



# *Science Check-up!*

Next Generation Science Standards

English/Chinese Edition

Teacher's Guide

**LIFE  
SCIENCE**



INTERACTIVE LEARNING ONLINE



# ***Science Check-up***

**Next Generation Science Standards**

**Grade 6-8**

# **Teacher's Guide**

***English/Chinese Edition***

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# ***Science Check-up***

## **Next Generation Science Standards**

### **Life Science**

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

\**Science Check-up* is an online product that focuses on the big ideas outlined in the *Next Generation Science Standards* (NGSS) for Life Science. It is designed as a formative assessment tool to help students better understand the science content learned and to prepare for high-stakes tests.

\*Questions in the lessons 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 lessons and tests to facilitate further instruction as needed.

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

#### **Dual Languages**

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

#### **For NGSS-Based Curricula!**

\**Science Check-up* is aligned to the *Next Generation Science Standards*. The science content and questions in the lessons are intended to deepen understanding of the content and give students that extra boost in confidence that they have learned what is needed to do their best on high-stakes tests. The table on the following page shows the alignment of the NGSS and suggested *Science Check-up* lessons.

#### **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/* NGSS Life Science Alignment**

<b>Molecular and Cellular Biology</b>	<b>Suggested Lessons</b>
Cell structures and functions; Cellular processes; Organs and organ systems	Lesson 1.: How do cells work? Lesson 2: What do cells do? Lesson 3: What makes a cell a cell? Lesson 4: What's up with organ systems? Lesson 5: How do organ systems work? Lesson 6: Building bodies

<b>Classification, Heredity, and Evolution</b>	<b>Suggested Lessons</b>
Evolution is the unifying idea of biology; Classification of organisms; Natural Selection; DNA transmits genetic information from one generation to another; DNA may be analyzed and manipulated;	Lesson 1: What's up with this evolution stuff? Lesson 2: DNA transmits information Lesson 3: How mutations happen Lesson 4: Selection happens Lesson 5: Understanding evolution Lesson 6: How does evolution work? Lesson 7: Advantages and disadvantages? Lesson 8: What makes living things unique? Lesson 9: What are adaptations? Lesson 10: Endless adaptations

<b>Organisms, Populations, and Ecosystems</b>	<b>Suggested Lessons</b>
Distribution and abundance of organisms is determined by interactions between living and nonliving environment; Energy flow within ecosystems; Human and natural influences on populations, biodiversity, and ecological processes.	Lesson 1: Life starts with the sun Lesson 2: Living things depend on plants Lesson 3: How energy flows in living things Lesson 4: How humans fit into natural systems Lesson 5: Humans using natural resources.

# Using Science Check-up: The Teacher Dashboard

## Getting Started

Step 1. Login at <https://en-zh.stem-smart.com/ngss-bio/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.

STEM-SMART science

Welcome, AIDEN | LOGOUT

### 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: AidenSkiles

Password: Leave blank or enter new

About You

Please enter your first name, last name and gender.

First name: Aiden

Last name: Skiles

Page Guide

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 lessons 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.

STEM-SMART science

Welcome, AIDEN | MANAGE MY ACCOUNT | LOGOUT | TEST LANGUAGES

TEACHER DASHBOARD | STUDENT ACCOUNTS

### Teacher Dashboard

SECTIONS	ACTIONS
ALL UNIT TEST	View All Unit Test
UNIT 1: MOLECULAR AND CELLULAR BIOLOGY	View Unit
	View Unit Results
	Generate Unit Test 1
	Generate Unit Test 2
	Settings

