

## BRAINSTORMING & LANDFILLS

|                            |  |
|----------------------------|--|
| RATIONALE:                 | Organized, problem-solving techniques can be usefully applied to the problem of solid waste management.  |
| SUBJECTS:                  | Gifted, Social Studies, Home Economics   |
| GRADES:                    | 5-12   |
| LEARNING PROCEDURE:        | <p>In addressing the problem of solid waste management in the school or community, students will learn an effective problem solving technique.</p> <ol style="list-style-type: none"> <li>1. The teacher will formulate a solid waste management problem to be solved by the class.<br/>For example:             <ol style="list-style-type: none"> <li>a. In 2014, according to the EPA, Americans threw away 136 million tons of garbage.</li> <li>b. Total MSW Landfilled (by material), 2014 136 Million Tons                 <ul style="list-style-type: none"> <li>• Food 21.6%</li> <li>• Plastics 18.5%</li> <li>• Paper &amp; Paperboard 14.3%</li> <li>• Rubber, leather, &amp; textiles 10.8%</li> <li>• Metals 9.4%</li> <li>• Wood 8.1%</li> <li>• Yard trimmings 7.9%</li> <li>• Glass 5.2%</li> <li>• Other 4.2%</li> </ul> </li> </ol> </li> <li>2. Have students look up online how much waste is generated per person daily in the US. Have them research how many active landfills there are and how full they are. What happens to landfills when they fill up? What are some alternatives?</li> </ol> <p><b>Apply the following problem-solving technique to the problem:</b></p> <ol style="list-style-type: none"> <li>a. Restate the problem</li> <li>b. Determine related problems</li> <li>c. Determine the specific problem to be solved</li> <li>d. Set goals in relation to the problem</li> <li>e. Identify expert sources of information on the problem</li> <li>f. Do research and gather information</li> <li>g. Brainstorm possible solutions</li> <li>h. Establish criteria for evaluating possible solutions</li> <li>i. Evaluate solutions</li> <li>j. Determine plan of action to implement solution</li> <li>k. Present solution to others</li> <li>l. Gain acceptance &amp; support for proposed solution</li> </ol> |
| PRE & POST TEST QUESTIONS: | When you have a problem, how do you decide on the best solution?<br>List steps to a problem-solving technique. Do these steps work for large community problems?   |
| SOURCES:                   | <a href="https://www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures">https://www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures</a>  |