



STEM BUCKET TOWER STUDENT PACKET



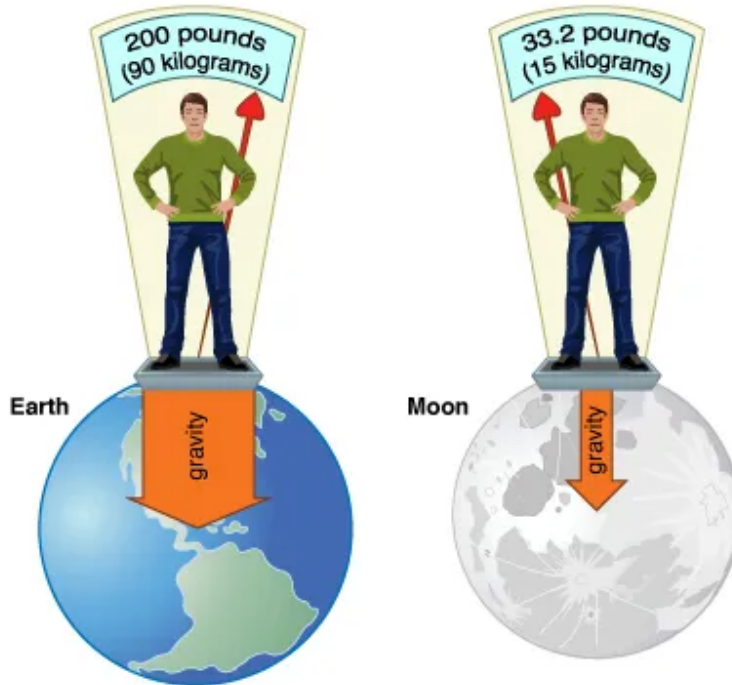
NAME _____

SECTION _____



STEM VOCABULARY

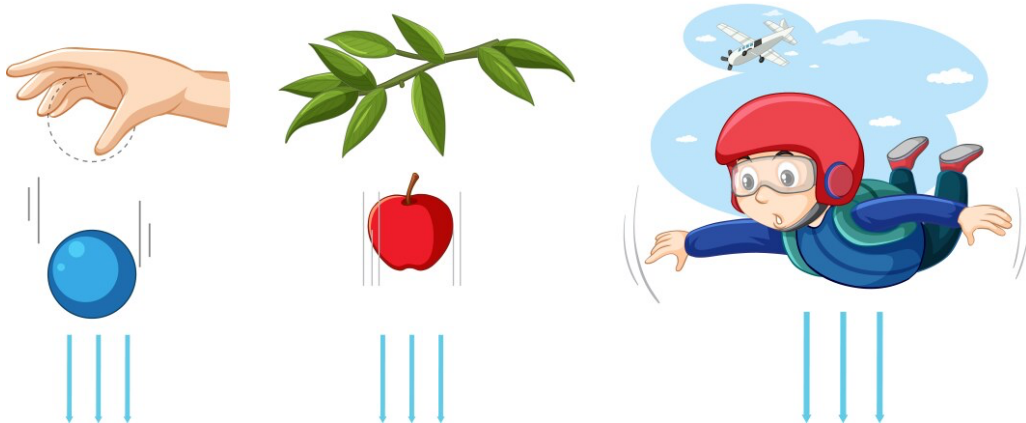
Effect of gravity on Earth versus on the Moon



© Encyclopædia Britannica, Inc.

Images of the Moon and Earth are not to scale

GRAVITY FORCE





Research

STEM Apple Head Working Packet

Group # _____

Section: _____

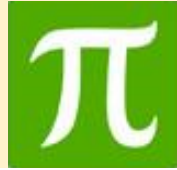
Student Name: _____

Partner's Name: _____

Challenge: How can you design, build, and test a load bearing tower that includes a suspended container that will be able to hold at least 20 pennies for a minimum of 10 seconds?

Research

Directions: Search the internet and find pictures and text about towers.



Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

Design the Prototype

(Create a labeled diagram of your prototype.)

Materials

- | | |
|--|--|
| <ul style="list-style-type: none">• Straws• 3 ounce cup• String• Masking tape | <ul style="list-style-type: none">• Scissors• Hole puncher• Pennies (for testing only) |
|--|--|



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

Test your Prototype - Collect your Data

Design #1

	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
Number of Pennies						
Time						

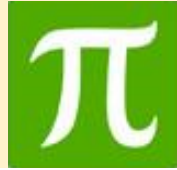
Design #2

	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
Number of Pennies						
Time						

Calculate the average amount of pennies the buckets held.

Design 1

Design 2



Group # _____

Section: _____

Student Name: _____

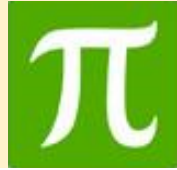
Partner's Name: _____

Improve the Prototype

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

Materials

- | | |
|--|--|
| <ul style="list-style-type: none">• Straws• 3 ounce cup• String• Masking tape | <ul style="list-style-type: none">• Scissors• Hole puncher• Pennies (for testing only) |
|--|--|



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.



Make an iMovie – Use iMovie following the instructions below. Share the presentation on **Seesaw**.

Instructions: Create an iMovie using the following parameters:

1. A beginning/opening title with the name of the challenge and the name of each group member
3. At least 3 transitions between segments.
4. 3 pictures of their designs.
5. 1 video of your testing.
6. Video of each person in your group communicating the results of the challenge by sharing the following information:
 - what was the project about
 - what were the results of the 2 designs when tested
 - what did you change in your redesign
 - what would you do better