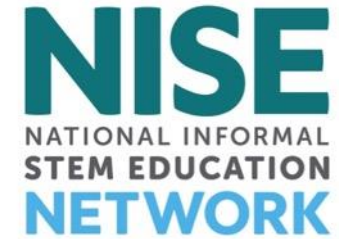


NISE Net Online Workshop



Learn More About the Frankenstein200
Project and Free Digital Resources

Tuesday, December 5, 2017

Welcome!

Today's presenters are:

Rae Ostman, Arizona State University

Jeannie Colton, Arizona State University

Justin Spencer, The Bakken Museum

Anika Taylor, The Bakken Museum

Emily Cotman, Sciencenter

Victoria Fiordalis, Sciencenter



As we wait to get started with today's discussion, please:

- **Update your display name.** Include your first & last name, institution and location.
- **Introduce yourself!** Type your name and institution into the Chat Box
- **Questions?** Feel free to type your questions into the Chat Box at any time throughout the online workshop or use the raise your hand function in the participants list and we'll unmute your microphone.

Today's discussion will be recorded and shared on nisenet.org at:

nisenet.org/events/online-workshop

FRANKENSTEIN²⁰⁰

- 2:00pm Welcome and introductions
- 2:10pm Frankenstein200 project overview
- 2:20pm Ways to use F200 resources
- 2:45pm How to access materials
- 2:50pm Questions and discussion
- 3:00pm Adjourn

Presenters

Rae Ostman, Arizona State University

Jeannie Colton, Arizona State University

Anika Taylor, The Bakken Museum

Justin Spencer, The Bakken Museum

Emily Cotman, Sciencenter

Victoria Fiordalis, Sciencenter

Christina Leavell, Science Museum of Minnesota

Kayla Berry, Museum of Science



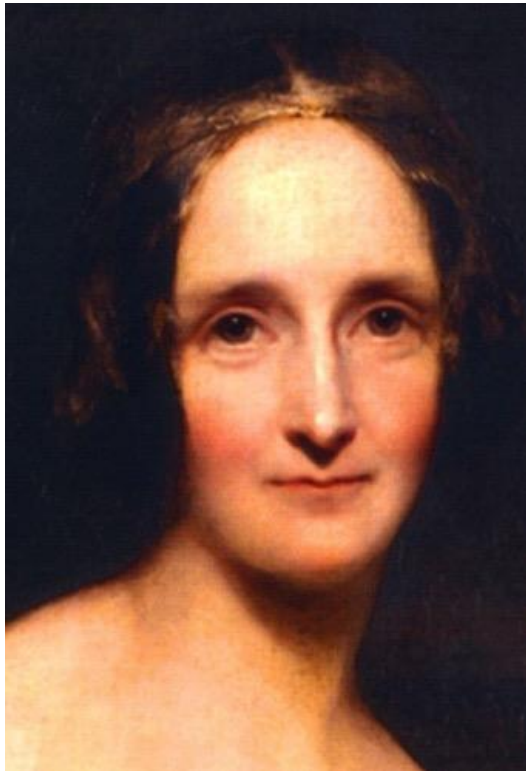
FRANKENSTEIN200

Frankenstein200 project

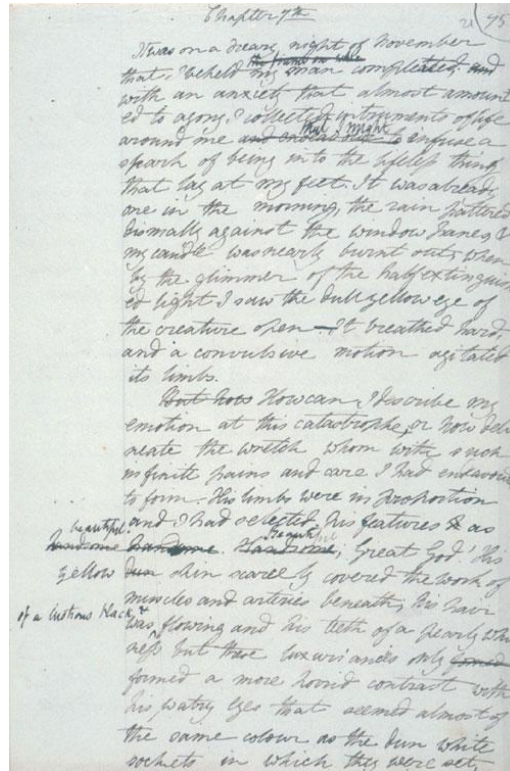
Celebrating the 200th anniversary of Mary Shelley's *Frankenstein!*

Museums, libraries, and other organizations across the United States are participating.

