

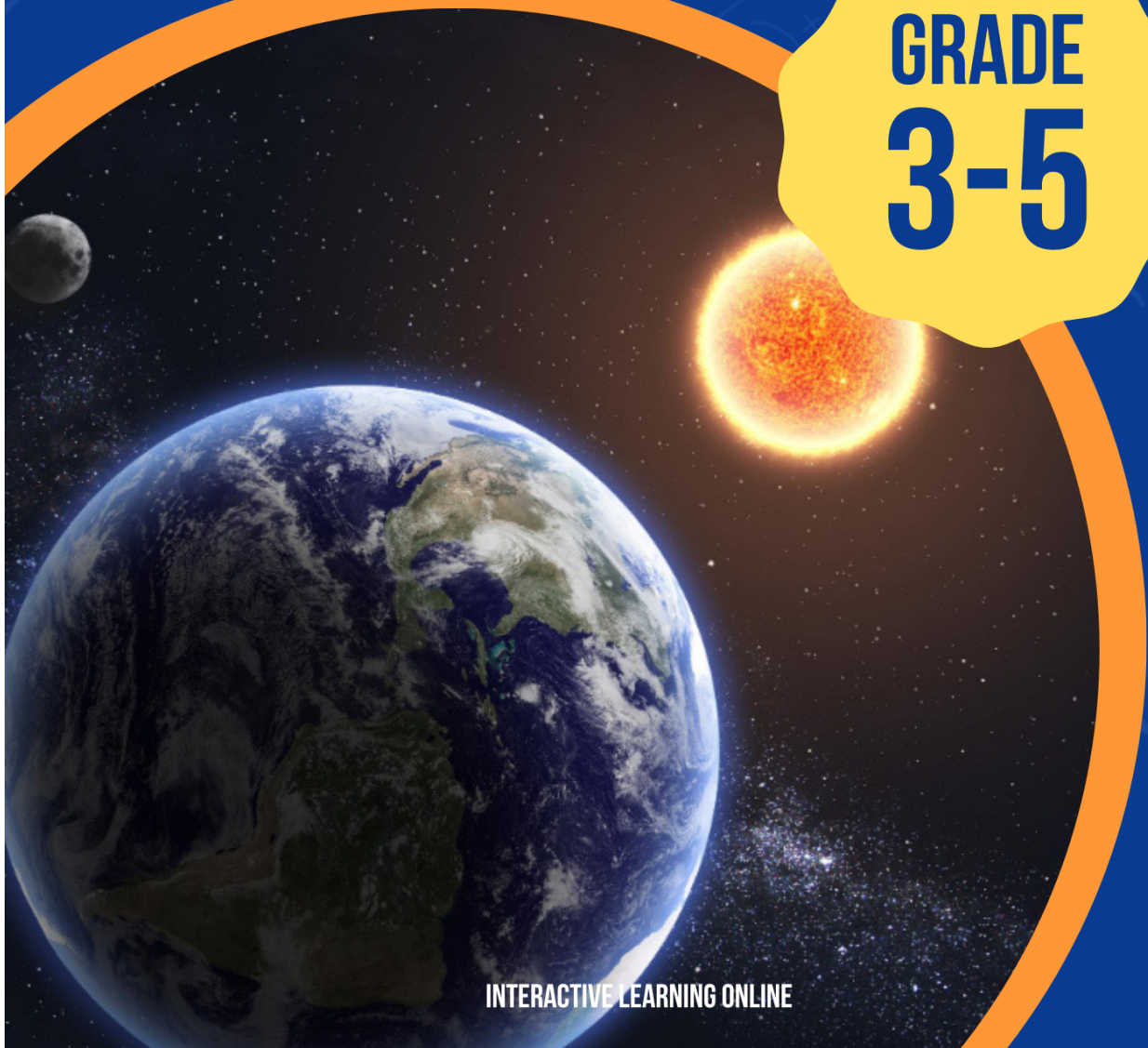


Science Check-up! NEW YORK

English/Spanish Edition

Teacher's Guide

GRADE
3-5



INTERACTIVE LEARNING ONLINE



Science Check-up **New York**

Grade 3-5

Teacher's Guide

English/Spanish Edition

STEM-Smart

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Science Check-up: New York

Grade 3-5

About Science Check-up

**Science Check-up: New York Grade 3-5* is an online supplement that focuses on the big ideas outlined in the P-5 *New York State Science Learning Standards (NYSSLS)* that upper elementary students encounter in their curriculum. It is designed to help students better understand the science content learned and to prepare for tests.

