Hands-on, Minds-on
SCIENCE

palouse discovery science center

2015-2016 Field Trip Organizer

Please contact us for more information

Palouse Discovery Science Center
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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.

Location and Hours

The Science Center is located at 950 NE Nelson Court in Pullman, Washington.
We are open to the public Tuesdays 10am -5pm and Wednesday - Saturday 10am-3pm
Hours for scheduled school visits are Tuesday – Friday 9:30 am–3 pm.

Our Exhibits

The Wildlife Hall – Come see "Hiccup," the black rat snake, "Gizmo" the chinchilla, hissing cockroaches, walking sticks, degus, turtles, fish, and other amazing animals.

Exhibits– Explore the many interactive exhibits including:

- **NASA Space Place**
- **Color, Sound, & Vision**
- **Communication Technology**
- **Brain Power**
- **Math Builders**
- **3-D Wonders & Dinosaur Scavenger Hunt**
- **Light in Action!**
- **Explore Nano!**

Mammoth Excavation Site – See genuine Columbia Region Mammoth bones found near Soda Springs, Idaho, thought to be over 10,000 years old. Dig for bones in the lentil pit and make cave drawings.

Self-Serve Science Room – Engage in hands-on activities.

Explore Nano! - Learn more about the properties of nanoparticles through experiments and puzzles located in the Self-Service Science room.

Quiet Room –Relax in our quiet space and read a book or watch a good science video.

Discovery Lab – Learn and discover in our classroom area, where we provide dynamic lessons for visiting school groups.

Little Learners Lab – Preschool visitors can learn and play in a special area just for them.

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 to the public during regular business hours and during scheduled school group visits.

Planning a Visit? – PDSC Discovery Lab Programs

- 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 halls designed to get your students excited about science and learning.
- We modify Discovery Lab programs to match the grade and experience of your group.

Choose one of the following Discovery Lab programs for your visit:

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)

Solar System for the Little Ones (PreK)
What's the difference between a star and a planet? What is the sun? Find out some introductory information about stars and planets and have lots of fun!

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. Local plants and how they grow on the Palouse will also be investigated.

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

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 Vacuum pump and Rueben's Tube 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 categories.

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 K-12)
Your class will be treated to a one-of-a-kind astronomical adventure in our inflatable planetarium. Learn about the planets in our solar system and galaxy, constellations, the universe and new astronomical discoveries! 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.

Our Watery World (grades K-3)
In this field trip, students will explore the wonders of the water cycle. They will learn about the different properties of water and how much water exists on our Earth. A variety of activities will give students the opportunity to work with water. The students will have fun playing a game where they imagine they are water droplets moving through our water cycle!

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, viewing fossils and 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! Only offered in the Spring and Summer (grades 1-5)
This lesson uses live bugs 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.

Food Web Fun (1-6)
How do plants and animals interact? What is a food web? Students will be exploring ecosystems as they as they participating in food web activities. There will also be an opportunity to meet PDSC animals and learn about species native to the Palouse!

Charge It Up! (grades 1-6)
This Charge It Up! lesson is offered in two grade appropriate categories.

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 Graaff 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.

Electrical Energy (2-12)
This Electrical Energy lesson is offered in two grade appropriate categories.

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.

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!

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.

Mars Bound (grades 2-8)
What is the surface of Mars like? How do scientists know what a planet is made out of? What do humans need to know to send people to Mars? Students will be completing hands-on experiments lead by the education director, who recently completed fieldwork with NASA to explore these questions.

Rockin Rockets (grades 3-8)
This Rockin Rockets lesson is offered in two grade appropriate categories.
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3-5 Blastoff with this fun fueled fieldtrip all about rockets and Newton's Laws of Motion! Students will be learning how air pressure and Newton's 3 Laws of Motion are involved in rockets. 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 will be learning how air pressure and Newton's 3 Laws of Motion are involved in rockets. 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.

Nano Technology (4-8)
"Nano" is a prefix that means billionth, so nanotechnology works on the scale of one billionth of a meter. In this lesson students will perform a variety of activities as they learn about how this tiny science is affecting our world in enormous ways.

