

Educator Resource Guide

2018–2019



DEAR FELLOW EDUCATOR,

I want to express my gratitude for all the amazing work you do in your learning environments. We at The Discovery understand the hours of work it takes to grow the next generation of leaders and we can't say thank you enough.

Your instruction and guidance are instrumental in creating a public who understands how the wonder of science affects our everyday lives and how it can be used to better our world. The Discovery wants to be your partner in the effort to maximize that understanding and inspire the next generation. This year, we have expanded our learning experiences related to computer science and robotics, and like every year, we hope your students experience a challenge or many challenges that leave them reflecting and inspired to do more with the knowledge they gain.

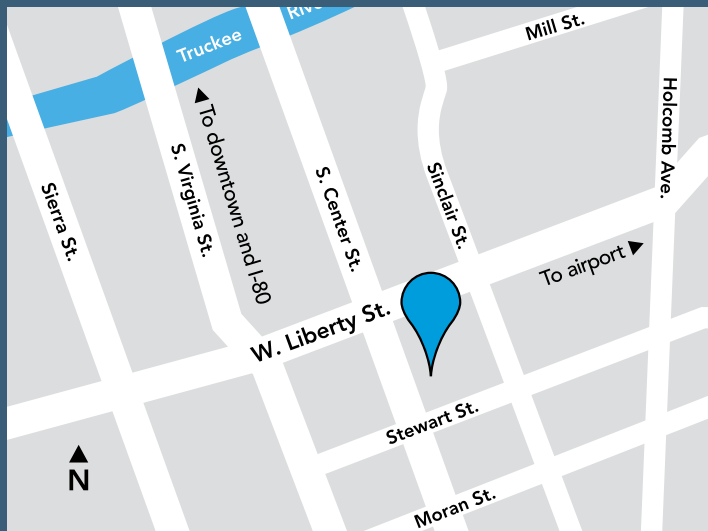


The Discovery's educational programs and events are full of opportunities for collaboration and interaction for learners of any age. We hope that students can visit on a field trip and return for camps, participate in our annual Scratch Code Challenge, and become an expert maker in *The Shop*. We invite you to participate in our adults-only programming as well—it's a great way to continue your own learning while taking a break from the classroom. Science Distilled, our informal lecture series featuring amazing scientists from our community and our themed Social Science events are great ways to come and enjoy the museum with a beverage in hand while learning about new and intriguing topics. This guide is designed to make it easier for educators like you to create a lasting impression on your students and find inspiration for your own personal pursuit of education as well.

My best wishes to you for a successful school year. We hope to see you at The Discovery soon.

Sincerely,

Sarah Gobbs-Hill
VP of Education & Exhibits



CONTACT INFORMATION

490 S. Center Street, Reno, NV 89501
775-786-1000 · info@nvdm.org

MUSEUM HOURS

Monday closed
(Open Mondays Memorial Day through Labor Day,
on national holidays, and during WCSD breaks)

Tuesday 10:00am–5:00pm
Wednesday 10:00am–8:00pm
Thursday–Saturday 10:00am–5:00pm
Sunday Noon–5:00pm

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FIELD TRIPS/GROUP VISITS

Discover STEM-powered inspiration at The Discovery. Immerse your students in lab-based activities and museum exploration designed to foster inquiry and engagement through encounters with science. All Discovery Labs are tied to national education standards.

Our field trip program is flexible and customizable. Your group can choose to focus on museum exploration or add a standards-aligned hands-on Discovery Lab to your visit. **Transportation for all Washoe County School District (WCSD) schools is included.** The Discovery is also pleased to offer financial assistance to support the educational needs of schools and groups that cannot afford the full cost of their visit to The Discovery.

The Discovery offers a variety of educator resources including pre- and post-trip lessons and Gallery Guides to enhance your field trip, along with orienting materials to help your students and chaperones be successful on their visit. You can find these resources on our website at nvdm.org.

STEP 1: REQUEST YOUR DATE

Submit your reservation at least three weeks in advance. **Please note:** WCSD schools are responsible for scheduling transportation with the District's transportation department (WCSD will bill the museum for transportation costs).

- **WCSD schools with 50% or higher FRL:** \$5 per student (includes bus transportation, no charge for required chaperones, minimum 30 students)
- **All other WCSD schools:** \$9 per student (includes bus transportation, no charge for required chaperones, minimum 30 students)
- **All other schools/groups:** \$6 per student (no charge for required chaperones, additional \$3 per student for Discovery Lab activity, minimum 20 students)

STEP 2: CHECK YOUR E-MAIL

Allow a few business days for your contract to arrive by e-mail. Please return a signed copy to The Discovery to complete the reservation process.

