



Teacher's Guide for Western and Northern Canadian Protocol



Table of Contents

<i>Introduction</i>	1
<i>Getting Help</i>	1
<i>Changing Your Account e-mail Address or Password</i>	1
<i>Creating and Changing a Master List of Students</i>	2
<i>Creating and Changing a Class List</i>	3
<i>Creating a Test</i>	3
<i>Administering a Test</i>	4
<i>Requesting a New Test Passcode</i>	5
<i>Scoring Communication (optional)</i>	5
<i>Requesting Score Reports</i>	6
<i>Closing, Reactivating and Deleting Tests</i>	7
<i>Understanding the Score Reports</i>	8
Class Process Skills Report	8
Communication Responses Report.....	9
Class Outcome Report	10
Class Indicator Report	11
Class Fine-grained Skills Report.....	12
Class Error Report.....	13
Individual Student Report	14

Introduction

ezclasstest is a system of online curriculum-based classroom assessments. It is designed to be used by teachers to assess their students as often as they would like throughout the school year. The teacher decides when to administer tests for specific outcomes as (s)he teaches those outcomes. *ezclasstest* makes it easy for the teacher to frequently administer short assessments. The students take the tests online and the tests are scored automatically.

Whenever a teacher requests score reports, the teacher receives diagnostic reports at the student level and at the classroom level. The reports are diagnostic, providing detailed information about a student's level of mastery of specific curriculum indicators as well as process skills. This detailed information in reference to specific indicators and process skills make it easy for a teacher to use the score reports to inform instruction.

Students can take the online tests using any computer or device (e.g., tablet), but we recommend that students use devices that have screens that are at least 8 inches. Students should not use smartphones. (For information about system requirements, see page 15.) The tests are not timed, so students can take as much time as you want to give them to complete a test, and they can leave the test and later sign in again to complete the test. A test for one outcome, however, is short and can be completed within 15 minutes.

Allow students access to scratch paper and a pencil/pen. Students will not need tools (e.g., calculator, ruler, protractor) as electronic tools are provided through the *ezclasstest* interface.

Questions that test a student's communication skills provide a text box where the student can type a response. The student will have access to their keyboard/keypad but will not be able to draw. If students type their communication responses in the interface, the system will provide the Communication Responses Report showing students' actual typed communication responses (see page 9).

If you would like students to have the option of drawing as part of their response, then photocopy and distribute the Communication Response Sheet found at the end of this guide. The students may write their communication responses on the copied sheets (one response per sheet).

Getting Help

The information in this manual will tell you what you need to know to use *ezclasstest*. If you need additional support, please send your request to support@ezclasstest.com.

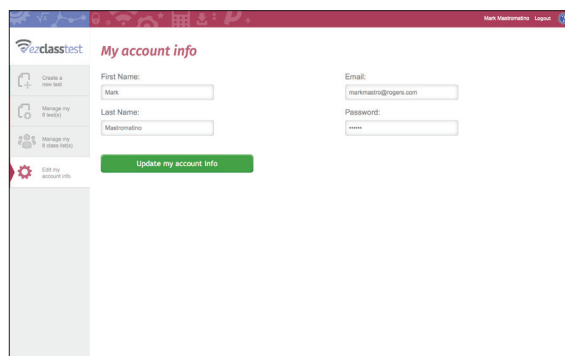
Changing Your Account e-mail Address or Password

To change your account e-mail or password:

1. Sign in to your account.



2. Select the "Edit my account info" tab.
3. Select "Edit."
4. Change your e-mail address and/or password.
5. Select "Update my account info."

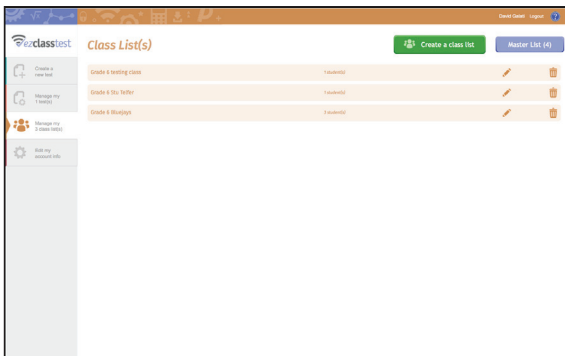


Creating and Changing a Master List of Students

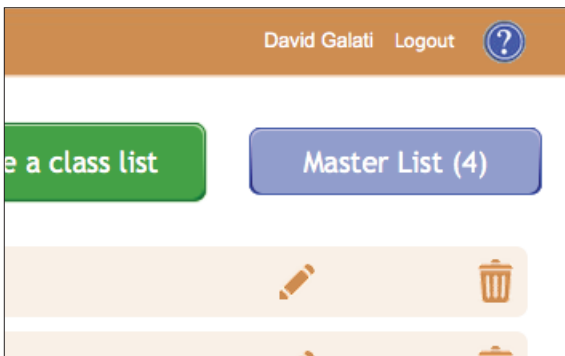
Before creating your first test, you will have to create a Master List of students in your classroom and then create at least one Class List. A Master List needs to be created only once at the beginning of the school year. (Note: If your Master List has already been uploaded, you will see your list of students and you can skip this section.)