*Questions in the reviews feature immediate feedback for students, opportunities to *go back* and answer questions until they get them right, and a report, “*How did I do?*”

*Teachers can generate single unit and all-unit tests on key science content and see tables of analytics and pie charts of responses on all questions in the reviews and tests to facilitate further instruction as needed.

*Teachers have total control of student access to *Science Check-up* reviews. Individually assigned usernames and passwords allow students to access only those reviews enabled by the teacher. Teachers can select reviews by simply highlighting and clicking on the reviews listed in the settings on their teacher *dashboard* for each science unit.

Dual languages

**Science Check-up* can be read in English or Spanish with a simple click of the *EN/SP* language buttons in the tool bar. Second language learners can use a built-in translation function to see and hear all text in both Spanish and English, enhancing both their science content knowledge and their language skills.

How to use Science Check-up

*The science content and questions in the *Science Check-up* reviews are intended to deepen understanding of the content and to give students that extra boost in confidence that they have learned what is needed to do their best on tests. Fourth grade teachers will find *Science Check-up* an especially useful tool for helping students prepare for the tests given at the end of Grade 4, but 3rd grade teachers can also use selected reviews to capitalize on the power and fun of *Science Check-up* and to lessen the burden on 4th grade teachers to prepare for the tests at the end of fourth grade. The best way to use *Science Check-up* is for the Grade 3-5 teachers to plan together and select reviews that align with the topics they are teaching at their grade. The table on the following page shows the alignment of the NGSS and suggested *Science Check-up* reviews.

Science Check-up works!!

Analyses of pilot study scores of 2,000 students using *Science Check-Up* showed an average gain of 22% in the number of students classified as proficient or advanced on their state science test!

