Lesson 1.6
Evaluating Sticky Test Evidence
Exploring the Handbook of Interesting Ingredients

The teacher introduces the unit’s reference book and students explore the book with a scavenger hunt.

Instructional Guide

1. Display the cover of *Handbook of Interesting Ingredients* and introduce the book. Tell the class that for the rest of the lesson, they will have a chance to explore a book that they will be using throughout the rest of the unit. Explain that the book is a reference text, which means it is intended to provide specific information about certain things.

Can you think of any other types of reference books?  
[Dictionary, atlas, handbook, encyclopedia, guidebook, yearbook]

References books are not meant to be read from the beginning to the end. Instead you can use them to look for and read the information that you need.

If I want to find information about a certain ingredient in this book, how do I find it?  
[Look in the index, look in the table of contents.]
2. Project page 3, Contents. Point out the list of ingredients and their corresponding page numbers. Explain that this reference book has different parts but they aren’t like chapters in a story book; instead, each part is about a different ingredient.

![Contents Table]

3. Project page 34, Index. Point out the topics and corresponding page numbers. Explain that this is not just a list of the ingredients in the book; this list also includes other key words. Model how to use the index.

![Index Table]

If I want to know about ingredients that might make something fluffy, what page should I turn to?

[7 or 17.]

Turn to these pages to find mention of “fluffy” and confirm student responses.
Properties of Materials
Lesson Guides

4. Project page 14, Handbook of Interesting Ingredients Scavenger Hunt, in the notebook. Have students turn to the same page in their notebooks. Read the directions and explain that students will go on a scavenger hunt in the book. Let them know that they can find all of the information to complete every question in the book, and that they should use the table of contents and index to look for information that will help them.

5. Distribute the books and have students begin.

6. Conclude the lesson. Let students know that it’s okay if they did not complete the Scavenger Hunt. Prepare students to revisit the book in a future lesson when they will be using the book like engineers would.

 Engineers search for evidence in reference books, too. Later in the unit, we will be using this reference book to gather more evidence for how to make good glue.

Teacher Support

Background

About the Book: Handbook of Interesting Ingredients
Handbook of Interesting Ingredients is a reference book that provides information about many common kitchen ingredients, such as cinnamon, egg white, gelatin, flour, and sugar. For each ingredient there is a two-page spread with photos and information, some of which is directly observable and some of which is not. Sections on each spread include “How it looks,” “Where it comes from,” “Important properties,” “What it’s used for,” and “Cause and effect.” The ingredients students will be testing as they design their glue mixtures are sprinkled throughout the book. Students use the information they find to support their firsthand investigations in the unit.

Background

Literacy Note: About Reference Books
Reference books provide in-depth information about specific topics and are typically read for particular purposes. For this reason, students do not read every section in reference books, nor do they read reference books from beginning to end. Rather, they search for the information they need and then read the relevant sections carefully. In this lesson, you will introduce Handbook of Interesting Ingredients, and students will have the opportunity to look through the book, reading sections that interest them. Reading reference materials in this way is authentic to how scientists and engineers use reference materials, and it encourages students to read complex text both purposefully and carefully.

Rationale

Literacy Note: Exploring Handbook of Interesting Ingredients
Later in the unit, students will refer to the reference book for evidence to support statements about glue ingredients. Providing students with the opportunity to explore the reference book using the scavenger hunt activity allows students to become familiar with the layout and content of the book before being required to refer to it for evidence.
Instructional Suggestion

Time Management: Using the Scavenger Hunt
The Scavenger Hunt activity offers a fun way for students to engage in a purposeful exploration of *Handbook of Interesting Ingredients*. However, it is unlikely that students will have time to finish the activity without more time. If your students will be uncomfortable not finishing it, an alternative is for students to explore the book on their own.