To create a Master List:

1. Sign in to your account.
2. Select the “Manage my class lists” tab.



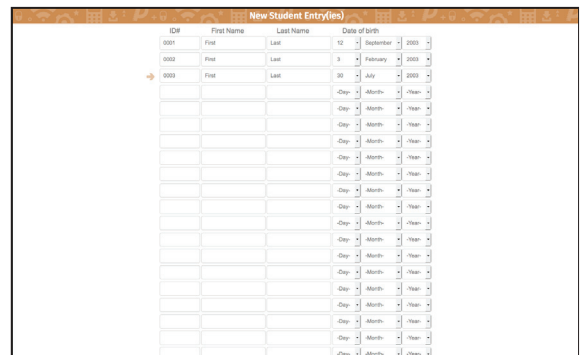
3. Select “Master List.”



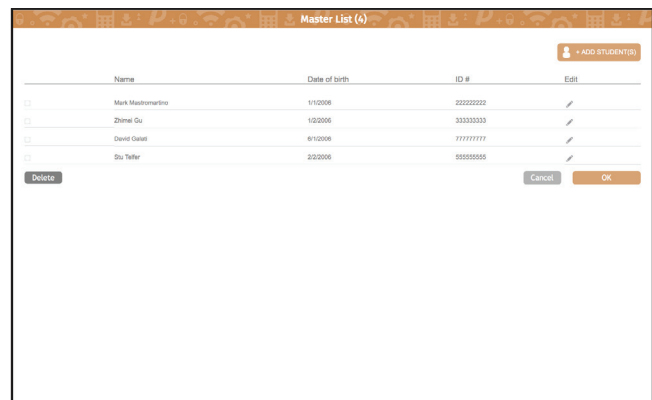
4. Select “ADD STUDENT(S).”



5. Enter the information for each student.
6. Scroll down to the bottom of the page and select “OK.”



This will bring you to a page with a list of students in the Master List:



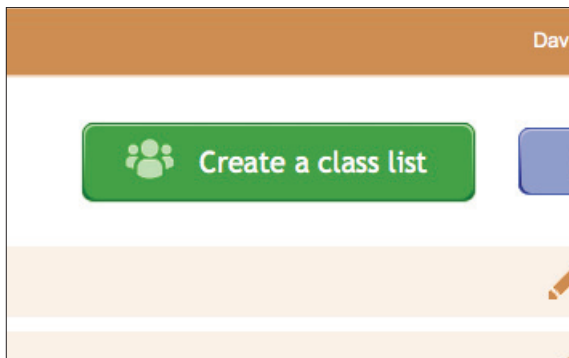
1. To delete a student from the Master List, select the small box beside the student’s name and select “Delete.”
2. To edit information for a student, select the pencil icon under “Edit”; edit the information and then select “OK.”
3. Once the Master List has been completed, select “OK.”

Creating and Changing a Class List

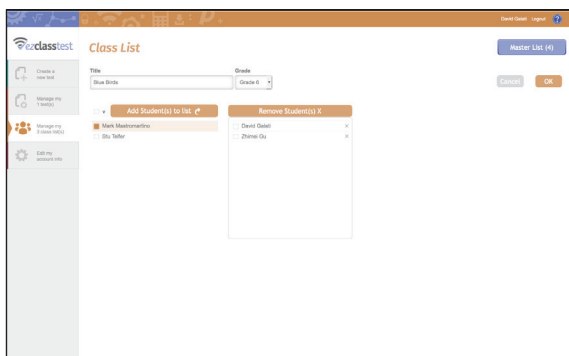
After creating a Master List, you must create at least one Class List. A Class List is a group of students who will be administered the same test. The Class List may consist of all the students in the Master List or a subset of the students in the Master List. All students in a Class List should be in the same grade.

To create a Class List:

1. Select the “Manage my class lists” tab.
2. Select “Create a class list.”



3. Type in a title and select a grade for the Class List.
4. Select the students to be included in the Class List. (You can select all students by selecting the box at the top of the list.)



5. Select “Add students to list.”
6. To delete students from the Class List, select the students and then select “Remove students” (or simply select the “x” beside each student’s name).
7. Once the Class List has been completed, select “OK.”

