



# KALEIDOSCOPE

## GALLAGHER BLUEDORN

**Dear Teachers,**

Welcome to the Gallagher Bluedorn Performing Arts Center and the Kaleidoscope Series for Youth. We appreciate your selection of the Gallagher Bluedorn for your students' cultural experience, and will make every effort to ensure your visit to our facility is educational, engaging, and enjoyable.

The materials about each individual performance in the Study Guide are designed by educators to help plan for your field trip. This information usually includes a synopsis of the production, pre- and post-show activities for the classroom, and bibliographies. Please feel free to print and copy the information that is appropriate to your classroom lesson plan. In addition, students and parents are encouraged to investigate the study guide materials together.

Along with study guide information, this packet will also provide you with valuable information about the performance experience and logistics of your trip, including details about the Gallagher Bluedorn, directions for travel, parking, and attendance information.

Thank you for your interest in the Kaleidoscope Series for Youth, and we look forward to welcoming you to "Iowa's Largest Classroom".

Sincerely,

Jennifer Onuigbo  
Community Relations Manager



# **KALEIDOSCOPE**

## **GALLAGHER BLUEDORN**

### **Field Trip Information For Teachers**

#### **BEFORE THE PERFORMANCE...**

##### **Time of Arrival**

We suggest you arrive approximately 20–30 minutes prior to curtain time.

##### **Parking and Unloading**

School buses arriving at the Gallagher Bluedorn will approach via University Avenue. Enter campus on the west side of the building onto Campus street. You will be motioned to move into the parking lot to unload. If you need accessible unloading or do not plan to stay for the show, let the attendant know. Unload students quickly and move them onto the sidewalk. Gallagher Bluedorn staff will direct traffic and assist in the unloading.

Once parked, buses cannot leave the lot until after the performance. If your bus needs to leave during the show, they should return no later than 10 minutes before the end of the performance and park where instructed.

##### **Home Schools/Private Patrons**

When you arrive, please proceed to the B lot south of University Avenue. Parking is free and no parking voucher is needed. A limited number of parking spaces for those with handicap designations or special needs are available in the lot north of the Gallagher Bluedorn. Please plan accordingly and arrive early.

##### **Tickets**

You will not receive a voucher for your group order. Ushers will have lists of schools attending and seating assignments.

##### **Seating**

The ushers will direct groups to their seats. Our seating policy is to seat students and teachers together as indicated on the order form. Each busload of students receives an usher and may enter different door but will be seated in the same area in the auditorium.

##### **Special Seating**

Please inform Molly Hackenmiller at (319) 273-3682 if you have a student with special seating needs (if not previously noted on your order form) so we can arrange appropriate seating. Please provide at least two weeks' notice if possible. Due to the large number of students attending most shows, we may not be able to accommodate special seating if we do not have prior notice.



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## Field Trip Information For Teachers

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### DURING THE PERFORMANCE...

#### A Few Reminders on Theatre Etiquette

- Food and drink are not permitted in the Great Hall.
- Cameras and recording devices are not allowed.
- You may talk before and after the performance begins, but please do not talk during.
- Turn off all cell phones, pagers, and other electronic devices.
- Clap and cheer when appropriate.
- Most importantly, enjoy the show!

#### Chaperones

Please see the section below on guidelines or Kaleidoscope chaperones.

#### Duration

The performance will last approximately one hour unless otherwise noted on the website, or confirmation letter. **If your students will not be getting on the bus immediately after the show, please notify parking staff so it is parked appropriately.**

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### AFTER THE PERFORMANCE...

#### Loading

At the conclusion of the performance, stay seated and wait until your assigned bus number is called by the Gallagher Bluedorn employee onstage. Please wait patiently as groups are dismissed to their buses. A Gallagher Bluedorn volunteer will escort your group to your bus safely. **Home schooled students and chaperones may exit at the conclusion of the performance through the east exit.**

#### Evaluation

Teacher surveys will be conducted online. The contact name on your group order will receive a link via email after the performance. Please share this with other teachers on the field trip. We appreciate your feedback for future Kaleidoscope performances!

#### Guidelines for Kaleidoscope Chaperones

As a chaperone for a Kaleidoscope performance, you are an important factor in making the performance enjoyable for the entire audience. Here are some guidelines to help make the most of your Kaleidoscope experience.

