STEM for ALL through Universal Design for Learning

Spring EEA Follow-up
STEM Education is for ALL Students

Approach
Science, Technology, Engineering, Mathematics

21st Century
STEM Education Goal
UDL Considerations for STEM Units and Lessons

Goals or Standards

• STEM Standards of Practice

• Content Standards (Science, Technology/Engineering, Mathematics)

• Other Content Standards related to the real world problem, complex question, or global issue
UDL Considerations for STEM Unit/Lessons

Materials

- Use of Science tools
- Use of Technology and Engineering tools
- Use of Mathematics tools
UDL Considerations for STEM Unit/Lessons

Methods

• Problem/Project-based pedagogy

• Inquiry-based pedagogy
UDL Considerations for STEM Unit/Lessons

Assessments

Performance-based assessments

• portfolios

• project journals

• graphs and illustrations
UDL Resources

For STEM Education
Teaching All Students

Today's increasingly diverse classrooms present great opportunities as well as complex challenges for educators. How do you plan, instruct and assess so that all of your students learn and achieve to their maximum potential? In this part of the site, we focus on a variety of real-world tools and strategies that can assist you in promoting success for all your students, with a particular emphasis on students with disabilities. You will also see here that approaches like Universal Design for Learning, Differentiated Instruction and Co-Teaching – while originally intended to address the needs of students with disabilities – can actually help every student that you teach.
The KHAN Academy
http://www.khanacademy.org/

- Over 3,000 videos
- 315 Practice Exercises
- Multiple Content Tutorials
Visual Dictionary

http://visual.merriam-webster.com/

- Includes labeled illustrations
- Provides explanations in up to 6 languages
CAST Science Writer
http://sciencewriter.cast.org/

- Includes a Text to Speech toolbar that reads any text out loud
- Assist with drafting, revising, and editing Science reports
Google Docs

https://accounts.google.com/

- Create and Share documents online
- Share a variety of documents (spreadsheets, presentations, drawings)
PhET Interactive Science Simulations
http://phet.colorado.edu/en/simulations/category/new

- Research-based simulation of physical phenomena
- Measurement instruments
- Immediate responses
Try Engineering
http://www.tryengineering.org/

- Engineering Career Exploration in Multiple Languages
  - English
  - Arabic
  - Chinese
  - French
  - German
  - Japanese
  - Portuguese
  - Russian
  - Spanish
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