GUIDELINES AND RECOMMENDATIONS FOR
Teaching Middle and High School Chemistry

www.acs.org/mshsguidelines

HIGHLIGHTS

- A focus on chemistry for ALL students
- Core concepts in chemistry for middle and high school chemistry, aligned with NGSS
- How to decide between "hands-on" and "virtual" investigations
- How to use assessment to improve instruction
- Recommended lab and safety equipment for middle and high school chemistry classrooms
- Tips for chemical storage and disposal
- The importance of professional development and some suggestions of where to find it
- Recommended resources for teachers of chemistry

WHY GUIDELINES?

While not a prescribed course outline or "how to" list, the Guidelines emphasize the essential components of a successful and safe learning environment for the teaching of chemistry. You'll find research-based information about instruction, core ideas, physical instructional environment, safety, sustainability, and the professional responsibilities of teachers.

WHO SHOULD READ AND USE THE GUIDELINES?

Middle and high school physical science and chemistry teachers, curriculum developers, principals, and other school administrators who support teachers in those roles.

CONTENT

Pathways to Learning: Core Ideas for Students and Best Practices for Teachers to Use

What are the core ideas and skills in chemistry and what are some effective ways to assist students in learning these?

In this section...

- Core concepts in middle and high school chemistry (with physical science NGSS alignment!)
- Effective strategies for teaching and learning
- Using assessment
- Differentiation
- Using technology in the chemistry classroom

The Chemistry Setting: Classroom and Laboratory Facilities

What types of classroom and laboratory facilities are recommended to optimize student learning?

In this section...

- Classroom equipment and supplies
- Laboratory and safety equipment and supplies

In the Lab: Safety and Sustainability

How do I create a safe laboratory culture and safe laboratory experiences for my students?

In this section...

- "RAMP" principles for safety
- Opportunities for safety training
- Chemical storage and disposal
- Environmental considerations

Professional Responsibilities: Teacher Expectations and Training

How can I best prepare myself to teach chemistry and to continue my professional growth?

In this section...

- Equity and ethics
- Professional development
- Professional organizations and resources
- Chemistry resources and activities for students

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