



Lexmark™

Lexmark Testing Assistant

FEATURES & PRODUCTIVITY

USABILITY

IT ADMIN & SECURITY

SUPPORT & TRAINING

VALUE

Product: Testing Assistant

Version: v2

Software Developer: Lexmark

Web: <https://www.lexmark.com>

Phone: 1-859-232-2000

For more information on Lexmark Testing Assistant, see BLI's comprehensive coverage at Buyerslab.com/Solutions.

About BLI: Since 1961, BLI has been a leading test laboratory in the world of digital imaging equipment. BLI is completely independent in all of its testing processes and subsequent reporting. All of BLI's product evaluations are conducted by highly experienced employees in its on-site testing facilities in the United Kingdom and United States where hundreds of new copiers, printers, wide-format devices, scanners, faxes and multi-function (MFP) products are evaluated and reported on each year.

OVERVIEW

Lexmark Testing Assistant is a test creation, grading, and analysis tool designed to streamline those essential processes for educators. It enables teachers to spend more time instructing students, conduct assessments more often to better gauge students' understanding of course material, and see test results in visual terms to more easily spot trends in individual and class-wide performance and adjust their lesson plan accordingly. The solution is made up of two components: a web-based tool that teachers use to design tests and run reports to analyze the results, and an MFP-resident shortcut for scanning completed test answer sheets so they can be automatically graded by the system. Teachers can access the web-based tool from a web browser using their favorite smartphone, tablet, laptop, or desktop from virtually anywhere on the globe. Lexmark Testing Assistant integrates with most popular learning management systems like Blackboard, Canvas LMS, Moodle, ParScore, Pinnacle, and Sakai Gradebook 2.

CHIEF BENEFITS



Streamlined testing processes: Teachers can spend less time creating and grading tests and focus more time on instructing students.



Reduce costs and go Green: Leverage your MFP and ordinary office paper to print and grade tests automatically, instead of using a costly, single function device and stocking costly proprietary forms. The solution's test designer enables teachers to organize answer sheets to use paper-space as economically as possible, thus reducing paper consumption, output costs, and the school's carbon footprint



Visualize test results to optimize student performance: Teachers can run as many as 11 preconfigured reports to identify trends for individual students or across the entire class. The solution was the first of its kind that BLI has evaluated to offer standard deviation, variance, and test-reliability metrics.



Set goals and track results: Set objectives and benchmarks, and visualize students' test results against them to quickly identify which students are hitting the target goals.



Granular grading controls: Teachers can configure multiple choice questions with more than one correct response, define different point values for different questions, and award different point values for correct, incorrect, and blank responses.



Dovetails with popular learning management solutions: Import and export term, class, student, and teacher information, plus test results and grade data, to csv or Excel, and send data to Blackboard, Canvas LMS, Moodle, ParScore, Pinnacle, and Sakai Gradebook 2. Teacher can also import scanned tests from their Google Drive account directly from Testing Assistant.

OUR TAKE

More than in any other profession, educators are expected to do more with less. And after evaluating Lexmark Testing Assistant, BLI analysts agree: the solution can help schools do just that. We were particularly impressed with how easy it was to use the solution and the granular control teachers have over creating and grading tests. Like most other test creation and grading solutions BLI has evaluated in the past, Lexmark Testing Assistant can be used to create "fill in the circle" answer sheets (for multiple-choice questions) along with open-response questions. But unlike those solutions, Testing Assistant can also include responses for math questions. The solution's reporting engine was also superior to the competition, in both the amount of built-in reports offered, and for the depth of metrics calculated—like standard deviation, variance, and test-reliability metrics.

The solution is a cost-effective alternative to testing systems that require school systems to purchase and maintain expensive single-function devices and stock costly proprietary forms. Instead, Testing Assistant leverages Lexmark MFPs and ordinary office paper to print test answer sheets. And since it's based in the cloud, schools won't have to pay for servers or hire more IT personnel to maintain the system. The solution's preview and test-design features also enable teachers to configure the layout of answer sheets to conserve how much real-estate each question takes up, thus reducing the number of pages teachers need to print. In general, the solution offered more test-design options and flexibility than BLI has seen in competing solutions from other MFP makers.

Despite how granular configuring test questions and grading conditions is, the solution is incredibly easy to use. Teachers can configure how many points each question is worth and define how many points correct, incorrect, and blank responses are worth. BLI analysts describe creating tests as easy as filling in an interactive form, and grading tests as easy as hitting a few buttons at an MFP. The solution also walks teachers through an exceptions-based workflow which flags questions of which the solution is unsure before grading the test. Testing Assistant is unlike the test creation/grading systems from other MFP makers in that tests cannot be created at the control panel of the MFP. But the ability to create more elaborate tests at the comfort of a PC or tablet, rather than while standing at a centrally located MFP (where there may be a line of people waiting to make copies), may be preferable to many users.

The solution's reporting engine was also impressive, and allows teachers to run any or all of the 11 reports. These can reveal insights into an individual student or class-wide trends, and adjust the lesson plan accordingly. Teachers can also set

objectives and benchmarks for individual questions, a selection of questions, or an entire section of questions to visualize, at a glance, which students are hitting the target goals and which aren't. The solution integrates with popular learning management systems, and teachers can import and export test results, teacher, class, term, and student information between Testing Assistant and other education systems using CSV and Excel files.

