

Panelists

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REALM PROJECT

REopening Archives, Libraries, and Museums

oc.lc/realm-project

#REALMproject



What is REALM?

REALM project research is providing data that helps us better understand the virus. You can use that data to inform your practices and policies.

REALM is NOT making recommendations. Every institution is different and will need to develop policies that work for them and their community.

REALM
data



Your
institution



Local
policies

Five simple rules for managing uncertainty in a pandemic

Most data will be flawed or incomplete.

We may never have a “final answer” for many questions. Do you wait for certainty or act on the evidence you have?

Acknowledge the complexity, admit ignorance, and be open to exploring paradoxes.

Different people interpret data differently. Seek out outside perspectives for solutions.

Observing real-world interventions can complement the findings of controlled trials and other forms of evidence.

[“Managing uncertainty in the covid-19 era”](#)

Rutter, Wolpert, and Greenhalgh in the British Medical Journal

The “known unknowns”



How many virus cells an infected person will leave on an object.



How many virus cells you can pick up from an object.



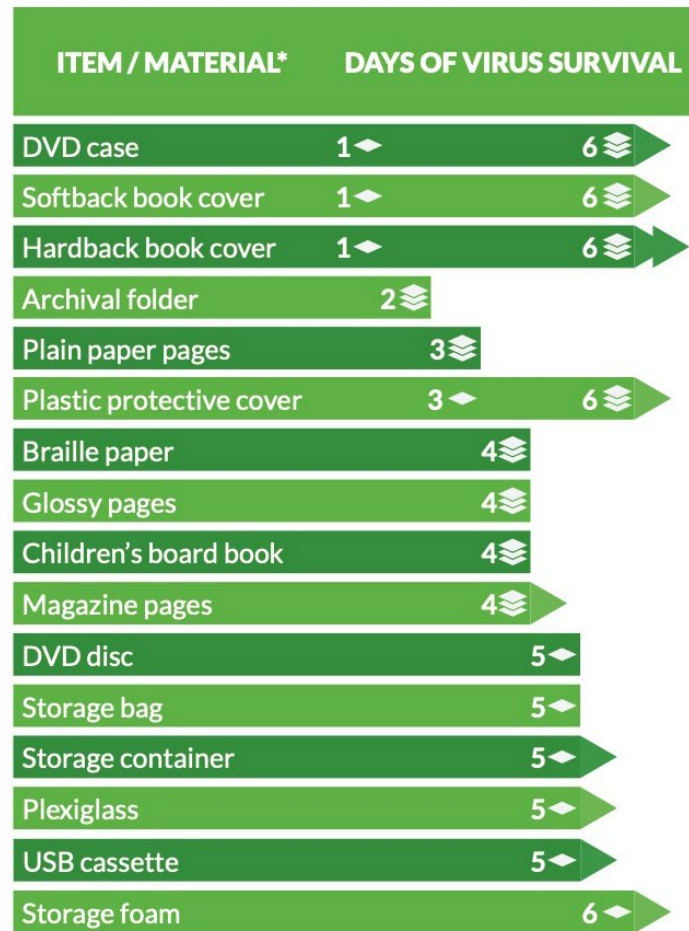
How many virus cells are needed to cause infection.

RESULTS

How long the virus survives on commonly used library, archive, and museum materials

- Item tested in a **stacked** configuration.
- Item tested in an **unstacked** configuration.
- Item showed **trace amount** of virus after testing.
- Item was **above LOQ** after testing.

*For more information about the items and materials tested, please visit oclc.org/realms-project.



HOW CAN I USE THESE RESULTS?

When making decisions about policies...