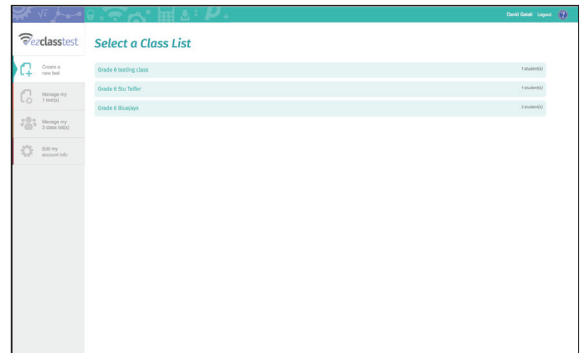
This will bring you to a page showing all of your Class Lists (you can have up to four Class Lists):

1. To delete a Class List, select the trash can icon.
2. To edit a Class List, select the pencil icon.

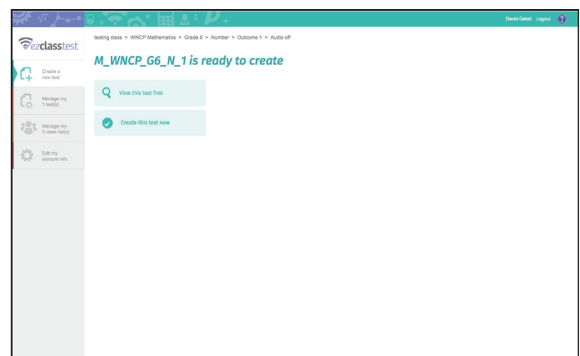
Creating a Test

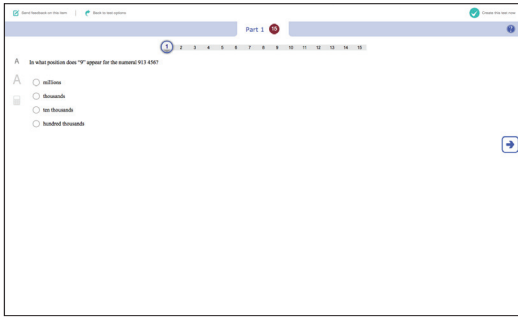
Once you have a Class List, you can create a test:

1. Select the “Create a new test” tab.

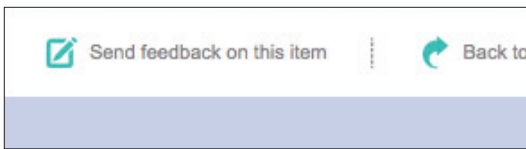


2. Select one of your Class Lists; the test will be administered to this group of students.
3. Select a subject.
4. Select a grade.
5. Select a strand.
6. Select between 1 and 3 outcomes; then select “Next.”
7. If your students do not need an audio accommodation, select “No.” (The audio accommodation is not available for Beta versions.)
8. To view the test you’ve just created, select “View this test first.” This will allow you to preview the video instructions to students and to scroll through the test questions:

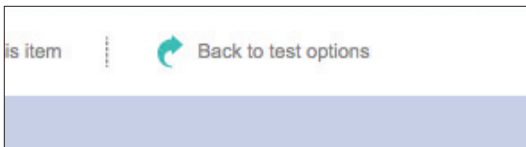




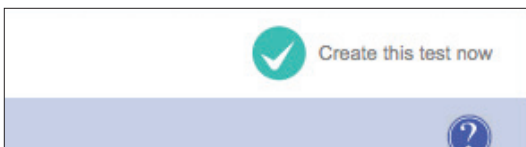
- a. If you would like to send the publisher feedback on a particular test question, select “Send feedback on this item.” Then type your comment in the box (no need to do anything else).



- b. To go back and select different outcomes for the test, select “Back to test options”; then select the “Outcome” breadcrumb near the top of the page. Select the outcomes you do want and then select “Next.”

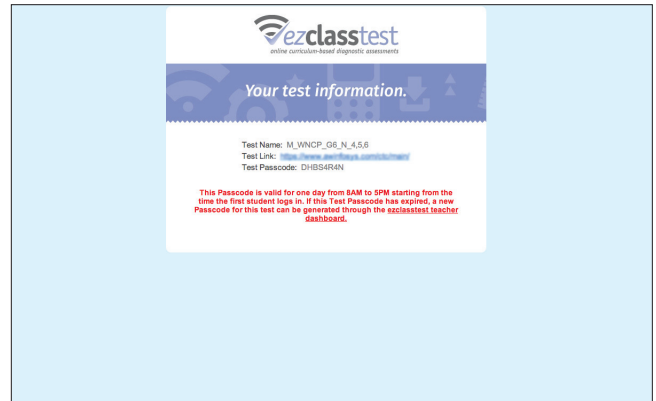


- c. If you would like to finalize the creation of the test, select “Create this test now.” A web link and passcode for the test will then be sent to your e-mail address.

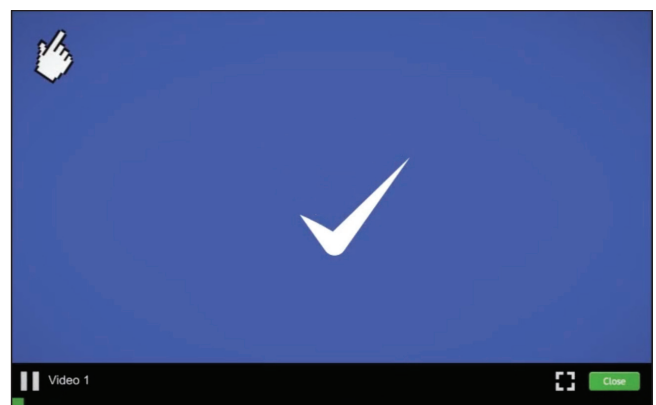


Administering a Test

Students must use the web-link and passcode to access the test. (The web-link remains active as long as the test is open, but the passcode remains active only for the day on which any student first uses the passcode.) If you have the students’ email addresses, you can forward to the students the e-mail you received containing the web-link and passcode. Otherwise, you can simply write the web-link and passcode on the board for students to type.

