

PARAMOUNT
EDUCATION PRESENTS

Bill Blagg's

magic

SCIENCE LAB

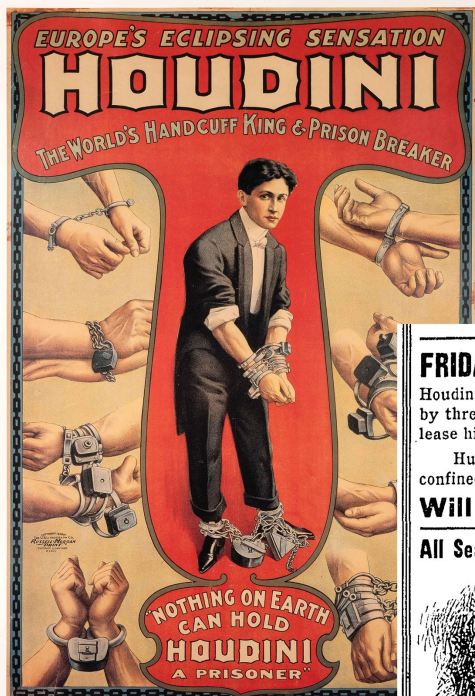


Bill Blagg

To say that Bill Blagg has had a magical life would be no exaggeration. From the moment he received his first magic kit in 1985, his world was never the same. Today, Bill has one of the largest touring illusion shows in the country. His magic has been featured on NBC, CBS, and FOX television. Having a love for both magic and science, Bill combined the two to create his one-of-a-kind, education shows called *The Science of Magic*, *Magic in Motion* and the digital series *The Magic Science Lab*! This series takes you on a rare, exciting, never-before-seen journey behind the scenes of the magic world. Bill shows you, firsthand, how magicians utilize science to create the impossible.



Magic at the Paramount Theatre



FRIDAY NIGHT'S PERFORMANCE

Houdini will be strapped into a "Punishment Suit" by three deputy sheriffs and he will endeavor to release himself in full view of the audience.

Hundreds of powerful criminals have been so confined successfully.

Will It Be Houdini's Waterloo?

All Seats Reserved

Seats on Sale Today

PRICES: Matinee and night, lower floor, 50c; first balcony, 35c; second balcony, 25c.

In addition to Houdini the regular motion picture play for today will be shown. This is a Triangle production, showing Willard Mack in "The Conqueror." The performance will start at 3 o'clock, so that Houdini should appear upon the stage about 4 o'clock or a few minutes later. For the night performance Houdini will appear upon the stage about 9 o'clock. He will be on the stage one hour at each appearance. This will be his last appearance in Texas for probably several years.



MAJESTIC

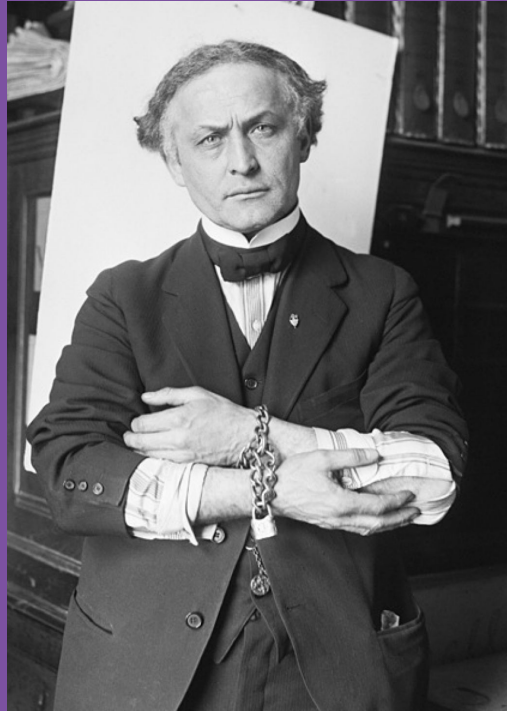
THE THEATRE BEAUTIFUL

This digital experience brought to you by Paramount Education is part of a long history of magic shows at the Paramount Theatre. Over its 104-year-old history, many magicians have graced our stage, including the most famous magician of all!

The Master of Escape, Harry Houdini, performed at the Paramount in February of 1916. Back then the theatre was known as the Majestic. (The name was changed in the 1930s when Paramount Pictures purchased the theatre to show movies.) Check out the Austin Statesman and Tribune newspaper ad about the show!