- Before entering the hall, assist the teacher by keeping students in line and by reminding them that chewing gum, eating, and drinking are not allowed in the hall. Make sure to take notice of the bus number assigned to you by a Gallagher Bluedorn employee.
- Be ready to let the ushers know what school you represent when you arrive. This information helps the ushers show you to your seats in an efficient manner. Please be patient if several people ask you the same question.
- If you need assistance for any reason, ushers are wearing white shirts and black pants and will be wearing nametags.
- Sit amongst the students during the performance. Please ask students to remain in their seats and to refrain from talking during the show. We want all students to be able to hear and enjoy the show.
  - At the conclusion of the show, wait to exit until your assigned bus number is called by the Gallagher Bluedorn employee onstage once the show is over. Please wait patiently as groups are dismissed to their buses. When exiting the hall, please help the teacher keep your class together.





**Mister C**



Conceived & Performed by Kevin Cornell

# Mister C Live

## Air is Everywhere - Resource Guide



Online media to support each activity sheet



Engage, Embrace and Extend STEAM Learning



Easy to complete activities for everyone to enjoy



Mister C

## ABOUT THE SHOW

Are you ready for some hair-raising science, toe-tapping music and mind-blowing media? Join Mister C for another fun day of learning together in the lab! Mister C is no stranger to finding exciting and engaging ways to explore STEAM (Science, Technology, Engineering, Art, and Math) in our everyday lives. Full STEAM Ahead Live will have everyone singing, dancing and learning to the tune of science. Students and teachers will be amazed with this fun and educational series as Mister C uses humor, media and the engineering design process to make the ordinary extraordinary!

## WHO IS MISTER C?

Mister C is not your ordinary educator! As an 20+ year education veteran, Mister C has spent time as a class-room teacher, principal, curriculum specialist and district administrator. His specialty is knowing how to inspire and engage learners of all ages using video, music and live presentations.

Mister C is the Emmy nominated producer and Emmy nominated host of Full STEAM Ahead, which airs on PBS Stations across the US. He is also the creator of the YouTube channel LearningScienceisFun with 15K subscribers. Through these platforms, millions of learners have had the opportunity to enjoy learning to a different beat with silly songs, exciting experiments and dazzling demonstrations.

Whether online, on-air or live on-stage, Mister C's high energy and infectious attitude will have you out of your seats, having fun learning together!



### TEACHER FOCUSED

Activities designed to kickstart critical thinking and minds-on learning.



### STUDENT-DRIVEN

Fun activities to introduce students to STEAM Learning.



### EDUCATOR CREATED

Mister C created these learning experiences to foster critical thinking and a love for learning.



### SHARE YOUR LEARNING

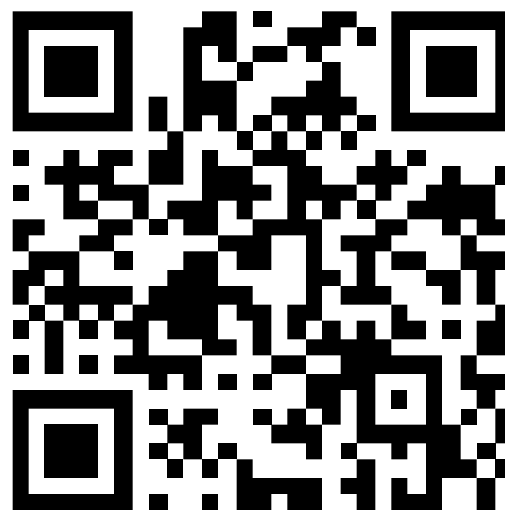
Snap a photo and share it online. Use #MisterCFullSTEAMAhead



@originalmisterc



@learningscienceisfun





Mister C

# Pre-show Conversation Starters

## ABOUT THE SHOW

1. Air is all around us! What evidence is there that air is actually something that scientists study?  
 2. What type of scientists study the weather?  
 3. Could you design an experiment that allows you to measure weather over time?



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## AIR-cabulary

Engineering, Art, and Math) in our everyday lives. This

**Atmosphere** - the envelope of gases surrounding the earth or another planet. Earth's atmosphere has 5 layers which are the troposphere, stratosphere, mesosphere, thermosphere and exosphere.

