



# *Science Check-up!*

## NEW JERSEY

English/Spanish Edition

Teacher's Guide

**GRADE  
3-5**



INTERACTIVE LEARNING ONLINE



# ***Science Check-up*** **New Jersey**

**Grade 3-5**

# **Teacher's Guide**

***English/Spanish Edition***

# STEM-Smart

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# ***Science Check-up: New Jersey***

## **Grade 3-5**

### ***About Science Check-up***

\**Science Check-up: New Jersey Grade 3-5* is an online supplement that focuses on the big ideas outlined in the *Next Generation Science Standards* (NGSS) 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. Fifth grade teachers will find *Science Check-up* an especially useful tool for helping students prepare for the tests given at the end of Grade 5, but 3<sup>rd</sup> and 4<sup>th</sup> grade teachers can also use selected reviews to capitalize on the power and fun of *Science Check-up* and to lessen the burden on 5<sup>th</sup> grade teachers to prepare for the tests at the end of fifth 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/ Grade 3-5 NGSS Alignment***

<b>Category</b>	<b>Suggested Reviews</b>
<b>Unit 1: Nature of Science</b>	
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	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!
<b>Unit 2: Earth &amp; Space Science</b>	
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	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
<b>Unit 3: Physical Science</b>	
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	Review 1: Different matter forms 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: Electric circuits are simple Review 12: Don't mess with electricity
<b>Unit 4: Life Science</b>	
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	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?

# Using Science Check-up: The Teacher Dashboard

## Getting Started

Step 1. Login at <http://stem-smart.com/nj-e/login.php> and enter the temporary username and password assigned to you. Any browser will work, but Google Chrome works best.

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.

**Let's Get Started**  
Welcome to Stem-Smart! This page will help you in updating and setting up your account.

**Step 1: Your Account**

**Update Account**  
Enter a new password if you would like. DO NOT enter a new password if you want your password to stay the same.

Username: AidenSkills  
Password: Leave blank or enter new

**About You**  
Please enter your first name, last name and gender.

First name: Aiden  
Last name: Skills

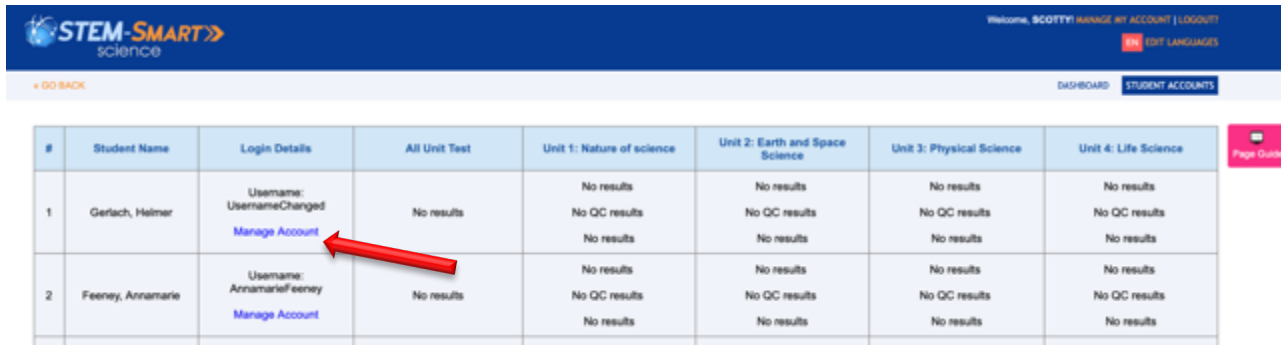
Step 3. The “next” button will take you to your *teacher dashboard* where you can control everything. Students can only see and do the units and reviews that you have “enabled” and see and take unit test and all-unit tests AFTER you have “enabled” (opened and closed) them as well. You may make changes 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.

**Teacher Dashboard**

SECTIONS	ACTIONS
ALL UNIT TEST	View All Unit Test
UNIT 1: NATURE OF SCIENCE	View Unit, View Unit Results, Generate Unit Test 1, Generate Unit Test 2

**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	Gerlach, Helmer	Username: UsernameChanged <a href="#">Manage Account</a>	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: AnnamarieFeeney <a href="#">Manage Account</a>	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

### ***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 “Enable All.”



### Teacher Dashboard

SECTIONS	ACTIONS
ALL UNIT TEST	<a href="#">View All Unit Test</a>
UNIT 1: NATURE OF SCIENCE  <a href="#">Settings</a>	<a href="#">View Unit</a> <a href="#">View Unit Results</a> <a href="#">Generate Unit Test 1</a> <a href="#">Generate Unit Test 2</a>



### Unit 1: Nature of science

[Enable All](#) [Disable All](#)