Science Check-up/P-5 NYSSLS Alignment

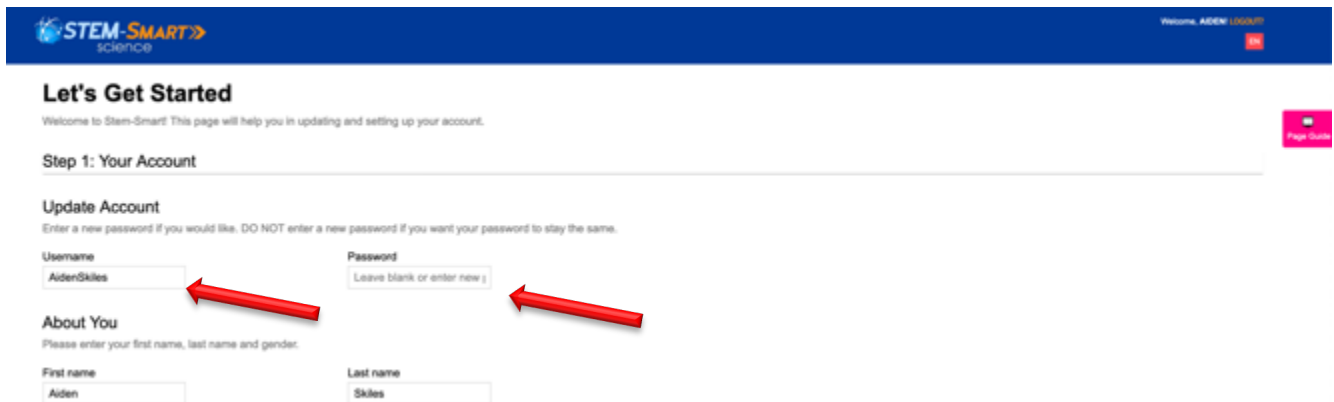
Science Learning Standards	Suggested Reviews
Unit 1: Engineering Design	
<p style="text-align: center;"><i>3-5-ETS1-1; 3-5-ETS1-2; 3-5-ETS1-3</i></p> <p>Analyzing data; Collecting & organizing data; Defining a testable problem; Importance of a control group; Distinguishing between observations and opinions; Importance of observations; Importance of repeated trials; Importance of replication</p>	<p>Review 1: Practices of Science Review 2: Scientific Investigations Review 3: Measurement & Analysis Review 4: Claims, Evidence & Reasoning Review 5: Let's argue about it!</p>
Unit 2: Earth & Space Science	
<p style="text-align: center;"><i>3-ESS2-1; 3-ESS2-2; 3-ESS2-1; 4-ESS1-1; 4-ESS2-1; 4-ESS2-2</i></p> <p>Earth's revolutions; Earth's rotation; Classifying rocks; Mineral properties; Streak color; Renewable vs nonrenewable resources; Weathering-water; Components of a galaxy, Star brightness and distance; Distinguishing between the Sun and planets; Earth's position; Planer characteristics; Roles of the ocean; Water cycle; Evaporation; Climate zone-polar; Weather-humidity</p>	<p>Review 1: Our solar system Review 2: Space and the universe Review 3: Energy from the Sun. Review 4: Natural Resources Review 5: Rock Cycle Review 6: Weathering and Erosion Review 7: Water – Solid, Liquid, or Gas Review 8: Water Cycles! Review 9: How Weather Works</p>
Unit 3: Physical Science	
<p style="text-align: center;"><i>3-PS2-1; 3-PS2-2; 3-PS2-2; 4-PS3-1; 4-PS3-2; 4-PS3-3; 4-PS3-4; 4-PS3-1; 4-PS4-1; 4-PS4-2</i></p> <p>Comparing objects—temperature; Comparing objects—volume; Dissolving--surface area; Separating mixtures—shape; Changes to water—melting; Chemical change—temperature; How light travels; Mechanical energy; Pitch; Energy causing a change; Forces—friction; Forces; gravity; Speed; Unbalanced forces; Electric circuits; Insulators-electric</p>	<p>Review 1: Properties of matter Review 2: Temperature matters Review 3: When matter is mixed Review 4: Physical and chemical changes Review 5: What is energy anyway? Review 6: Two basic forms of energy Review 7: All kinds of energy Review 8: Balanced forces are boring Review 9: Net forces make things happen Review 10: How much force is needed? Review 11: Machines change force Review 12: Sound wave energy Review 13: How light behaves Review 14: Electric circuits are simple Review 15: Don't mess with electricity</p>
Unit 4: Life Science	
<p style="text-align: center;"><i>3-LS2-1; 3-LS4-1; 3-LS4-3; 3-LS4-4; 3-LS1-1; 3-LS3-1; 3-LS3-2; 3-LS4-2; 4-LS1-1; 4-LS1-2</i></p> <p>Plant structures-roots; Plants responding to gravity; Seed dispersal; Insect metamorphosis—complete; Energy flow through a food chain; How animals obtain energy; Organ function—skin; Animal classification-reptiles; Comparing plant and animal structures; Plant classification--spore producing plants; Characteristics--environmentally influenced Impact on environment--animals</p>	<p>Review 1: How do body systems work? Review 2: How animals behave. Review 3: What are plants up to anyway? Review 4: Solar power for life. Review 5: How do living things change? Review 6: What are some animal adaptations? Review 7: How do life forms change? Review 8: Habitats? Ecosystems? What's the deal? Review 9: What makes a biome? Review 10: How do living things interact?</p>

Using Science Check-up: The Teacher Dashboard

Getting Started

Step 1. Login at <http://stem-smart.com/ny-e/login.php> and enter the temporary username and password assigned to you. Any browser will work, but STEM-Smart is designed to work specifically on Chrome to best utilize all the STEM-Smart language features.

Step 2. After logging in, your temporary username and password will take you to your “Let’s Get Started” page. On this page you may change your username and password if you wish. Be sure to write your username and password where you can find it.



Step 3. The “next” button will take you to your *teacher dashboard* where you can control everything. Students can only see and do the units and reviews that you have “enabled” and see and take unit test and all-unit tests AFTER you have “enabled” (opened and closed) them as well. You may make changes in things enabled at any time, but students must be logged-out and log back in to see the changes you’ve made.

Step 4. You can access all student accounts by clicking the **Student Accounts** tab in the toolbar at the upper right of your teacher dashboard. The following screen shot shows list of students assigned.



