CIRQUE MECHANICS in Pedal Punk

thu & fri DEC 1 & 2 10 am
WELCOME TO THE HOP
A performance needs an audience, so be prepared to play your part!

THEATER ETIQUETTE
When entering the Hopkins Center, show consideration for all those sharing the building by remaining quiet and respectful in common areas.

Be aware and use quiet voices. Remember that live theater differs greatly from watching television or movies or attending a sporting event. Live performers can hear and see you and are easily distracted by any talking or moving around in the audience. Even the smallest sounds can be heard throughout the theater, so it’s best to be quiet so that everyone can enjoy the performance.

Applause is the best way to show your enthusiasm and appreciation!

Important things to remember: Backpacks, food, drink, and gum are not allowed in the theater. Please turn off all cell phones and note that recording the performance or taking any photos is strictly prohibited. Hats off! It is respectful to remove hats during your time in the theater.

INFORMATION FOR TEACHERS
Be prepared and arrive early. You should arrive at the theater 30 to 45 minutes before the show. Allow for travel time, parking, and trips to the restroom. You should be in your seat at least 15 minutes before the performance begins.

Have a head count. On the day of the performance be sure to have an accurate head count of students, chaperones, and teachers.

Staying for lunch? Please call 603.646.2010 no later than one week in advance of the show to make a reservation for lunch. The day of the show, bring lunches in marked boxes and give them to a Hop staff member. Lunches will be ready for you after the show in Alumni Hall.

Photo Policy. The Hopkins Center may take photographs during the performance for use on our website or on promotional materials. If you or your students do not wish to be photographed, please see a Hop staff member.

The Show Must Go On! We do not cancel events due to inclement weather. Performances will only be canceled if the artist is unable to reach the theater. Schools will be notified by phone if the performance has been cancelled. We do not issue refunds for weather-related cancellations; please feel free to fill empty seats with other school or community members.

This study guide was created for you by the Outreach & Arts Education team. To download copies of this study guide, see additional resources for this event, or view past study guides, please visit: www.hop.dartmouth.edu/outreach.

ENJOY THE SHOW!
Hopkins Center Outreach Department:
Stephanie Pacheco, Outreach Manager
Mary Gaetz, Outreach Coordinator
Erin Smith, Outreach Coordinator
The Hopkins Center Outreach & Arts Education department embodies the Hop’s mission to “ignite and sustain a passion for the arts.” It provides Dartmouth, the community and beyond rare personal contact with artists and a broad context for the performing arts. Unveiling the creative process of extraordinarily diverse artists, Outreach programs touch more than 14,000 lives each year.

DID YOU KNOW?
• The Hopkins Center opened in 1962.
• The Hopkins Center was designed by Wallace Harrison, architect of Lincoln Center and the United Nations Building in New York City.
• The first three rows of The Moore Theater are on an elevator that goes eleven feet below ground to create an orchestra pit and can also be raised to the height of the stage to make it larger.
• In The Moore Theater, the area over the stage, called the “fly loft,” is 63 feet tall.
ABOUT THE PERFORMANCE

Inspired by bicycles and steampunk design, Pedal Punk is an acrobatic whirlwind where cycling becomes an escape from our technology-obsessed society. Centered on a bicycle mechanic and his zany interactions with cyclists, this performance features all aspects of contemporary circus— aerialists, clowns, acrobats, jugglers and more. There are over 25 bicycles in Pedal Punk including a BMX, an old beach cruiser, a miniature bike, two unicycles and a bicycle that climbs vertically when it is pedaled. Aerialists perform spins and acrobatics while suspended on ropes or other apparatus hung from the top of the performance space. Acrobats show off their ability to flip, stretch and contort. Clowns make us laugh with entertaining tricks and physical humor. Add in lots of lights and music and the circus is an exciting place to be!

ABOUT THE ARTIST

Pedal Punk Cast: Lindsey Covarrubias, Jan Damm, Wes Hatfield, Blake Hicks, Nata Ibragimov, Katie Ketchum, Holland Lohse, Kevin Rogers, Windu Sayles, Lauren Stark

The creative director and founder of Cirque Mechanic, Chris Lashua, got his start doing stunts on a BMX bike. From there, he moved on to another circus apparatus, the German Wheel. In 2002, he and Aloysia Gavre began experiments using an innovative aerial apparatus which was the inspiration for the development of other machines that would join the acrobatic and mechanical worlds. In 2004, Chris and Aloysia teamed up with more circus pros to create a 30th Anniversary production for the Pickle Family Circus. This show, Birdhouse Factory, which performed at the Hop in 2013, was their first collaborative effort and went on to tour all over the United States.
CONTEXTUAL BACKGROUND: THE BICYCLE

The first version of the bicycle, invented by a German baron, was called the Drasine. It had two wheels but no pedals and moved by feet pushing against the ground. The penny-farthing was invented by Englishman James Starley. With its large front wheel and small rear wheel, this bicycle had increased speed, more comfort and the ability to go farther with one rotation of the pedals. The unicycle was inspired by the penny-farthing, because when cyclists stopped abruptly, the bicycle would often rise up on the front wheel and the rear wheel would leave the ground. Some cyclists began experimenting to see how far they could travel on just the front wheel. The penny-farthing gets its name from old British penny and farthing coins which represent the large and small wheels.

