Science Standards Guidance

Safety Fact Sheet

Introduction

Kansas science educators, counselors, and building/district administrators are legally obligated to maintain a safe learning environment for students. The federal legal guidelines fall under Duty of Care[1] and as such both classroom teachers and those who influence decisions about science classrooms ***must*** comply. This document is intended to serve as a recommendation, districts are encouraged to exercise local control but are urged to err on the side of safety.

Safety Instruction and Contracts

Explicit safety instruction should be consistent and compliant with the duty of care. Instruction on safety should occur at the beginning of the year, including yet not limited to a safety contract (Flinn[4]) but, ***it is critical that safety practices be explicitly reviewed before each appropriate classroom lesson.***

It is the district's responsibility to ensure that staff are fully and continuously trained appropriately in safety protocols and that all equipment is provided in good working order. The below websites[2] is a suggested starting point for district consideration:

- Elementary
- Secondary

Class Sizes and Learning Conditions

- Classes involving a laboratory component mustn't be "overloaded". It is recommended that in
  - Elementary Classrooms 45 sq ft is allocated per student.[3]
  - Secondary Classrooms 60 sq ft is allocated per student. [2]
- Science classrooms should be limited to no more than 24 students.

[1] http://static.nsta.org/pdfs/DutyOfCare.pdf
[2] https://cosss.wildapricot.org/Safety-Resources
[3] https://static.nsta.org/pdfs/NSTA_SafetyIssuePaper_ScienceLabRequirements.pdf

Organisms in the Classroom

All organisms both live and preserved, should be treated with extreme care and caution per the Flinn Safety Guidelines[4]. The inclusion of live animals in the classroom should be limited to standards-aligned instruction. Live animals may pose a health risk to those in the vicinity therefore their inclusion in a classroom is ***discouraged***.

The practice of dissection is not a component of the Next Generation Science Standards and can pose a physical and emotional risk to students. While a memorable experience, dissection does not align with standards nor does its inclusion supersede the necessary duty of care in Kansas Science Classrooms. An advanced course at the secondary (10-12 grade) may incorporate the practice to extend beyond required state science standards or as appropriate per a post-secondary curriculum.

Other organisms (such as bacteria and fungi) are appropriate in their preserved state and align to several standards. The inclusion of culturing specimens in the classroom should be limited to standards-aligned instruction. Before engaging in this practice, all educators ***must*** be appropriately trained in the safe handling and disposal of materials.

Continuing Safety Education for Teachers

Science educators should be trained ***annually*** using a valid and reliable source. Additionally, educators must be provided no less than ***4 hours per year*** to maintain and align safety protocols in science spaces and storage areas including but not limited to proper chemical/ material storage, handling, and disposal.

Stephanie Alderman-Oler
Science/STEM Program Manager
Teaching and Learning

(785) 296-8108

stephanie.alderman-oler@ksde.gov

Kansas State Department of Education
900 S.W. Jackson Street, Suite 102
Topeka, Kansas 66612-1212

(785) 296-3201

www.ksde.org

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.

[4] https://www.flinnsci.com/api/library/download/80efae9513b548d6999c31d38ac36abe