Step 5. When students log in for the first time, they will be asked to update their name, username and password, but that's all optional. Clicking on **Manage Account** allows you to reset student usernames and passwords to be those assigned by the school or in case a student forgets his or her username and password.



#	Student Name	Login Details	All Unit Test	Unit 1: Nature of science	Unit 2: Earth and Space Science	Unit 3: Physical Science	Unit 4: Life Science
1	Gertach, Helmer	Username: UsernameChanged Manage Account	No results	No results No QC results No results	No results No QC results No results	No results No QC results No results	No results No QC results No results
2	Feeney, Annamaria	Username: AnnamariaFeeney Manage Account	No results	No results No QC results No results	No results No QC results No results	No results No QC results No results	No results No QC results No results

Step 6: STEM-Smart can be read in English and Spanish. The **Edit Language** link on home page tool bar allows you to select the text language for the reviews. If both languages are enabled, students can toggle between English and Spanish by clicking the EN or SP button at the top right of their screen. You may also choose to enable only one of the languages as well.



Language Settings

Enable	Languages	Default
<input checked="" type="checkbox"/>	English	<input checked="" type="checkbox"/> Set as default
<input type="checkbox"/>	Spanish	<input type="checkbox"/> Set as default

[Save Changes](#) [Cancel](#)

Deciding what students will see

On the home page you can open and close any or all of the STEM-Smart units, open and close any or all of the reviews within a unit, generate individual unit and/or all-unit tests, and view student responses to the *Quick Checks* in the reviews and to the tests that you've generated.

A. Selecting a unit and enabling or disabling reviews in a unit

Step 1: Click the **Settings** button under one or more of the units. Below is what you will see for Unit 1 when the settings link is clicked. The sample screen that follows shows that three of the five reviews have been enabled and will be open for student access. The default for all reviews in all units is "Disable All."



Teacher Dashboard

SECTIONS	ACTIONS
ALL UNIT TEST	Generate All Unit Tests
UNIT 1: ENGINEERING DESIGN	View Unit Generate Unit Test 1 Generate Unit Test 2
Settings	View Unit Results

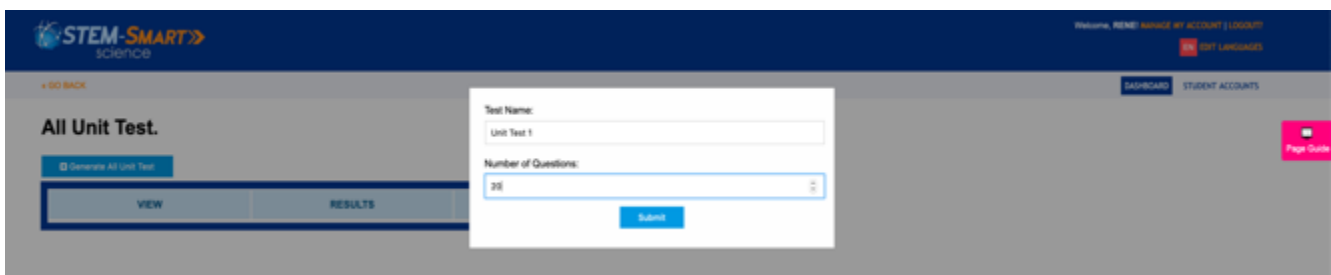


B. Generating All-Unit Tests

Step 1: Clicking on the **View All-Unit Test** allows you to create multiple tests of randomly selected items from the test item pools for each unit.

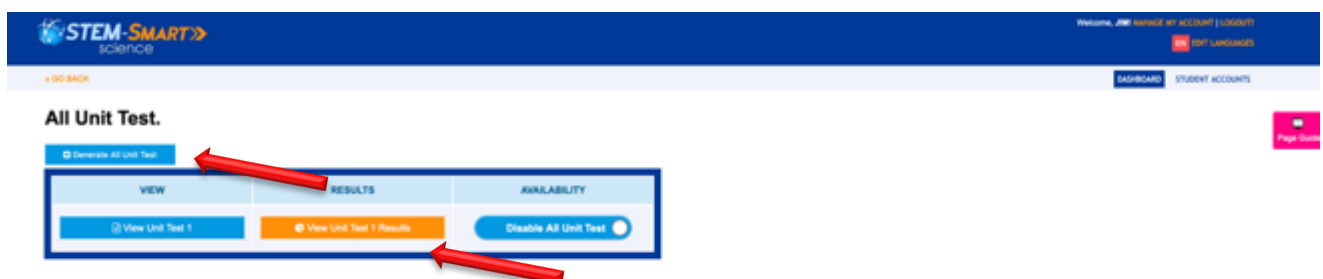


Step 2: When you click on **Generate All Unit Test**, you will be asked to provide a name for the test and input the number of questions for the test. The screen shot below shows the teacher generating a test of 20 items. You may generate as many different tests as you like.