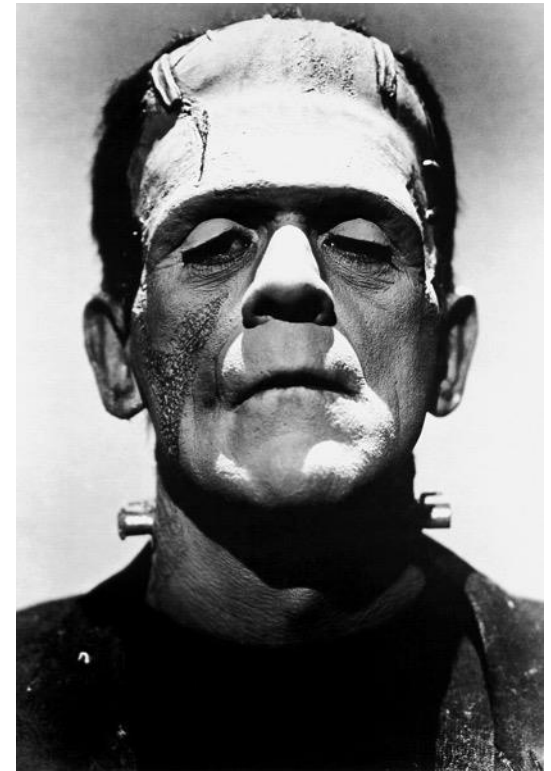
Mary Shelley's *Frankenstein*



Mary Shelley



Draft of *Frankenstein*



Boris Karloff as Frankenstein's creature

Opportunities for learning

Practice 21st century skills such as creativity and collaboration

Explore emerging technologies such as artificial intelligence, robotics, synthetic biology, and human enhancement

Reflect on responsible innovation through questions that are easy to understand but hard to answer

Key questions

What is life?

Why do we create?

What are our responsibilities as creators, scientists, and engineers?

Transmedia project



- Hands-on activities
- Alternate reality game
- DIY activities and contests



ACTIVITY KIT

Museum programming



Frankenstein200 kits

Hands-on activities

- Automata
- Battery Stack
- Dough Creature
- Frankentoy
- Monster Mask
- Scribble Bot
- Spark of Life



