

Lesson Plan: Papermaking
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Lesson Plan = This lesson plan involves hands-on activities to allow students to go through a simple recycling process to create new paper from previously used paper, and linking this process to both environmental impact and natural resources. The project used old newspaper, soaked and shredded, to create a paper pulp which was then formed into sheets through the use of a traditional mold and deckle to drain and shape the new sheet of paper. Students had to measure out a given quantity of paper pulp, mix this with water to a specified volume, then carefully pour the resulting slurry through the screen and drain away the excess water. Once this was completed, students had to carefully remove the wet sheet and press it between felts to dry it further, and let it air-dry overnight. The next day, the resulting paper was examined and compared to the original newsprint, and a discussion ensued to talk about the differences and how the process created a paper that was quite different from the original stock material, yet apparently nothing had been taken away or added during the process. (In fact, seizing was removed by the pulping process, and this was discussed.)

This exercise was valuable for several reasons. First, it provided an actual example of recycling, with the students going through the entire process of recycling a common material, and was as chance to talk about environmental impacts and how we can lessen them. Second, it tied into natural resources; the paper pulp was a product of wood, a sustainable natural resource if managed properly. Third, during the process students practiced accurate measurement with the metric system to create the desired pulp mixture. Last, it created a tangible end product which could be examined further as a foundation for inquiry-based learning, through asking questions about what happened to make the product the way it was.

It went very well, as there was a lot of interest in the idea of making paper - an everyday item that all the students were familiar with. All had to dip into the pulp and feel the actual texture, and there was a lot of discussion and comments about how it did not look or feel like wood, and a lot of questions about the process that we did not do in the classroom (cutting down the tree and shredding it.) Overall it was very successful, though somewhat messy and time-consuming.

E.Q.: I can understand how recycling of a common material works.

SCOS GOALS & OBJECTIVES: To understand how materials may be recycled, and see connection between recycling and natural resources.

ACTIVATING STRATEGIES: Using a hands-on process involving measuring, mixing, and material movement to achieve a predetermined result, and follow a common process through from raw material to finished product.

INSTRUCTIONAL PROCEDURES: A lab project using recycled paper to create new paper products.

ASSESSMENT STRATEGIES: Examination of the finished product, comparison to both original and intermediate materials, and discussion of what happened to create the final material.