

Grade Band Examples: Safety Section

Elementary School (K–5)

In my elementary science classroom, safety is taught explicitly as part of every investigation and is reinforced as a shared responsibility. Before beginning hands-on activities, students participate in structured safety discussions that include modeling proper behavior, identifying potential hazards, and practicing safe use of materials such as scissors, magnifiers, water, soil, and simple tools.

I use visual safety reminders, anchor charts, and consistent routines to ensure students understand expectations. Safety language is embedded in daily instruction, such as “observe carefully,” “handle materials gently,” and “clean up responsibly.” Students are gradually taught to recognize safe vs. unsafe behaviors through guided practice and teacher modeling.

All investigations are designed with age-appropriate materials that minimize risk while still supporting inquiry-based learning. I closely supervise all hands-on activities and ensure clear procedures for distributing and collecting materials. Emergency procedures are practiced according to school-wide protocols, including fire drills and classroom evacuation routes.

Students are taught basic lab habits such as handwashing, safe cleanup, and respectful handling of living organisms when applicable. Families are informed when investigations involve sensory materials or outdoor exploration. Safety is reinforced as part of scientific thinking—students learn that scientists follow procedures carefully to protect themselves, others, and the environment.

Middle School (6–8)

Safety in my middle school science classroom is structured, explicit, and consistently reinforced as students engage in more complex laboratory investigations. At the beginning of each course, students complete formal safety training that includes demonstrations, safety contracts, and assessments covering lab behavior, equipment use, and emergency procedures.

Students are trained to use laboratory equipment such as hot plates, microscopes, chemical materials, and measurement tools with proper technique and supervision. Safety protocols are reviewed prior to each lab activity, and students are required to demonstrate understanding before participating in hands-on work.

Personal protective equipment (PPE), including goggles, aprons, and gloves when necessary, is required and enforced. Students are taught proper chemical handling, disposal procedures, and spill response protocols. Safety data is reviewed and simplified for student understanding when appropriate.

Classroom safety expectations are consistently monitored, and students are held accountable through clear routines and consequences. Emergency procedures, including eye wash station use, fire evacuation routes, and first aid protocols, are reviewed and practiced regularly.

Safety is integrated into instruction as part of scientific practice. Students are taught that safe behavior is essential to conducting valid investigations and that responsible scientists prioritize care for themselves, others, and the environment.

High School (9–12)

Safety in my high school science classroom reflects professional laboratory standards and aligns with expectations for authentic scientific investigation. Students complete formal safety training at the beginning of each course, including written assessments, lab safety contracts, and demonstrations of competency before participating in laboratory work.

Depending on the course, students work with chemicals, biological materials, dissection tools, electrical equipment, heat sources, and field investigation tools. All activities are carefully designed to comply with district, state, and federal safety guidelines, including appropriate use of personal protective equipment (PPE) such as goggles, gloves, and lab coats when required.

Students are explicitly trained in hazard identification, risk assessment, and proper response procedures, including chemical spill management, eyewash station use, fire safety, and emergency evacuation protocols. Safety data sheets (SDS) are incorporated into instruction to build student understanding of chemical properties and safe handling practices.

Lab setups are pre-screened for risk, and students must demonstrate readiness and understanding before beginning experiments. Safety accountability is reinforced through structured roles, lab checks, and ongoing teacher supervision.

Safety is framed as an essential component of scientific integrity. Students are expected to take responsibility for maintaining a safe laboratory environment, mirroring expectations in professional scientific and engineering settings.