STEP 3: EXTEND THE LEARNING

Use The Discovery's library of resources for educators to extend the learning beyond your museum visit. Help your students prepare for their visit by watching an orientation video.

STEP 4: MAKE PAYMENT

Payment for your field trip or group visit is due upon arrival on the day of your visit. Check your itinerary for details about how to make payment. A \$50 deposit is required for all non-WCSD schools.

STEP 5: ENJOY YOUR VISIT

We hope you enjoy your visit to The Discovery. You will receive a survey at the end of your visit. Please fill it out to let us know how we did. Your feedback helps us continue to improve the field trip experience.

DISCOVERY LABS

In addition to ample time to explore the museum, field trips and group visits include your selection of a 45-minute Discovery Lab activity from the list below. Select your lab to begin the adventure.

THEY SHOUTED PUSH!

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
Preschool-K	Hands-on activity	Build It!

Description: In this Discovery Lab, students learn the basics of gravity and engineering through push and pull challenges. Students will use a variety of materials to move a marble from one location to another and complete other unconventional building challenges.

Nevada Academic Content Standards in Science (NGSS): K-PS2-2.

Common Core: W.K.2 2., 1.K.4 I/L



TOOL EXPLORATION

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
K-2nd	Hands-on activity	Da Vinci's Corner

Description: In this Discovery Lab, student will explore how tools are simple machines that allow us to perform a variety of tasks. This concept is the foundational understanding for motion, stability, and the interaction of forces.

Nevada Academic Content Standards in Science (NGSS): K-2-ETS1-2.



SKYSCRAPER CHALLENGE

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
K-2nd	Hands-on activity	Build it!

Description: In this hands-on Discovery Lab, students work to design, create, test and redesign free-standing, weight-bearing towers using KEVA® Planks. Students will experiment with different geometric shapes used in structural designs and determine how design choices affect the height and strength of structures.

Nevada Academic Content Standards in Science (NGSS): 2-PS1-2., K-2-ETS1-2.



Changing Matter is presented as part of Sierra Nevada Journeys' Classrooms Unleashed program entitled "Classroom Engineers".

MY ROBOTIC BUG

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
K-2nd	Hands-on activity	Spark!Lab Smithsonian

Description: Using a cute, clever and codeable Blue-Bot, students will explore the possibilities unleashed by an understanding of the language of computers.

K-12 Computer Science Framework: 2nd Grade – Algorithms & Programming



DISCOVERY LABS (CONTINUED)

SHADOW STORIES

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
1st	Hands-on activity	Da Vinci's Corner

Description: In this Discovery Lab, students will learn fundamental optics concepts including transparency, opacity, refracted light and shadows. They'll also create a shadow puppet perfect for creative writing and storytelling.

Next Generation Science Standards: 1-PS4-3

Common Core: W.K.2.2.



CHANGING MATTER

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
2nd	Hands-on activity	Scavenger hunt

Description: In this Discovery Lab, students will be asked to construct an argument using evidence that some changes caused by heating or cooling can be reversed, and some cannot. Through hands-on exercises in groups and as a class, students will sort reactions based on their observations.

Nevada Academic Content Standards in Science (NGSS): 2-PS1-4.

Common Core: W.2.8, MP.2



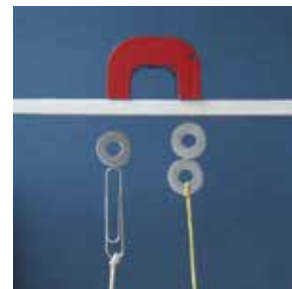
DEFYING GRAVITY

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
3rd	Hands-on activity	Da Vinci's Corner

Description: In this Discovery Lab, students work together to come up with a solution, using everyday objects, that will allow a string to float upward using the concept of magnetism.

Nevada Academic Content Standards in Science (NGSS): 3-PS2-4.

Common Core: SL.3.1



MEASURE TWICE, CUT ONCE

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
3rd-5th	Hands-on activity	Build It!/The Shop

Description: In this Discovery Lab, students' knowledge of fractions will be enhanced as they practice measurements in the standard system. Students will learn to use tools as well as important safety precautions. Each student will use these skills to build a key hanger they can take home. Note: 54 students maximum. Offered Tuesday and Thursday only.