REVIEW	
Practices of Science	<input checked="" type="checkbox"/> Review Enabled
Scientific Investigation	<input type="checkbox"/> Review Disabled
Measurement and Analysis	<input checked="" type="checkbox"/> Review Enabled
Evidence, Reason and Knowledge	<input type="checkbox"/> Review Disabled
Let's Argue about It!	<input checked="" type="checkbox"/> Review Enabled

### 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.

### Teacher Dashboard


SECTIONS	ACTIONS
ALL UNIT TEST	<a href="#">View All Unit Test</a>
UNIT 1: NATURE OF SCIENCE  <a href="#">Settings</a>	<a href="#">View Unit</a> <a href="#">View Unit Results</a> <a href="#">Generate Unit Test 1</a> <a href="#">Generate Unit Test 2</a>





(Step 4 continued): Clicking on the item number heading (e.g., “Q#4”), 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 A. Match each scientific instrument to its name and the properties that we use to measure them by selecting an item in the drop down lists.



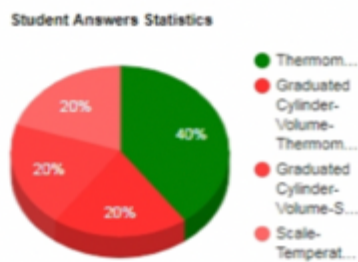
Scientific Instruments:

- Thermometer
- Scale
- Graduated Cylinder

Properties:

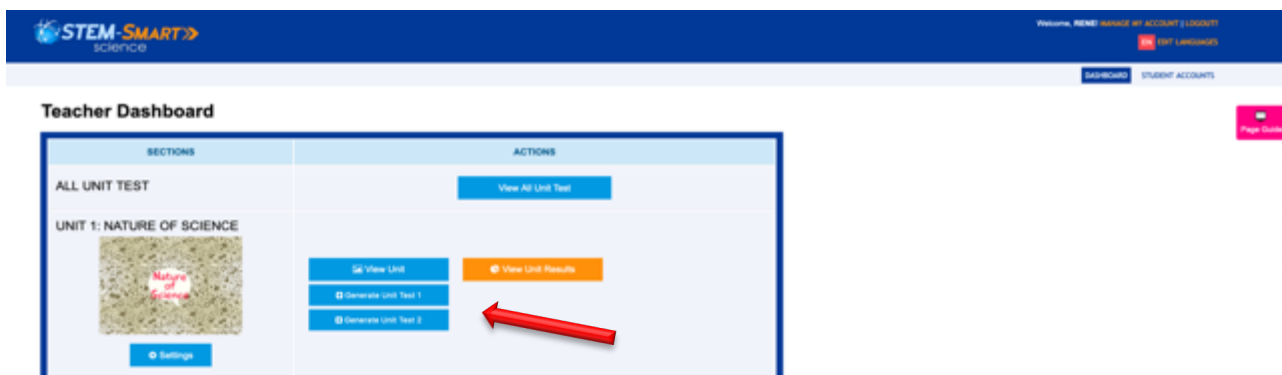
- Temperature
- Weight
- Volume

Correct Answer: THERMOMETER-TEMPERATURE-SCALE-WEIGHT-GRADUATED CYLINDER-VOLUME



### 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.



STEM-SMART SCIENCE

Teacher Dashboard

SECTIONS

ALL UNIT TEST

UNIT 1: NATURE OF SCIENCE

ACTIONS

View All Unit Test

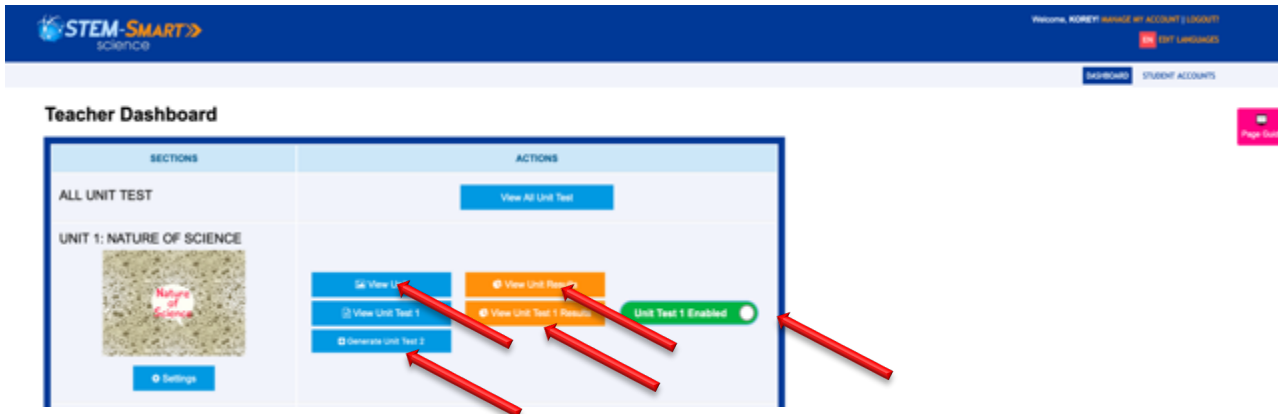
View Unit

Generate Unit Test 1

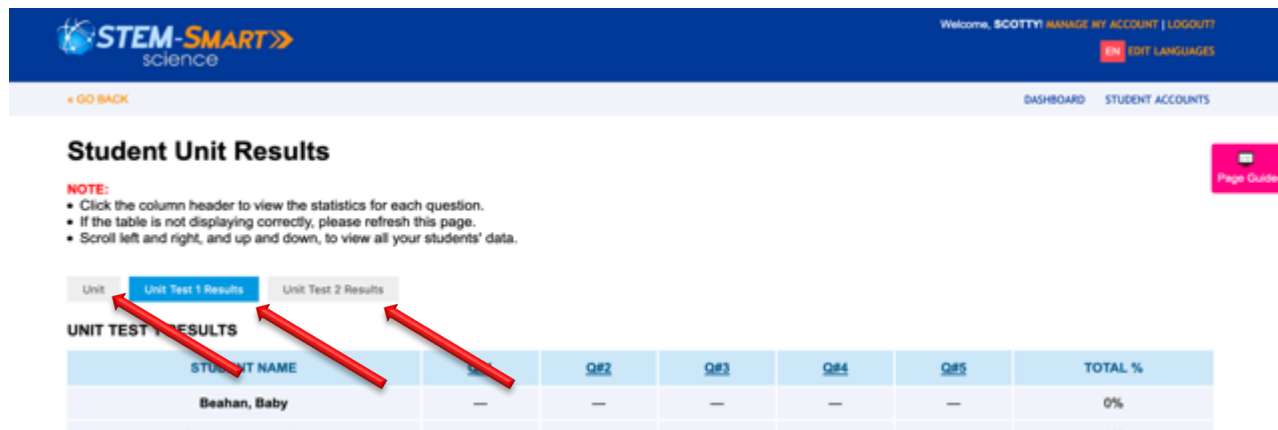
Generate Unit Test 2

View Unit Results

**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.

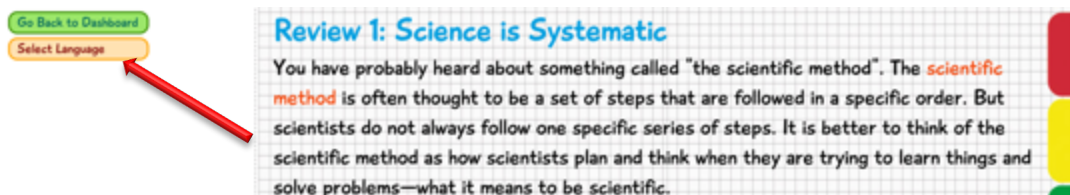


**Step 3:** After students have finished a unit and it has been disabled (closed), clicking on **View Unit Results**, takes you to **Student Unit Results** screen that are the same as the “all unit” tests (See Section B.4 above).



#### D. Translation and Audio Features

\***Full text translation:** Students can toggle at any time between English and Spanish by clicking on the “Select Language” tab. A sample translation is shown below.



Volver al tablero de instrumentos  
Seleccione el idioma

### Examen 1: La ciencia es sistemática

Probablemente alguna vez usted haya escuchado sobre algo llamado "el método científico". A menudo se piensa que el método científico es un conjunto de pasos que se siguen en un orden específico. Pero los científicos no siempre siguen una serie específica de pasos. Es mejor pensar en el método científico como la forma en que los científicos planifican y piensan cuando intentan aprender cosas y resolver problemas, es lo que significa ser científico.

\*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). A sample Google Translate is shown below.

Volver al tablero de instrumentos  
Seleccione el idioma

### Examen 1: La ciencia es sistemática

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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.

Volver al tablero de instrumentos  
Seleccione el idioma

### Examen 1: La ciencia es sistemática

Probablemente alguna vez usted haya escuchado sobre algo llamado "el método científico". A menudo se piensa que el método científico es un conjunto de pasos que se siguen en un orden específico. Pero los científicos no siempre siguen una serie específica de pasos. Es mejor pensar en el método científico como la forma en que los científicos planifican y piensan cuando intentan aprender cosas y resolver problemas, es lo que significa ser científico.

Spanish

Probablemente alguna vez usted haya escuchado sobre algo llamado "el método científico".

ENGLISH

You've probably ever heard of something called "the scientific method."