BIOLOGY ILO 1 PRE-TEST
INSTRUCTIONS TO TEACHER

This pretest will help you measure how well your students can perform the science process and thinking skills that students at grade level should have mastered (Intended Learning Outcomes 1). It tests abilities such as measuring objects, temperature and volume; comparing things, process and events; predicting and hypothesizing; recording data in tables and graphs; using reference sources; planning and conducting investigations; analyzing data and classifying things.

You may use the test at the beginning of the school year to determine what skills you need to teach. At the end of the year you could give the test again to see what progress your students have made.

Each skill or thought process is measured with several test items. You will notice there are three items to measure ILO 4d. This skill is also a science process that students need to know.

An ideal test would contain more than multiple choice items, of course. In addition to this multiple choice test, you may select essay items from UTIPS to test students' ability to construct and report their own thoughts. You may also select performance tests that measure students' ability to actually perform science process skills. Each item in this test not only measures a specific science process skill, but it also measures this in the context of science concepts that students should have learned.

The test may be given online using UTIPS or you may print the test and administer it hard copy. If you give the test online, check that your students log into the test correctly. If you give the test hard copy, each student will need a copy of the test, an answer sheet (preferably scan-tron) and a pencil. Be prepared with something for students to do if they finish early. Instructions for the administration of both formats follow.

The instructions that follow will help you determine how well your students can do on each of the skills.

UTIPS Online Test
Instructions to Students

Please read to the students:

This test is a pre-test. It measures some science material you have learned before, and it may measure some science material you have not studied yet. Don't worry if you don't know all the material—just do your best.

There are 42 questions on this test. Please read each question carefully. Choose the **best** answer from the four choices. After you choose an answer, click the circle next to that answer.

Mark only one answer for each question. If you wish to change an answer, click on the circle next to your new answer.

If you do not know the answer to a question, continue on to the next question. Please try to answer all of the questions on this test.

Do not talk to other students. Raise your hand and ask the teacher if you have a question.

If you finish early you may go back and try to answer questions that you skipped or check your work.

When you complete the test, **scroll to the top of the test and click the submit button**. Once you click submit, you will NOT be able to change any answers. Do not click on any other buttons on your screen at any time during the test or your test could be ruined. Once you are finished with the test, follow your teacher's instructions.

Hard Copy Test
Instructions to Students

Please read to the students:

This test is a pre-test. It measures some science material you have learned before, and it may measure some science material you have not studied yet. Don't worry if you don't know all the material—just do your best.

Please write your name on the answer sheet (bubble sheet).

There are 42 questions on this test. Please read each question carefully. Choose the **best** answer from the four choices. After you choose an answer, fill in the circle that matches your choice for that question on your answer sheet.

Mark only one answer for each question. If you wish to change an answer, erase the old mark completely before making a new one. Do not make any stray marks on your answer sheet.

If you do not know the answer to a question, continue on to the next question. Please try to answer all of the questions on this test. If you skip a question, make sure that you leave the answer circle for that question blank on your answer sheet.

Do not talk to other students. Raise your hand and ask the teacher if you have a question.

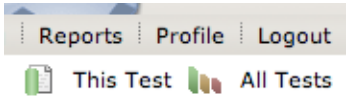
If you finish early you may go back and try to answer questions that you skipped or check your work. When you are done with the test, turn the test over on your desk and follow your teacher's instructions.

BIOLOGY ILO 1 PRE-TEST
INSTRUCTIONS FOR INTERPRETING AND USING TEST SCORES

To find out how well your students have done on this test, locate and print the Seventh Grade ILO 1 Pretest Diagnostic page that follows. Find the column "question numbers." In this column, the item numbers that measure each specific skill are listed. The instructions below will help you know how your class did on each skill in ILO 1 in the biology curriculum.

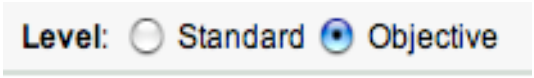
1. Once your students have finished taking the test, be sure they have clicked the **"submit"** button. Then go to your UTIPS site. Click on the **"Reports"** menu.

2. On the Reports menu, select **"All Tests"**. Then select the Biology ILO 1 Pretest from the list.



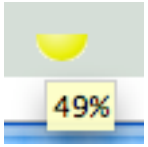
3. On the far right near the top of the screen, choose the **apple icon**.

4. In the title box, click the **Objective button**. This will display your students' results by each ILO 1 skill.

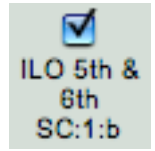


5. Scroll to the bottom of the screen and note the **Average row**.

As you roll over each pie chart and pause, the **percent** of items correct for that skill will pop up. You will use this percent in instruction #6.



6. Write the average percent for the corresponding **ILO skill** in the right-hand column on the **Biology ILO 1 Pre-Test Diagnostic** page you printed.



