

IT'S NOT  
**MAGIC**  
IT'S  
**SCIENCE**



**NO SPLASH ZONE  
EXPERIMENT GUIDE**

**EXPERIMENT**

Fun experiments disguised as  
a magic tricks!

**EXPLANATION**

Discover the science behind  
the magic!

**EXPLORATION**

Bring the "magic" to life with  
real world applications!

**IN PARTNERSHIP WITH**

**SHPE**  
**NOCHE de**  
**CIENCIAS™**

Interactive “family science nights” for high school students and families bring STEM to life. Imagine yourself in different STEM careers and discover what excites you. All the while, your parents learn how to support you in achieving these new found ambitions.



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Industrial Engineer  
SHPE Professional



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Mechanical Engineer  
SHPE Lifetime Member  
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## No Splash Zone

### **EXPERIMENT PREPARATION - PAGE 3**

This is everything you will need in order to make the "magic" happen!

### **EXPERIMENT INSTRUCTIONS - PAGE 4**

Now that you've gathered all your materials we will guide you through the process to bring the science magic to life!

### **EXPLANATION - PAGE 5**

Wow that was cool! Now let's learn how it works.

### **EXPLORATION - PAGE 6**

Now that you know the science behind the magic it's your turn to share cool ideas of how we can use it to make the world a better or cooler place!



# EXPERIMENT

## No Splash Zone

### MATERIALS

Zip-loc bag

2 pencils

Water



### WATCH (OPTIONAL)

Scan the QR Code below or visit [www.jayfloresinspires.com/blog/magicsciencekit](http://www.jayfloresinspires.com/blog/magicsciencekit) to watch "It's Not Magic, It's Science" hosts Jay Flores and Diana Mogeno conduct the No Splash Zone experiment!



# EXPERIMENT

## No Splash Zone

### INSTRUCTIONS

1. Gather all of your materials from the equipment list and set up a safe space to conduct the experiment
2. Fill about  $\frac{3}{4}$  of your zip-loc bag with water and seal it well
3. Carefully push your pencils through both sides of the bag
4. Remove the pencils above a sink or bowl to reveal the holes in the bag
5. Remind everyone that "It's Not Magic, It's Science!"



# EXPLANATION

## No Splash Zone

### "MAGIC" REVEAL - HOW IT WORKS

We hope you enjoyed our No Splash Zone experiment! You were able "magically" push a pencil through a bag full of water without spilling a drop.

So how did we do it? Remember, it's not magic, it's science! Zip-loc bags are made of a polymer.

Polymers are like flexible chains so when you begin to push the pencil into the bag they start stretching. The chains nearest to where you are pushing the pencil are stretched to the point where they break but there are other chains around them that are stretched but not broken. These stretched chains squeeze around the pencil creating a seal that doesn't allow the water to leak out of the bag. Try this experiment again sometime and see how many pencils can you poke through the bag!

### BRING THE "MAGIC" TO LIFE

Now that you know the science behind the magic how do you think we can apply this science to solve real life problems? Use the following exploration pages to start bringing your ideas to life!





# ABOUT SHPE

## Organization Overview

SHPE is the nation's largest association dedicated to fostering Hispanic leadership in the STEM field.

### **Mission**

SHPE changes lives by empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support, and development.

### **Vision**

SHPE's vision is a world where Hispanics are highly valued and influential as the leading innovators, scientists, mathematicians, and engineers.

### **SHPE Jr.**

Starting early is the key to successfully exploring a future in Science, Technology, Engineering or Mathematics. If you're a high school student, and you think STEM might be the path for you, join a SHPE Jr. Chapter today. If your school doesn't have one, let's start one together!