What’s it mean?

Uni = one and Bi = two
Cycle = wheel

So...

Uni + cycle = one wheel
Bi + cycle = two wheels

Cirque Mechanics perform on a penny-farthing suspended in the air!
THE CIRCUS

Philip Astley, a member of the British military and talented horse breaker, opened a riding school in London in 1768. The arena for the horses was circular and he called it the circus, and later the ring. (Circus is a Latin word that means “ring.”) He would showcase trick riders and rope dancing, and eventually added acrobats, jugglers and clowns. The first circus in the United States opened in 1793. In 1871 Phineas Taylor Barnum and William Cameron Coup launched P.T. Barnum’s Museum Menagerie and Circus. It traveled from town to town and featured an exhibition of exotic animals and oddities which later became known as the Sideshow. In 1907, the Ringlings, another popular circus company, purchased the Barnum and Bailey Greatest Show on Earth and created the Ringling Brothers Barnum and Bailey Circus, also known as “The Big Show” because it had expanded to three rings. Circus remained unchanged for decades; then, in the 1950s, the Moscow Circus came to the attention of the world with high-level performers and unique artistry. Other circus groups followed, including the Pickle Family Circus, Circus Oz, the Big Apple Circus and Cirque de Soleil.

WHAT IS STEAMPUNK?

The designers of the machines in Pedal Punk were inspired by the Steampunk movie The Mysterious Geographic Explorations of Jasper Morello. Steampunk is a genre of science fiction based in a world that imagines what it would be like if people in the late 19th century used steam power and clockwork to make gadgets like we have today.
WHAT IS A GANTRY BIKE?

One of the apparatus you’ll see in Pedal Punk is the gantry bike. The word gantry refers to a framed structure created to go across and support something; one example of a gantry is the structure that holds a rocket in place before it launches into space. In this case, the gantry is a huge vertical structure that rotates around the stage when performers pedal the two large wheels on either side. The gantry also becomes a place for performers to do acrobatics of all kinds. The gantry bike weighs 3,000 lbs and has a top speed of five miles an hour, using sprockets and chains to propel it. It takes a team of four people 1 ½ hours to put it together but only one hour to take it apart.

See the gantry bike at work in this video, narrated by the creative director of Cirque Mechanics, Chris Lashua: www.youtube.com/watch?v=kQj9JwRvhkl&feature=youtu.be

Recycle and Repurpose!
Many of the bikes in the show were built from parts found in scrap yards. A great way to recycle and repurpose parts!

SIMPLE MACHINES

Simple machines are machines that have few or no moving parts that are powered by energy. There are five simple machines that are used in Pedal Punk:

Pulley
Made up of a grooved wheel and a rope that fits in the groove, one end of the rope is attached to a load, then the other end is pulled to lift the load, turning the pulley.

Wheel and Axle
The axle is a rod that goes through the center of the wheel allowing it to turn.
Inclined Plane
Often called a ramp, an inclined plane is a flat surface that is higher on one end. It is used to easily move objects from higher to lower or lower to higher.

Wedge
A wedge is made of two inclined planes. These two planes meet and form a sharp edge which is used to push two things apart.

PRE PERFORMANCE DISCUSSION QUESTIONS:
• When you think of circus, what images come to mind? How do you think Pedal Punk might be the same or different from those images?
• How do you think someone decides to be a circus performer? What do you think they should study in school to prepare?
• Where do you see simple machines in your everyday life? What kinds of things do they do? How would life be different if we did not have these machines to help us out?