Stay informed of federal, state, and local guidelines



Check CDC guidelines on PPE and hygiene practices



Consider if your collection/resources can be sanitized without damage



If quarantining, consider REALM results for the lifespan of the virus on relevant materials



Ask your peer institutions for their policies



Inform internal and external stakeholders of your policies

Disinfecting Books and Other Collections

Bexx Caswell-Olson, Director of Book Conservation



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NORTHEAST DOCUMENT CONSERVATION CENTER

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ASSESSMENTS AND CONSULTATIONS

PRESERVATION TRAINING



Serving Clients Nationwide — Cultural Institutions, Government Agencies, Tribal Organizations, Municipal Clerks, Corporate Archives, Private and Family Collections

Founded in 1973, NEDCC was the first independent conservation laboratory in the nation to specialize exclusively in treating collections made of paper or parchment, such as works of art, photographs, books, documents, maps, and manuscripts. Today, the Center offers conservation treatment, digital imaging, and audio preservation services, as well as preservation training, assessments and consultations, and disaster advice on collections. NEDCC is a trusted resource worldwide for information on the preservation of paper-based collections.

2.6 Low Cost/No Cost Improvements in Climate Control 1999 [HTML](#)

[NEDCC Publications](#)

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[Further Reading](#)

3. Emergency Management

3.1 Protection from Loss: Water and Fire Damage, Biological Agents, Theft, and Vandalism 1999 [HTML](#)

3.2 An Introduction to Fire Detection, Alarm, and Automatic Fire Sprinklers 1999 [HTML](#)

3.3 Emergency Planning 2017 [HTML](#) [PDF](#)

3.4 Worksheet for Outlining an Emergency Response Plan 2020 [UPDATED](#) [HTML](#) [PDF](#)

3.5 Disinfecting Books and Other Collections 2020 [UPDATED](#) [HTML](#) [PDF](#)

3.6 Emergency Salvage of Wet Books and Records 1999 [HTML](#)

3.7 Emergency Salvage of Wet Photographs 2020 [UPDATED](#) [HTML](#) [PDF](#)

3.8 Emergency Salvage of Moldy Books and Paper 2012 [HTML](#) [PDF](#)

3.9 Protecting Collections During Renovation 1999 [HTML](#)

3.10 Integrated Pest Management 2015 [HTML](#) [PDF](#)

3.11 Collections Security: Planning and Prevention for Cultural Heritage Institutions 2020
[UPDATED](#) [HTML](#) [PDF](#)

3.12 Freezing and Drying Wet Books and Records 1999 [HTML](#)

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4. Storage and Handling

4.1 Storage Methods and Handling Practices 2012 [HTML](#) [PDF](#)

4.2 Storage Furniture: A Brief Review of Current Options 1999 [HTML](#)

4.3 Cleaning Books and Shelves 2012 [HTML](#) [PDF](#)

4.4 Storage Enclosures for Books and Artifacts on Paper 1999 [HTML](#)

4.5 Packing and Shipping Paper Artifacts 2020 [NEW](#) [HTML](#) [PDF](#)

4.6 Packing and Shipping Audio Media 2020 [NEW](#) [HTML](#) [PDF](#)

4.7 The Book Shoe: Description and Uses 1999 [HTML](#)

4.9 Storage Solutions for Oversized Paper Artifacts 1999 [HTML](#)

4.10 Matting and Framing for Works on Paper and Photographs 2019 [UPDATED](#) [HTML](#) [PDF](#)

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5. Photographs

5.1 A Short Guide to Film Base Photographic Materials: Identification, Care, and Duplication
2012 [HTML](#) [PDF](#)

What Causes Damage to Collections Materials?

- 1) Physical Damage (*i.e.* improper handling)
- 2) Theft & Vandalism
- 3) Fire
- 4) Water
- 5) Pests
- 6) Pollutants (*i.e.* chemical exposure, air quality)
- 7) Light
- 8) Temperature (extreme highs or lows)
- 9) Humidity (extreme highs or lows)
- 10) Improper Storage

adapted from CCI's "Agents of Deterioration" <https://www.canada.ca/en/conservation-institute/services/agents-deterioration.html>