Creativity and responsible innovation

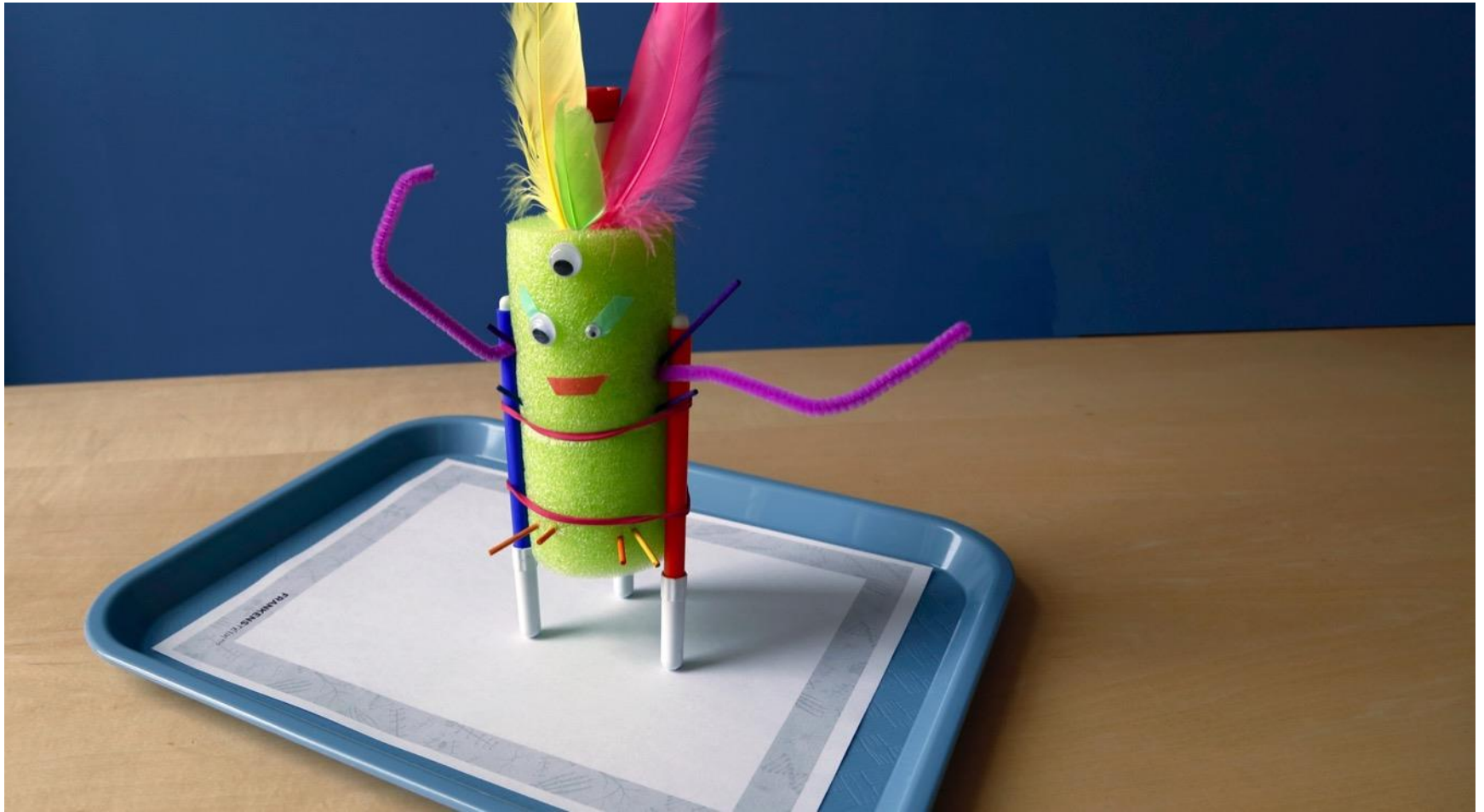


Artificial intelligence and robotics

Automata



Scribble Bot



Creativity and responsible innovation

Dough Creature



Frankentoy



Monster Mask



Genetic engineering and synthetic biology

Dough Creature



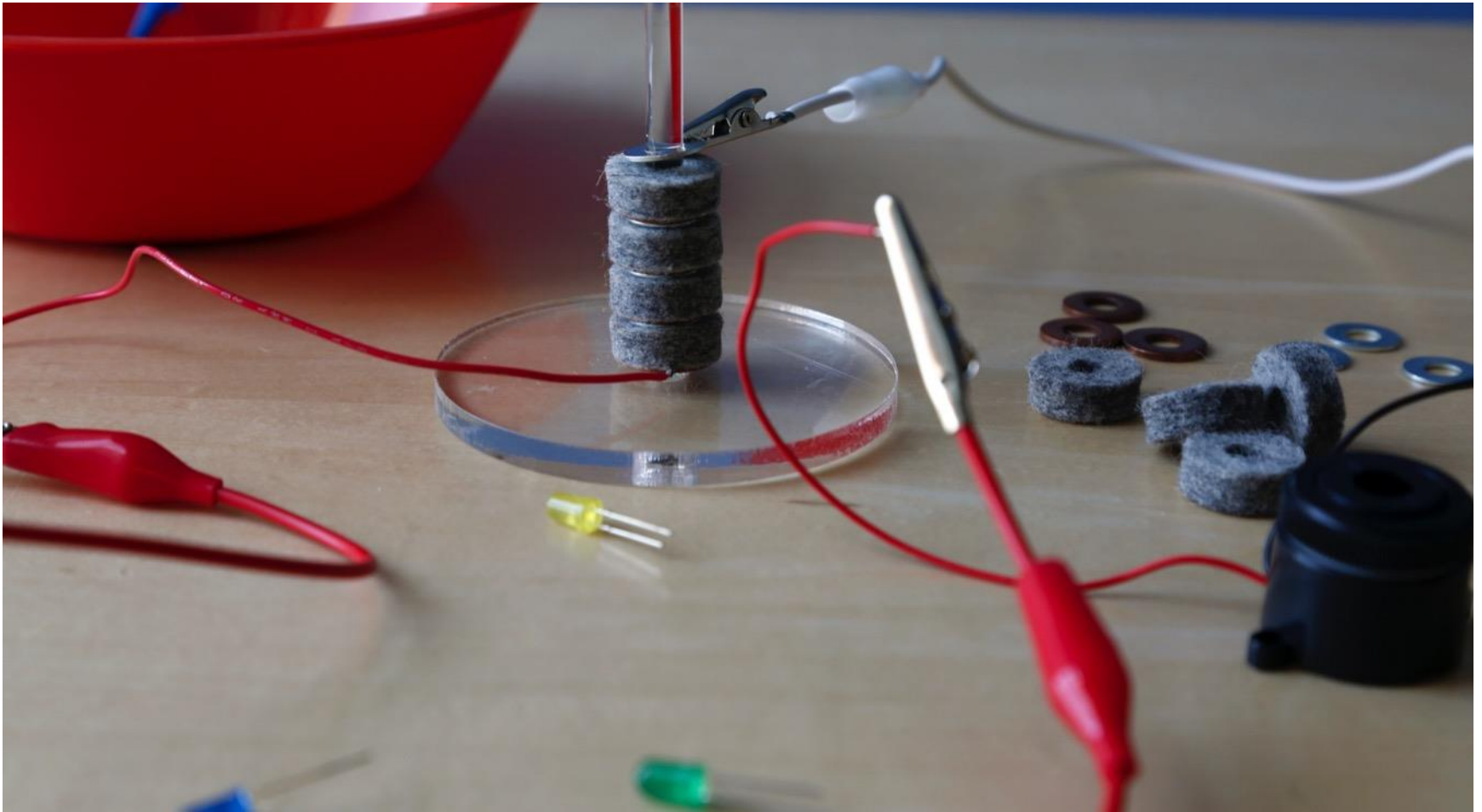
Frankentoy



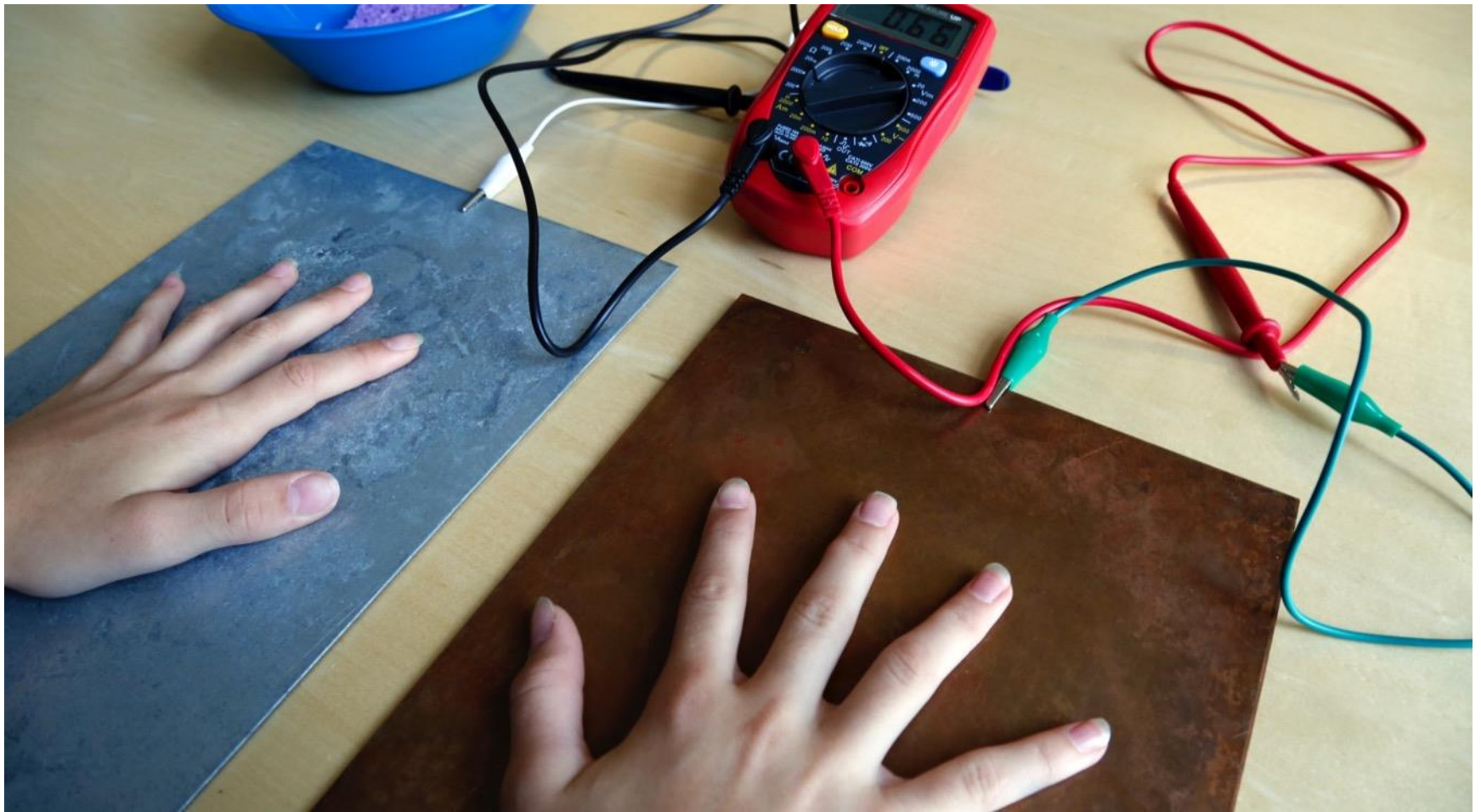
Monster Mask



Battery Stack



Spark of Life



Program planning materials

Event Planning and Promotion Guide



FRANKENSTEIN²⁰⁰

frankenstein200.org

Press Photos

We have provided a selection of press photos that you can use to promote your Frankenstein200 events. These photos are free for use under a Creative Commons Attribution-NonCommercial-ShareAlike license. creativecommons.org/licenses/by-nc-sa/3.0/us/
All press photographs credit: Science Museum of Minnesota.



Frankenstein200_Photo 1



Frankenstein200_Photo 2



Frankenstein200_Photo 3



Frankenstein200_Photo 4



Frankenstein200_Photo 5



Frankenstein200_Photo 6



Frankenstein200_Photo 7



Frankenstein200_Photo 8



