2023-24 School Year
Laboratory Safety Agreement

Dr. Julia Renberg, Supervisor of Science

Independent, inquiry-based study is essential for the mastery of scientific principles. Therefore, students will be doing activities that may require the use of hazardous materials and equipment. Every student has a right to be in a safe learning environment. Prior to conducting any "hands-on" activity, the attached agreement must be signed by both the student and parent/guardian and placed on file with the instructor. A copy of this agreement shall be posted in the teacher's course in Canvas.

PART I: SCIENCE INQUIRY AT-HOME

1. The learning for some students takes place virtually. The Division is committed to providing all students with meaningful opportunities to interact directly with natural phenomena or with data collected by other investigators. Inherent in such activities is the potential for injury. When conducting scientific inquiry at home, **the responsibility of protecting students against unreasonable risk is shared by PWCS staff and students and their parents/guardians**.

2. Students shall be offered "hands-on" activities that are aligned with the 2018 Virginia SOL and could be performed safely under adult supervision based on: (a) hazards analysis, (b) risk assessment, and (c) safeguards available at students' individual homes. **Therefore, all science investigations shall be pre-approved by the student's teacher and parent/guardian**.

3. Without written parental/guardian consent, **the students shall be offered an alternative activity** that might include, but not limited to the following options: (a) a virtual simulation (e.g., Gizmos or PhET); (b) a synchronous (live) demonstration of the activity by the teacher via pre-scheduled Zoom session; (c) an asynchronous (recorded) session of the activity performed by the teacher; (d) a video of the activity from a source other than the teacher (e.g., SAFARI Montage or Discovery Education) and accompanying data for students' manipulation and analysis.

   NOTE: All videos shall have closed captions (CC) and images shall include an alternative text (Alt Text) to meet accessibility requirements.

4. **To ensure that students and their parents/guardians make informed decisions regarding their participation in offered "hands-on" learning opportunities**, all activities shall include a comprehensive list of supplies/materials, a "step-by-step" explanation of the procedure, and explicit safety instructions. Safety Data Sheets (SDS) shall be provided as PDF files for all chemical substances, including common household items (i.e., rubbing alcohol, vinegar, etc.)
   In addition, parents/guardians will be offered suggestions for minimizing the risks. These might include but are not limited to the following: (a) providing an open working area; (b) replacing glass items with plastic or Styrofoam materials; (c) reducing quantities to a micro-scale; and (d) providing personal protection equipment (PPE) for eyes and hands, such as goggles and gloves.

5. **Parents/guardians are encouraged to voice their questions and concerns** with school administration and Dr. Julia Renberg, PWCS Supervisor of Science, at renbergj@pwcs.edu.

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PART II: SCIENCE INQUIRY IN THE IN-PERSON LEARNING ENVIRONMENT

1. For students who attend school in person, "face-to-face" instruction in science classrooms will **include** inquiry-driven laboratory experiments and collaborative activities, inclusive of those that require the use of **PPE**.
2. Students shall strictly adhere to requirements specific to each activity and the classroom environment, as articulated by their teacher. At any time, students c**an** elect to excuse themselves from participating in the activity and request an alternative assignment.
3. All standard operating procedures and safeguards, as described below, apply to the "in-person" learning model:

A. Behavior in the Science Classroom

- By entering the laboratory, the student agrees to follow the instructions of the classroom teacher.
- Students are not to touch equipment until given proper instructions and permission by the teacher.
- Students must always conduct themselves in a responsible manner in the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
- Students should observe good housekeeping practices. Work areas should be kept clear of books and backpacks. Work areas should be cleaned well before exiting the lab.
- Students are not to put their feet on chairs or sit on lab tables and benches.
- Unauthorized experiments are not permitted.
- Food, drink, cosmetics, and gum are not allowed in the science classroom.
- Skin must be protected when working with hazardous materials. Students wearing short skirts or shorts should wear lab aprons. Full-coverage footwear is required.
- When working with open flames, long hair must be tied back, and loose clothing must be secured.
- Before leaving the lab area, students should wash their hands well with soap and water.

