



PLAY • CREATE • CHALLENGE

IMPRESSION 5 SCIENCE CENTER  
**School Visit Guide 2013-14**  
EXHIBITS • WORKSHOPS • PROGRAMS





## Exhibits

A self-choice, learner-directed environment with the tools and freedom to interactively explore science!

- More than 150 activities
- 25,000 ft<sup>2</sup> exhibit space

Explore the exhibit floor in a path that suits your personal interests while you form a relationship with science. Dive in and discover that learning is fun!

### BUILD ZONE

What types of structures can you build? How will gravity, tension, and compression affect your structure? Get ready to become an engineer as you build with moving parts. Build Zone features a tinker area, pipes and tubing, building blocks, and more! This exhibit promotes team building and problem solving skills. What will you create together?



### ELECTRICITY & MAGNETISM

In this shocking exhibit, students use magnets to make electricity — and electricity to make magnets! Explore the relationship between electricity and magnetism, and series circuits. Students can also explore how electricity is generated from solar and wind energy!

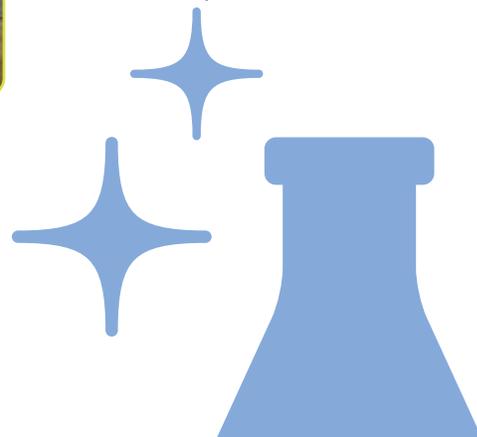
### FIRST IMPRESSION ROOM

The First Impression Room is a space for young scientists from birth to age four to experience and learn about science in a comfortable, and customized environment. Complete with a family restroom, private nursing room, Crocs™ and raincoats for the water area, and a welcome area for snacks, and more!



### GIANT EYE

The eye is one of the most fascinating organs in the human body, and this Giant Eye lets you see it in a whole new way! Walk into this 7-foot tall model and learn about the anatomy of your eyes and how this incredible organ transforms light into images of the world around you!



## LIGHT & COLOR

### NEW & Renovated Winter 2013/2014!

Step carefully into the dark but colorful world of light science! Take a closer look at the primary colors of light as you explore prisms, mirrors, and more! Play with lasers, reflection, refraction, and even paint with light. Light science has never been so much fun!

## MAKE YOUR OWN KIND OF MUSIC

What does a sound look like? Use a variety of real musical instruments such as a piano, a dulcimer, and more, to explore the concepts of sound waves and vibrations, and make your own kind of music!

## MINATURE

What does the world look like through the eyes of a naturalist? Explore natural environments of Michigan while never setting foot outside the science center! With a variety of new technological tools, you'll be challenged to use your thinking skills as you get up close and personal with living systems, just like a naturalist in the field!



## POP! A BUBBLE EXPERIENCE

In POP! visitors will explore how soap and water molecules interact to create the structure of a bubble. Learn about the chemistry of soap films, create beautiful forms and colors, and even stand inside a giant bubble!



## SIMPLE MACHINES

How could you possibly move a 500-pound block of concrete? Find out as you explore the concepts of work and mechanical advantage using a set of activities designed with the Michigan Elementary Curriculum in mind.

## SPIN

Explore rotational motion as you crank up a giant flywheel, develop your mathematical understanding of torque, and spin yourself silly in our spinning momentum chair!

## THROWING THINGS

Where does the energy come from to launch a ball through the air? Use a trebuchet to launch different weights across the exhibit floor, and track your results! Explore the laws of motion, ballistics, and energy transformations while pitching, launching, and catapulting with high-energy activities!

## WATER ROOM

Why do some things float while others don't? Explore concepts of measurement and pressure, experiment with buoyancy and flow dynamics, and see how a boat can move up- or down-hill through a system of locks! Plus, learn where water comes from as you study the giant groundwater model!