**Air pressure** - the force exerted on a surface by the weight of the air above it and the weight of the air molecules themselves.

**Density** - Density commonly is expressed in units of grams per milliliter and kilograms per liter and is defined as mass per unit volume.  $D = M/V$

## WHO IS MISTER C?

**Mass** - is the measurement of the amount of matter there is in an object. Mass of an object remains constant in all circumstances while weight varies due to gravity. Mass and is measured in grams (g) or kilograms (kg). Your mass on the earth and the moon are identical.

Kevin Cornell, Ed.S., aka Mister C, has been an educator for 18 years and knows the importance of engaging children with powerful learning experiences in and out of the classroom! Kevin's character, Mister C, is no stranger to failure and shows audiences that learning can be fun and a way to connect with the world.

## Lab Safety

Anytime you're doing science, it's important to remember Science Safety.

Report all accidents, and breakage of glass or equipment to your instructor.

Keep pathways clear by placing extra items (books, bags, etc.) on the shelves or under the work tables to avoid people tripping and falling or spilling materials.

Long hair (chin-length or longer) must be tied back to avoid catching fire or blowing in chemicals.

You can find his science videos, songs and PBS clips at the following links. To learn more please visit:

- Leave your work-station clean and in good order before leaving the laboratory.

<https://www.youtube.com/c/learningscienceisfun>

Learn the location of the fire extinguisher, eye wash station, first aid kit, and safety shower.

<https://www.youtube.com/mistercfullsteamahead>

[www.speakersandbeakers.com](http://www.speakersandbeakers.com)

- Walk calmly in the lab without running to avoid bumping into materials or one another.





# Mister C Live



## DIY AIR CANNON

### TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. Build an air cannon to experience the movement of air through a space.

### MATERIALS

- Plastic or styrofoam cups
- Scissors
- Balloon
- Various items to knock over
- Clean work space and a parent helper

### DIFFICULTY:



SCAN ME TO WATCH A VIDEO



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Did you know that dolphins can create vortex rings to play with in the water by blowing air through their blowholes. The quick burst of air combined with the round shape of the blowhole create a vortex ring of bubbles.



## EXPERIMENT:

Step 1: Gather materials.

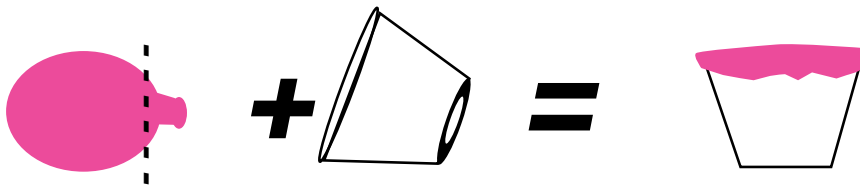
Step 2: Cut the neck off of the balloon and keep the large part.

Step 3: Carefully cut a hole in the bottom of the cup about the size of a dime with your scissors. You may need an adult to help for this step.

Step 4: Attach the cut balloon to the mouth of the cup. Be sure to stretch it tightly and reinforce by wrapping a rubber band around the lip of the cup.

Step 5: Pull back the balloon and let it go to force the air out of your cannon. You can also tap the balloon to fire the cannon.

Step 6: You can hang a strip of toilet paper from a door frame and test how far back you can stand and still hit the toilet paper with the air cannon.



## WHY IT WORKS:

Although you can't see it, your cup is filled with air. When you apply a force to the air molecules by pulling back the balloon and letting it snapback, the air molecules are pushed toward the opening. This movement sets off a quick chain reaction of collisions with other air molecules and the sides of the cup. The only way for the air molecules to escape is through the opening at the bottom of the cup. The quick escape of these air molecules forms a stream of air that flows straight out of the cannon.

## EXTEND YOUR LEARNING:

To make this a true experiment, try changing a variable?

What might happen if you used a different sized cup? Could you cut a 2 liter bottle to make a larger cannon? Could you try another stretchy material to take the place of the balloon?

Does it change the experiment if you make the hole a different shape? What if you place it in a different spot? Experiment with your air cannon to see what changes allow you to shoot air the furthest.

