Hands-on, Minds-on

SCIENCE

palouse discovery science center

2017-2018 Field Trip Organizer

Please contact us for more information

Palouse Discovery Science Center
950 NE Nelson Court
Pullman, WA 99163
Phone: 509-332-6869
Fax: 509-332-2474
Email: fieldtrips@palousescience.org
Website: www.palousescience.net

At the Science Center, learning about science is fun and exciting!

The Palouse Discovery Science Center (PDSC) is a nonprofit organization that promotes science, math, and technology literacy through immersive informal science education, youth programming, and hands-on science exhibits and activities. The PDSC offers educational programs to public, private, and home school groups as well as day care groups.

Planning a Visit?

How to book a successful field trip to the PDSC

- Carefully read the field trip organizer.
- Check our website field trip availability calendar for available dates to visit. (www.palousescience.net/fieldtrips)
- Completely fill out the ***Field Trip Form*** found on our website (www.palousescience.net/fieldtrips) and return it via email, post, or hand-delivery to **fieldtrips@palousescience.org** or *950 NE Nelson Ct, Pullman, WA 99163*. **This email address is also where ALL correspondence regarding fieldtrips should be directed.**
- After receiving this information, we will review preferred and alternate date(s) & time(s) for availability as well as determine the admission/lesson cost for your visit. Once date and time are identified, and cost is calculated, correspondence confirming the field trip will be sent to your primary email contact.
- Confirmation and payment are required **at least two weeks** prior to your scheduled field trip. Email, mail, and phone calls are acceptable methods of confirmation and payment. **Your scheduled visit is not secure until we receive your payment**.

Booking in Advance

Book your field trip as far in advance as possible. There are two time slots available each weekday (Tue.-Fri.): **morning: 10:00-12:00** and **afternoon: 12:30-2:30**. You will be required to submit your *Field Trip Form* at the time of booking. Due to high demand during certain times of the year, we also encourage you to consider paying at this time; again, your scheduled visit is not secure until we receive your payment.

Payment Policy

The PDSC accepts checks, credit cards (Visa and MasterCard), and cash. Checks should be made out to “Palouse Discovery Science Center” or “PDSC”. **Confirmation cannot be secured until payment is received**. Payment must be made no later than **two weeks prior** to your field trip**.** If payment is NOT received 2 weeks or more in advance, the PDSC may offer your field trip slot to another group requesting that same day. For this reason, early payment is highly recommended to secure your field trip dates.

Cancellation Policy & Refunds

Cancellations made less than 48 hours prior to your scheduled trip will result in a partial refund of 50% of your field trip cost. **Failure to show for your scheduled field trip without sending a cancellation notice will result in a forfeiture of your entire payment.** We will attempt to accommodate any rescheduling of field trips if other acceptable dates and times are available. The number of students paid for two weeks prior to the field trip is definitive. We cannot refund you for students who do not make it to the field trip if they were accounted for during confirmation, however, each child paid for during confirmation will be provided a free Children's Pass to the PDSC after the field trip.

Field Trip Location and Scheduling Options

All field trips take place at the PDSC, which is located at 950 NE Nelson Court in Pullman, Washington.

All scheduled field trip groups are allowed 2 hours per visit. During this 2-hour visit each group will have the option of attending a 20-60 minute science lesson taught by a PDSC Educator and free time on the exhibit floor in chaperone groups. You may also set aside time to visit our gift store, *The Curiosity Shop*, in small groups under chaperone supervision.

Group Size

The PDSC recommends group sizes **between 10 and 60 students** to best utilize space and resources at the science center. Our classroom most comfortably seats 20-25 students at a time. However, groups larger than 30 students will be separated into two lesson groups. If your group is larger than 60 students, please contact the PDSC to discuss special arrangements.

Group Rates* (10 or more children)

Group rates booked 2 or more weeks in advance:
Without Lesson: $5.25 per student
With Lesson: $5.75 per student
Required adult chaperones are free (1 for every 5 students).
Additional adults may attend for $5 each.