Frankenstein200_Photo 9

FRANKENSTEIN²⁰⁰

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Event Planning Guide



FRANKENSTEIN²⁰⁰

**LIFE.
CREATIVITY.
RESPONSIBILITY.**

frankenstein200.org



Training materials

FRANKENSTEIN²⁰⁰

Overview

AUTOMATA

What happens when your creation comes to life?



FRANKENSTEIN²⁰⁰

FRANKENSTEIN²⁰⁰

FACILITATOR GUIDE TO AUTOMATA

DESCRIPTION

In this activity, learners make an automaton, a moving mechanical device that imitates the movement of a human, animal, or other living thing. The activity is designed to prompt conversation and reflection about responsible innovation, inspired by themes raised in Mary Shelley's novel *Frankenstein*.

AUDIENCES

This activity is best suited for ages 10 and up. Younger children can participate successfully with support from an educator or caregiver.

LEARNING OBJECTIVES

The primary objective of this activity is to encourage creativity and reflection about responsible innovation. In addition, learners will explore the following concepts:

- People are creative! We're always learning more about the world and inventing new things.
- It's important to think ahead as we study science and make new technologies.
- Researchers who study artificial intelligence make machines that can reason and learn over time.

MATERIALS

- Plastic deli containers, 16 oz. size (1 per person)
- Bamboo skewers (2 per person)
- Small piece of drinking straw, about 1" long (1 per person)
- Foam circles, around 1.5" in diameter (at least 2 per person)
- Craft materials for decoration (such as craft foam, feathers, chenille stems, artificial flowers, googly eyes, and colored paper)
- Tape
- Safety scissors
- Activity booklet

FRANKENSTEIN²⁰⁰

FACILITATOR GUIDE & CONVERSATION TIPS

Greet participants

Say "hello," make eye contact, and smile. Simply looking like you're available and friendly will invite learners to interact with you.

Let participants do the activity

As much as possible, let participants do the hands-on and creative parts of the activity, and let them discover what happens. Your job is to introduce the activity, provide questions for guidance and reflection, and help as needed.

