Utah’s Energy & Minerals Education Initiative

Western States Coal Strategies Forum
November 20-22, 2019

Utah Governor’s Office of Energy Development
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The Governor’s Office of Energy Development is dedicated to advancing all forms of responsible energy and minerals for the provision affordable, reliable and sustainable energy through planning, policy and direct engagement.

-Gov. Gary R. Herbert
Utah’s Energy Action Plan

- Support Energy Research, Demonstration and Development Initiatives
- Continue to Organize Energy and Minerals Events
- Increase All-of-the-Above Energy Communications
- Expand Education Initiatives
Summary: Advancing Utah’s Energy and Minerals Economy

**Policy & Planning**
- Inform and advance state and federal policy to promote development and drive innovation

**Industry Assistance**
- Funding & Incentives
- Public/Private-Sector direct engagement
- Trade Missions

**Education & Outreach**
- K-12 Education
- University Energy Research Triangle
- Summits, Symposia, Workshops, Forums
Utah Energy and Minerals Education Initiative
Website
https://energy.utah.gov/k-12-education/

K-12 EDUCATION
A skilled labor force is key to powering Utah's bright future
Utah Energy and Minerals Education Initiative
Curriculum & Lesson Plans

To Date

• 30+ Lesson plans
• Covering grades 3-12
• Set to Utah State Standards
• Featuring STEM based activities
• Free to download
Utah Energy and Minerals Education Initiative

Lesson Plans – A Closer Look

Coal Distribution in Utah

Grade/Subject: 8th Science

Strand/Standard 8.4.1 Construct a scientific explanation based on evidence that shows that the uneven distribution of Earth’s mineral, energy, and groundwater resources is caused by geological processes. Examples of uneven distribution of resources could include Utah’s unique geologic history that led to the formation and irregular distribution of natural resources like copper, gold, natural gas, oil shale, silver, and uranium. (ESS3.A)

Lesson Performance Expectations: Students will compare geological maps of Utah to coal maps of Utah to determine why coal is unevenly distributed across the state.

Materials:
Per student:
- Student Sheet
- Access to Geological and Resource Map, this could be accessed digitally or printed for each student.

Material for Layering Model. This model can be done as a demonstration or in small groups.
- 1 bag of dark sand
- 1 bag of light sand
- 1 bag of soil
- 1 bag of small gravel
- Green leaves
- Spray bottle(s) with water (one per class or each small group)
- Shallow aluminum pan to put it in. The bottom needs to be flexible to enable uplifting.
- Spoon(s)
- Ruler(s)

Time: 1 period, 60 minutes

Teacher Background Information:
Coal was formed from the dead remains of trees, ferns, and other plants that lived millions of years ago in swampy areas. Geological processes such as uplift have unevenly distributed coal even further.

Student Background Knowledge:
- Students will understand what a fossil fuel is and that coal is a type of fossil fuel.
- Students will understand uplift.
- Students will understand that geological forces have shaped Utah's landscape.

Teacher Step by Step: A 3-5 lesson should insist students do the thinking. Provide time and space for the students to experience phenomenon and ask questions. The student sheet provided below provides guidance but is only an example of how students might respond.

1. Introduce Phenomenon:
   a. Show students the following image and have students imagine they were hiking one day and saw this scene. Have them make a list of questions based on what they see in the picture.
Utah Energy and Minerals Education Initiative
Professional Development Workshops

- Teacher relicensure points provided
- Substitute stipend provided
- Lesson kit provided for future use
- 50+ educators trained
Utah Energy and Minerals Education Initiative
Energy and Mineral Videos

• 40+ YouTube Videos
• Featuring hands-on energy and minerals education activity videos
• Directly tied to their specific lesson plan
• Designed with the teacher in mind
Utah Energy and Minerals Education Initiative

Workforce Development

Utah Energy Workforce Scholarship

The Governor’s Office of Energy Development is proud to partner with Chevron to advance Utah’s energy workforce by providing scholarships to high school seniors who intend to pursue a Science, Technology, Engineering, or Math (STEM) related course of study at a public or private institution of higher learning in Utah.

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Five $4,000 scholarships for students attending a Utah college or university

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Five scholarships for up to $2,000 for students attending a Utah technical college

Submit Your Application Today!

- Complete the energy questionnaire
- Write an essay about your STEM goals
- Submit your application to levin@utah.gov

Deadline: April 1, 2020

For more information visit energy.utah.gov/k-12-education/scholarship/

Utah Power & Energy Career Expo

Sponsored by:

Utah Energy Conference

Come explore career and internship opportunities in the Power & Energy Industry!

Friday, February 13, 2020
10:00 AM - 6:00 PM
University Of Utah Student Union

RSVP In Handshake

https://utah-handshake.com/career_fairs/923/student_preview
Utah Energy and Minerals Education Initiative
Conferences, events, and more

• Governor’s Energy Summit
• Utah Power and Energy Career Expo
• The Energy and Minerals Pavilion at STEM Fest
• Utah Science Teachers Association Conference
• Greenpower Electric Car Challenge

“Winning this scholarship has helped me be able to further my learning, attend the school of my dreams, and hopefully someday have a career that I will love in chemical engineering.”

- Brynn Eardley
Utah Energy and Minerals Education Initiative
Continued Partnerships & Conclusions

• Building partnerships
• Increasing public awareness
• Making connection between our lives and the resources we need
• Growing our curriculum
• Integrating the education website with media and partners
• Supporting workforce development through event participation
• Driving Utah’s rising generation to supporting our energy and minerals future
Thank you!

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