

Gravitational Potential Energy Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS

Students answer questions then use a simple number to letter cipher to reveal a hidden message.

Gravitational Potential Energy Cipher Puzzle

Instructions: Compute the missing variable for each problem using the formula $PE = m \cdot g \cdot h$, where $g = 9.8 \text{ m/s}^2$. Write your answer in the "Answer" column, one decimal place and include units. When calculating the number, round to the nearest whole number and write the number in the "Number" column. Connect to the letter cipher at the bottom (26-1, 26-2, etc.). Write the corresponding letter in the "Letter" column. After you finish all questions, write your letters together to reveal the hidden message.

#	Question	Answer	Number	Letter
1	A 1.1 kg object is at a height of 1.2 m. What is its gravitational potential energy (J)?			
2	An object has 100 J of gravitational potential energy at a height of 8.0 m. What is its mass (kg)?			
3	A 1.8 kg object has 74.5 J of gravitational potential energy. What is its height (m)?			
4	A 1.8 kg object is at a height of 1.5 m. What is its gravitational potential energy (J)?			
5	An object has 300 J of gravitational potential energy at a height of 4.0 m. What is its mass (kg)?			
6	A 1.7 kg object stores 88.2 J of gravitational potential energy. What is its height above the ground (m)?			
7	An object has 98.0 J of gravitational potential energy at a height of 8.0 m. What is its mass (kg)?			
8	An object has 480 J of gravitational potential energy at a height of 4.0 m. What is its mass (kg)?			
9	A 1.8 kg object has 112.9 J of gravitational potential energy. How high is it above the ground (m)?			
10	A 1.8 kg object is lifted to a height of 2.0 m. What is its gravitational potential energy (J)?			
11	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
12	A 1.8 kg object stores 106.2 J of gravitational potential energy. What is its height (m)?			
13	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
14	An object has 480 J of gravitational potential energy at a height of 4.0 m. What is its mass (kg)?			
15	A 1.8 kg object has 106.2 J of gravitational potential energy. What is its height (m)?			
16	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
17	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
18	A 1.8 kg object stores 106.2 J of gravitational potential energy. What is its height (m)?			
19	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
20	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
21	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
22	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
23	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
24	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
25	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			
26	An object has 100 J of gravitational potential energy at a height of 1.0 m. What is its mass (kg)?			

Once you have recorded the numbers from the answer column, use the number to letter cipher below to decipher the hidden message.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Hidden Message: _____



#	Question	Answer	Number	Letter
1	A 1.1 kg object is at a height of 1.2 m. What is its gravitational potential energy (J)?	12.9 J	13	M
2	An object has 112.9 J of gravitational potential energy at a height of 9.6 m. What is its mass (kg)?	1.2 kg	1	A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z



NO PREP, MATERIALS, OR MARKING

SCROLL to take a look inside!



HOW THESE ACTIVITIES HELP YOU

- **Saves Prep Time** - Everything is pre-made, ready to go, and fully editable.
- **Provides Built-In Assessments** - The activity lets students self-assess and lets you quickly check for understanding.
- **Perfect for:** Review, Practice, Homework, and more!

MULTIPLE QUESTION TYPES THAT CHECK FOR UNDERSTANDING

Example

#	Question	Answer	Number	Letter
1	A 1.1 kg object is at a height of 1.2 m. What is its gravitational potential energy (J)?	12.9 J	13	M
2	An object has 112.9 J of gravitational potential energy at a height of 9.6 m. What is its mass (kg)?	1.2 kg	1	A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Full Teacher Answer Key

Gravitational Potential Energy Cipher Puzzle – Answer Key

#	Correct Answer	Number	Letter
1	12.9 J	13	M
2	1.2 kg	1	A
3	19.4 m	19	S
4	19.1 J	19	S
5	2.8 kg	7	G
6	18.4 m	18	R
7	1.2 kg	1	A
8	22.2 kg	22	V
9	9.4 m	9	I
10	19.6 J	20	T
11	25.2 kg	25	Y
12	8.1 m	8	H
13	5.3 kg	5	E
14	9.1 kg	9	I
15	7.1 m	7	G
16	8.2 kg	8	H
17	29.9 kg	20	T
18	12.3 m	13	M
19	7.2 kg	7	G
20	8.3 kg	8	H

Final Message: MASSGRAVITYHEIGHTMGH → MASS GRAVITY HEIGHT MGH

Students Answer Questions and Use a Cipher to Reveal a Hidden Message

What Will Your Students Learn?

