<table>
<thead>
<tr>
<th>SCIENCE EDUCATION WILL INVOLVE LESS:</th>
<th>SCIENCE EDUCATION WILL INVOLVE MORE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worksheets</td>
<td>Student writing of journals, reports, posters, and media presentations that explain and argue</td>
</tr>
<tr>
<td>Teachers posing questions with only one right answer</td>
<td>Students discussing open-ended questions that focus on the strength of the evidence used to generate claims</td>
</tr>
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<tbody>
<tr>
<td>Teachers providing information to the whole class</td>
<td>Students conducting investigations, solving problems, and engaging in discussions with teachers’ guidance</td>
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<tr>
<td>Learning of ideas disconnected from questions about phenomena</td>
<td>Systems thinking and modeling to explain phenomena and to give a context for the ideas to be learned</td>
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<tr>
<td>Oversimplification of activities for students who are perceived to be less able to do science and engineering</td>
<td>Provision of supports so that all students can engage in sophisticated science and engineering practices</td>
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<td>Rote memorization of facts and terminology</td>
<td>Facts and terminology learned as needed while developing explanations and designing solutions supported by evidence-based arguments and reasoning</td>
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<td>Students reading textbooks and answering questions at the end of the chapter</td>
<td>Students reading multiple sources, including science-related magazine and journal articles and web-based resources; students developing summaries of information</td>
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<td>Pre-planned outcome for “cookbook” laboratories or hands-on activities</td>
<td>Multiple investigations driven by students’ questions with a range of possible outcomes that collectively lead to a deep understanding of established core scientific ideas</td>
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