Houdini's Legacy at the Paramount

Houdini's legacy lives on at the Paramount Theatre - in the ceiling! Legend has it that Houdini carved a hole in it to perform one of his grand illusions. You can still see that hole today, just to the left of the painting of Saint Cecilia. When you watch the digital tour of the Paramount Theatre, see if you can spot the hole!



The Scientific Method

As we learned from Bill Blagg in his *Magic Science Lab* video series, the scientific method is a good process to use for perfecting a magic trick! What do you know about the Scientific Method? See if you can fill out the missing words in the steps. ***Check your answers on slide 7.***



1. ASK A

This is when you want to know more about something that you observe. How, What, When, Who, Which, Why, or Where? What do you want to do?



2. CONDUCT

You're a savvy scientist and you will use the library, the internet, and other tools to help you put together a plan to answer your question.



3. FORM A

This is an educated guess about how things work. It is an attempt to answer your question with an explanation that can be tested. “If I (do this), then (this) will happen.” What do you think is going happen?



4. PERFORM THE

This is how you test if hypothesis is correct. Remember, safety is the most important factor!



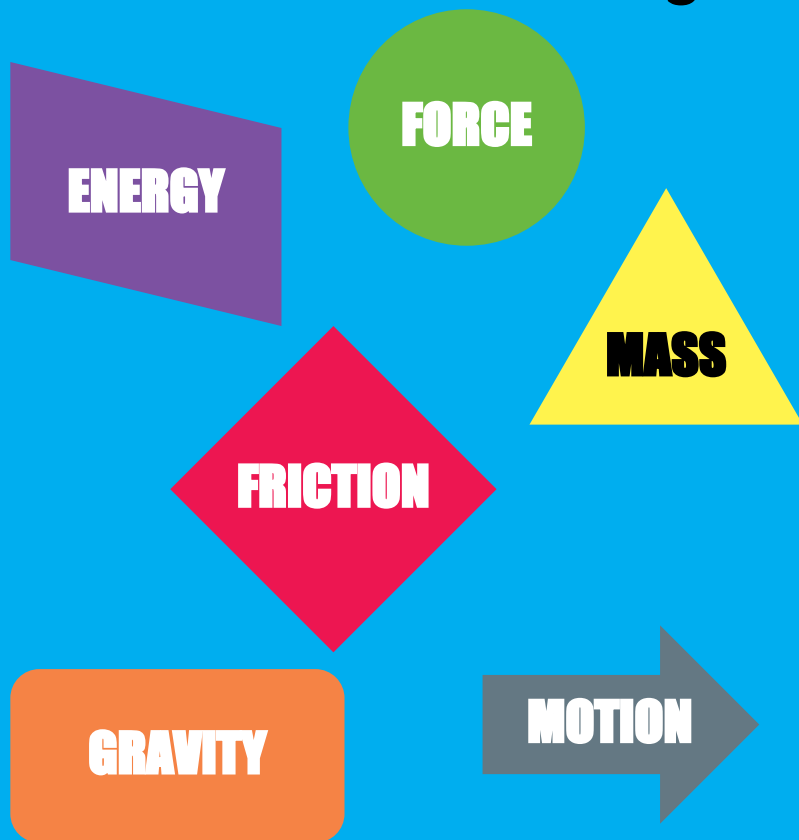
5. DRAW A

Once your experiment is complete, you say how it turned out. Was your hypothesis true? Did it work or did it not work?

Answers: The Scientific Method

1. Question
2. Research
3. Hypothesis
4. Experiment
5. Conclusion

Magic in Motion Words



Without these important scientific concepts, the magic you saw today would not be possible. Draw a line matching each word to its definition. ***See the answers on the next page.***

DEFINITIONS

1. The action or process of moving or being moved.
2. A natural phenomenon by which all things with mass or energy - including planets, stars, and galaxies – are brought toward one another
3. A push or a pull
4. The quantity of matter in a body regardless of any forces acting upon it
5. Examples include both kinetic and potential
6. The resistance that one object encounters when moving over another

Answers: Magic in Motion Words

1. Motion
2. Gravity
3. Force
4. Mass
5. Energy
6. Friction

Magic Word Search

Circle or highlight the Magic in Motion words you just defined in the word search. Be sure to search up, down, and diagonal directions.