Photo: Bexx Caswell-Olson

Liquid Cleaning Products

- EPA's **List N: Disinfectants for Coronavirus** provides the contact time necessary for disinfection. Times range from 30 seconds – 10 minutes.
- Products on this list are only recommend for use on hard, non-porous surfaces (*i.e.* tables, door handles).
- Many liquid cleaning products contain harsh chemicals including bleach, hydrogen peroxide, chlorine, ammonia, etc.
- These chemicals can:
 - cause moisture damage to covers and pages
 - accelerate aging and embrittlement of materials
 - weaken paper or cloth
 - cause staining, discoloration, or bleaching; may remove color from leather, cloth, and paper

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Contact Time (in minutes)
90856-4	Quaternary ammonium	MonoFoil D	Apply Guard LLC	3
9804-5	Chlorine dioxide	Purogene Deodorizer and Sanitizer	Bio-Cide International Inc	10
90276-2	Sodium hypochlorite	Biosenta Antimicrobial 0.5%	Biosenta Inc	10
9480-4	Quaternary ammonium; Isopropanol (Isopropyl alcohol)	Super Sani-Cloth Germicidal Disposable Wipe	Professional Disposables International Inc	1
67619-30	Sodium hypochlorite	GNR	Clorox Professional Products Company	1
1677-129	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)	Oxonia Active	Ecolab Inc	10

<https://www.epa.gov/pesticide-registration/list-n-advanced-search-page-disinfectants-coronavirus-covid-19>



Wet Paper Towel



Bleach-Free Disinfecting Wipe



70% Isopropyl Alcohol / 30% Water

- The bookcloths shown above meet the requirements of **ANSI/NISO/LBC Z39.78-2000 (R2018): Library Binding**, which dictates that covering material must be colorfast and water resistant.
- While a scrubbing with a wet paper towel did not remove color, the bleach-free disinfecting wipe (active ingredient ammonium chloride) and 70% isopropyl alcohol removed color from all 3 samples.

Fogging

- Fogging of disinfectant to control the spread of COVID-19 is not currently approved by the EPA because its efficacy has not been verified.
<https://www.epa.gov/coronavirus/can-i-use-fogging-fumigation-or-electrostatic-spraying-or-drones-help-control-covid-19>
- Fogging of disinfectant is only recommended for use on hard, non-porous surfaces (*i.e.* it should not be used on cloth, paper, upholstery, carpeting).
- Fogging will only apply disinfectant to exposed surfaces – closed books or books in a stack would not be adequately sanitized.



Photo: Bexx Caswell-Olson

Ultraviolet Light (UV)

- There are 3 types of UV: UVA, UVB, UVC
 - **UVC** - Most effective for disinfection, but direct exposure can burn your skin or eyes. UVC lamps may generate ozone; ozone is damaging to the respiratory, cardiovascular and central nervous system.
 - **UVB** – B=Burning. Penetrates deep into skin/eyes and exposure increases your risk of developing skin cancer and cataracts.
 - **UVA** – A=Aging. Exposure increases your risk of skin cancer, advanced aging. **1,000x less effective for disinfection.**
- The dose of UV needed to inactivate SARS-CoV-2 unknown. Lamps sold for home use may not be effective.
- While UV *can be* an effective sanitation method, only surfaces in direct contact with light will be disinfected; a closed book or books in a stack will not be adequately sanitized.
- UV is known to cause damage to collections materials.

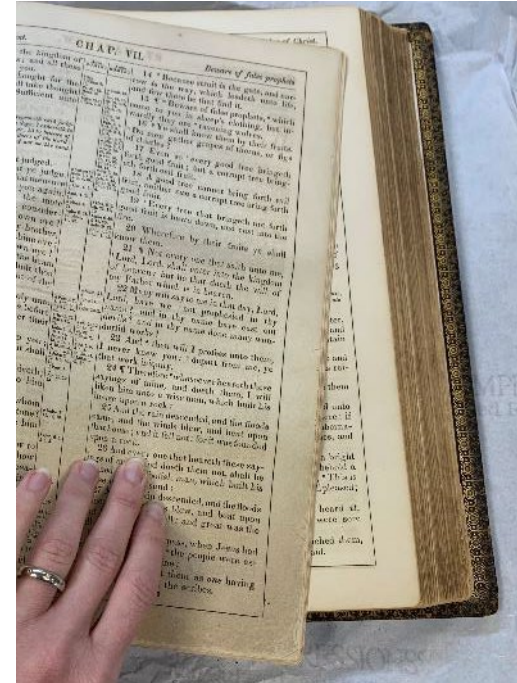


Photo: Bexx Caswell-Olson

Ultraviolet Light (UV)