Group Rates booked less than 2 weeks in advance:**
Without Lesson: $6.00 per student
With Lesson: $6.50 per student
Required adult chaperones are free (1 for every 5 students).
Additional adults may attend for $7.50 each

***Member passes and admission coupons do not apply for field trip groups.**
****Groups wishing to book a field trip less than 2 weeks in advance run the risk of the PDSC not being able to accommodate their visit request. We HIGHLY recommend booking a field trip visit more than 2 weeks prior to the intended field trip date.**

Our Exhibits

The PDSC is broken up into areas of STEM (Science Technology Engineering Math) - related learning based on target age group, content, and interaction level. For more detailed information on all PDSC Exhibits and spaces, please visit our website at www.palousescience.net/exhibits.

Curiosity Shop

The Curiosity Shop - our science store - is full of unique items that encourage science learning through fun, interactive activities. The store is open during scheduled school group visits assuming that small groups will be taken in by their chaperones, one at a time.

PDSC Field Trip Lessons

- Hands-on classroom programs offer your students unique opportunities to focus on subjects in greater depth and work with materials, equipment, and technology that may not be available in your classroom or school.
- We strive to align our exhibits, activities, and programs with national education standards and the K-12 science standards for Washington and Idaho.
- We supplement classroom experiences by offering inquiry-based exhibit spaces designed to get your students excited about science and learning.
- We strive to adapt any lesson to the grade and experience level of your group.

Choose one of the following educational field trip lessons for your visit*:
*Unless previous arrangements for 2 lessons have been made with the PDSC.

Busy Bees (PreK)
Buzz, buzz, buzz…what makes bees buzz? Did you know that bees dance? Find out all about bees in this lesson just for little ones. **(No live bees are used)**

Plant It! (grades PreK-3)
How do seeds travel? Where and how can a plant survive? What is the life-cycle of a plant? Students will be answering these questions and more as they participate in a series of hands-on experiments and games. This lesson is also regionally related as local plants and how they grow on the Palouse will also be investigated.

Sensational Sound (grades PreK-8)
The lesson is offered in two grade appropriate options:

PreK-2	Although we can't see sound, there are lots of ways to demonstrate sound energy visually. This program is loaded with hands-on activities designed to help students learn how sound is created, how it travels, and how we hear.
3-8	This lesson takes a deeper look at sound as a form of energy. Students will be learning how this energy can travel through mediums, and how pitch and frequency are affected by mass. Hands-on experiments**,** as well as teacher demonstrations aid in illustrating how sound waves work.

Know The Glow (grades PreK-12)
This glow-in-the-dark lesson is offered in four grade appropriate options:

PreK-1 Students explore diffraction of white light into colors and learn about phosphors which are revealed by ultraviolet light.

2-4 Students explore diffraction of white light into colors. Inquiry based experiments will be conducted in which students will predict which objects may contain phosphors that will fluoresce. Real world applications in technology will be discussed.

5-8 Students learn about visible light, invisible light, and reflective light. Experiments will be conducted to determine if UV light is present, and how it may be blocked. Students will also have the opportunity to explore both natural and man-made phosphors using black-lights. Real world applications in technology will be discussed.

9-12 Students learn about the electromagnetic spectrum and visible light. Experiments will be conducted using spectroscopes to learn how scientists can determine what substances are on the surface of other planets. Students also will have the opportunity to learn more about how phosphors work, and explore both natural and man-made phosphors.

Planetarium Show (grades PreK-12)
Your class will be treated to a one-of-a-kind astronomical adventure in our inflatable planetarium. Learn about the outer space topic of your choosing: planets in our solar system and galaxy, constellations, the universe, new astronomical discoveries, and more! Our shows will leave your students with a greater understanding and appreciation for our solar system and the universe.

May the Force Be With You (grades K-2)
We invite your class to explore the world of magnets in a fun, hands-on lab. Find out what magnets are attracted to, where the magnetic poles are, and lots of interesting properties of magnets.

Pushes and Pulls (grades K-2)
How can you build a faster model car? Students will be exploring the basics of physics and simple machines in this lesson. Force and friction will be discussed as students develop a better understanding of what makes an object move. This lesson will conclude with the racing of small cars down an incline plane!

