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. Look up and see it for yourself!

Today’s performance is part of a long history of magic shows at the Paramount Theatre. Over its 106-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 below!

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, virtual performance Bill Blagg’s Magic Science Lab, and today’s performance, Magic in Motion! The show 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 IN MOTION WORD SEARCH

Hidden below are words important to the worlds of science and magic! Without these scientific concepts, the magic you saw on stage today would not be possible. Find the words and draw a line matching each word to its definition. The answers are upside down at the bottom of the page!

THE RISING RING MAGIC TRICK

THE ILLUSION:
Make a ring defy gravity by rising up a slope!

MATERIALS NEEDED:
1. a ring (like a keyring)
2. a rubber band that has been cut so it is a “rubber string”

1. Thread the rubber band through the ring and lay it down. Grab the very left end of the band with your left thumb and index finger.
2. With your right thumb and index finger, squeeze the band at about 4/5ths from the right end, with the ring between your fingers.
3. Hold the band’s excess in your right fist to hide it from the audience. Stretch the rubber band out until it appears to be at its resting length.
4. Create a gentle slope with the band. The ring should be at the bottom of the slope on the righthand side.
5. Slowly release tension from your right thumb and finger to allow the rubber band to contract. The ring will be pulled up towards your left hand.
### 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 motion will stay in motion... | unless acted on by an unbalanced force. |

![Image of soccer ball and foot](image1)

### Newton’s Second Law of Motion

| Force is the product of mass $x$ acceleration or $F=ma$. So in order to make something accelerate or speed up, you have to apply a force. |

![Image of man pushing a cart](image2)

| This also means that the greater the mass of an object, the more force it will need to accelerate it. |

### Newton’s Third Law of Motion

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

![Image of bird flying](image3)

| 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. |

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**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!

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Choose one of the Laws of Motion and write it below. Then, think of an example of this law being used in the real world and explain it.

<table>
<thead>
<tr>
<th>Law of Motion</th>
</tr>
</thead>
</table>

Explain: ____________________________

______________________________

______________________________

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Want to learn more? Visit: [www.physics4kids.com](http://www.physics4kids.com) and [www.khanacademy.org](http://www.khanacademy.org)
POTENTIAL AND KINETIC ENERGY

There are two primary types of energies: Kinetic and Potential. Potential energy (PE) is the stored energy in an object because of its position or arrangement. Kinetic energy (KE) is energy from something that is in motion. Label the images below to indicate which type of energy they have!

MOON CRATER EXPERIMENT

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.

MATERIALS:
- Large plastic container
- Balls with different sizes and weights, such as a golf ball, a plastic egg, a baseball, marble, etc. (They should be smaller than a softball)
- Ruler
- Flour to fill the container to a depth of 4 inches
- Cloth/tarp under the container for easier cleanup

DIRECTIONS:
Drop one of the balls into the tub of flour. Where/when do you see potential energy? Kinetic energy?

Does dropping the same ball from different heights influence the size of the craters made in the flour? Use your ruler to measure and record your observations.

Try dropping different sized and weighted balls. What effect does this have on the size of the craters? Make a prediction:

Did your predictions come true?
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. If you are interested in finding out more or want to make a contribution, please reach out to Krystal Parsons at kparsons@austintheatre.org. Thank you!

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