- All light is damaging, but UV is the most damaging; light damage is **cumulative** and **irreversible**.
- Light damage causes fading, discoloration, advanced aging, and embrittlement of paper, fabrics, plastics, etc.
- Best practices for collections care include **eliminating or minimizing as much UV light as possible** in areas where collections are present. <https://www.nedcc.org/free-resources/preservation-leaflets/2.-the-environment/2.4-protection-from-light-damage>



Photo: Bexx Caswell-Olson

Heat

- Best practices for preservation of collections materials do not recommend exposure to high temperatures or extreme fluctuations in temperature. <https://www.nedcc.org/free-resources/preservation-leaflets/2.-the-environment/2.1-temperature,-relative-humidity,-light,-and-air-quality-basic-guidelines-for-preservation>
- The chemical reactions that lead to deterioration accelerate twice as fast with each 10°F temperature increase.
- Exposure to heat causes advanced aging, discoloration, distortion, and embrittlement of paper.
- Adhesives used in the binding process may soften, melt, or shrink as temperature fluctuates.

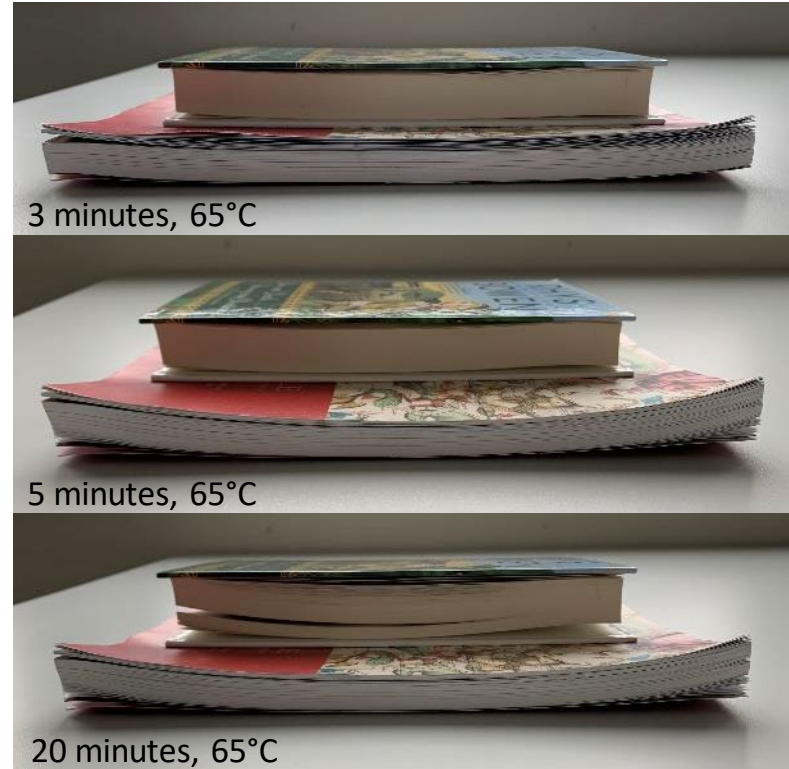


Photo: Bexx Caswell-Olson

Quarantining Materials

- NEDCC recommends quarantining materials over other disinfection methods.
- Quarantining materials is a safe, effective, and low-cost way of mitigating risk for both staff and patrons.
- Practice good personal hygiene; always **wash your hands** before *and* after handling collections materials.