3 Billy Goats Gruff (grades 1-3)
What do the goats need to get to a greener pasture? A bridge of course! This lesson will have students learning the basics of engineering as they learn about ancient architecture and then plan and build bridges to deliver goats of various weights safely to their new pasture.

Kitchen Chemistry (grades 1-3)
Acids, bases, gasses, liquids, solids, fizzing, bubbling, explosions…Students will be learning the basics of chemistry as they conduct hands-on experiments with candy and kitchen items.

Fantastic Fossils (grades 1-3)
What is a fossil? How are fossils made? What can we learn from them? Students will be learning how fossils are made, handling fossils, sorting them into groups, understanding the basic concepts of fossil history through a game, and modeling the fossil creating process through a hands-on activity.

Bugs, Bugs, Bugs! (grades 1-5) *Only offered in the Spring and Summer*
This lesson uses live bugs from local water sources to conduct scientific investigations! Students will be comparing the life cycles of various bugs as well as performing experiments while making observations and inferences about bug behavior.

Owl Pellets (grades 1-5)
What is an owl pellet? What is inside one? In this exploration-based lesson, students dissect an owl pellet and try to determine what prey was eaten by reassembling the bones. This lesson incorporates ecology, physiology, and anatomy.

Superhero Science (grades 1-6)
How can the Invisible Woman be invisible? How would a superhero safely throw a ball of flames? This lesson focuses on the science of superhero powers through a series of demonstrations and hands-on activities. Students will learn how light can be bent, what it takes to make something burn, and how the human body collects electricity in this lesson!

Charge It Up! (Grades 1-6)
This lesson is offered in two grade appropriate options:

1-3 Using a variety of materials, students will investigate the amazing effects of the static electricity all around them. A brief introduction to atoms, atom structure, and electrons, will help them make sense of what they observe. Demonstrations with the Van de Graff Generator promise to make this lab a hair-raising experience!

4-6 Students will take a closer look at atoms and how static electricity works. Through a series of hands on activities and Van de Graff Generator demonstrations, students will predict the behavior of objects as they charge, lose their charge, or remain neutral.

Optical Illusions (grades 2-8)
Enjoy tricking your brain? Students will have the opportunity to learn more about the interaction between their eyes, brain, and light (optics) in this tricky lesson. How does light behave? How do we see? What are illusions? These are just a few questions answered in this lesson as students view demonstrations and participate in hands-on activities.

Electrical Energy (2-12)
This lesson is offered in three grade appropriate options:

2-5 Students will be learning about electrical circuits and how the energy from these circuits can be changed into other forms of energy as they view demonstrations and build their own circuits.

6-8 Students will be learning about green energy, generating electricity, direct electrical current, and alternating electrical current in this lesson featuring hands on activities and demonstrations using a plasma orb.

9-12 Students will be learning about electricity and magnetism in this lesson featuring the assembly of basic electromagnets and electromagnetic motors.

Rockin Rockets (grades 3-8)
This lesson is offered in two grade appropriate options:
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3-5 Blastoff with this fun fueled fieldtrip all about rockets and Newton's 3 Laws of Motion! Students will be learning how air pressure and Newton's 3 Laws of Motion are involved in rocketry. This lesson will consist of hands-on activities, demonstrations with a vacuum pump, and the opportunity to launch an Alka-Seltzer rocket.

6-8 Students learn how air pressure and Newton's 3 Laws of Motion are involved in rocketry. This lesson will take a closer look at motion, friction, and gravity through an inquiry based, hands-on experiment. Students will also be participating in hands-on activities, viewing demonstrations with a vacuum pump, and launching Alka-Seltzer rockets.

The Sound of Light (grades 4-12)
This lesson is offered in two grade appropriate options:

4-6 if your students think that Alexander Graham Bell's best invention was the telephone, wait until they see this! Using simple materials, students will demonstrate how Mr. Bell showed, in 1881, that the sound of his voice could be transmitted by light using his photo-phone. This lab is a great way to learn about multiple energy transformations. The development of fiber optic cables and their use in present day technology will also be investigated.