Ask open-ended questions

Use the suggested questions to help learners reflect on the connections between science, engineering, and society. Phrase your questions so that there is more than one possible answer. For the purpose of this learning experience, there are no right and wrong answers.

Offer positive and encouraging responses

When learners have trouble articulating their thoughts, you might say, "That's an interesting idea. Why do you think that?" or "Have you thought about...?" Offer them an opportunity to reflect further.

Be a good listener

Be interested in what participants tell you, and let their curiosity and responses move the conversation forward. Let them form their own ideas and opinions.

Share accurate information

You can provide additional information or a different perspective for learners to consider. If you aren't sure about something, it's ok to say, "I don't know. That's a great question!" Suggest looking for more information at the library or online.

Remain positive throughout the interaction

Keep things upbeat and positive. Remember that nonverbal communication is important, too. Maintain an inviting face and body language.

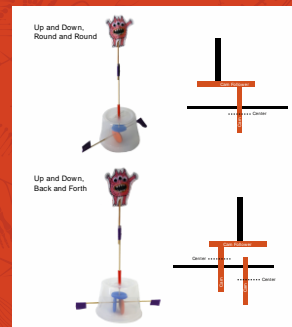
Wrap up graciously

Follow their cues, and recognize when they're ready to move on. Thank them for participating, and suggest other activities they might enjoy. Even a brief interaction can have a big impact!

HAVE FUN!

AUTOMATA

Try different variations to see
how your automata moves.



FRANKENSTEIN²⁰⁰

FRANKENSTEIN²⁰⁰

Presents

AUTOMATA

Training Video



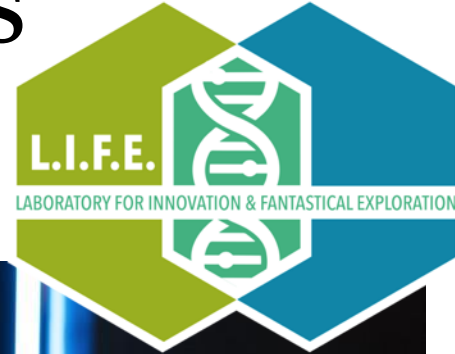
ALTERNATE REALITY GAME

L.I.F.E.



A portal from real world museums to the the fictional world of *Frankenstein*

Research assistants



Mya
Genetics +
Biochemistry



Xavier
Machine learning +
Artificial intelligence


FRANKENSTEIN 200



L.I.F.E. scouts are searching for new research assistants!

Frankenstein200.org

FRANKENSTEIN²⁰⁰ PARENT GUIDE FAQ SHOWCASE BLOG PARTNERS



ASU ARIZONA STATE UNIVERSITY

0:18 / 7:03 HD

Frankenstein200 puts children in the middle of the action in a story where the classic tale collides with modern science. Perform experiments, explore hidden areas of science, and assist a pair of young scientists as they unravel a mystery in a cutting edge digital experience.

PLAY NOW!

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**WAYS TO USE THE
ACTIVITY KITS**



BAKKEN
MUSEUM

Creature Week



Using Frankenstein200
activities in Camps and Workshops

Drop In

Activities

Guided Experience

Making a specific project

+ High Volume

+ Quick Experience

- Minimal Context

(Good Facilitators help)



Drop In

Activities



Tinkering Experience

More open ended projects

- + Richer Experience
- + High Engagement
- Lower numbers served
- Context still tricky





BAKKEN
MUSEUM

Creature Week



Guided Workshops

Guided

Workshop

One Hour Workshop

Fixed start and end time

- + High Engagement
- + Historical or Technological context (video or picture)
- Lower numbers served