<https://wydaily.com/local-news/2020/05/13/williamsburg-regional-library-reopens-book-drops/>



COVID-19 Modifications and Procedures

Chris Carron
Director of Collections



The Children's Museum Pandemic Status

- Phased re-opening in June - July
- Open full hours with advance tickets and capacity restrictions
- Floor staff at Museum; professional staff working from home if they can
- Medical panel working with Board COVID-19 Task Force to make decisions based on latest science

Health and Safety Tactics

- Limit Crowd Numbers
- Social Distancing
- Surface Cleaning
- Ventilation
- Masks / PPE
- Hand Washing & Sanitizing
- Employee Screening

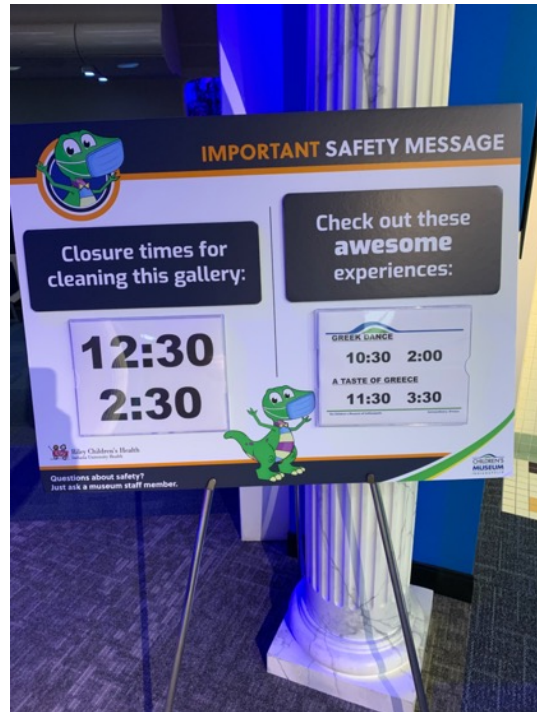




Overall Experience Strategy

- Keep interactives that can be sanitized regularly
- Remove interactives & touchable objects that cannot withstand frequent cleaning
- Provide a *Mission: Discovery* guide to highlight hands-off / eyes- and minds-on experiences
- Highlight and add dynamic interpretation activities
- Provide tools for visitors to manage their own health and safety

Scheduled Closures for Deep Cleaning



Shared Responsibility for Surface Cleaning



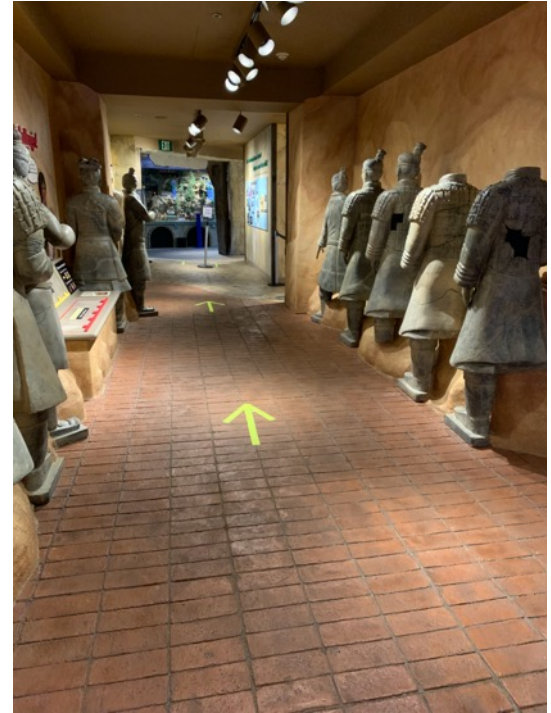
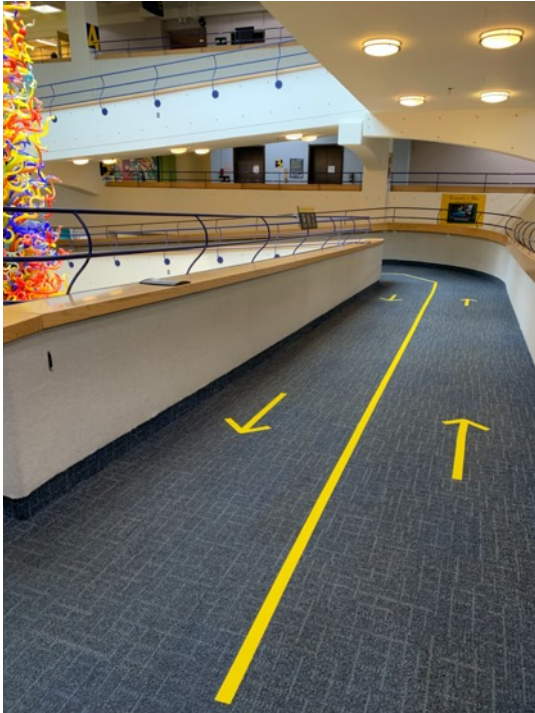
Outdoor Experiences in Fresh Air Limit Time Spent Indoors