Common Core: SL.5.1, 3-5.NF



DISCOVERY LABS (CONTINUED)

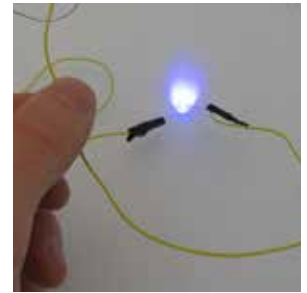
CIRCUIT STEAM

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
4th	Hands-on activity	Spark!Lab Smithsonian

Description: In this STEAM-inspired lab, students use scientific design to test and refine a device that converts energy from one form to another. Then they apply the concept to create small light-up wire sculptures to take home.

Nevada Academic Content Standards in Science (NGSS): 4-PS3-2, 4-PS3-4.

Common Core: SL.4.1



CODE A BUG, DEBUG YOUR CODE

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
5th	Hands-on activity	Spark!Lab Smithsonian

Description: This Discovery Lab allows students to engage with robotics and coding as they work through a series of team programming challenges. Students will learn that algorithms are a series of steps followed to complete a task, and they will work collaboratively to learn about the design and revision process to create the best possible algorithm for their robot.

K-12 Computer Science Framework: Algorithms & Program Development

Common Core: SL.5.1



Code a Bug, Debug Your Code is presented in partnership with the University of Nevada, Reno College of Engineering's Mobile Engineering Education Lab (ME²L).

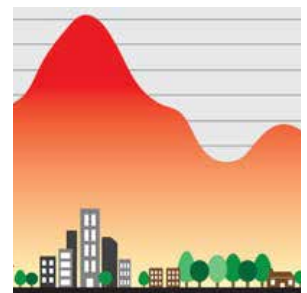
URBAN HEAT ISLANDS

GRADE LEVEL(S)	FORMAT	GALLERY CONNECTION
Secondary	Hands-on activity	Build It!

Description: In this hands-on Discovery Lab, students will explore the "heat island effect" as one of the contributing factors to global climate change. Students will work collaboratively to design cityscapes and evaluate their ability to minimize human impact on the environment.

Nevada Academic Content Standards in Science (NGSS): MS-ESS3-3, MS-ESS3-5.

Common Core: 7.EE.B.4



ONLINE EDUCATOR RESOURCES

A field trip to The Discovery is only part of the museum experience. In addition to museum exploration and Discovery Lab activities, we also provide a library of resources for you to use in the classroom both before and after your field trip. On our website you'll find standards-aligned pre- and post-trip activities directly tied to Discovery Labs, Gallery Guides to help you direct your students to key points in each of the museum's galleries, and a wealth of other resources to help prepare you and your students for an exciting visit to The Discovery.



CAMP DISCOVERY

STEM-BASED CAMPS FOR STUDENTS IN K-7TH GRADE

When school's out, Camp Discovery is in. The Discovery's seasonal camps are a great way to experience all that the museum has to offer. Camp Discovery's all-day, themed camps are designed for students in kindergarten through 7th grade, and are led by qualified educators in an environment designed specifically for learning, exploration and fun. Themes range from bugs to building, and dinosaurs to video game design.



For dates and more information about Camp Discovery, or to register, visit nvdm.org or call 775-398-5954.

FAMILY SCIENCE NIGHTS AT THE DISCOVERY

Family Science Nights offer a unique opportunity for your school's families and teachers to visit the museum and kindle a lifelong interest in learning. This event for your school or group is designed to foster partnerships between teachers, parents and students, and strengthen parent and family involvement in science exploration and discovery. Your school or group will explore the museum's galleries and exhibits and have the opportunity to take part in a variety of hands-on science activities and demonstrations. For more information about this exciting program, please call 775-398-5954 or visit nvdm.org.

TEEN SCIENCE NIGHT

A ONE-NIGHT TEEN TAKEOVER

Inspiring a teen audience at the age when career path decisions are being made is at the core of The Discovery's mission. And what better way to connect with this important age group than to form a Teen Advisory Committee and charge them with creating an annual event for their peers? Encourage your students to join us for the annual Teen Science Night, hosted and organized by The Discovery's Teen Advisory Committee. They'll explore the entire museum, take part in a variety of intriguing science activities, and find out how The Discovery can open their eyes and minds to what's possible.

Note: Attendance at this event is limited to students enrolled in high school only.