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

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. 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 photophone, students will also learn how basic speakers work. Students will be encouraged to use their imagination as they incorporate their speakers with their photophones 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.

Length of Stay

We encourage classes/groups to allow 2 hours for their time at the PDSC. During this 2-hour visit you will be treated to a 20-40 minute Discovery Lab program and time on the exhibit floor. You may also want to set aside time to explore our gift store, *The Curiosity Shop*.

Group Size

In order to make the best use of our resources and provide a high quality educational experience, we ask that visiting groups be **between 10 and 60 students**. Student groups of less than 10 or more than 60 need to contact the PDSC to make special arrangements. Our classroom can only accommodate 30 students at a time. Groups larger than 30 students will be separated into two lesson groups.

Group Rates (lesson included)

Rates are as follows:
$5.00 per student.
Required adult chaperones are free (1 for every 5 students).
Additional adults may attend for $5 each.
Note: Neither member passes nor admission coupons apply for field trip groups.

Group Rates (groups of 10 or more children booked less than 2 weeks in advance)

Rates are as follows:
$5.00 per student.
$7.50 per adult
Required adult chaperones (1 for every 5 students).
Note: Neither member passes nor admission coupons apply for groups of 10 or more children.

Lunch

Considering having lunch at the PDSC? Please let us know! Ask if classroom space will be available for your group. If you have a large group here are some options you may want to consider:

- Eating outside! We have a nature walk, garden and backyard.
- Eating on the bus! Many groups have found it easier to keep all lunch materials on the bus.
- Eating in the museum! Groups will find plenty of space to sit on the floor in the central room of our museum, or in our classroom if it is available.

Curiosity Shop

Our Curiosity Shop will be open for students to purchase educational science toys. Many items are available for under $3.00. If you plan on allowing students to visit the Curiosity Shop, we ask that a specific part of your visit be designated for this. We require that you or your chaperones help with supervision in the Curiosity Shop and that only 1-2 small groups visit at a time. Proceeds support the PDSC.

Planning a Visit? – How to book a successful field trip to the PDSC

1. Carefully read the field trip organizer.

2. Check our website field trip availability calendar for available dates to visit.
http://www.palousescience.org/default.asp?PageID=92

3. Email fieldtrips@palousescience.org or call 509-332-6869, stating your interest in booking a field trip to the PDSC. In your communication please include the following:

a) School/Group, # of students, grade level(s)
b) Teacher/Contact Name(s), mailing address, phone number, email address
c) Preferred date(s) & time(s), alternate date(s) & time(s)
When will you arrive? When will you depart?
d) Special student accommodations or considerations
e) Number of chaperones beyond the **required** 1:5 ratio
f) Out-of-town groups: Will you be having lunch at the PDSC?
g) Your Discovery Lab Program choice (see pages 3-4 of Organizer)
h) Describe your students' previous experience with this topic, please.

4. After receiving this information we will determine the availability of your preferred or alternate date(s) & time(s) and the admission/lesson cost for your visit. Then a confirmation email or letter will be sent to your contact person.

5. 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** and **afternoon**. Times are flexible, with morning groups arriving between 9:30 and 10 and afternoon groups arriving between 12 and 1.

Payment Policy

The PDSC accepts checks, credit cards, and cash. Checks should be made out to the 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**.** 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.

Important Logistics Information for Teachers

Bus Parking and Unloading

Buses should use the upper parking lot. Upon arrival the lead teacher should check in at the front desk.

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

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) assigned to an adult chaperone while exploring the science center. We have found that assigning adults to an area, while students roam free, does not work well.

- **Please have your students wear nametags upon arrival.**

- **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 (outlined at the beginning of your visit by a PDSC staff member).**

Other Suggestions

- Visit the PDSC ahead of time. Your school ID gets you a free look at the center prior to your visit. Engage your students in pre-visit activities to generate interest and get them thinking science. Include in your pre-trip planning: **learning goals**, **a timetable of the visit**, and **the logistics of group work**.

- We 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 back-in-the-classroom discussions.

Storage

PDSC cannot be responsible for lost or stolen property. All belongings will remain in the classroom until departure. Backpacks are not permitted on the exhibit floor or in the Curiosity Shop.