STRENGTHS

- Granular control over test questions and grading conditions
- Create tests with responses for math questions
- Offers more built-in reports and metrics than other OEM solutions
- Simple and easy user experience is consistent whether using a PC, tablet, or even smartphone browser
- Easy to create, print, and grade tests
- Take the bias out of grading and analysis by anonymizing student identity when grading open-ended responses and reviewing test data
- Run reports based on test data to highlight trends for individual and class-wide performance
- Reduce costs of printing multiple-choice fill in the bubble tests
- Integrates with popular learning management platforms

WEAKNESSES

- Users cannot create tests at the MFP's control panel

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PRODUCT PROFILE

Versions:	Lexmark Testing Assistant comes in one flavor.
Pricing:	Lexmark Testing Assistant carries a list price of \$159 a year per teacher, with volume discounts based on the number of teachers, the subscription length, or the number of devices purchased.
Server:	Not applicable (cloud- and MFP-resident solution)
Client:	Any device that can run supported browsers: Microsoft Internet Explorer 10 or Edge, Apple Safari, Mozilla Firefox, Google Chrome, or Opera.
Mobile Device Compatibility:	The solution can be accessed via all smartphones and tablets that can run one of the browsers supported
Compatible Output Hardware:	Test sheets can be printed on any printer; MFP app to enable scan-to-grade functionality is supported on Lexmark MFPs with scan-to-email capabilities.
Availability:	Available for purchase through Lexmark partners and authorized dealers
Languages	English, Spanish

Features & Productivity

Lexmark Testing Assistant has two components that deliver the solution’s functionality: a shortcut embedded on the MFP’s control panel for scanning answer keys and emailing them to the address associated with the teacher’s login, and an online service where the automatic test grading takes place, and where teachers create tests and run reports.