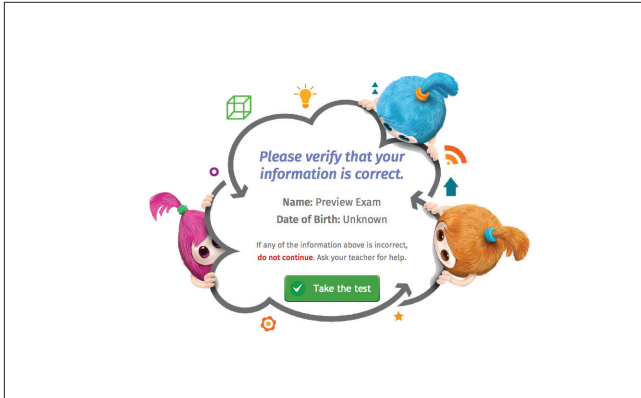


The web-link will take students to a page where they can sign in. They will need to type (or copy/paste) the passcode as well as type either their ID Number or their First and Last Name. A window will open and a 15-minute instructions video will play, showing students how to do the test (audio is not required). Students have the option of closing the instructions video whenever they choose. (For a student’s first encounter with ezclasstest, the student should watch the whole video before proceeding to the test.)



Note: For the first testing, you may want to connect your computer to a projector and play the video for the whole class. This will avoid potential Internet bandwidth problems when all students are playing the 15-minute video at the same time.

Once the student has closed the video, a page will appear with the student's name and date of birth. If the name or date of birth is not correct, the student should let you know. Otherwise, the student may proceed to take the test.



On the last item of the test, students have the option to select "I'm finished." If they select "I'm finished," they will no longer be able to access the test. If they want to return to the test later, they should not select "I'm finished"; they should simply close the window. Then, when they sign in to the test again, they will be able to look at their previous answers and change them if they want.

Requesting a New Test Passcode

A test passcode remains active only for the day on which any student first uses the passcode. For example, if you create a test and receive a test passcode on Monday but no student uses the passcode until Tuesday, then the passcode will remain active until 4 PM on Tuesday. Once the passcode expires, you can request a new passcode for the same test:

1. Sign in to your account.
2. Select the "Manage my tests" tab.
3. Select the subject.
4. Select the grade.

5. Select a test from the "Active tests" column.
6. Select "Send me a new passcode."
7. Select "Yes, send new passcode."

The new passcode and web link for the test will be sent to your e-mail address.

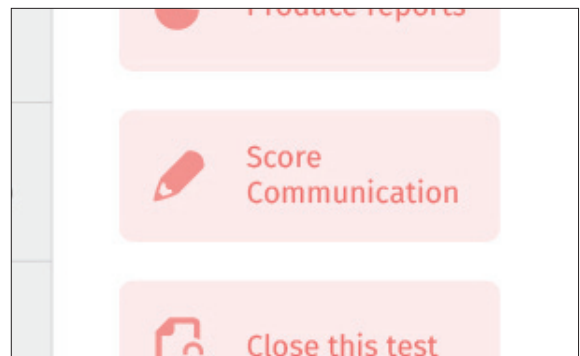
Scoring Communication (optional)

The ezclasstest system automatically assigns scores for all content categories and assigns mastery levels for all fine-grained and process skill categories, except for Communication. If you do not assign mastery levels for Communication, you will still receive the Class Process Skills Report with system generated mastery levels for Knowledge, Thinking and Application (see page 8). You will also receive the Communication Responses Report showing each student's typed response to each communication question (see page 9).

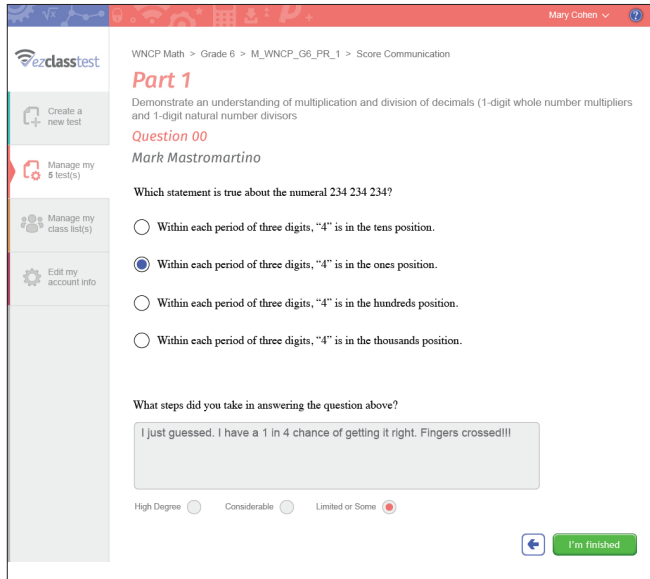
If you would like to assign mastery levels for Communication, you can do so in the teacher dashboard before requesting score reports. The scores that you assign would then appear along with each student's communication responses in the Class Communication Responses Report.