BAKKEN
MUSEUM

Creature Camp

Each student designs and builds their own creature

Camp

Multiple Activities

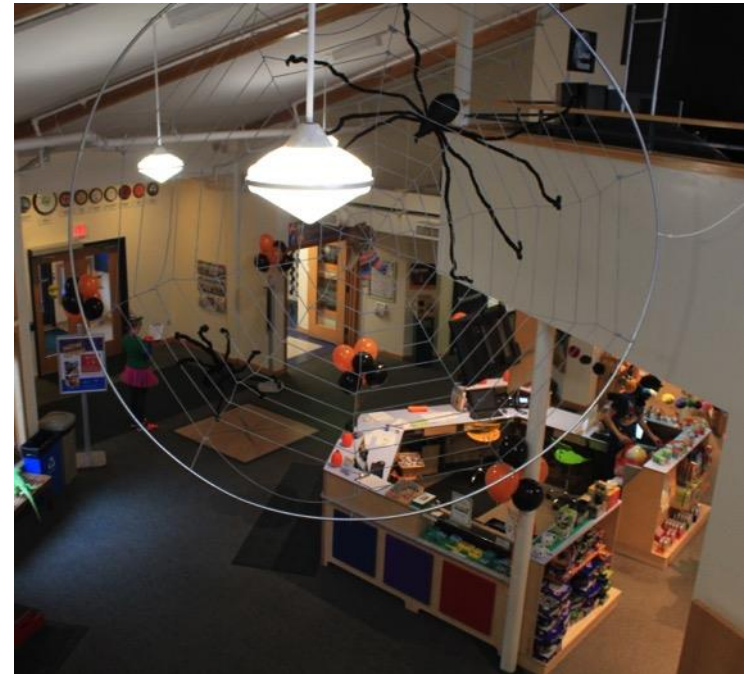
Week long camp

- Individual Projects
- Activities as take homes





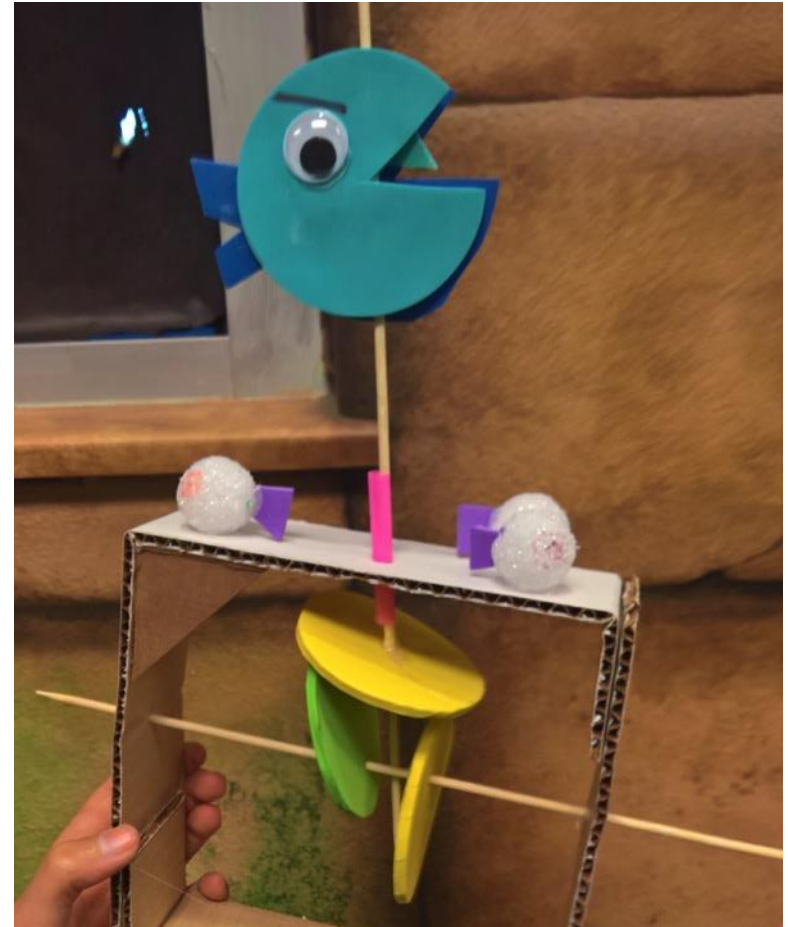
Spooky Science Halloween event







Library programs





RESOURCES

Accessing the materials

Frankenstein200 activity kits

<http://www.nisenet.org/frankensteinkit>

Available now!

Alternate reality game

<http://frankenstein200.org/>

Available soon!