SCRATCH CODE CHALLENGE

DISCOVER CODING AND WIN CASH PRIZES

Scratch is an easy-to-use programming platform with the potential to create amazing interactive games, movies, presentations, and more! In The Discovery's annual Scratch Code Challenge, participants are encouraged to create with Scratch for the chance to win cash prizes. There's no fee to enter. Simply register at nvdm.org and start coding!



MINDBENDER MANSION

A NEW EXHIBITION COMING SOON

Prepare to enter the wonderfully puzzling world of *Mindbender Mansion*, a large-scale, eclectic and quirky exhibition full of brainteasers and interactive challenges guaranteed to test the brain power and problem solving skills of even the most experienced puzzlers. Visitors to the mansion are invited to join the Mindbender Society by gathering hidden clues and secret passwords scattered throughout the various thematic rooms of the house. Puzzlers of all ages will exercise their minds as they try to master each of the 40 individual brainteasers and five group activities that make up this challenging, fun and completely unconventional mansion!

Mindbender Mansion will open at The Discovery in late January 2019. We recommend reserving your *Mindbender Mansion* field trip date early as capacity is limited.



HALF PRICE ADMISSION PROGRAM

EXTENDED HOURS AND REDUCED ADMISSION

Beginning at 4:00pm every Wednesday, The Discovery offers \$5 admission for all visitors and remains open until 8:00pm. This makes the museum accessible and affordable to a broader range of families, including those who have work or financial barriers to access during regular business hours. And best of all, The Discovery's Educators keep the science going with repeat performances of science demonstrations delivered earlier in the day.

DISCOVER YOUR WAY

A SENSORY-FRIENDLY MORNING AT THE DISCOVERY

During this special event, The Discovery offers exclusive admission to families with children on the Autism/Sensory Processing Disorder Spectrum. This event provides an opportunity to enjoy family time at the museum in a safe, understanding environment so they can get oriented enough to return anytime. It also allows parents to network with one another. For more information about this event, please contact Catherine Van Dellen at 775-398-5942 or cvandellen@nvdvm.org.

SOCIAL SCIENCE

ADULTS-ONLY, BRAIN BUILDING FUN

Explore the entire museum with a beverage in-hand while you get hands-on with topics ranging from crime scene science, to the human attraction, to the process of fermentation. Social Science happens four times each year, typically in January, March, June and September. To find out what topics we'll be covering this year, check out nvdm.org/socialscience.



SCIENCE DISTILLED

CUTTING-EDGE SCIENCE MADE APPROACHABLE

Science Distilled, the lecture series created by the Desert Research Institute (DRI) and The Discovery, makes cutting-edge science approachable through presentations on current and curious topics held at hip locations in a social atmosphere. For upcoming topics, dates and locations, visit sciencedistilled.org.



A NOVA Science Café presented by **DRI** and **The Discovery**

EDUCATOR NIGHT OUT

CELEBRATING OUR REGION'S EDUCATION PROFESSIONALS

The Discovery's Educator Night Out is an exciting opportunity for educators and administrators to relax and mingle. You'll learn more about the educational resources and programs offered by The Discovery and have an exclusive opportunity to make your field trip reservation. Discover engaging, innovative, standards-aligned ways to bring STEM subjects into your classroom and have your students apply that learning through hands-on Discovery Labs during their next field trip! Book online at nvdm.org or by calling 775-398-5954.

FINANCIAL ASSISTANCE

The Discovery is pleased to offer financial assistance to support the educational needs of families, schools and groups. Financial assistance can provide partial to full support for the cost of the museum's programs.

Assistance is awarded based on availability and financial need. Funds are made available through the generosity of The Discovery's donors. An application fee (applied upon approval toward the cost of the program, or refunded if not approved) for financial assistance is required in order for an application to be considered. Applications are accepted until all available funds are distributed.

To apply for financial assistance, please visit nvdm.org or call 775-389-5954.

For more information about any of
The Discovery's programs and resources for educators,
e-mail info@nvdn.org or call 775-398-5954.



490 S. Center Street · Reno, NV 89501 · 775-786-1000 · nvdn.org

The Terry Lee Wells Nevada Discovery Museum (The Discovery) was incorporated in 2004 in Nevada for the purpose of inspiring curiosity, creativity and the joy of lifelong learning. The Discovery is an IRS-approved 501(c)3, tax-exempt organization with tax ID #61-1474845.