Enhanced Ventilation and Filters



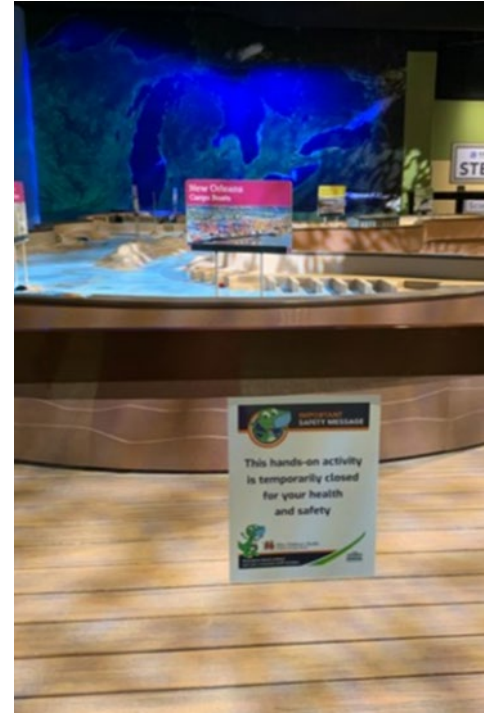
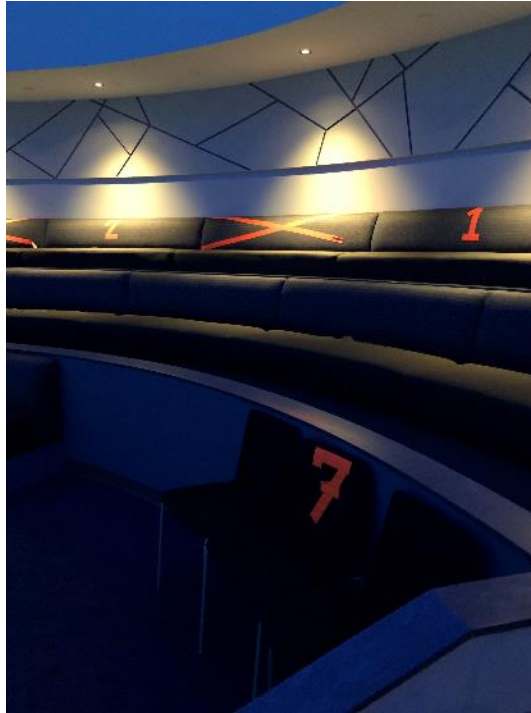
One-Way Traffic Flow