# Workshops

Enhance your day visit;  
schedule your group for  
a workshop!

*Workshops are scheduled for 30 minutes.  
Larger groups may require multiple sessions.  
For your convenience, fee and content  
standards follow workshop descriptions.*

## BIOSPHERES

Students will explore water and the carbon cycles as they make their own biome, get their hands in the dirt and explore all the items needed for a self-contained system. We will explore plants and learn about photosynthesis and how it works. Each student will take home their own biosphere!

**Fee:** \$2.00 *Standard(s): L.OL.00.11-12, L.OL.01.21, L.OL.02.14, L.OL.02.22, L.OL.03.31, L.OL.04.15, P.EN. 07. 43*

## CIRCUIT BUILDERS

Experiment with Snap Circuits, alter the path of an electron, discover power sources, and investigate the difference between series and parallel circuits! Get your hands on the four components of any circuit, and more, in this exploratory workshop!

**Fee:** \$1.00 *Standard(s): S.IP.00-04.13, P.EN.E51*

## FORCE & MOTION

Students will experiment with force and motion and participate in a variety of challenges that will help build their understanding of motion, speed, acceleration, gravity, and force!

**Fee:** \$1.00 *Standard(s): P.FM.00.11-12, P.FM.00.21, P.FM.00.31-34, P.FM.03.22, P.FM.03.35-38, P.FM.03.41-43, P.FM.05.21-22, P.FM.05.31-34, P.FM.05.41-43*

## LIGHT

How can we see light and what colors create it? Students will explore the fascinating world of light in this mesmerizing workshop that supplements the Light & Color exhibit. The workshop's activities will challenge students to identify sources of light, and explore the concepts of reflection and refraction!

**Fee:** \$2.00 *Standard(s): P.EN.03.11, P.EN.03.21-22, P.PM.03.52*

## MAGNETS

Explore magnetic fields and magnetic and non-magnetic objects! Learn about magnetic poles and see how magnets attract or repel other magnets. In this exploratory workshop, we'll discuss how the Earth is a magnet and how compasses work!

**Fee:** \$1.00 *Standard(s): P.PM.01.31-32, P.PM.04.33-34*

## SLIME

Explore how molecules interact in solids, liquids, and gases! Learn about several other basic chemistry principles, such as physical and chemical changes. Then finally, mix ingredients to create your own colorful Slime to take home!

**Fee:** \$2.00 *Standard(s): P.PM.01.21-22, P.PM.04.23, P.CM.04.11, P.CM.06.11-12, P.PM.07.23, P.CM.07.22*

## STATIC ELECTRICITY

Experiment with different uses of static electricity and explore conductors, insulators, circuits, currents, and more! Participants will observe first-hand the powerful effects of static electricity with our Van de Graaff generator in a shocking and hair-raising experience. *(Available September 2013 - April 2014 only.)*

**Fee:** \$1.00 *Standard(s): P.EN.04.12*

# Preschool

## BUGS! BUGS! BUGS!

What are bugs, and where can you find them? Explore the science of lightning bugs, as well as the many different bugs that fly, scurry, and jump around us!

**Fee:** \$2.00

## FOSSILS

Love digging? Explore how fossils are formed, and dig them up with paleontology tools! Unearth the mystery of plants and animals from long ago!

**Fee:** \$2.00

## SENSES

Smell without sight, and see what you can't hear! Discover what our senses do, and how important they are with sensational hands-on activities!

**Fee:** \$1.00

# Programs

Leave it to the Impression 5 Staff to entertain and educate your students with one of these unique options offered through the Science Center.

## BIG SCIENCE LESSON

Explore science like never before & make Impression 5 your classroom for a week!

Activities during the BIG Science Lesson week are teacher-led and student-centered, incorporating presentations, behind-the-scenes tours, experiments, discussions, writing, sketching, and a variety of other interdisciplinary lessons!

Plus - as a teacher, develop an in-depth relationship with the exhibits, staff, and science!

