UNIT FEATURES
- Discovery and hands-on activities on the insect life cycle, using Vanessa cardui (painted lady) butterfly larvae.
- Inquiry-based activity on inheritance of wing color in butterflies (card sort activity).
- Procedures for recording observation in science journals.
- English/Language Arts mini lessons.
- Student investigation and exploration of expository texts.

Outcomes from the pilot will inform revisions to the module, which will be evaluated through a large comparison group study in Houston and San Antonio (N=50 teachers, approximately 1,000 students).

Project resources will be available on BioEd Online (www.bioedonline.org).

Baylor College of Medicine, Houston, Texas

Project Team: Nancy Moreno, (PI), Gregory Vogt, Alauna Howell, James Don, Travis Kelleher and Martha Young, Baylor College of Medicine; Misty Safors (site PI); Sarah Aguirre and Janine Garcia, The University of Texas at San Antonio; Linda Zientak, Sam Houston State University.

Scientists and educators at Baylor College of Medicine are developing, and disseminating new teaching resources that integrate science and health content, scientific practices and cross-cutting concepts (such as patterns, cause and effect, and structure and function)—with reading/language arts. All resources are field-tested using a rigorous comparison group design with random assignment of groups to treatments. Each unit is revised after field-testing and made available with supporting resources on the website, BioEd Online (www.bioedonline.org).

BioEd Online

INVISIBLE THREATS: ORGANISMS AND ENVIRONMENTS

Students explore threats from emerging deadly viruses and other diseases, and learn about the importance of vaccines in preventing infection. Baylor’s research team working on elephant endotheliotropic herpesvirus (EEHV) is highlighted in the companion reader for students.

(Grades 4–5)

ALLERGY BUSTERS

Using survey techniques, graphing and hands-on simulations, students learn about the immune system, allergies and allergens. The unit is accompanied by two short stories, Where’s Mooh? and Cockroach School and the Bigfoot Monsters. (Grades 2–3).

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Pre-test SD</th>
<th>Post-test</th>
<th>Post-test SD</th>
<th>t</th>
<th>df</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison</td>
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<td>3.32</td>
<td>11.49</td>
<td>3.50</td>
<td>1.99</td>
<td>364</td>
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<tr>
<td>Implementation</td>
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<td>3.92</td>
<td>14.08</td>
<td>5.04</td>
<td>8.59</td>
<td>307</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Outcomes from the field test of Allergy Busters were very positive. The comparison and implementation group students did not differ in content knowledge on the pretest. Only the implementation group students had statistically significant gains on the posttest, with a moderate effect size (Cohen’s d = 0.52).

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