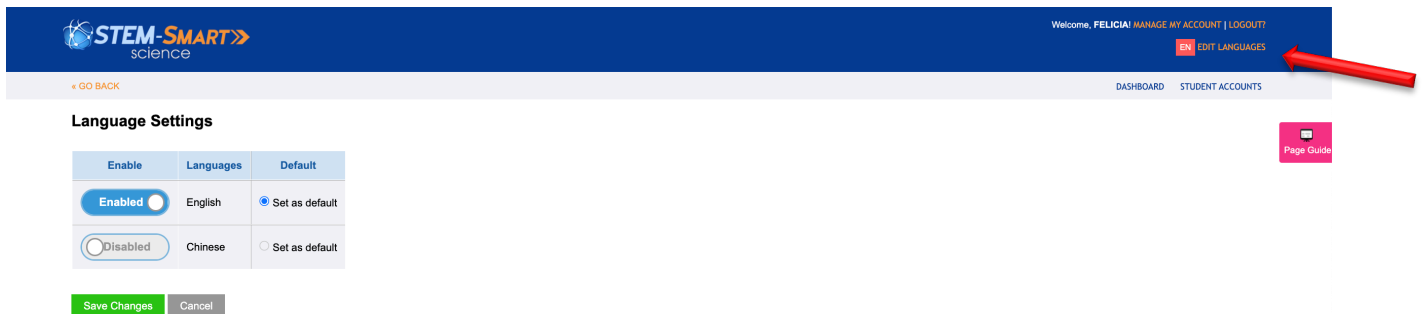
Page Guide

**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: AnnamariaFeeney <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 Chinese. The **Edit Language** link on home page tool bar allows you to select the text language for the lessons. If both languages are enabled, students can toggle between English and Chinese by clicking the EN or CN button at the top right of their screen. You may also choose to enable only one of the languages as well. The default for the Chinese is “Traditional,” but it can be changed to “Simplified” using “Google Translate” as needed.



Language Settings

Enable	Languages	Default
<input checked="" type="checkbox"/> Enabled	English	<input checked="" type="radio"/> Set as default
<input type="checkbox"/> Disabled	Chinese	<input type="radio"/> Set as default

### ***Deciding what students will see***

On the home page you can open and close any or all the STEM-Smart units, open and close any or all 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 lessons 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 six lessons have been enabled and will be open for student access. The default for all lessons in all units is “Disable All.”



Teacher Dashboard

SECTIONS	ACTIONS
ALL UNIT TEST	<a href="#">View All Unit Test</a>
UNIT 1: MOLECULAR AND CELLULAR BIOLOGY	<a href="#">View Unit</a> <a href="#">View Unit Results</a>
 <a href="#">Settings</a>	<a href="#">Generate Unit Test 1</a> <a href="#">Generate Unit Test 2</a>



Unit 1: Molecular and Cellular Biology

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

REVIEW	STATUS
How do cells work?	<a href="#">Review Enabled</a> <input checked="" type="checkbox"/>
What do cells do?	<a href="#">Review Disabled</a> <input type="checkbox"/>
What makes a cell a cell?	<a href="#">Review Enabled</a> <input checked="" type="checkbox"/>
What's up with organ systems?	<a href="#">Review Disabled</a> <input type="checkbox"/>
How do organ systems work?	<a href="#">Review Enabled</a> <input checked="" type="checkbox"/>
Building bodies	<a href="#">Review Disabled</a> <input type="checkbox"/>

**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: MOLECULAR AND CELLULAR BIOLOGY	<a href="#">View Unit</a> <a href="#">View Unit Results</a>
 <a href="#">Settings</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.



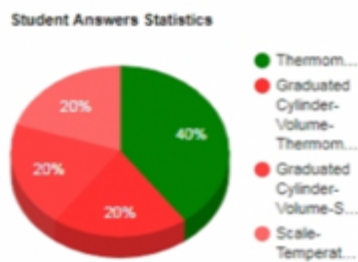
Scientific Instruments:

- Thermometer
- Scale
- Graduated Cylinder

Properties:

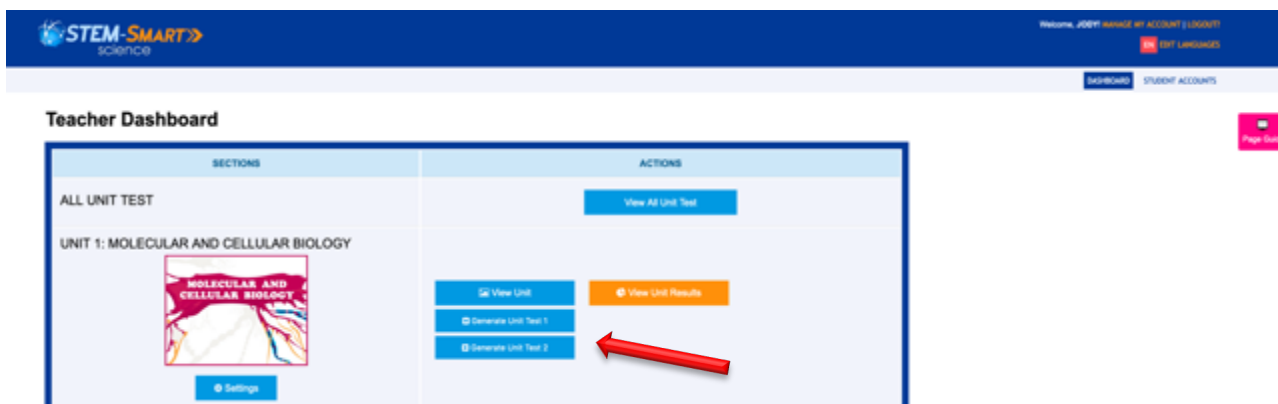
- Temperature
- Weight
- Volume

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

SECTION: ALL UNIT TEST

ACTION: View All Unit Test

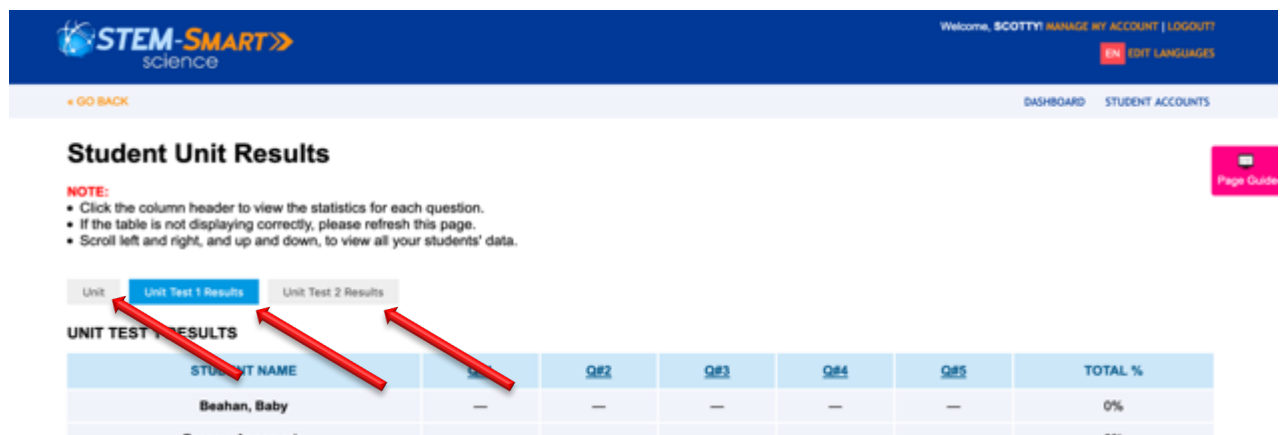
SECTION: UNIT 1: MOLECULAR AND CELLULAR BIOLOGY

ACTION: View Unit, View Unit Results, Generate Unit Test 1, Generate Unit Test 2

**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

**\*Text translation:** If both languages are enabled, students can toggle at any time between English and Chinese by clicking on the “Select Language” tab. The default is set for “Traditional Chinese.” A sample translation is shown below.

Go Back to Dashboard

Select Page

Select Language

**Review 2: What do cells do?**

Just as our bodies have **organs** and **systems** to perform the functions that keep us alive, our cells also have parts that work together to do the work of living. The structures, present in all eukaryotes, are called organelles. Some show up in nearly all kinds of cells, while others are present only in some kinds of special cells.

---

返回到主選單

選擇頁面

選擇語言

**單元2：細胞會做什麼呢？**

就像我們的身體器官和系統共同合作一樣，我們的細胞也在身體各處一起合作來維持我們的生命。這些構造出現在所有的真核細胞中，被稱作為胞器。有些胞器在所有的細胞都可見到，但有的只出現在一些特殊的細胞中。

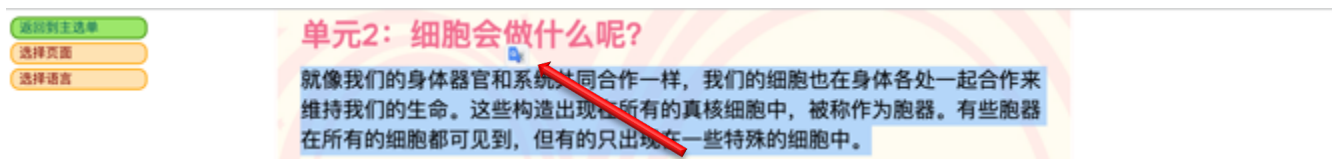
\*Specific text translation with audio: To see or hear a translation of only a single word, sentence or section of Chinese text, the “Google Translate” function on Google Chrome can be used or the Google Translate plugin needs to be added to their browser at:

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

\***NOTE:** When text is displayed in Chinese, two Google Translate icons will appear in the toolbar. The Traditional text can be changed to Simplified text by clicking on the left icon as shown below.



The translation of the Traditional or Simplified Chinese can then be done by highlighting a word, a sentence or a section of text on the screen and clicking on the Google Translate icon near the highlighted word or sentence(s). A sample of a Google Translate operation is shown below.



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