WORD BANK

MOTION

GRAVITY

FORCE

MASS

ENERGY

FRICTION

O	N	A	E	C	Y	Y	I	W	S	V	R	D	O	Q
J	X	V	E	N	T	A	F	D	V	P	D	V	Y	D
I	I	L	U	I	E	X	Y	U	L	F	I	U	A	X
V	X	E	V	A	S	R	V	B	Q	O	G	F	Z	Y
T	W	A	V	A	N	R	G	W	T	R	T	G	B	M
O	R	U	H	S	O	O	Z	Y	B	C	O	A	A	Y
G	P	Y	E	V	I	H	G	D	I	E	Q	S	S	R
H	D	E	K	Z	T	T	N	C	C	G	S	Y	J	T
A	T	R	V	E	C	I	F	Q	Q	G	N	R	X	V
B	P	O	R	C	I	U	M	Y	U	R	Y	D	R	W
H	X	G	V	P	R	O	W	P	S	B	W	D	O	H
B	G	Q	K	F	F	O	Q	P	A	A	U	B	I	G
T	D	J	R	K	V	L	F	O	L	Y	Y	T	P	I
P	X	K	O	F	L	X	U	K	J	V	F	R	B	M
M	O	T	I	O	N	G	W	S	Z	W	E	R	Q	G

A Secret Message

Solve Bill's secret message for you! First, you must crack the secret code. Before telephones became popular, people sent messages by telegram. These messages couldn't be private, because many people were involved in getting the message delivered. So, in order to send private messages, people developed simple codes to pass their messages along in secret. Use the code below to solve Bill's message to you. Here's how it works: In the secret message below the letter A stands for Z, B stands for A, and so on...

A = Z	B = A	C = B	D = C	E = D	F = E	G = F	H = G	I = H
J = I	K = J	L = K	M = L	N = M	O = N	P = O	Q = P	R = Q
S = R	T = S	U = T	V = U	W = V	X = W	Y = X	Z = Y	

J BMXBZT GPMMPX OFXUPO'T MBXT PG NPUJPO!

Sir Isaac Newton

(1643 – 1727) was an English physicist, mathematician, and a key figure of the scientific revolution of the 17th century. His three laws of motion formed the basic principles of modern physics. Without Newton's work, Bill Blagg would have no magic tricks to show you today!



Newton's First Law of Motion

An object at rest will stay at rest...



unless acted on by an unbalanced force.



An object in motion will stay in motion, with the same direction and speed...



unless acted on by an unbalanced force.



Newton's Second Law of Motion

Acceleration happens when a force acts on a mass.

Example: When you ride your bicycle, your leg muscles (the force) push on the pedals. As a result, your bicycle increases speed.

The second law also states that if you exert the same force on two objects with different mass, you will get different accelerations.

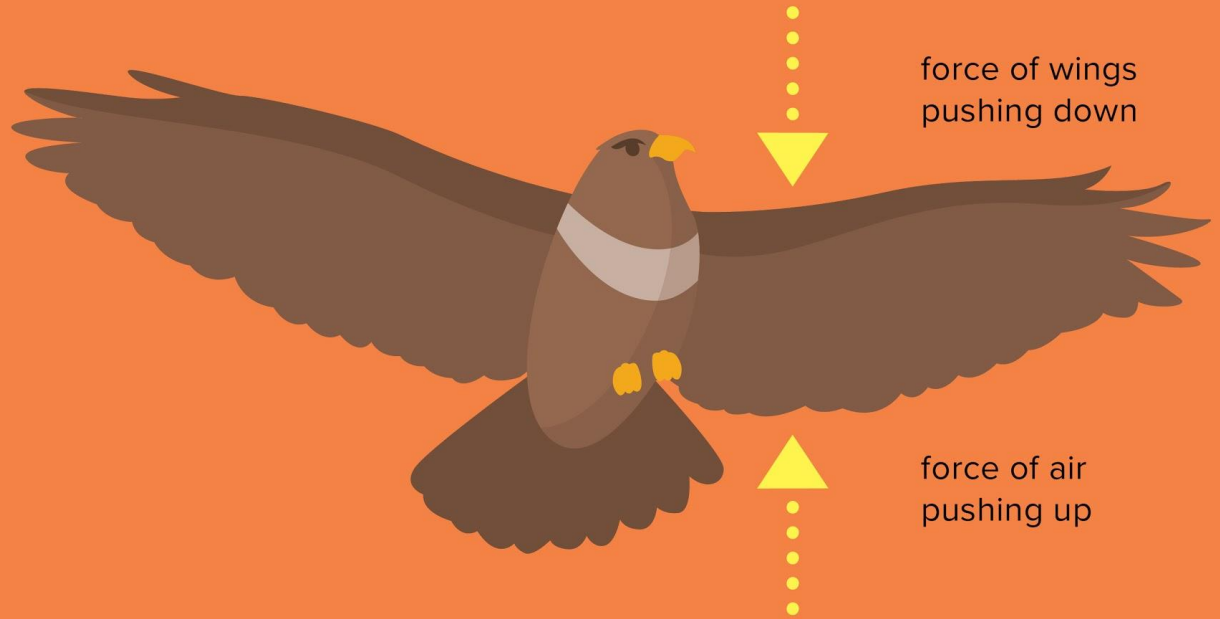
Example: Say you have two identical bicycles, except one has a basket full of rocks. If you push on the pedals of each with the exact same strength, you will be able to accelerate the bike with the empty basket more than the bike with the basket full of rocks. (The rocks add mass to the second bicycle, so you would have to apply more force to the pedals to make it move.)