To assign Communication scores:

1. Sign in to your account.
2. Select "manage my tests."
3. Select the subject.
4. Select the grade.
5. Select a test from the "Active tests" column.
6. Select "Score Communication."



You will then be brought to a page showing the first student's response to the first question in the test requiring a communication response. You can assign a mastery level to the student's response before selecting the forward arrow to go to the next response.



The evaluation of a student's communication skills for a particular question involves assigning a mastery level for their effectiveness in one or more of the following:

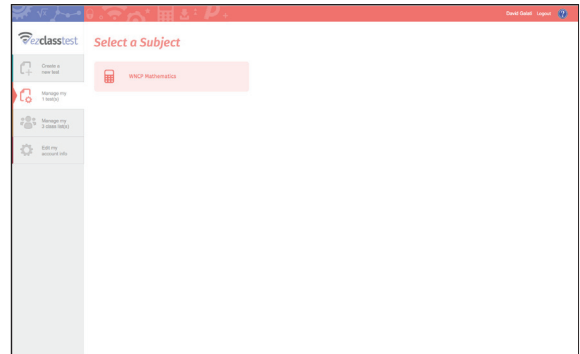
- Expressing and organizing ideas and mathematical thinking
- Using mathematical conventions, vocabulary and terminology

For each communication question, decide which of the above skills can be assessed. Then assign the mastery level of a student on these skills given the effectiveness of the student's response to the question. The descriptors defining the three different levels of effectiveness for Communication are: "High Degree," "Considerable" and "Limited or Some." Assign one of the three levels.

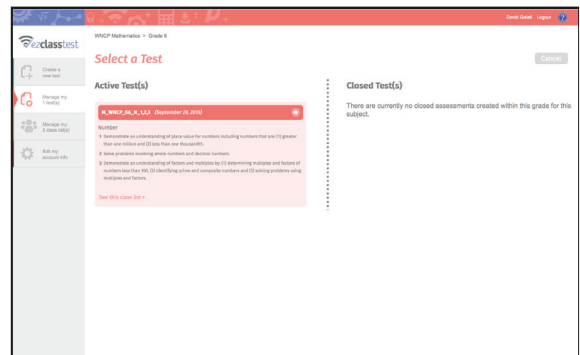
Requesting Score Reports

To request score reports:

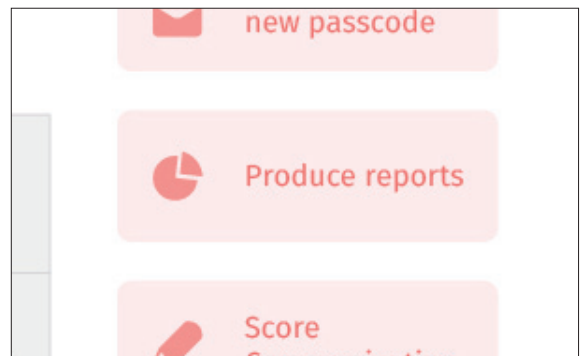
1. Sign in to your account.
2. Select "Manage my tests."



3. Select the subject.
4. Select the grade.
5. Select a test from the "Active tests" column.



6. Select "Produce reports."



A window will then open telling you the number of students who have not yet completed their tests. This is the number of students in the Class List who have not started the test or have started the test but have not yet selected "I'm finished." Scores will not be reported for these students; scores will be reported only for those students who have selected "I'm finished." If you still want to generate reports, select "Yes, produce reports." Links to the reports will then be sent to your e-mail address. You can produce reports again later, when more students have completed the test.

Closing, Reactivating and Deleting Tests

Once you have finished administering a test, you can close the test. When you close a test, the system automatically generates reports and sends links to the reports to your e-mail address. Once a test is closed, students no longer have access to the test.

To close a test:

1. Sign in to your account.
2. Select "Manage my tests."
3. Select the subject.
4. Select the grade.
5. Select a test from the "Active tests" column.
6. Select "Close this test."

Once a test has been closed, it can be re-activated. To re-activate a closed test:

1. Select "Manage my tests."
2. Select the subject.
3. Select the grade.
4. Select a test from the "Closed tests" column.
5. Select "Activate this test."

A test link and passcode will then be sent to your e-mail address.

Once a test has been closed, it can be deleted. Once you delete a test, it will no longer appear on your list of tests. If you delete a test and then in the future want to administer the same test, you will have to create the test again.

To delete a test:

1. Select "Manage my tests."
2. Select the subject.
3. Select the grade.
4. Select a test from the "Closed Tests" column.
5. Select "Delete this test."