B. Laboratory Safety Equipment

- Students will wear splash-proof safety goggles provided by the school while engaged in certain activities as defined by the Virginia State Code, section 22 10-2: "Every student participating in laboratory work involving caustic or explosive chemicals or hot liquids or solids shall be required to wear industrial quality eye protection devices at all times."
- Contact lenses are discouraged in the laboratory due to the potential for harmful fumes to flow through the gas-permeable surface. Students who wear contact lenses should request goggles without vents for use in laboratory work.
- Laboratory aprons and gloves must be worn as directed by the instructor.
- Each laboratory is equipped with specialized safety equipment for use in general and emergency situations. Students are responsible for knowing the location, function, and safe operation of the following:

  Fume Hood: Provided for local ventilation device that is designed to limit exposure to hazardous or toxic fumes, vapors, or dust.

  Fire Extinguisher: CO_2 or dry chemical propellant tanks used for extinguishing laboratory fires.

  Shower: A saturating stream of water used to wash off chemicals in the event of a large personal spill.

  Eye Wash: A steady stream of water provided to rinse the eyes, nose, or mouth in the event of a chemical spill.

C. Emergency Procedures

- Whenever an injury or accident occurs, it must be immediately reported to the teacher.
- If a chemical should splash on the skin, immediately flush with running water and notify instructor.

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- Should a laboratory emergency arise, students are to stop working and wait quietly until given instructions by the teacher.

D. Equipment Usage

- Breakage of equipment occurring from negligence will be the responsibility of the student.
- Students should report any broken or non-functional equipment to the instructor immediately.
- Students should carefully examine glassware before use. Never heat chipped or cracked glassware.
- Students should never handle broken glassware with bare hands. Broken pieces should be swept up using a broom and dustpan and placed in a designated broken glass container.

E. Handling Chemicals and Biological Materials

- All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemicals unless specifically instructed to do so.
- Check the label on chemical bottles carefully before removing any of the contents. Alert the instructor of any unlabeled container.
- When diluting acid, be sure to carefully add the acid to the water (not vice versa). This reduces the risk of splashing.
- Students are to dispose of all used materials per instructions provided by the teacher.
- Solid waste materials (glass, metal pieces, rocks, et cetera) should not be placed in the sinks.
- Chemical waste should be treated and neutralized before disposal.
- Sharp objects, such as scalpels, should be handled with the utmost care. Students should be aware of the sharp edge and cut in a direction away from the body.
- Students should not handle or agitate any live or preserved biological specimens unless specifically directed by the instructor. Students should wash their hands thoroughly after handling all specimens.
- No chemicals or biological specimens may leave the laboratory room under any circumstance.

F. Heating Substances

- Students should exercise extreme caution when using a gas burner. Take care that hair, clothing, and hands are at a safe distance from the flame. Safe operation of the gas burner will be discussed, demonstrated, and practiced.
- Students should exercise care when using an electric heating device, such as a hot plate. Do not use it if you detect any frayed cords or loose connections.
- A lit burner or heat source should never be left unattended.
- Students should direct any substances being heated away from people.
- Heated metals, ceramic, and glass remain very hot for a long time. Handle with caution.

The instructor reserves the right to remove any student from the laboratory in response to recklessness. These laboratory safety guidelines are designed to create a safe environment in which exploration can occur. Each student should feel safe and comfortable in the lab and confident of his/her abilities to safely handle lab materials and equipment.

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Student Name: _____ Class Period: _____

Teacher Name: _____ Course: _____

Student Agreement:

I have read and agree to follow all safety rules set forth in this agreement. I understand that I must obey these rules to ensure my own safety and that of my fellow students and my instructor. I am aware that any violation of this safety agreement may result in removal from the laboratory, a parent conference, and/or an administrative referral.

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Student Signature ***Date***

Dear Parent or Guardian:

You should be aware of the safety instructions your child will receive before engaging in any science inquiry work. No student will be permitted to perform activities unless this agreement is signed by both the student and parent/guardian and is on file with the instructor. Your signature indicates that you have read this Student Lab Safety Agreement, are aware of the measures taken to ensure the safety of your student, and will instruct your student to uphold their agreement to follow these rules and procedures.

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Parent/Guardian Signature ***Date***

Comments and/or Relevant Health Issues:

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