Newton's Third Law of Motion

For every action, there is an equal and opposite reaction.

Example: When a bird flies, its wings push in a downward and a backward direction. This pushes air downward and backward. The air pushes back on the bird in the opposite directions—upward and forward. This force keeps a bird in the air and propels it forward.



Newton's 3 Laws of Motion

Now that you've read about the 3 Laws of Motion can you think of an example of one of them from *The Magic Science Lab* video series or one that you experience daily in your own life? Write about it below.

LAW OF MOTION

EXPLAIN

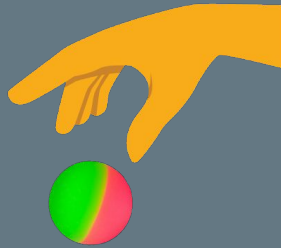
Want to learn more? Visit: www.physics4kids.com and www.khanacademy.org.

Potential and Kinetic Energy

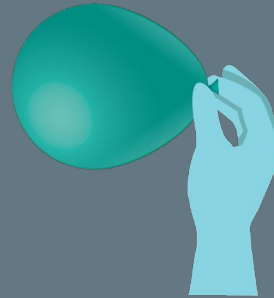
There are two primary types of energies: Kinetic and potential. They are found in all objects. Potential energy (PE) is energy that is “stored” because of the position and/or arrangement of the object. If an object is moving, it is said to have kinetic energy (KE). Label the images below to indicate which type of energy they have:



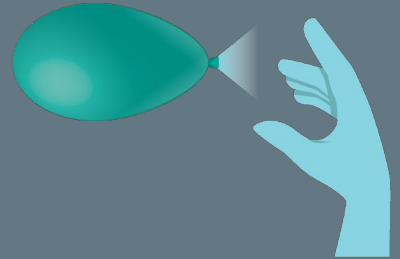
ENERGY



ENERGY



ENERGY



ENERGY



Moon Craters

Have you ever seen pictures of the moon and noticed large craters covering the surface? Over billions of years, the moon has been hit by asteroids and meteors pulled to the surface by the moon's gravity.

Moon Crater Experiment

- Large plastic container
- Flour to fill the container to a depth of 4 inches
- Plastic Easter egg shell
- 10 pennies for weight inside the egg
- Short ruler, 12 inches or less
- Cloth/tarp under the container for easier cleanup

Drop a weighted plastic egg into a tub of flour.
Where/when do you see potential energy?



Where/when do you see kinetic energy?

Does dropping the egg from different heights have an effect on the size of the craters made in the flour? Use your ruler to measure the craters and record your observations.

Alter the plastic egg's mass by adding pennies inside it. What effect does changing the egg's mass have on the size of the craters? Make a prediction:

Did your predictions come true?



About The Paramount Theatre

The Paramount Theatre was built 105 years ago in 1915. Back then, Congress Avenue was a dirt road and the automobile was a new invention. As one of the first examples of early theatre architecture, the Paramount has been bringing Austin families together for generations. When you visit the theatre, you enter a place that feels exciting and welcoming. From your seat, you can almost reach out and touch the performers on stage! Many famous people have performed at the Paramount. From magician Harry Houdini to the premier of the original Batman movie, the Paramount and its audiences have seen it all over the past 100 years...here's to the next century!



About Paramount Education

We inspire the intellect and imagination of young people by providing opportunities to experience, perform, and learn through the arts.

We can't wait to see you again at our theatre or in our school programs!

Paramount Education programs are made possible through generous donations from our community. [Learn more about us](#) or [make a donation](#).

Thank you!



The image shows the interior of a grand, ornate theatre. The stage is dominated by a large, vibrant red curtain. The architecture is highly detailed, featuring gold-colored carvings, arches, and a balcony with decorative railings on the left. The ceiling is also highly decorated with circular patterns. The overall atmosphere is one of classic elegance and grandeur.

Take a virtual tour of the
Paramount Theatre now!

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