Understanding the Score Reports

Class Process Skills Report

The questions for a particular outcome measure a number of process skills. The Class Process Skills Report provides student mastery levels for Knowledge, Thinking and Application. (For Communication, see the Communication Responses Report on page 9.) Each test question measures one or more process skill. A student's mastery levels for Knowledge, Thinking and Application in this report are determined by the number of times the student correctly answered questions requiring the relevant skill.

Class Process Skills Report for J. Smith

Test Date: Oct 10, 2013
pages 1 of 2

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadiantestcentre.com/ezclasstest



Outcome

Demonstrate an understanding of ratio, concretely, pictorially, and symbolically.

	Consistent evidence of limited or some understanding	Evidence of considerable understanding	Consistent evidence of a high degree of understanding
Process Skill <i>Knowledge and Understanding</i>	Melanie Aguilar Willie Bass Cesar Flowers Alma Harris Marcella Little Bradley Mcdaniel Ramon Myers	Marc Boone Enrique Bowen Scott Bowers Andy Boyd Terry Bryan Jackie Doyle Tasha Duncan Elbert Figueroa Zachary George Abraham Jimenez Sandra Knight Luz Nichols Leroy Osborne Archie Richards Kristen Ruiz Emily Sullivan Gwendolyn Taylor Courtney Valdez Michelle Weber Howard Wheeler	Al Clarke Conrad Guerrero Mark Mastromartino
Process Skill <i>Thinking</i>	Melanie Aguilar Willie Bass Jackie Doyle Elbert Figueroa Cesar Flowers Zachary George Alma Harris Marcella Little Bradley Mcdaniel Ramon Myers	Marc Boone Enrique Bowen Scott Bowers Andy Boyd Terry Bryan Tasha Duncan Abraham Jimenez Sandra Knight Luz Nichols Leroy Osborne Archie Richards Kristen Ruiz Emily Sullivan Gwendolyn Taylor Courtney Valdez Michelle Weber Howard Wheeler	Al Clarke Conrad Guerrero Mark Mastromartino

The left column of the Class Process Skills Report shows the process skill category for a particular outcome. The top row of the report shows the three mastery levels: “high degree of effectiveness,” “considerable effectiveness” and “limited or some effectiveness.” Within each process skill category and mastery level, student names are listed alphabetically by last name. This report can be used to identify the process skills that still need to be mastered by certain groups of students in the classroom.

Communication Responses Report

The questions for a particular outcome measure a number of process skills. Some of the questions require a student to provide a communication response. If the student types responses to these questions directly in the student interface, the typed responses appear in the Communication Responses Report. The Communication Responses Report provides the actual typed responses of each student to the communication questions. (For process skills other than Communication, see the Class Process Skills Report on page 8.)

The system does not provide mastery-level scores for Communication. If you would like to assign mastery levels to a student's communication responses, you may do so in the Teacher Dashboard (see page 5). If you assign mastery levels to a student's communication responses, the student mastery-levels will appear on the Communication Responses Report along with the student's actual typed responses.

Communication Responses Report for J. Smith

Test Date: Oct 10, 2013
pages 1 of 1

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadiantestcentre.com/ezclasstest



Outcome

Demonstrate an understanding of ratio, concretely, pictorially, and symbolically.

Willie Bass

Question 1 (limited or some effectiveness)

dfuudfRume sit liquae nissitiunt odigenti aborio molorro optatassitas excero corehenis et laut mo optas veliquae exero occuptassit liquas aut omnis dolum rest, aut accus consenet ipsam, ut faccaborro mos molorep udamusa peroria volesti ium dolori apicaborae vendebit accus assit veri odiciistem ilis ut que.

Question 5 (limited or some effectiveness)

dfuudfRume sit liquae nissitiunt odigenti aborio molorro optatassitas excero corehenis et laut mo optas veliquae exero occuptassit liquas aut omnis dolum rest, aut accus consenet ipsam, ut faccaborro mos molorep udamusa peroria volesti ium dolori apicaborae vendebit accus assit veri odiciistem ilis ut que.

Alma Harris

Question 1 (considerable effectiveness)

dfuudfRume sit liquae nissitiunt odigenti aborio molorro optatassitas excero corehenis et laut mo optas veliquae exero occuptassit liquas aut omnis dolum rest, aut accus consenet ipsam, ut faccaborro mos molorep udamusa peroria volesti ium dolori apicaborae vendebit accus assit veri odiciistem ilis ut que.

Question 5 (high degree of effectiveness)

dfuudfRume sit liquae nissitiunt odigenti aborio molorro optatassitas excero corehenis et laut mo optas veliquae exero occuptassit liquas aut omnis dolum rest, aut accus consenet ipsam, ut faccaborro mos molorep udamusa peroria volesti ium dolori apicaborae vendebit accus assit veri odiciistem ilis ut que.

Class Outcome Report

A single test can cover between 1 and 3 outcomes. Each outcome is taken from the curriculum and is tested using between 10 and 20 questions. The number (and percent) of questions answered correctly for each outcome is reported in the Class Outcome Report. The students are listed alphabetically by last name. The last row of the report shows the Class Average, the average score across students, for each of the outcomes.

