3	

Group #_____ **Section: _____**

Student Name: _____

Partner's Name: _____

_____

Improve the Prototype

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

Materials

Group #_____ **Section: _____**

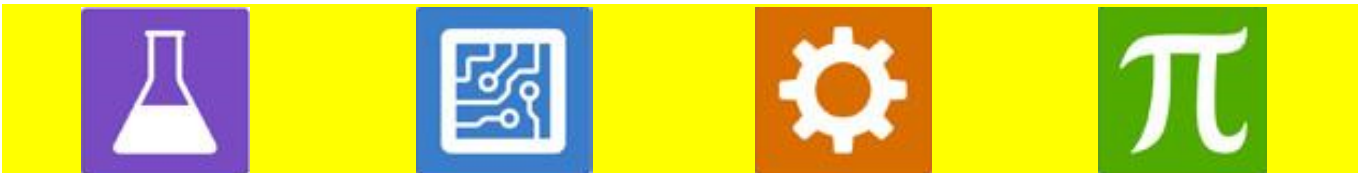
Student Name: _____

Partner's Name: _____

_____

Re-Test your Prototype - Collect your Data

Trial	# of binders	Time
1	1	
2	2	
3	3	



Group #_____ **Section: _____**
Student Name: _____
Partner's Name: _____
_____

Reflection Questions

1. In what way did you improve your prototype?

2. Do you expect the improved prototype to pass the challenge? Why?

3. What did you learn? Discuss your success or lack of success and reasons for it.