Instructional Suggestion

Providing More Experience: Home Investigation
This optional activity invites students to test glues or other ingredients from home using the sticky test. Home Investigations can encourage interaction and discussion between students and their families around science concepts, which has been found to be beneficial for student learning. See the Optional: Chapter 1 Home Investigation: More Sticky Tests copymaster (in Digital Resources). Make one copy for each student and review the instructions with them.

Possible Responses

Investigation Notebook
*Handbook of Interesting Ingredients* Scavenger Hunt (page 14–15)

Where does cinnamon come from? A special kind of tree bark.

What are two things you can use vinegar for? You can use it for salad dressing. You can use it to get rid of spots made by oil and other substances.

What can baking soda be used for? You can use it for making cakes rise or for cleaning things.

List four ingredients you have at home. Oil, flour, vinegar, cinnamon

List two ingredients that come from corn. Cornstarch, corn syrup

What does gelatin look like? It is a powder. It may be a bit yellow or have no color.
Handbook of Interesting Ingredients
Scavenger Hunt

Directions:
1. Look through the Handbook of Interesting Ingredients for answers to the questions below.
2. Then record your answers.

Where does cinnamon come from?
___________________________________________________________________

What are two things you can use vinegar for?
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

What can baking soda be used for?
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

List four ingredients you have at home.
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
List two ingredients that come from corn.

___________________________________________________________________
___________________________________________________________________

___________________________________________________________________

What does gelatin look like?

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
Exploring the Handbook of Interesting Ingredients

The teacher introduces the unit’s reference book and students explore the book with a scavenger hunt.

Instructional Guide

1. Display the cover of *Handbook of Interesting Ingredients* and introduce the book. Tell the class that for the rest of the lesson, they will have a chance to explore a book that they will be using throughout the rest of the unit. Explain that the book is a reference text, which means it is intended to provide specific information about certain things.

- ¿Pueden pensar en algunos otros tipos de libros de referencia? [Diccionario, atlas, manual, enciclopedia, guía, anuario].

- Los libros de referencia no están diseñados para leerse desde el principio hasta el final. En lugar de ello, pueden usarlos para buscar y leer la información que necesitan.

- Si quiero encontrar información sobre cierto ingrediente en este libro, ¿cómo lo encuentro? [Buscar en el índice, buscar en el contenido].

2. Project page 3, Contents. Point out the list of ingredients and their corresponding page numbers. Explain that this reference book has different parts but they aren’t like chapters in a story book; instead, each part is about a different ingredient.

<table>
<thead>
<tr>
<th>Contenido</th>
<th>Páginas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cómo usar este libro</td>
<td>4</td>
</tr>
<tr>
<td>Bicarbonato de sodio</td>
<td>6</td>
</tr>
<tr>
<td>Canela</td>
<td>8</td>
</tr>
<tr>
<td>Ácido cítrico</td>
<td>10</td>
</tr>
<tr>
<td>Almidón de maíz</td>
<td>12</td>
</tr>
<tr>
<td>Jarabe de maíz</td>
<td>14</td>
</tr>
<tr>
<td>Clara de huevo</td>
<td>16</td>
</tr>
<tr>
<td>Harina</td>
<td>18</td>
</tr>
<tr>
<td>Gelatina</td>
<td>20</td>
</tr>
<tr>
<td>Aceite</td>
<td>22</td>
</tr>
<tr>
<td>Sal</td>
<td>24</td>
</tr>
<tr>
<td>Azúcar</td>
<td>26</td>
</tr>
<tr>
<td>Vinagre</td>
<td>28</td>
</tr>
<tr>
<td>Agua</td>
<td>30</td>
</tr>
<tr>
<td>Glosario</td>
<td>32</td>
</tr>
<tr>
<td>Índice</td>
<td>34</td>
</tr>
</tbody>
</table>

3. Project page 34, Index. Point out the topics and corresponding page numbers. Explain that this is not just a list of the ingredients in the book; this list also includes other key words. Model how to use the index.