**Fee:** \$28.00/student per week  
*Tuesday - Friday only.*

## SCIENCE ON WHEELS

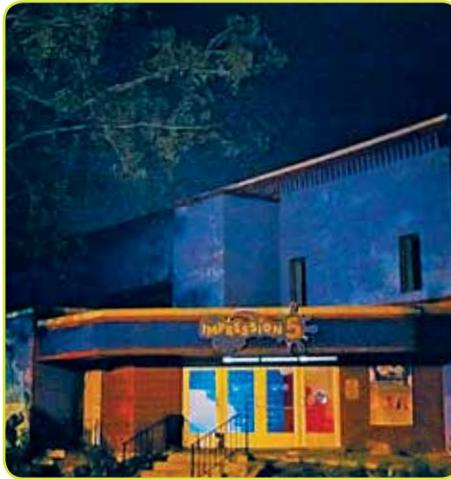
Can't make it to Impression 5? Then have Impression 5 come to you!

We'll make science come alive in your classroom, library, church, or anywhere! We feature hands-on science exploration and dynamic, inquiry-based learning.

With a variety of science topics available, Science on Wheels features Slime, Light, Circuit Builders, Magnets, or Electricity workshops! We also have science themes for preschool classrooms with topics from nature to senses!

Ask today about what amazing science can be brought to you with our Science on Wheels program!

*Customizable packages start at \$150.*



## OVERNIGHT ADVENTURE

Take over the Science Center at night and make your visit to Lansing even more memorable!

Choose any 3 interactive workshops and explore science at night during your Overnight Adventure!

**Fee:** \$30.00/student  
*Chaperones are free. A minimum of 36 students is required to book an Overnight Adventure.*

## EVENING ADVENTURE

Can't stay overnight? Save \$7.50 per person and enjoy any 3 of our workshops in this fun-filled evening.



# Planning Your Visit

Consider the exhibits you have to visit, the workshops you want to include, and the programs you'd like to experience, then plan your visit today!

## LUNCH AREA

If you've chosen to visit us during mealtime, you may wish to reserve our lunch area for your brown-baggers. The room accommodates 60 people and can be reserved in half-hour sessions for \$25.00 per session.

## SCIENCE STORE

Be sure to make time for shopping in Impression 5's Science Store during your visit. Our gift store is fully stocked with many educational toys, t-shirts, and unique gift items. We also have a large selection of books about science topics for a variety of reading levels. Don't let the science discovery end with your departure from Impression 5!

## GROUP ADMISSION RATE

Group rate with a reservation is \$5.00 per child. Teachers and chaperones accompanying a reserved group receive free admission. Group rates will be extended to schools and other established organizations.

### Scholarships:

A limited number of need-based scholarships for students involved in Impression 5 programs are available. For more information about those opportunities, please contact our Reservations Coordinator.



## PUBLIC HOURS

**Tuesday - Saturday:** 10:00 a.m. - 5:00 p.m.

**Sunday:** 12:00 - 5:00 p.m.

**Monday:** Closed

## CONTACT INFORMATION

<b>Mail:</b>	Impression 5 Science Center 200 Museum Drive Lansing, MI 48933
<b>Phone:</b>	Science Center — (517) 485-8116 Reservations Coordinator — Ext. 32 Big Science Lesson, Science on Wheels, and custom lessons — Ext. 44
<b>Fax:</b>	(517) 485-8125
<b>Online:</b>	<a href="http://www.impression5.org">www.impression5.org</a>
<b>Find Us:</b>	<a href="https://www.facebook.com/impression5">Facebook.com/impression5</a> <a href="https://www.flickr.com/photos/impression5/">Flickr.com/impression5</a>
<b>Parking:</b>	Parking is available, but limited. Buses are not accommodated in our lot.

### Our Reservations Coordinator will be happy to:

- Answer questions
- Provide ideas for your visit
- Help you choose a date and time for the best experience
- Accommodate your special needs
- Reserve a lunch room

In order to meet the needs of Science Center visitors, we are open six days a week! If possible, we're happy to open early for your group. **Feel free to request early arrival times to meet the needs of your visit** (as early as 8:00 a.m.)