SIMPLY DOWNLOAD AND GIVE TO YOUR STUDENTS

Gravitational Potential Energy Cipher Puzzle

Instructions: Compute the missing variable for each problem using the formula $PE = mgh$, where $g = 9.8 \text{ m/s}^2$. Write your answer in the "Answer" column to one decimal place and include units. When entering the number, round to the nearest whole number and put this number in the "Number" column. Correct it is a letter using the key at the bottom (A=1, B=2, etc.). Write the corresponding letter in the "Letter" column. After you finish all questions, go to your letters in order to reveal the hidden message.

#	Question	Answer	Number	Letter
1	A 1.5 kg object is at a height of 2.2 m. What is its gravitational potential energy (J)?			
2	An object has 112.9 J of gravitational potential energy at a height of 9.6 m. What is its mass (kg)?			
3	A 3.8 kg object has 193.3 J of gravitational potential energy. What is its height (m)?			
4	A 1.8 kg object is at a height of 3.9 m. What is its gravitational potential energy (J)?			
5	An object has 305.8 J of gravitational potential energy at a height of 6.7 m. What is its mass (kg)?			
6	A 1.7 kg object does 167.3 J of gravitational potential energy. What is its height above the ground (m)?			
7	An object has 99.8 J of gravitational potential energy at a height of 8.4 m. What is its mass (kg)?			
8	An object has 548.8 J of gravitational potential energy at a height of 2.8 m. What is its mass (kg)?			
9	A 1.3 kg object has 113.9 J of gravitational potential energy. What is its height (m)?			
10	A 1.8 kg object is at a height of 3.9 m. What is its gravitational potential energy (J)?			
11	An object has 144 J of gravitational potential energy at a height of 6.4 m. What is its mass (kg)?			
12	A 3.8 kg object is at a height of 2.2 m. What is its gravitational potential energy (J)?			
13	An object has 112.9 J of gravitational potential energy at a height of 9.6 m. What is its mass (kg)?			
14	A 3.8 kg object has 193.3 J of gravitational potential energy. What is its height (m)?			
15	A 1.8 kg object is at a height of 3.9 m. What is its gravitational potential energy (J)?			
16	An object has 305.8 J of gravitational potential energy at a height of 6.7 m. What is its mass (kg)?			
17	A 1.7 kg object does 167.3 J of gravitational potential energy. What is its height above the ground (m)?			
18	An object has 99.8 J of gravitational potential energy at a height of 8.4 m. What is its mass (kg)?			
19	An object has 548.8 J of gravitational potential energy at a height of 2.8 m. What is its mass (kg)?			
20	A 1.3 kg object has 113.9 J of gravitational potential energy. What is its height (m)?			

Write your Answer here
Hidden Message = (H)

Final Message: MASSGRAVITYHEIGHTMGR → MASS GRAVITY HEIGHT MGR

Gravitational Potential Energy Cipher Puzzle – Answer Key

#	Correct Answer	Number	Letter
1	32.9 J	23	M
2	1.2 kg	3	A
3	18.4 m	20	S
4	18.1 J	20	S
5	7.3 kg	7	G
6	18.4 m	20	S
7	1.2 kg	3	A
8	20.2 kg	23	M
9	18.4 m	20	S
10	18.1 J	20	S
11	20.2 kg	23	M
12	32.9 J	23	M
13	1.2 kg	3	A
14	18.4 m	20	S
15	7.3 kg	7	G
16	18.1 J	20	S
17	1.2 kg	3	A
18	20.2 kg	23	M
19	18.4 m	20	S
20	18.1 J	20	S

- ✓ Full Answer Key
- ✓ No Prep, Just Print
- ✓ Perfect for

- Review
- Practice
- Additional work for early finishers

- How to calculate gravitational potential energy
- How to solve for mass using $PE = mgh$
- How to solve for height using $PE = mgh$
- How gravity affects potential energy calculations
- How to apply the relationship between mass, gravity, and height
- How to connect physics calculations to clues and patterns in a puzzle format

NO PREP or Materials

- **Gravitational Potential Energy Cipher Puzzle Worksheet**
- A student-friendly activity with 20 clues focused on solving for gravitational potential energy, mass, and height using $PE = mgh$.
- **Clear Instructions**
 - Students solve each clue, round the answer, and convert the number to a letter to decode a hidden message.
- **Reinforces:**
 - Gravitational potential energy
 - Mass
 - Height
 - $PE = mgh$
 - Energy formula practice
- **Includes answer key and number-to-letter conversions**
- **No-Prep Resource**
 - Ready to print or assign digitally for review, practice, or sub plans.

What You Get

Students Use Their Answers to Reveal a Hidden Message

1. For each clue, write the answer in the 'Answer' column.
2. Convert the number to the letter using the chart.
3. Write the deciphered letter in the 'Letter' column.
4. Write your letters in order below the table to reveal the hidden message.

