

## TIPS FOR TEACHERS

### **Give Me a Break (Bag): A Home-School Connection for ELLs**

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#### **Background**

In both ESL and EFL environments, the need for quality content-based instruction for English language learners (ELLs) is growing. In the U.S., for example, the Center of Immigration Studies estimates that in 2016, approximately 22 percent of children, slightly more than 12 million, spoke a language other than English at home, and these numbers are expected to continue to increase for some time. English Language Learners (ELLs) underachieve in comparison to their English-speaking peers in academic domains, and the achievement gap tends to increase the higher the grade level (Genesee, Paradis, & Crago, 2010). Worldwide, the BBC estimates that approximately 1.5 billion people are students of English. Increasingly, English is used as a medium—not just a subject—of instruction in content-area courses in international schools, in dual language schools, and in academically-oriented high schools and in institutions of higher education, particularly in such global fields as business, science, and technology.

This teaching tip reports on a project originally designed for immigrant children in five majority-ELL elementary schools in northeastern Ohio in the U.S., but it holds promise for ELLs in a variety of other settings as well. Our goals were (a) to continue students' subject matter learning over winter break and (b) to create meaningful English language interaction for students who are often called upon to serve as interpreters for family members navigating the world of English. We created break bags, individualized, hands-on science and math experiments for children to take home and complete with their families over the break

#### **Bringing Science Experiences Home**

The idea for break bags came from Scientific American's Bring Science Home (<https://www.scientificamerican.com/education/bring-science-home/>), which fea-

tures family-centered science projects on topics ranging from building rubber band powered cars to lifting ice cubes with chemistry, Bring Science Home embeds key science and math concepts in enjoyable, easy-to-follow activities that require only common household or outdoor materials such as leaves and toys. Although most parents feel confident about helping their young children with behavior and social skills, as well as with math and reading, many feel less confident about helping their children with science. Break bags allow families of ELLs to support, and even learn, content knowledge along with their children without extensive planning, expense, or background knowledge.

### Procedures

1. Identifying Appropriate Experiments. In addition to Bring Science Home, these sites also provide excellent ideas for break bag experiments.
  - City Science, <https://www.cityscience.org>, raises the quality of STEM education and supports environmental stewardship by using the natural and built environments of cities as laboratories for active learning.
  - Exploratorium/Science Snacks, <https://www.exploratorium.edu/snacks>, are fresh, exciting, hands-on, inexpensive, teacher-tested activities based on amazing scientific phenomena.
  - FabLab, <https://www.thefablab.com>, connects everyday life to the scientific process. Videos, projects, and resources bring science to life through beautiful, practical do-it-yourself projects.
  - Science Buddies, <https://www.sciencebuddies.org/>, has over 1150 project ideas in all areas of science. The Topic Selection Wizard helps users find suitable projects.
2. Preparing Break Bags. Once the activity has been chosen, assemble a prototype bag to determine how materials will be packaged. Be sure to include clearly-written instructions, a photo of the finished product, and a list of materials needed besides those in the bag. Most often, these additional materials are household items, such as tape and scissors, costing less than a dollar. Materials, directions, and pictures should fit in a one- or two-gallon plastic bag. For a class of 25 to 30 students, assembly of the break bags may take between two and three hours, depending on the topic and materials needed. (See examples in Appendix B.)
3. Preparing Students. The day before the break, open one of the break bags, show its contents, and demonstrate how to perform the experiment. Re-

mind students that they are expected to “teach” the experiment to their family. Then, repackage the materials and give students their bags.

4. Reporting Results. After the break, have students report on their findings and their family’s responses. They can prepare a lab report (see Appendix A) and, if desired, an individual reflection exercise, in which they discuss results of the experiment and whether they were surprised by the outcome. Guiding questions might include: How did your family respond to the experiment? Were they surprised by the results? What did they learn? Did you have any difficulty in doing the project? Would you like to do another break bag project in the future?

### **Language and Content Learning**

All readers of this journal will remember a time in their career when, through teaching others, they finally came to understand elements of English that were not well understood before. When ELLs become the “teacher” of science concepts for their family members, they also come to a deeper, clearer understanding of science concepts than they would otherwise. In addition, they practice an interesting linguistic phenomenon called language brokering which refers to translation between linguistically and culturally different parties. The children of immigrant families assume the role of language broker for their parents and other family members when they accompany their parents to a doctor’s appointment, translate a letter sent home from school, or conduct transactions on the phone. They rarely receive formal training for this duty, yet their family’s day-to-day experiences often depend on their bilingualism.

### **Variations and Adaptations for Other ELL Environments**

Although this break bag project was originally designed for young ELLs in the United States, the concept can be adapted for numerous other ELL situations ranging from secondary schools and literacy centers in English-speaking countries to international schools where English is used as a medium, not just subject, of instruction and to programs in English for academic and/or specific purposes in both ESL and EFL settings. These caveats and observations may be helpful to readers working in environments different from ours.

- Experiential learning activities, such as those described here, can help students see how their, often-passive, teacher-centered, study of English connects to real-world use in higher education or the work place.
- In many EFL environments, students will likely carry out the experiments in L1 at home, but they can report, interpret, and discuss them in English when they return to class.
- Roles, responsibilities, and relationships in families vary. It is important for teachers to understand students' home lives well enough to adjust the "teaching family" aspect of break bag assignments when necessary.
- Teachers may need to make adaptations in break bag materials or assignments to fit the environmental context in which they work. For example, an investigation involving seasonal observations or use of leaves and other natural materials may require adjustment.
- In many settings, teachers could enlist the help of others in designing and assembling break bags. For example, pre-service teachers working with us have gained invaluable experience in considering the needs of ELLs and their families, as well as the importance of attending to language use, not only for language learners, but for all their students. Similar benefits could be realized by calling on parent groups, school clubs, and older, more proficient English students to assist with assembly of break bags for younger, less proficient learners.
- Break bag experiments could go mainstream. In other words, classroom English lessons could be designed around the hands-on activities described here as break bags. Working in cooperative groups with their peers, students can realize cognitive and linguistic benefits similar to those described for teaching family members with take-home experiments.

### **Conclusion**

Break bags allow children to interact with adults using advanced linguistic and cognitive skills. All four language domains—listening, speaking, reading, and writing—and several cognitive domains are engaged in completing break bag tasks. For example, students must record data, analyse results, synthesize information, describe processes, ask for clarification, paraphrase oral and written language, and gauge whether they have accurately understood and conveyed concepts to others. The knowledge, confidence, and fluency that language learners gain from the teaching break bag experiments to their families are evident.

Following one winter break, parents of ELL students in a newcomer school were asked, during parent-teacher conferences, for their response to their children's break bag experiences. Overwhelmingly, they enjoyed watching and learning from their children's engagement with science. They expressed amazement at the unpredictable twists and surprising outcomes in many of the experiments. In sum, they reminded us that when family is involved in their children's education, students have a better chance of academic success.

### References

Genesee, F., Paradis, J., & Crago (Eds.) (2010). *Dual Language Development and Disorders: A Handbook on Bilingualism and Second Language Learning*, 2nd Edition. Baltimore, Maryland: Brookes Publishing.

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Appendix A

Lab Report

Write or draw what you did on the right.

<p>Ask a Question</p> 	
<p>I Think...</p>  <p>Make a Prediction</p>	
<p>Make a Plan and Follow It</p> 	
	
<p>Record your Results</p> 	
<p>Draw a Conclusion</p> 	

## Appendix B

### Images of Break Bags



Water Cycle in a Bag. Students simply add water at home and a plant grows.



Noise Makers. Students discover sound waves.