### Before you call, please be prepared with:

- The name of your school or organization
- The name of the person in charge of the group on the day of your visit
- The date of your visit (and an alternate date, just in case)
- Your planned arrival and departure times
- The number of students and adults in your group
- Your group's address for confirmation and billing, including the county if within Michigan
- Your phone number, fax number, and e-mail address
- The age or grade level of the students
- The workshops you wish to reserve
- Your lunch plans
- Any special accommodations you need

*Early arrival times are available by reservation!*

*Once your reservation is complete, we will send you a confirmation that includes some logistical details, a map to the Science Center, a parking map, and an invoice to assist you in preparing your payment.*

*Payment is expected on or before the date of your visit.*

# Classroom Activity: MENTOS® & Pop

## WHAT TO DO *(Do this activity outside!)*

1. You'll need a 2-liter bottle of diet pop (*diet doesn't make a sticky mess*) and an outdoor location for your geyser. Select a flat surface on the lawn or driveway to place the bottle.
2. Start by tying one end of the string to the trigger pin (*the string might already be attached to the pin*) on the Geyser Tube.
3. Open the pop bottle and attach the Geyser Tube. Put the trigger pin into the hole at the base of the Geyser Tube.
4. Twist off the top cap on the Geyser Tube and drop 7 MENTOS® candies into the tube. The trigger pin will keep the candy from falling into the pop before you're ready. Replace the twist-on cap.
5. Warn everyone to stand back. Countdown... 3-2-1... and pull the trigger. The MENTOS® will drop and the pop will go flying into the air!
6. Pour out the remaining pop and take a look at the MENTOS®. You can see where the pop has eaten away at the surface of the candy. No need to waste the candy... they still taste great!

## MATERIALS

MENTOS® rolls - 1 per pop bottle  
Geyser Tubes\*  
20 oz Diet Pop



\*Geyser Tubes are available for purchase in the Impression 5 Science Store! You may also make your own Geyser Tube with cardstock paper and tape.

## HOW DOES IT WORK?

### Why does mixing MENTOS® with pop produce this incredible eruption?

As you probably know, pop is basically sugar (*or diet sweetener*), flavoring, water, and preservatives.

Carbon Dioxide is what makes pop bubbly, and it is pumped into the bottle using tons of pressure! Until you open the bottle, the gas mostly stays suspended in the liquid and cannot expand to form more bubbles (*which gases naturally do*).

**Why?** Because water molecules are strongly attracted to each other, and link to form a tight mesh around each bubble of carbon dioxide gas in the pop. Water "resists" the expansion of bubbles. In order for a new bubble to be formed, or even for one to expand, water molecules must push away from each other.

As soon as the MENTOS® candy hits the pop, bubbles form all over its surface in thousands of tiny pits called nucleation sites. This releases the gas from the protective hold of the water molecules. When you open the bottle, all this gas is released and literally pushes all of the liquid up and out of the bottle in an incredible blast!

**Why should you use diet pop?** Diet pop just works better! Some people speculate that it has something to do with the artificial sweetener. More importantly, diet pop does not leave a sticky mess to clean up!

**What's the record for the biggest MENTOS® fountain?** The official record from [www.SteveSpanglerScience.com](http://www.SteveSpanglerScience.com) is an 18-ft blast that shot up and almost took out a half-million dollar, high-definition television camera.



## DID YOU KNOW?

1. When you lower potatoes or pasta into a pot of boiling water, it will sometimes boil over because organic materials that leach out of the cooking potatoes or pasta disrupt the tight mesh of water molecules at the surface of the water, making it easier for bubbles to form.
2. When a scoop of ice cream is added to a glass of root beer, the float foams over for essentially the same reason. The surface tension of the root beer is lowered by gums and proteins from the melting ice cream, and the CO<sub>2</sub> bubbles expand and release easily, creating a delicious foam on top.



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**What's Inside: Your 2013/14 School Visit Guide!**

*Exhibits, Workshops, Programs, and more!*



The W.B. and  
Candace Thoman  
Foundation



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