*After creating an all-unit test, you have the option to *view the test*, *enable or disable the test* and *view the test results* after students have completed the test. Clicking the “Generate All Unit Test” again allows you to generate another version of the test with a new set of randomly selected items.

Step 3: Clicking on the **View Test Results** tab shows a matrix of students’ scores on the all-unit tests generated.



The rows in the matrix show the percent of correct responses across all items by individual **Student Name** and the **columns** show the percent of correct responses by all student on each item.

Students All Unit Test Results (Test 1)

NOTE:

- Click the column header to view the statistics for each question.
- If the table is not displaying correctly, please refresh this page.

STUDENT NAME	Q#1	Q#2	Q#3	Q#4	Q#5	Q#6	Q#7	Q#8	Q#9	Q#10	TOTAL %
Beier, Dahlia	–	–	–	–	–	–	–	–	–	–	0%
Dane, Lora	–	–	–	–	–	–	–	–	–	–	0%
Kilback, Baylee	–	–	–	–	–	–	–	–	–	–	0%
Ortiz, Astrid	–	–	–	–	–	–	–	–	–	–	0%
Ortiz, Olga	–	–	–	–	–	–	–	–	–	–	0%
Total (5)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%


Step 4: Clicking on a **Student Name** shows how that student scored on each test item and the percent correct on all the test items in the “Total %” column. Clicking on the item number heading (e.g., “Q#1”), shows a copy of the test item and correct response and generates a pie chart showing the distribution of students’ responses to the item.

QUESTION ITEM INFORMATION

The image below is an actual screenshot of the exercise in the review. It shows the question items and the correct answers.


Question #1

Use the pull down menu to indicate whether the object is experiencing balanced or unbalanced forces.




A ferry slows down as it approaches a dock.

Unbalanced




A basketball arcs towards the hoop.

Unbalanced



A hockey puck slides across the ice at a constant speed.

Balanced



A red rock sits motionless atop some other rocks.

Balanced

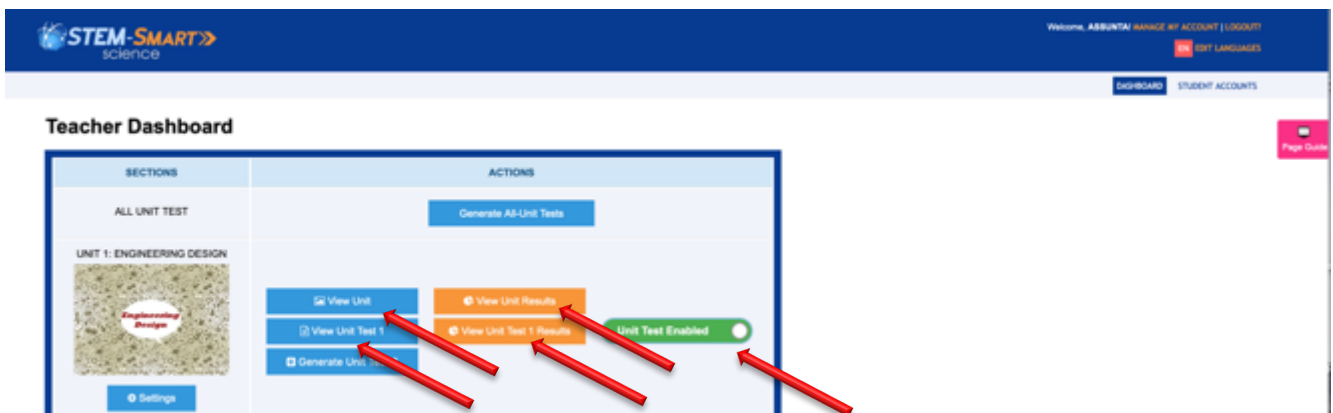


C. Managing the Units

Step 1: Clicking on the **Generate Unit Test** tabs on your dashboard allows you to create up to **two** tests of randomly selected items for that unit. As with the all-unit test, you will be asked to select the number of items.