(If you are unsure which ILO skill each column in UTIPS corresponds to, go to the top of the column and click on the box. The ILO skill for that column will appear at the top of the screen.)

You have now recorded all the data from the pre-test that will help you to make decisions about how to plan your science instruction. If students did well on certain skills, then you may spend less time teaching those skills and spend more time teaching those on which your students did poorly.

BIOLOGY ILO 1 PRE-TEST DIAGNOSTIC

ILO 1	Item Number	Class Percent
a. Observe objects and events/qualitative/quantitative	29, 30, 37	
b. use comparisons	*	
c. evaluate, sort and sequence data	27, 28, 40	
d. select appropriate instrument (length, volume, temp, mass) and measure	4, 11, 21	
e. plan and conduct experiments	*	
1. identify a problem	*	
2. formulate questions and hypotheses	8, 19, 22	
3. predict results	15, 18, 41	
4. identify variables and describe relationships between them	12, 13, 14	
5. plan procedures to control independent variables	5, 6, 7	
6. collect data on the independent variable	*	
7. select appropriate format to summarize data	23, 35, 36	
8. analyze data and construct reasonable conclusions	1, 9, 10	
9. prepare oral and written reports	*	
f. distinguish between fact and inference	2, 3, 20	
g. develop and use classification systems	24, 25, 26	
h. construct models, simulations and metaphors to explain natural phenomena	*	
i. use mathematics as a precise method for showing relationships	16, 17, 31	
j. form alternative hypotheses to explain a problem	32, 33, 42	
ILO 4 4d. Use reference sources to obtain information and cite the source	34, 38, 39	

* These skills are not measured with this test.

BIOLOGY ILO 1 PRE-TEST
INSTRUCTIONS FOR INTERPRETING AND USING TEST SCORES
WHEN YOU ADMINISTER A HARD COPY OF THE TEST

As you prepare copies of the test for your students, make a copy of the "Biology ILO 1 Pre-Test Diagnostic" that follows on the next page.

Your students should have used scan-tron answer sheets on which to record their answers to the test. If they did not, find the paragraph in these directions entitled "Scoring the test without scan-tron answer sheets."

Scoring the test if students recorded their answers on scan-tron answer sheets

Prepare a scan-tron item analysis sheet, which summarizes the performance of all of the students in your class. It will list how many of your students missed or answered correctly each question.

Referring to the diagnostic sheet, find the row for ILO 1a. (Note that ILO 1a is measured by test items 29, 30, 37.) Find how many of your students missed these three test items on your scan-tron item analysis sheet, add the numbers together and record the sum in the ILO 1a box named "Class Percent." This number represents the number of students who missed ILO 1a.

Next, find the row for ILO 1c on the diagnostic sheet. Find the number of students who missed questions 27, 28, 40 and record this sum in the class percent box. (You are not calculating percents but by recording the number of students who missed the items for a specific skill, you will be able to determine where your students need the most help or conversely, on which skills your students do the best.)

Continue to record the total number of students who missed each *skill*.

You can now look at the numbers and determine on which ILO 1 skills your students need the most help. If you recorded the number of students who missed an item, then the **higher** numbers indicate the skills on which your students know the least.

Scoring the test without scan-tron answer sheets

Without scan-tron answer sheets you will first need to score your students' tests. Next, count the number of students who missed questions 29, 30, 37. Record this number on your diagnostic sheet at the right hand end of the row "1a. Observe objects and events…" Now count the number of students who missed ILO 1c (The total students missing questions 27, 28 and 40). Record this total at the end of the row. Continue recording the total number of students missing the items for each skill in the appropriate boxes named "Class Percent" (You are not calculating percents but by recording the number of students who missed the items for a skill, you will be able to determine where your students need the most help or conversely where, on which skills, your students know the most.)

You can now look at the numbers and determine on which ILO 1 skills your students need the most help. If you recorded the number of students who missed an item, then the **higher** numbers indicate skills on which your students know the least.

BIOLOGY ILO 1 PRE-TEST DIAGNOSTIC

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a. Observe objects and events/qualitative/quantitative	29, 30, 37	
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c. evaluate, sort and sequence data	27, 28, 40	
d. select appropriate instrument (length, volume, temp, mass) and measure	4, 11, 21	
e. plan and conduct experiments	*	
1. identify a problem	*	
2. formulate questions and hypotheses	8, 19, 22	
3. predict results	15, 18, 41	
4. identify variables and describe relationships between them	12, 13, 14	
5. plan procedures to control independent variables	5, 6, 7	
7. collect data on the independent variable	*	
7. select appropriate format to summarize data	23, 35, 36	
8. analyze data and construct reasonable conclusions	1, 9, 10	
10. prepare oral and written reports	*	
f. distinguish between fact and inference	2, 3, 20	
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ILO 4 4d. Use reference sources to obtain information and cite the source	34, 38, 39	

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