Have a target competition with a friend

## WORKFORCE CONNECTION

A meteorologist studies interactions between temperature, humidity, air pressure, precipitation and vortices in the atmosphere. They develop an understanding of how vortices such as tornadoes, waterspouts and hurricanes form so they can predict the weather to keep people informed and safe. They also study and learn about the polar vortex and how it affects the weather during winter



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## DIY CAN CRUSH

### TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. there are five layers to Earth's atmosphere and gravity is pulling down on the air molecules in each layer. That pulling creates atmospheric pressure.

### MATERIALS

- Stove top or burner
- Water
- Empty soda cans
- Tongs
- Large bowl with ice
- Clean work space and a parent helper

### DIFFICULTY:



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## DIY SOLAR BALLOON

### TOPIC: AIR

Air is EVERYWHERE! Air is the invisible gaseous substance surrounding the earth. Build a Solar Balloon Kite to learn how heat energy changes how air behaves.

### MATERIALS

- Cellophane packing tape
- Seven (7) 30 gallon thin, black trash bags
- Scissors
- String
- Clean work space and a parent helper

### DIFFICULTY:



Make sure you don't fly your solar balloon kite near any airports and be sure to let your neighbors know what you are doing! We don't want any UFO calls being made to the authorities!



## EXPERIMENT:

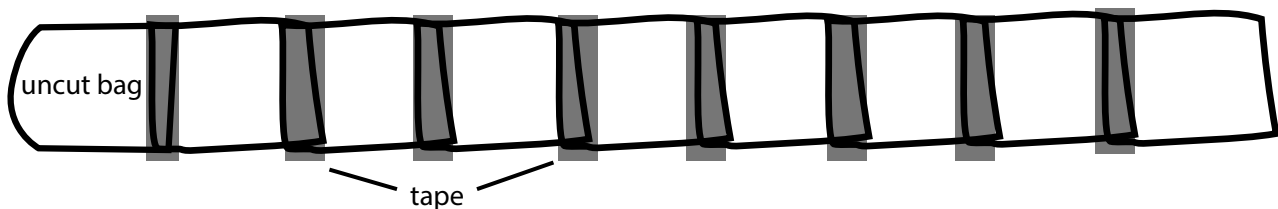
Step 1: Gather materials.

Step 2: Cut the bottoms off of 6 trash bags.

Step 3: Lay the uncut bag out first. Then lay 6 cut bags end-to-end starting at the top of the uncut bag. Be sure to tuck the bags into each other at least 1 inch so no air will be able to escape when you tape them together. This overlap prevents air from escaping.

Step 4: Connect the bags together by taping them to each other with tape. Carefully cover the seams all the way around the bag so no air can enter or escape.

Step 5: Repeat step 4 with the remaining bags and then connect them together in the middle. Make sure you are careful to tuck them in the same direction as the other segment so the air will flow in easily. Your kite should look like a giant segmented earthworm with one open side.



Step 6: Carefully inflate your balloon. Have a helper hold the closed end while you hold the open end to allow air to fill your balloon.

Step 7: Once inflated, tie a kite string to your DIY Solar Balloon Kite and allow it to be in direct sunlight.

## WHY IT WORKS:

The black color of the trash bags absorbs heat energy from the sun and the air inside the bags to heat up. As air molecules gain more energy, they spread out quickly and create more space between them. Because the air molecules inside are spreading out, they become less dense than the cooler air around the solar balloon kite. This allows the solar balloon kite to rise and float in the air. This is similar to a beach ball rising to the top of the pool water because the air inside is less dense than the surrounding water.

## EXTEND YOUR LEARNING:

- Would the solar balloon kite work if you used white trash bags?
- Would it work with one trash bag?
- Does the solar balloon kite work better in the morning, in the middle of the day, or in the evening?
- Does it work on a cloudy day?

## WORKFORCE CONNECTION

An airship pilot flies giant airships. The airships only fly about 30 miles per hour, but are extremely sensitive to the wind just like the solar balloon. Pilots need strong flying skills to respond to the slightest changes in the weather. In addition, Airships have to land into a group of people who rush to secure them to the ground, so expert piloting skills are necessary for safety. Even professional pilots need at least a year of additional training to fly a helium filled airship.



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