7-12 In addition to learning to construct a photo-phone, students will also learn how basic speakers work. Students will be encouraged to use their imagination as they incorporate their speakers with their photo-phones and other forms of modern technology. The development of fiber optic cables and their use in present day technology will also be investigated.

If you have any questions about our Discovery Lab programs, email fieldtrips@palousescience.org or call 509-332-6869. **Check our website for the most current field trip information**.

Logistical Information for Teachers

Bus Parking and Unloading

Buses should use the upper parking lot ONLY. Bus Drivers should be made aware of this prior to arrival at the PDSC.

Upon arrival the lead teacher should check in at the front desk.

Bus drivers are welcome to join their group at the science center at no charge.

Storage

PDSC cannot be held responsible for lost or stolen property. The PDSC encourages students to leave backpacks on the bus or at school; space is limited and large field trip groups will find it easier to bring only what they need for their time at the science center. Backpacks are not permitted on the exhibit floor or in the Curiosity Shop.

A Safe & Fun Visit

- Students must be accompanied by an adult chaperone (18 or older) at all times. **Please make sure you have your students broken into small groups (5 children or fewer) assigned to an adult chaperone while exploring the science center. The PDSC is open to the public during Field Trips and in order to respect those individuals, any students visiting with a school group found without a chaperone will be returned to their lead teacher.**

- No gum, food, or drinks are permitted in the exhibit halls or the Curiosity Shop.

- Chaperones are responsible for making sure they supervise the students they are responsible for at all times, and to make sure that those students follow the PDSC rules, which will be presented at the beginning of your visit by a PDSC staff member.

Lunch

Considering having lunch at the PDSC? **Please let us know!** Ask if classroom space will be available for your group *in advance*. Depending on the size of your group, the PDSC may not be able to accommodate your lunchtime needs. If you have a large group here are some options you may want to consider:

- Eating outside! We have a nature walk, sidewalk, garden and backyard.
- Eating on the bus! Many groups have found it easier to keep all lunch materials on the bus.

Other Suggestions

- Teachers are encouraged to visit the PDSC ahead of time. Your school ID gets you a free tour of the Science Center prior to your visit. This will allow you to engage your students in pre-visit activities to generate interest and get them thinking about the STEM topics they will interact with while on their field trip.

- We also encourage teachers to use downloadable **Scavenger Hunt Worksheets** on our website! These worksheets help students focus on particularly interesting aspects of our exhibits and provide a written reminder for post-field trip discussions.

Emergency Closure

In the event of inclement weather, power failure, natural disaster, etc., the Science Center may be closed. Call the PDSC at 509-332-6869 or email us at fieldtrips@palousescience.org to confirm our hours of operation during emergency situations.

Location, Directions

The PDSC is located at 950 NE Nelson Court, in the Port of Whitman County Industrial Park, on the north side of Pullman, Washington and is easily mapped on Google Maps.

In Pullman: Follow Grand Avenue north past Dissmore's and Pizza Hut. At the next light, take a right onto Terre View Drive. Go across the bridge and immediately turn left into the Port of Whitman County Industrial Park on Hopkins Court; follow the left side of the fork. Continue up Hopkins Court and the Science Center is on your left at the top of the hill. Buses please enter the driveway off of Hopkins Ct., turning left **after** Nelson Ct. and the PDSC sign. Bus parking is in this upper parking lot.

From Moscow: Take the Moscow Pullman Hwy into Pullman City Center. Take a right at the light from Main Street on to Grand Avenue. Continue about 1 mile (Past Dissmore's, Pizza Hut and Kinko's). At the next light, take a right onto Terre View Drive. Go across the bridge and immediately turn left into the Port of Whitman County Industrial Park on Hopkins Ct. Continue up the hill and the Science Center is on your left at the top of the hill. Buses please enter the driveway off of Hopkins Ct., turning left **after** Nelson Ct. and the PDSC sign. Bus parking is in this upper parking lot