Class Outcome Report for J. Smith

Test Date: Oct 10, 2013

pages 2 of 2

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadiantestcentre.com/ezclasstest



***Note:** Scores can be validly compared within an outcome across students but cannot be validly compared across outcomes. See page ## in the Teacher's Guide for an explanation.

Students	Outcome Demonstrate an understanding of ratio, concretely, pictorially, and symbolically 18 Questions Number Correct (Percent Correct)	Outcome Demonstrate an understanding of percent (limited to whole numbers) concretely, pictorially, and symbolically 20 Questions Number Correct (Percent Correct)	Outcome Demonstrate an understanding of integers, concretely, pictorially, and symbolically 19 Questions Number Correct (Percent Correct)
Luz Nichols	10 (56%)	10 (50%)	11 (58%)
Leroy Osborne	15 (83%)	3 (15%)	7 (37%)
Archie Richards	8 (44%)	11 (55%)	5 (26%)
Kristen Ruiz	9 (50%)	9 (45%)	11 (58%)
Emily Sullivan	6 (33%)	14 (70%)	11 (58%)
Gwendolyn Taylor	8 (44%)	6 (30%)	10 (53%)
Courtney Valdez	11 (61%)	12 (60%)	11 (58%)
Michelle Weber	10 (56%)	17 (85%)	12 (63%)
Howard Wheeler	6 (33%)	10 (50%)	7 (37%)
Class Average	9 (50%)	10 (50%)	10 (53%)

Each column of scores in this report shows the scores attained by different students for a particular outcome. Scores can validly be compared across students within an outcome to identify students who are having the most difficulty with a particular outcome. Scores for a particular student cannot, however, be compared across outcomes, because score differences between two outcomes may be due to a difference in the question difficulties for the two outcomes. In other words, when the questions for one outcome are more difficult than the questions for another outcome, the number-correct scores cannot be validly compared between the two outcomes.

Class Indicator Report

The questions for an outcome represent a number of achievement indicators. Each indicator is taken from the curriculum and is tested using at least 2 questions. The number of questions answered correctly for each indicator is reported in the Class Indicator Report. The students are listed alphabetically by last name. The last row of the report shows the Class Summary, the distribution of student scores, for each of the indicators.

Class Indicator Report for J. Smith

Test Date: Oct 10, 2013

pages 2 of 2

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadiantestcentre.com/ezclasstest



Outcome

Demonstrate an understanding of ratio, concretely, pictorially, and symbolically

Students	Number of Questions Answered Correctly					
	Marcella Little	2	2	2	2	2
Mark Mastromartino	1	1	1	1	1	1
Bradley Mcdaniel	2	1	2	2	1	2
Ramon Myers	1	2	1	1	2	1
Luz Nichols	0	2	0	0	2	0
Leroy Osborne	2	2	2	2	2	2
Archie Richards	2	4	2	2	4	2
Kristen Ruiz	1	2	1	1	2	1
Emily Sullivan	2	2	2	2	2	2
Gwendolyn Taylor	2	2	2	2	2	2
Courtney Valdez	2	2	2	2	2	2
Michelle Weber	1	3	1	1	3	1
Howard Wheeler	3	2	3	3	2	3
Class Summary	0 correct: 1 student 1 correct: 12 students 2 correct: 15 students 3 correct: 2 students	0 correct: 1 student 1 correct: 8 students 2 correct: 12 students 3 correct: 6 students 4 correct: 3 students	0 correct: 1 student 1 correct: 12 students 2 correct: 15 students 3 correct: 2 students	0 correct: 1 student 1 correct: 12 students 2 correct: 15 students 3 correct: 2 students	0 correct: 1 student 1 correct: 8 students 2 correct: 12 students 3 correct: 6 students 4 correct: 3 students	0 correct: 1 student 1 correct: 12 students 2 correct: 15 students 3 correct: 2 students

Each column of scores in this report shows the scores attained by different students for a particular Indicator. Scores can validly be compared across students within an indicator to identify students who are having the most difficulty with a particular indicator. Scores for a particular student cannot, however, be compared across indicators, because score differences between two indicators may be due to a difference in the question difficulties for the two indicators. In other words, when the questions for one indicator are more difficult than the questions for another indicator, the number-correct scores cannot be validly compared between the two indicators.

Class Fine-grained Skills Report

The questions for an outcome measure a number of fine-grained skills. Each skill is tested using at least 5 questions. Some test questions measure just one of the skills and some measure more than one skill. A student's mastery level for a fine-grained skill is determined by the number of times the student correctly answered questions requiring that skill.