Closing of Confined Pretend-Play Spaces



Promote Social Distancing & Close Spaces that Don't Allow Social Distancing



Allow/Remind Visitors to Sanitize and Wash Hands



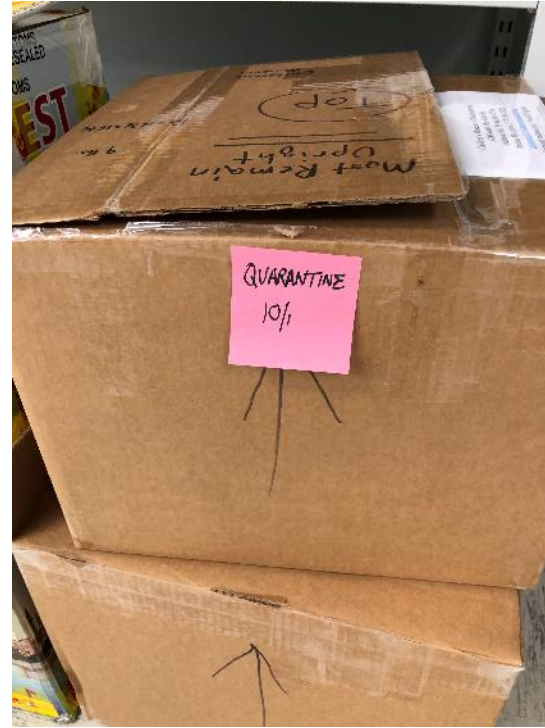
Add Plexiglas Between Adjoining Interactive Stations



Add Object Cases to Replace Hands-on Interactivity



Internal Quarantine of Artifacts and Specimens



More Interpretation Programs



Clearly Communicate Expectations to Visitors



Even Our Dinosaurs Wear Masks!



Museum at Home



- New virtual content and interactivity daily
- More than 200 videos
- More than 1.1 million views



Replace In-person Field Trips with Virtual Experiences

Virtual School Programs

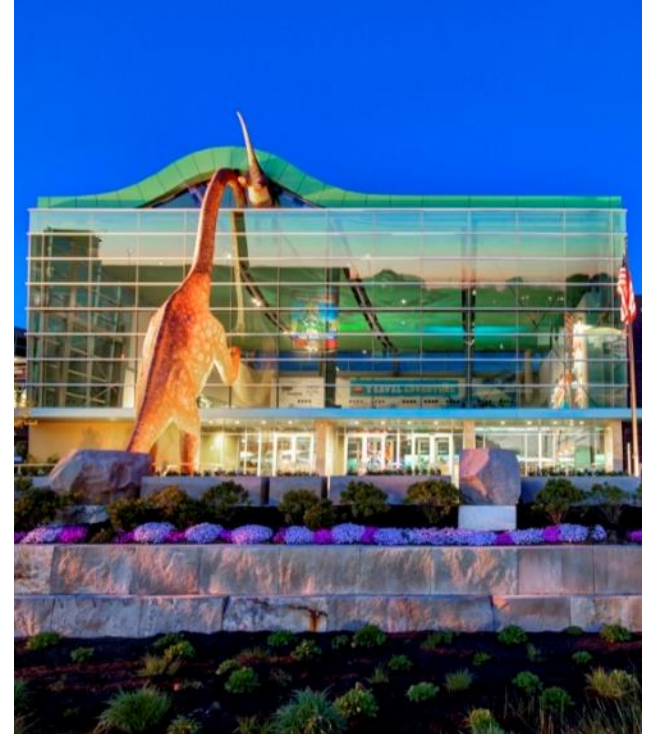


- Virtual Field Trips
- Humanities and STEM Classroom Programs with Kits provided
- Chats with Collections
- Homeschool Programs



The Future?

- Things are changing rapidly, and scientists can't produce all the answers this fast
- We adapt quickly when new data becomes available
- We're planning for different scenarios of when there will be a vaccine, and when people feel comfortable to visit
- We remain focused on providing extraordinary quality in everything we do



Questions?

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#REALMproject

oclc.org/realms-project



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This document synthesizes various studies and data; however, the scientific understanding regarding COVID-19 is continuously evolving. This material is being provided for informational purposes only, and readers are encouraged to review federal, state, tribal, territorial, and local guidance. The authors, sponsors, and researchers are not liable for any damages resulting from use, misuse, or reliance upon this information, or any errors or omissions herein.



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