Love Kids. Love Science.

Interactive Notebooks

A Power Tool for Implementing UDL in the Secondary Science Classroom





Presentation Resources

- The Center for Applied Special Technology (CAST)
 Educational research and development organization dedicated to expanding learning opportunities for all individuals through universal design for learning (UDL).
 http://www.cast.org
- National Center on Universal Design for Learning
 Organization supporting the effective implementation of UDL by connecting stakeholders and providing resources and information.

 www.udlcenter.org
- Teaching Science with Interactive Notebooks by Kellie Marcarelli http://www.corwin.com/books/Book231624
- Lesson Plan to Introduce Notebooking http://phys.csuchico.edu/~ljatkins/SGSI/SGSI_files/Notebooks%20lesson%20plan.pdf
- Instructions on how to make the mini "bound" book: http://sblc.registereastconn.org/foldables/InterestBoundBook.pdf



The Noun Project – a source for free (and fee) Creative Commons CCO (No Rights Reserved) icons. www.thenounproject.com













Ten Characteristics of Interactive Notebooks

Adapted from: Marcarelli, Kellie. (2010). *Teaching Science with Interactive Notebooks* (pp. 1-21). Thousand Oaks, CA: Corwin

- 1. [The interactive notebook is] "...like my own piece of property that I have to take responsibility for. It shows my personal thinking and creativity. My notebook shows I can think for myself and figure out where I went wrong for myself instead of someone telling me." Student
- 2. Homework assignments and practice are built into the use of interactive notebooks, providing valuable processing opportunities.
- 3. Interactive notebooks connect students' thinking, prior knowledge, and experiences with science concepts.
- 4. Interactive notebooks develop academic language. It provides a safe place to practice writing, express prior knowledge, and record newly acquired knowledge.
- 5. Notebooks encourage active learning and provide opportunities for students to pursue their own interests and tackle authentic problems.
- 6. Notebooks facilitate communication with parents, teachers, and specialists and can be used to provide them with evidence of student growth and facilitate development of intervention strategies.
- 7. Notebooks provide an ongoing record of student work and growth, leading to recognition from their peers, teachers, and parents.
- 8. Questions are present throughout students' interactive notebooks, and the notebooks are richly littered with graphic organizers.
- Science notebooks engage students in collaborative inquiry as a way of learning science content by recording data and observations and engaging in reflective thinking, discussion, and analysis.
- 10. Students take notes and illustrate their observations as they complete science investigations and create different kinds of graphs to represent their data.



Interactive Cafe Menu Daily Specials

Appetizers - Starters

- Quick Draw
- Picture Collage
- Headline News
- Text Me

Entrees - Meaty Matters

- •Graphic Organizer / Folding Model
- •Flow Chart
- Thinking Map®
- •Graph / Infographic

Sides - Cross Curriculuar

- Analogy
- Acrostic
- History Connection
- •Acronym/Mnemonic

Desserts - Creative Flair

- •Sketch / Pictograph
- •Song / Poem / Rap
- Cartoon
- •Game/ Puzzle

Beverages - Connections

- •Reflection / Real World Connection
- Aha!
- •Summary of Understanding
- Quick Write



Interactive Cafe Menu Daily Specials

Appetizers - Starters

- Quick Draw
- Picture Collage
- Headline News
- Text Me

Entrees - Meaty Matters

- •Graphic Organizer / Folding Model
- •Flow Chart
- Thinking Map®
- •Graph / Infographic

Sides - Cross Curriculuar

- Analogy
- Acrostic
- History Connection
- Acronym/Mnemonic

Desserts - Creative Flair

- Sketch / Pictograph
- Song / Poem / Rap
- Cartoon
- •Game/ Puzzle

Beverages - Connections

- •Reflection / Real World Connection
- Aha!
- Summary of Understanding
- Quick Write



Universal Design for Learning Guidelines

I. Provide Multiple Means of **Representation**

1: Provide options for perception

- 1.1 Offer ways of customizing the display of information
- 1.2 Offer alternatives for auditory information
- 1.3 Offer alternatives for visual information

II. Provide Multiple Means of **Action and Expression**

4: Provide options for physical action

- 4.1 Vary the methods for response and navigation
- 4.2 Optimize access to tools and assistive technologies

III. Provide Multiple Means of **Engagement**

- 7: Provide options for recruiting interest
- 7.1 Optimize individual choice and autonomy
- 7.2 Optimize relevance, value, and authenticity
- 7.3 Minimize threats and distractions

2: Provide options for language, mathematical expressions, and symbols

- 2.1 Clarify vocabulary and symbols
- 2.2 Clarify syntax and structure
- 2.3 Support decoding of text, mathematical notation, and symbols
- 2.4 Promote understanding across languages
- 2.5 Illustrate through multiple media

5: Provide options for expression and communication

- 5.1 Use multiple media for communication
- 5.2 Use multiple tools for construction and composition
- 5.3 Build fluencies with graduated levels of support for practice and performance
- 8: Provide options for sustaining effort and persistence
- 8.1 Heighten salience of goals and objectives
- 8.2 Vary demands and resources to optimize challenge
- 8.3 Foster collaboration and community
- 8.4 Increase mastery-oriented feedback

3: Provide options for comprehension

- 3.1 Activate or supply background knowledge
- 3.2. Highlight patterns, critical features, big ideas, and relationships
- 3.3 Guide information processing, visualization, and manipulation
- 3.4 Maximize transfer and generalization

6: Provide options for executive functions

- 6.1 Guide appropriate goal-setting
- 6.2 Support planning and strategy development
- 6.3 Facilitate managing information and resources
- 6.4 Enhance capacity for monitoring progress

- 9: Provide options for self-regulation
- 9.1 Promote expectations and beliefs that optimize motivation
- 9.2 Facilitate personal coping skills and strategies
- 9.3 Develop self-assessment and reflection

Resourceful, knowledgeable learners

Strategic, goal-directed learners

Purposeful, motivated learners

