

Universal Design for Learning (UDL): Science 10 'Safety Rules' Lesson Redesign

Part 2: Planning the redesign

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Below are a few specific target areas for the redesign of the Science 10 Safety Rules Lesson. Also, at the end of this file, you will find the graphic organizer, which has helped to guide the planning of this redesign.

Addressing the UDL Checklist Key Points:

1. Expectations (Objectives, rubrics, grading) should be more explicit. Three broad learning outcomes are currently identified at the beginning of the lesson; however, the following demonstrates that more specific leaning outcomes could be identified.

A1 Demonstrate safe procedures

- Identify a variety of dangers in procedures (e.g., cuts from sharp objects; explosions or burns from handling chemicals or heating materials)
- Identify appropriate equipment for a lab activity (e.g., Bunsen burner vs. hotplate; glassware for chemicals)
- Identify and use appropriate personal protective equipment (e.g., hand and eye protection) and procedures (e.g., hair tied back, clear work area, no loose clothing, no horseplay)
- Use proper techniques for handling and disposing of lab materials (e.g., using special containers for caustic chemicals)
- Describe appropriate emergency response procedures (e.g., how to use a fire extinguisher/blanket, eye wash station, first aid for cuts and burns, knowing who to contact and how)

A4 Demonstrate scientific literacy

- Identify the main points in a science-related article or illustration
- Describe the qualities of a scientifically literate person, such as

- Recognizing that scientific knowledge is continually developing and often builds upon previous theories

A5 Demonstrate ethical, responsible, cooperative behaviour

Describe and demonstrate

- Ethical behaviour (e.g., honesty, fairness, reliability)
- Open mindedness (e.g., ongoing examination and reassessment of own beliefs)
- Willingness to question and promote discussion
- Skills of collaboration and cooperation
Respect for the contributions of others

Furthermore, grading structure and/or rubrics should be outlined at the beginning of the lesson. Students need to know how they will be assessed.

2. Multiple ways to engage the students and multiple ways to represent ideas need to

be offered to students through choice options. These will likely include:

- Videos (with text, subtitles and/or transcript) – Media player information provided (i.e., VLC link for FLV media files) – AVI, MPEG
- Auditory resources (i.e., MP3, WAV, WMA), ideally with transcript
- Text to speech option
- Graphics/Images (with text descriptions) – JPEG, PNG
- Interactive resources, such as websites, or flash-animations (Flash player required? JavaScript link provided for free Java software)
- Collaborative learning and construction of knowledge (i.e., forum, glossary, or database use)
- Text resources and student notes (learning guides) should be provided in multiple formats (PDF, RTF, DOC) * Chromebook note regarding apps to open files (i.e., RollApp to open RTF files), other relevant notes
- Optional resources

3. Checks for understanding need to be integrated more frequently in the lesson to

help shape instruction. This will likely be accomplished using the following:

- Opportunities for practice (ungraded) embedded in the lesson
- “Low stakes” tasks

- Moodle Feedback, Survey, or Choice activities
4. The lesson material does not currently include methods that require the student's active participation (although the assessment pieces and one matching activity do, to a limited extent).
 - Interactive lesson material and activities, and the use of a Moodle Forum or the like, should increase active participation in the lesson.
 - Self-evaluation and reflection will be encouraged.
 5. Step by step instructions for using learning strategies should be apparent.
 6. Students should be able to show what they know in a variety of ways (see 2 above), using a variety of media, tools, and web-based and/or LMS activity options. Options will be provided to students.

The above outlined areas are recommended for redesign; however, as I have learned, course design can uncover many twists and turns. I fully expect the end result to address the main problems identified, but realistically, the end product will probably be a “Beta” version of the Safety Rules lesson waiting for another redesign.

* Sources are referenced at the end of the Lesson Critique.

OLTD 502: Learning Activity Redesign Visual Organizer

