

Lesson Plan: Make your own ink and learn some chemistry along the way

Lesson Title: Ink it!

Grades: 9-12

Communicative Objective/Standards	<p>Students will discover some of the unique chemical properties that ink is composed of, while learning a cheap and fun way of making their own ink.</p> <p><u>Standards Addressed</u></p> <p>3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>7. Translate quantitative or technical information expressed in words in a text into visual form and translate information expressed visually or mathematically into words.</p> <p>9. Compare and contrast findings presented in a text to those from other sources, noting when the findings support or contradict previous explanations or accounts.</p>
Anticipatory Set	<p>Place small containers of india ink and small twigs on tables for groups of 3-5 to use. Ask students to experiment using the ink on a variety of surfaces such as: glass, plastic, and paper. Ask students to discuss in their groups the challenges of using sticks to write, and have them create a short list of ways for improving the primitive pen.</p>
Review	<p>Discuss the chemical properties of what ink is and review the history of the design of the pen.</p>
Input/Modeling/Presentation	<ul style="list-style-type: none">➔ Access the website http://www.instructables.com/id/How-to-Make-a-Quill-Pen-Ink/ with pictures and briefly show students the process for which they will create homemade ink.➔ Show some lettering and calligraphy examples at http://abduzeedo.com/lovely-sketch-collection-instagram-ink-ration. Show various nib types from http://www.richardspens.com/?page=ref/nibs/primer.htm➔ Within small table groups of 3-5, ask students to write a list and sketch an example of the pen nib they wish to create for their homemade ink pens.
Check for Understanding	<p>A presenter from the group will be chosen at random by the teacher and asked to give a brief description of what the group discussed, as well as their plan for creating their pens.</p>
Guided Practice	<p>Working in groups, students will create the ink from the handout given by teacher. Supplies should be at each table ready for lesson.</p>

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Independent Practice/Evaluation	Students will be required to complete one drawing or lettering assignment of their choice that must be equivalent to three hours of homework. Students will present their work in a classroom "gallery style" critique in which artwork will be displayed on walls around the room. Display a variety of artwork that was completed in different lengths of time, showing the difference of 1, 2, and 3 hour drawings!
Enhancing Transfer and Retention	Students will gain historical knowledge of the ink pen and the chemistry behind ink.
ELL Modification	ELL's will be paired accordingly in groups of strong leadership. Individualized assignment modification will vary. Accommodations will include: Google translate for research component, audio and, or video support in native language for additional support and tutoring on every facet of project.
GT Modification	Students that show a mastery for content and complete the task at an accelerated rate may have the opportunity to dig deeper into the content. Encourage students to research other methods for creating the project being studied, as well as the history and direction of this art form.
SPED Modification	Students struggling to complete the task may have a modified workload, dependent on their IEP. If a GT student shows strong leadership skills, this is a great opportunity to encourage peer to peer teaching.