Emergency Closure

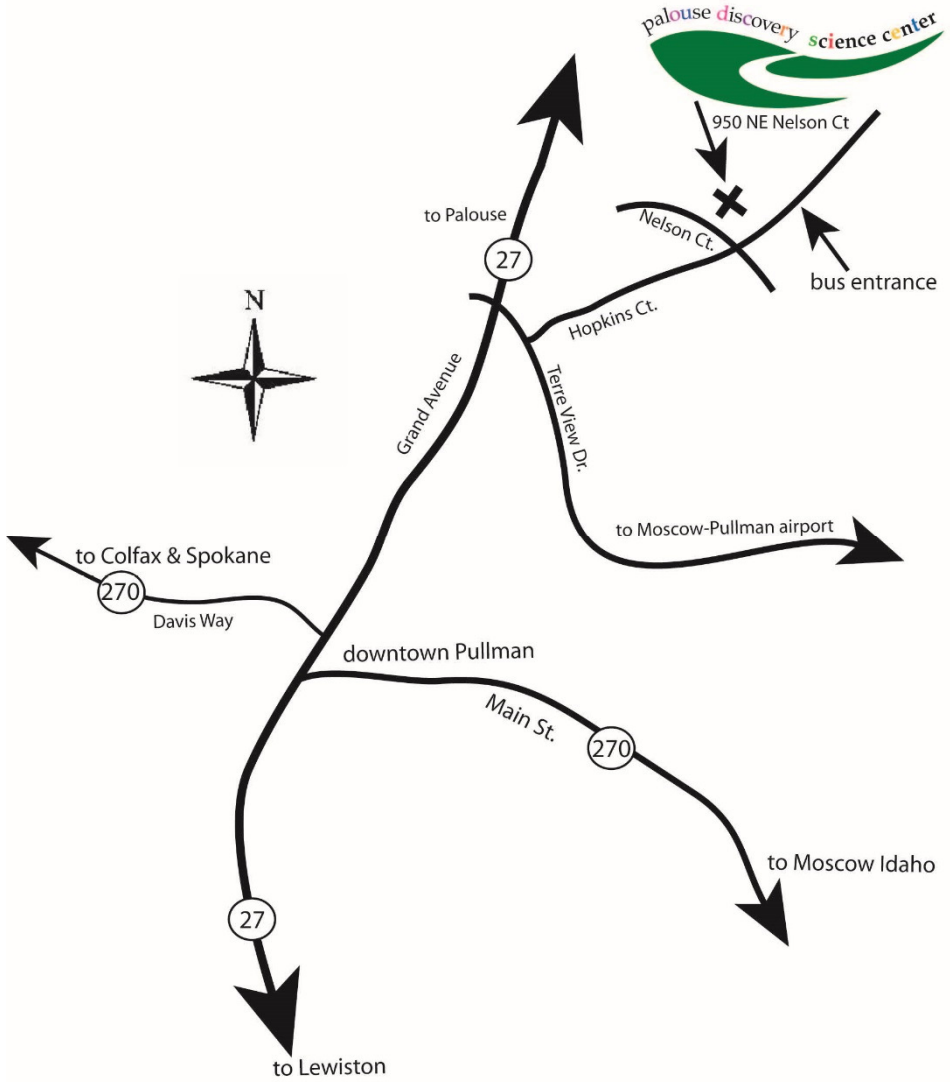
In the event of inclement weather, power failure, natural disaster, etc., the Science Center may be closed. Call PDSC at 509-332-6869 or email us at fieldtrips@palousescience.org to confirm our hours of operation during emergency situations.

Location, Directions

PDSC is located at 950 NE Nelson Court, in the Port of Whitman County Industrial Park, on the north side of Pullman, Washington.

In Pullman: Follow Grand Avenue north past Dissmore's, Pizza Hut and Kinko's. At the next light, take a right on to Terre View Drive. Go across the bridge and immediately turn left into the Port of Whitman County Industrial Park on Hopkins Court. 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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Nelson Ct.
bus entrance
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N
Grand Avenue
Terre View Dr.
to Moscow-Pullman airport
to Colfax & Spokane
270
Davis Way
downtown Pullman
Main St.
270
to Moscow Idaho
27
to Lewiston