Step 2: After creating a unit test, you have the option to view the unit itself, view the unit tests, view the unit test results, and enable (or disable) the tests.



Step 3: After students have finished a unit and it has been disabled (closed), clicking on **View Unit Results**, takes you to **Student Unit Results** screen that are the same as the “all unit” tests (See Section B.4 above).

NOTE:

- Click the column header to view the statistics for each question.
- If the table is not displaying correctly, please refresh this page.
- Scroll left and right, and up and down, to view all your students' data.

STUDENT NAME	Q#1	Q#2	Q#3	Q#4	Q#5	TOTAL %
Beahan, Baby	—	—	—	—	—	0%

D. Translation and Audio Features

*Full text audio and translation: Students can always hear the full text on a screen read to them in English by clicking on the “speaker” icon to the left of the text—whether the text appears in English or Spanish.

Review 1: Practices of Science

You may have heard or read about something called “the scientific method”. The scientific method is often thought to be a set of steps that are followed in a specific order. But scientists do not always follow one specific series of steps. So it is better to think of the scientific method as how scientists plan and think when they are trying to learn things and solve problems—what it means to be scientific.

Examen 1: Las prácticas de la ciencia

Puede que hayas escuchado o leído acerca de algo llamado “el método científico”. Normalmente se piensa en el método científico como una serie de pasos que se siguen en un orden específico. Pero los científicos no siempre siguen una serie de pasos específica, así que es mejor pensar en el método científico como la forma en que los científicos planean y piensan cuando intentan aprender cosas y resolver problemas: eso es lo que significa ser científico.

Volver al tablero de instrumentos
 Seleccionar página
 Seleccione el idioma

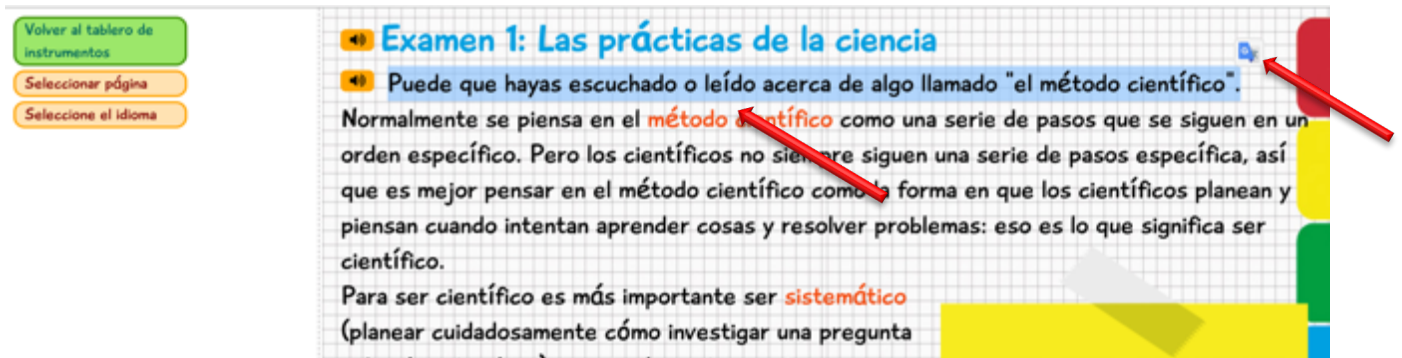
*Specific text audio and translation: If a student wants to see or hear a translation of only a single word, sentence or section of Spanish text, the “Google Translate” plugin needs to be added to their browser at:

<https://chrome.google.com/webstore/detail/google-translate/aapbdbdomjkkjkaonfhkkikfgjllcleb?hl=en>

After it has been added a Google Translate icon will appear in the toolbar.



Step 1: The translation can be done by highlighting a word, a sentence or a section of text on the Spanish screen. Then find and click on the Google Translate icon near the highlighted word or sentence(s).



Step 2: Clicking on the translation icon will produce a box that contains the word or sentence(s) in English and Spanish. Clicking on the “speaker” icons in the box will produce audios of both translations.