Gravitational Potential Energy Cipher Puzzle

Instructions: Complete the clues to solve for mass, height, or potential energy. Round your answer to the nearest whole number. Write the answer in the 'Answer' column. Convert the answer to a letter using the chart below. Write the letter in the 'Letter' column. The hidden message is revealed by reading the letters in order.

Clue	Answer	Number	Letter
1. A 10 kg object is at a height of 1.2 m. What is its gravitational potential energy (J)?			
2. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
3. A 10 kg object has 44.1 J of gravitational potential energy. What is its height (m)?			
4. A 10 kg object is at a height of 1.2 m. What is its gravitational potential energy (J)?			
5. An object has 100 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
6. A 10 kg object has 44.1 J of gravitational potential energy. What is its height above the ground (m)?			
7. An object has 14.7 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
8. An object has 14.7 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
9. A 10 kg object has 44.1 J of gravitational potential energy. What is its height (m)?			
10. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
11. A 10 kg object has 44.1 J of gravitational potential energy. What is its height (m)?			
12. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
13. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
14. A 10 kg object has 44.1 J of gravitational potential energy. What is its height (m)?			
15. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
16. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
17. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
18. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
19. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			
20. An object has 11.2 J of gravitational potential energy at a height of 0.5 m. What is its mass (kg)?			

Write your Answer letters in order below the table to reveal the hidden message.

Hidden Message: _____

Gravitational Potential Energy Cipher Puzzle – Answer Key

#	Correct Answer	Number	Letter
1	12.0 J	12	M
2	2.5 kg	25	G
3	20.0 m	20	H
4	12.0 J	12	M
5	10.0 kg	10	G
6	20.0 m	20	H
7	3.0 kg	30	T
8	3.0 kg	30	T
9	10.0 kg	10	G
10	2.5 kg	25	G
11	20.0 m	20	H
12	2.5 kg	25	G
13	2.5 kg	25	G
14	10.0 kg	10	G
15	2.5 kg	25	G
16	2.5 kg	25	G
17	2.5 kg	25	G
18	2.5 kg	25	G
19	2.5 kg	25	G
20	2.5 kg	25	G