<table>
<thead>
<tr>
<th>Índice</th>
<th>Páginas</th>
</tr>
</thead>
<tbody>
<tr>
<td>abrasivo</td>
<td>7, 25, 27</td>
</tr>
<tr>
<td>absorber</td>
<td>7, 11, 25, 27</td>
</tr>
<tr>
<td>aceite</td>
<td>9, 22–23, 29</td>
</tr>
<tr>
<td>ácido</td>
<td>7, 10–11, 28–29</td>
</tr>
<tr>
<td>ácido cítrico</td>
<td>10–11</td>
</tr>
<tr>
<td>agrio</td>
<td>10, 29</td>
</tr>
<tr>
<td>agua</td>
<td>6, 11, 13, 14, 19, 21, 24, 25, 26, 27, 29, 30–31</td>
</tr>
<tr>
<td>almidón de maíz</td>
<td>12–13, 14</td>
</tr>
<tr>
<td>azúcar</td>
<td>10, 14, 15, 18, 21, 26–27, 28</td>
</tr>
<tr>
<td>bicarbonato de sodio</td>
<td>6–7</td>
</tr>
<tr>
<td>cambiantes de ácidos</td>
<td>7</td>
</tr>
<tr>
<td>canola</td>
<td>8–9</td>
</tr>
<tr>
<td>clara de huevo</td>
<td>16–17</td>
</tr>
<tr>
<td>color</td>
<td>6, 8, 10, 12, 13, 14, 15, 17, 18, 20, 22, 24, 26, 28, 30</td>
</tr>
<tr>
<td>blanco</td>
<td>6, 10, 12, 13, 16, 17, 18, 24, 26</td>
</tr>
<tr>
<td>no tener color</td>
<td>20, 22, 28, 30</td>
</tr>
<tr>
<td>congelar</td>
<td>15, 23, 29, 30, 31</td>
</tr>
<tr>
<td>crista</td>
<td>6, 7, 10, 24, 25, 26</td>
</tr>
<tr>
<td>disolver</td>
<td>6, 29</td>
</tr>
<tr>
<td>dulce</td>
<td>15, 26, 27</td>
</tr>
<tr>
<td>duro</td>
<td>7, 17, 19, 27</td>
</tr>
<tr>
<td>espeso</td>
<td>12, 13, 14, 16, 19, 21, 22</td>
</tr>
<tr>
<td>esponjoso</td>
<td>7, 17</td>
</tr>
</tbody>
</table>

Si quiero saber sobre ingredientes que podrían hacer algo esponjoso, ¿a qué página debo ir? [7 o 17].

Turn to these pages to find mention of “fluffy” and confirm student responses.
4. Project page 14, *Handbook of Interesting Ingredients Scavenger Hunt, in the notebook*. Have students turn to the same page in their notebooks. Read the directions and explain that students will go on a scavenger hunt in the book. Let them know that they can find all of the information to complete every question in the book, and that they should use the table of contents and index to look for information that will help them.

5. Distribute the books and have students begin.

6. Conclude the lesson. Let students know that it’s okay if they did not complete the Scavenger Hunt. Prepare students to revisit the book in a future lesson when they will be using the book like engineers would.

Los ingenieros también buscan evidencia en libros de referencia. Más tarde en la unidad, usaremos este libro de referencia para reunir más evidencia para cómo hacer buen pegamento.

**Teacher Support**

**Background**

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Instrucciones:
1. Repasa el Manual de ingredientes interesantes en busca de respuestas a las preguntas siguientes.
2. Después apunta tus respuestas.

¿De dónde viene la canela?

___________________________________________________________________

¿Qué son dos cosas para las cuales se puede usar el vinagre?

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

¿Para qué se puede usar el bicarbonato de sodio?

___________________________________________________________________
___________________________________________________________________

Menciona cuatro ingredientes que tienes en casa.

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
Búsqueda del tesoro en el Manual de ingredientes interesantes (continuación)

Menciona dos ingredientes que vienen del maíz.

___________________________________________________________________

___________________________________________________________________

¿Cómo se ve la gelatina?

___________________________________________________________________

___________________________________________________________________