Class Fine-grained Skills Report for J. Smith

Test Date: Oct 10, 2013
pages 1 of 3

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadiantestcentre.com/ezclasstest



Outcome

Demonstrate an understanding of ratio, concretely, pictorially, and symbolically

	Consistent evidence of limited or some understanding	Evidence of considerable understanding	Consistent evidence of a high degree of understanding
Fine-grained Skill Understand the relationship among verbal, symbolic and pictorial representations of ratio	Melanie Aguilar Willie Bass Cesar Flowers Alma Harris Marcella Little Bradley McDaniel Ramon Myers	Marc Boone Enrique Bowen Scott Bowers Andy Boyd Terry Bryan Jackie Doyle Tasha Duncan Elbert Figueroa Zachary George Abraham Jimenez Sandra Knight Luz Nichols Leroy Osborne Archie Richards Kristen Ruiz Emily Sullivan Gwendolyn Taylor Courtney Valdez Michelle Weber Howard Wheeler	Al Clarke Conrad Guerrero Mark Mastromartino
Fine-grained Skill Understand part-to-part and part-to-whole relationships	Melanie Aguilar Willie Bass Jackie Doyle Elbert Figueroa Cesar Flowers Zachary George Alma Harris Marcella Little Bradley McDaniel Ramon Myers	Marc Boone Enrique Bowen Scott Bowers Andy Boyd Terry Bryan Tasha Duncan Abraham Jimenez Sandra Knight Luz Nichols Leroy Osborne Archie Richards Kristen Ruiz Emily Sullivan Gwendolyn Taylor Courtney Valdez Michelle Weber Howard Wheeler	Al Clarke Conrad Guerrero Mark Mastromartino

The students' mastery levels are shown in the Class Fine-grained Skills Report. The left column of the report shows the fine-grained skills for a particular outcome. The top row of the report shows the three mastery levels: "high degree of effectiveness," "considerable effectiveness," and "limited or some effectiveness." Within each skill and mastery level, student names are listed alphabetically by last name. This report can be used to identify the fine-grained skills that still need to be mastered by certain groups of students in the classroom.

Class Error Report

The Class Error Report provides examples for up to the three most common types of errors made by students who wrote a particular test. It reports the percent of times students made each type of error, and it suggests the reason such errors are being made by students. This report can be used to identify the most common types of errors made by students in the classroom.

Class Error Report for J. Smith

Test Date: Oct 10, 2013

pages 1 of 1

Grade: 6
School: Willow ES
Test: M_WNCP_G6_N_5,6,7
Report Generated: Oct 12, 2013
www.canadianstestcentre.com/ezclasstest



The item examples below represent the most common types of errors made by students who wrote this test.

Example 1

What is another way to write the ratio 4 to 9?

About **40%** of the students in your class are likely to give an incorrect answer. This indicates some difficulties students may have in understanding the relationship between verbal and symbolic representations of ratio.

Example 2



For the picture above, what does the ratio 5:11 represent?

About **35%** of the students in your class are likely to give an incorrect answer. This indicates some difficulties students may have conceptualizing part-to-whole relationships.

Example 3

David has 3 blue beads and 5 red beads. Mark has twice as many blue and red beads as David. What is the ratio of blue to red beads for Mark?

About **30%** of the students in your class are likely to give an incorrect answer. This indicates students may have difficulties understanding verbally described ratio problems, or they may have difficulties expanding a ratio.

Individual Student Report

All of the scores for a particular student can be found in the Individual Student Report. The scores are reported by outcome. For a particular outcome, the student's number-correct score for that outcome and for each indicator appear near the top of the report. The student's mastery level for each of the process skills and for each of the fine-grained skills for that outcome appear near the bottom of the report. This report can be used to identify potential areas of strength and need for an individual student.

Individual Student Report for Mark Mastromartino

Test Date: Oct 10, 2013

pages 1 of 1

Grade: 6

Teacher: J. Smith

School: Willow ES

Test: M_WNCP_G6_N_5,6,7

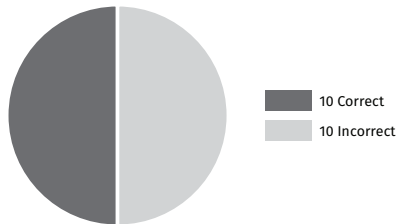
Report Generated: Oct 12, 2013

www.canadiantestcentre.com/ezclasstest



Outcome

Demonstrate an understanding of ratio, concretely, pictorially, and symbolically



Indicators

Indicators	Number Correct
Provide a concrete or pictorial representation for a given ratio.	3/3
Write a ratio from a given concrete or pictorial representation.	3/4
Express a given ratio in multiple forms, such as 3:5, or 3 to 5.	2/3
Identify and describe ratios from real-life contexts, and record them symbolically.	1/3
Explain the part/whole and part/part ratios of a set.	1/4
Solve a given problem involving ratio.	0/3

Fine-grained Skills	Consistent evidence of limited or some understanding	Evidence of considerable understanding	Consistent evidence of a high degree of understanding
Understand the relationship among verbal, symbolic and pictorial representations of ratio			●
Understand part-to-part and part-to-whole relationships		○	
Reduce and expand ratios			●

Process Skills	Consistent evidence of limited or some understanding	Evidence of considerable understanding	Consistent evidence of a high degree of understanding
Knowledge and Understanding			●
Thinking		○	
Application	○		