POST PERFORMANCE DISCUSSION QUESTIONS:
• How did Cirque Mechanic incorporate wheels and bicycles into the performance?
• Discuss the ways you saw circus being used to tell this story. How is it different from film or theatre or other forms of entertainment? What do you think happens next in the story?
• Name all the simple machines you saw in the show.
• If you were training to be a circus performer, what type of apparatus or acrobatic would you want to train for?
LEARNING ACTIVITIES:

BE THE MACHINE (GRADeS 3-5)

Using moves inspired by both simple machines and imagination, have each student come up with a repetitive movement and sound as if he or she were a piece of a machine. The movement should use various parts of the body but be easily repeated over and over again with a simple sound. The movement can include head, legs, hands, feet, anything. Let students experiment and receive some feedback. Once everyone has their movement and sound, have them start doing them, then move students around to match movements together so they connect and create one large machine from all the parts. Linking should involve moving students nearer to each other so one’s physical movement informs another, but not physically touching each other. Once the machine parts are all in place, have students freeze and look around at the machine they have created. Identify different points of cause and effect in the motions, e.g. “when Allie moves that way, it makes Titus move this way.” Brainstorm what the machine might be making. Repeat with students, selecting a new movement and sound. Try having one or two students arranging the moving parts to create a larger machine. EXTENDER: have students sit together on the floor in one area of the room, leaving space for working. Have one student step out of the seating area and do a machine-inspired movement and sound. Add the rest of the class into the machine, one student at a time. Challenge the students watching to come up with their motion and sound based on what is already in the machine. No pre-planning allowed—inspiration should come from what they are seeing and hearing from each other. Once all the parts are in place, explore speeding the machine up and slowing it down. In what different ways are you seeing the cause and effect from one student to another? Are some moves repeated more than others? Why?

CIRQUE DE INvENTION (GRADeS 5-9)

Have students design their own circus machine! Begin by having them review the photos from Pedal Punk at www.cirquemechanics.com/pedal-punk/photos. Draw their attention to the different apparatuses in the photos. Have them make notes and sketches of the machinery they find interesting; include the simple machines discussed above. Ask students what they would like to see in a circus, something new that has never been done. Working independently or in groups, have students brainstorm new ideas for circus performance. Once all ideas are out on the table, narrow down to one and identify the specific problems involved in creating this new circus act—do they need to design a new apparatus, a different performance space, a certain type of machinery, special costumes, or all of the above and more? Have the group write out the main problem(s) it needs to solve in order to bring this new circus act to life. Using this research, have the group imagine the different ways it might solve the problem(s). Have students sketch out designs to explore the ways they could overcome the problem(s) and bring the new circus invention to life. As they narrow down their ideas into one design, have them create a visual presentation and share it with the class. After sharing, have groups trade projects. Each group should now brainstorm ways to further improve the other group’s original design. Share back improvements with the class. Were you able to solve the problem? How did the improvements align with the original intent of the design? What would it take to actually build the invention? How many simple machines can you find in your projects?
**VOCABULARY**

Aerial: existing, happening or operating in the air  
Apparatus: the technical machinery or equipment needed for a particular purpose or activity  
BMX: a bicycle designed to be used on a dirt track in organized racing; BMX stands for bicycle motocross  
Cast: the performers taking part in a performance  
Contemporary: belonging to or happening in the present  
Exhibition: a display or demonstration of a particular skill  
Exotic: originating in or characteristic of a distant foreign country  
Horse breaker: a person who trains horses to be saddled and ridden by people  
Oddities: strange or peculiar people, things or traits  
Vertically: oriented up and down

**LOCAL CONNECTIONS**

**BICYCLES**

Upper Valley Mountain Bike Club uvmba.org  
Upper Valley Trails Alliance www.uvtrails.org  
Upper Valley Women’s Cycling Club www.meetup.com/Upper-Valley-Womens-Cycling-Club  
Upper Valley Rideshare www.uppervalleyrideshare.com  
Getting Around the Upper Valley by Bicycle www.vitalcommunities.org/transportation/bike  
Cycling along the Connecticut River www.ctriverbyways.org/bicycling-the-byway  
Safe Biking Routes to Schools www.saferoutesinfo.org

**CIRCUS**

New England Center for Circus Arts in Brattleboro, VT www.necenterforcircusarts.org  
Circus Smirkus, Northeast Kingdom, VT www.smirkus.org  
Cirque de Soleil in Montreal, Quebec, Canada www.cirquedusoleil.com/canada/montreal/shows  
Circus Building at the Shelburne Museum www.shelburnemuseum.org/collection/circus-building

**DID YOU KNOW?**

All of the Advance Transit buses in the Upper Valley are equipped with easy-to-use bicycle racks, and each bus can accommodate two bicycles. More info at www.advancetransit.com/bikes.htm

**ADDITIONAL RESOURCES AND REFERENCES**

Credit to Cirque Mechanics’ “Pedal Punk: The Study Guide”  
Watch how the laws of physics govern circus www.pbs.org/video/1607925512  
Steampunk Festival www.springfieldvtsteampunkfest.com  
Read more about Cirque Mechanic at www.cirquemechanics.com  
www.thinglink.com  
www.backdropsbeautiful.com