Creating your own kits

Frankenstein200 activity kits

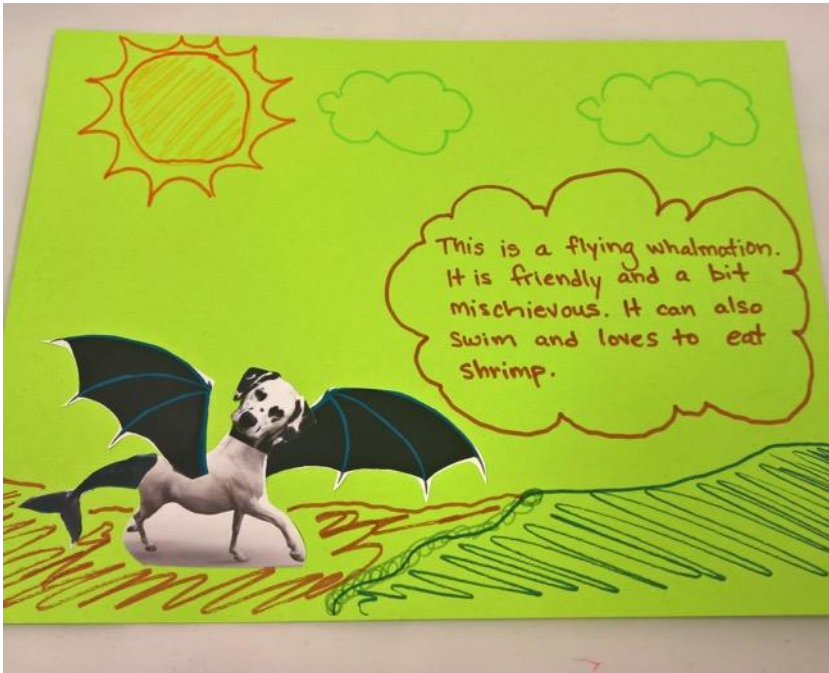
<http://www.nisenet.org/frankensteinkit>

Facilitator guides have information on where to find materials.

You can also use similar activities you already do!

Create your own kits

For example, here are two ways to do the **Frankentoy** activity:



Participants cut out pictures from magazines and calendars, glue to paper, and write out their story.
Less prep time. Take home.



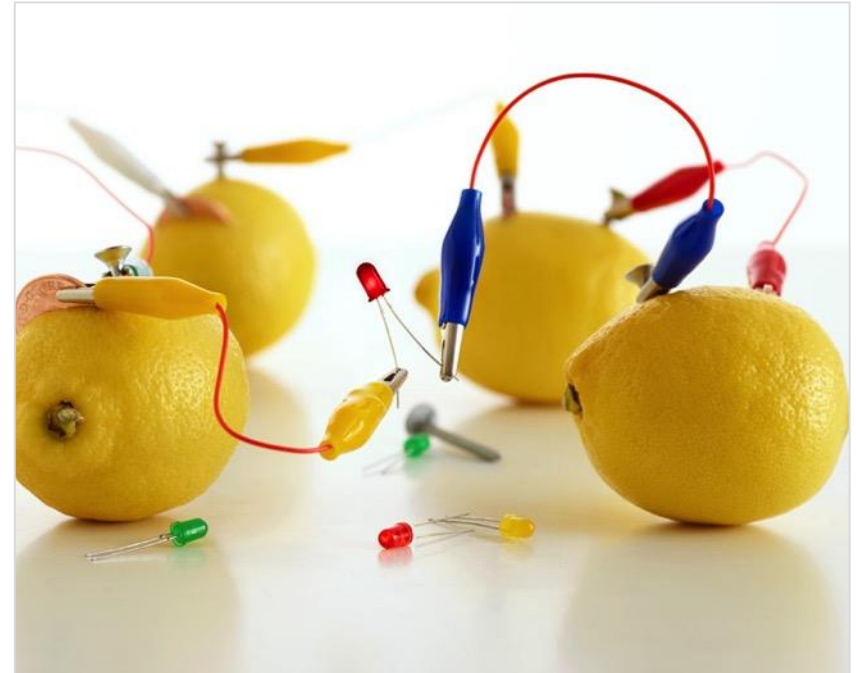
Educator cuts up stuffed toys from thrift store, sews shut and adds velcro fasteners. Participants stick together and act out a story.
More prep time. Reusable.

Adapt existing activities

For example, many battery and circuit activities connect to ideas in the kit:



Sewable circuit or paper circuit activities connect to many activities in the kit, including **Monster Mask** and **Battery Stack!**



Lemon batteries connect to many activities in the kit, including **Spark of Life** and **Dough Creature!**



QUESTIONS & DISCUSSION

Thank you



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Distributed in collaboration with the National Informal STEM Education Network: nisenet.org



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