Final Message: MASS GRANTY HEIGHT HIGH

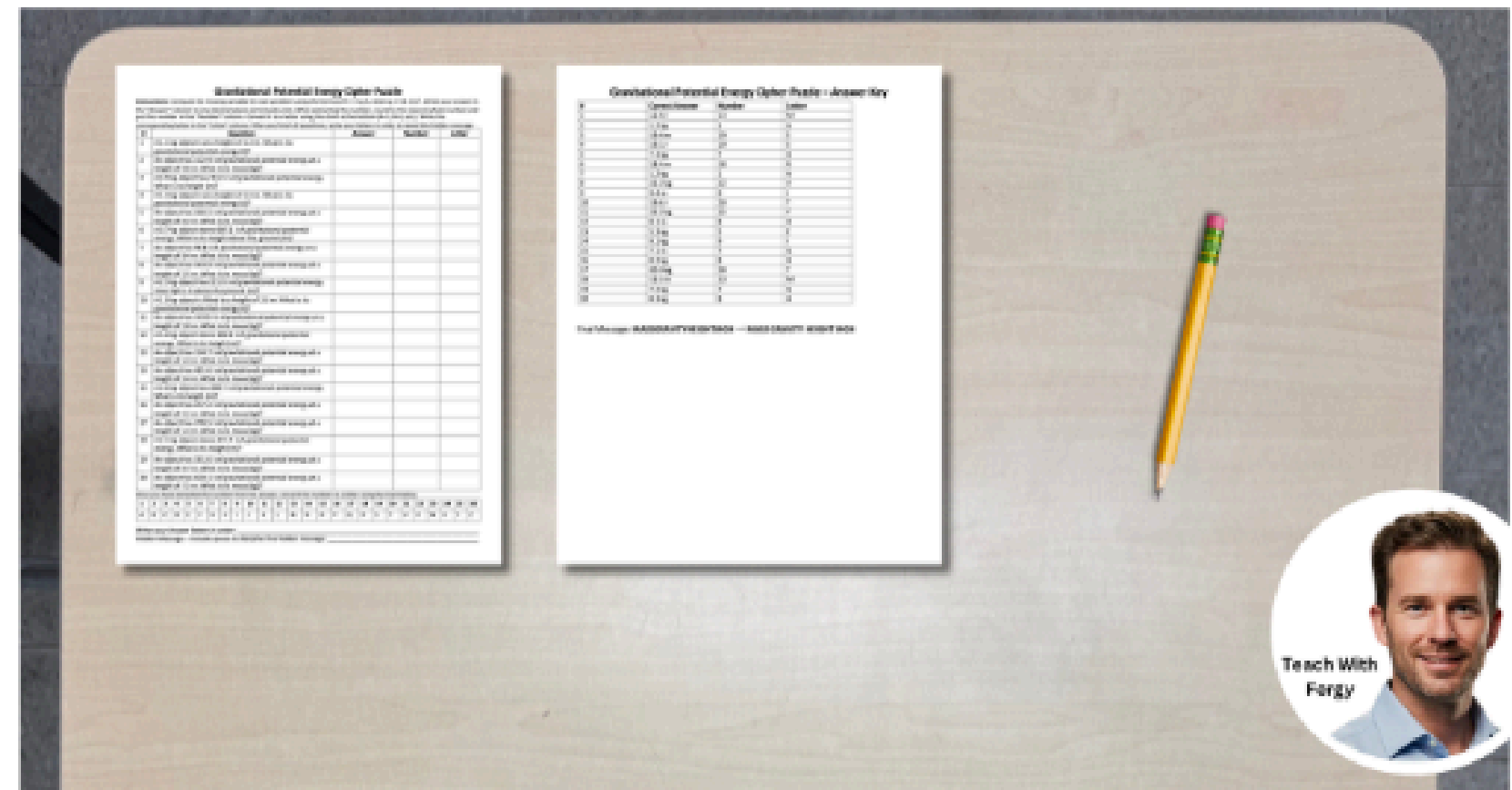
Your Activity

- Is a fun and interactive way to reinforce concepts and study
- **DIGITAL** and **PRINT** ready
- **FULLY EDITABLE**
- Complete Answer Key



Gravitational Potential Energy Cipher Puzzle

- Students solve problems to discover a secret message
- **NO PREP, NO MARKING, NO MATERIALS**



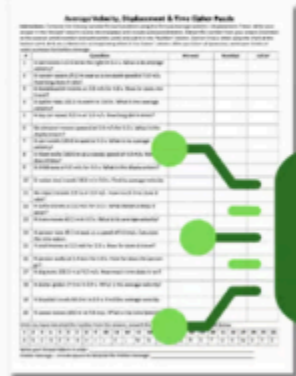
NO PREP, MATERIALS, OR MARKING

Physics - Force, Motion, and Energy Bundle

Get all my Physics Calculation Cipher Activities at a **HUGE** discount. Additionally, you'll get access to all additional physics ciphers I create in the future.

Average Velocity, Displacement & Time Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



Acceleration, Velocity, Displacement Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS

NO PREP, MATERIALS, OR MARKING

Gravitational Potential Energy Cipher Puzzle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



Kinetic Energy Cipher Puzzle

- Students solve problems to discover a secret message

NO PREP, MATERIALS, OR MARKING

Momentum Cipher Puzzle

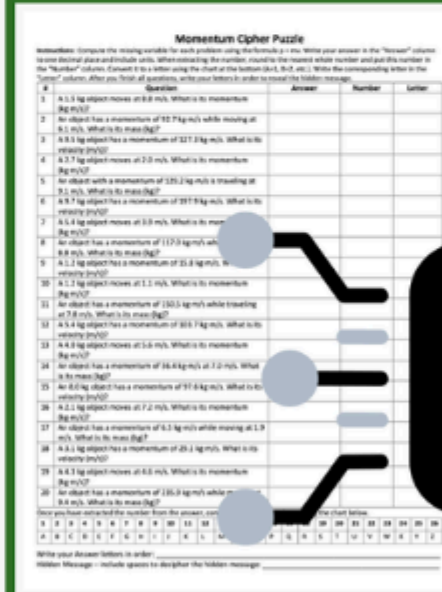
- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MATERIALS, OR MARKING

Physics - Force, Motion, & Energy Cipher Puzzle Bundle

- Students solve problems to discover a secret message
- NO PREP, NO MARKING, NO MATERIALS



NO PREP, MATERIALS, OR MARKING



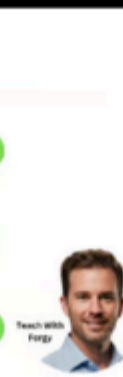
Plus Many More!
Click Here



NO PREP, MATERIALS, OR MARKING



NO PREP, MATERIALS, OR MARKING



Thanks
**for your interest
in this resource!**

I am a real person and if
you have any questions,
suggestions, or concerns,
please reach out.



devon@teachwithfergy.com

TWF

Teach With Fergy

*Let's
Connect!*