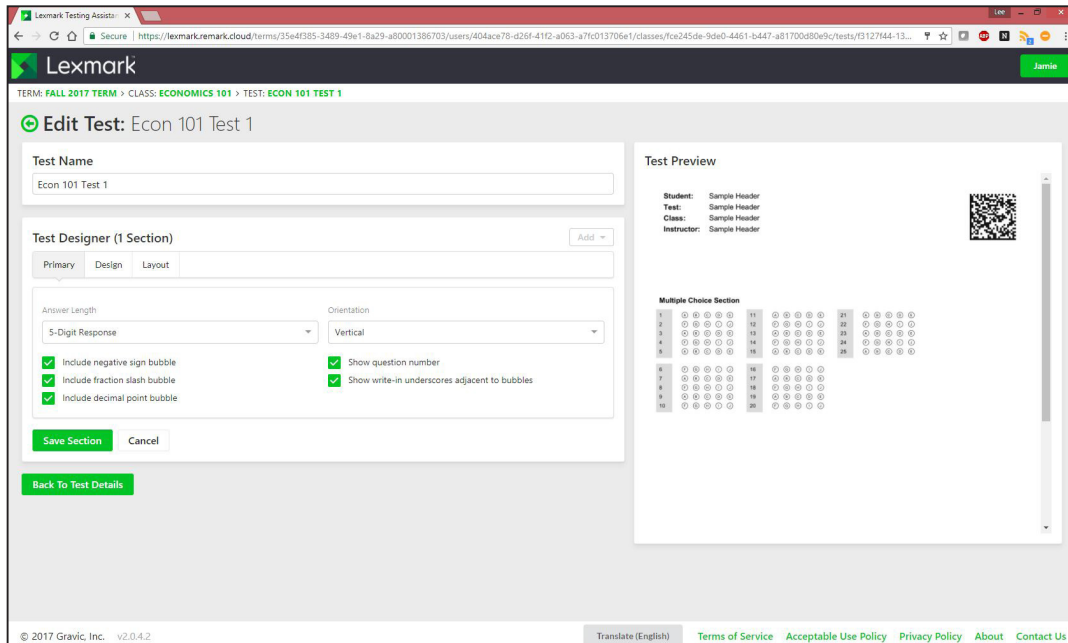
CREATING TESTS

- Teachers can create and print test answer sheets with multiple choice, math, and subjective responses from any device running one of the supported browsers. Teachers can create these tests from scratch, or copy existing tests to use as templates. The solution prints a copy for each student enrolled in the class, and teachers have the option to print additional copies. They can also upload the test question document so they can print the answer key and the test questions at the same time, which ensures that only the necessary amount of each document is printed and thus saves money.
- Teachers can name tests and use the Test Designer to configure the overall test design, and add sections with multiple choice, math, or subjective question sections. Each section can be tailored to provide a dynamic testing experience.
- The Design Settings in the Test Designer enable teachers to configure settings for the test's header, footer, and overall layout.
 - o Teachers can configure the header to show an illustration on how to properly mark bubbles, to show the student ID region, or to make the generic test form. Teachers can also select the orientation of the student ID on the test, plus the amount of characters to display.
 - o Teachers can add left, right, and middle column text.
 - o Tests can be configured so students can submit them through email.
 - o Teachers can select how to align multiple choice sections (default, justified, or centered), how multiple-choice sections should scale (default, fit-width, or fit-height), and set the subjective section numbering scheme (horizontal or vertical).
- Multiple-choice sections can be as long as 360 questions—the maximum amount of questions supported, and plenty more than what most teachers would require. Each question can have as many as 26 answers “bubbles,” which again is more than what is traditionally required.
 - o Multiple choice responses can be configured so that multiple bubbles must be selected to answer the question correctly. For example, a geography teacher could list 10 cities, and ask students to only mark the bubbles that coincide with the names of cities that state capitals. Teachers can require that all the correct answers must be selected to get full credit or not.
 - o Teachers can apply a setting to alternate choices between questions with 13 or fewer choices. So, if a teacher has 10 questions with four choices each, odd-numbered questions will display bubbles “ABCD” and even-numbered questions will be labeled “EFGH”, for example. This makes filling in the answer sheet much easier for students, and reduces the odds that they will fill in the wrong questions on the answer sheet.

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- Teachers can also set up responses for math questions. These sections can only be one question, but teachers can add as many 360 math sections—which is also the maximum amount of questions overall supported in a test. Math responses can accommodate responses ranging from 5- to 15-digits long, and teachers can include bubbles for a negative sign, slash, or decimal point. Teachers can choose to display these responses horizontally or vertically, which can be useful for consolidating space and use less paper when printing tests.



Lexmark Testing Assistant is the only OEM-developed test creation and grading system that supports mathematics questions.

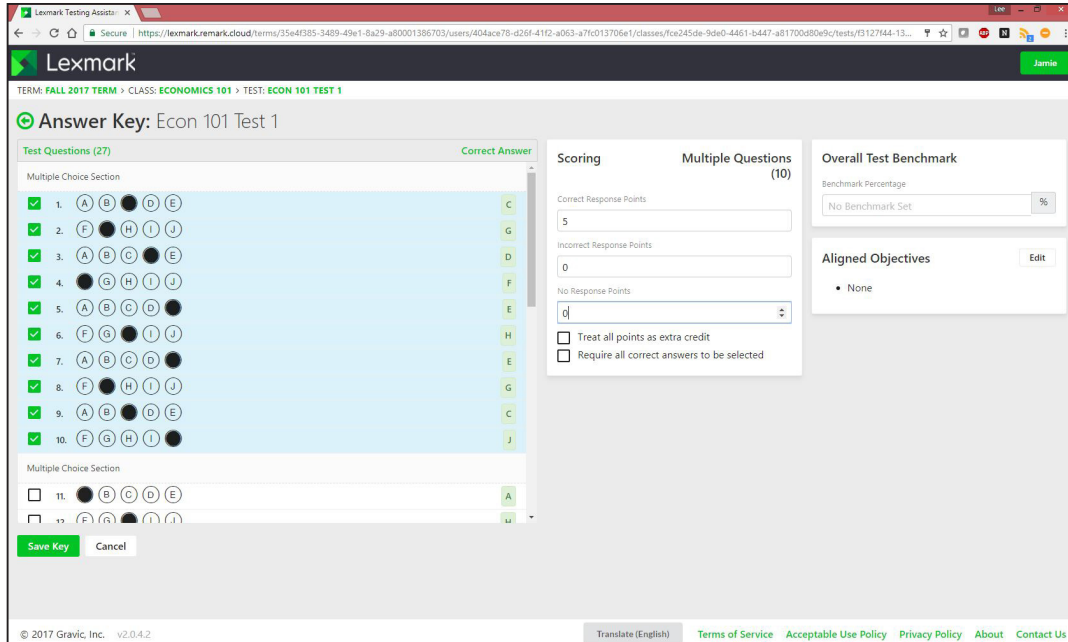
- Similarly, subjective sections can only be one question long, but teachers can add up to 360 sections—the maximum amount of questions supported by Testing Assistant. Teachers define a range of points each question is worth. These values can be either positive or negative, which means teachers can deduct points from a test when a student gets a question wrong. With these sections, teachers would read and assess the responses, then fill in bubbles to assign a score.

Teachers can decide how to display subjective responses on the answer sheet. They can include a write-in box, a write in box with bubbles, or just bubbles. Teachers have a few options for how tall each box can be: custom (1 to 20 rows high), remainder of the page, or the span of 2, 3, 4, or 5 pages. They can also configure the boxes to have horizontal or grid lines to make it easier for students to respond—and thus easier to read for teachers—or no lines at all.

- Teachers have very granular control over how many points each question is worth. They can select any one or more questions at a time—even if they’re not in the same section—and define how many points are awarded to correct and incorrect responses, as well as for instances when there is no response. They can also define whether or not to treat the points as extra credit, and require that all correct answers must be selected to receive full credit.

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Teachers have a great deal of control over how many points each response is worth.

- Educators can search for class, teacher, term, and student information using keywords to locate information quickly.

GRADING TESTS

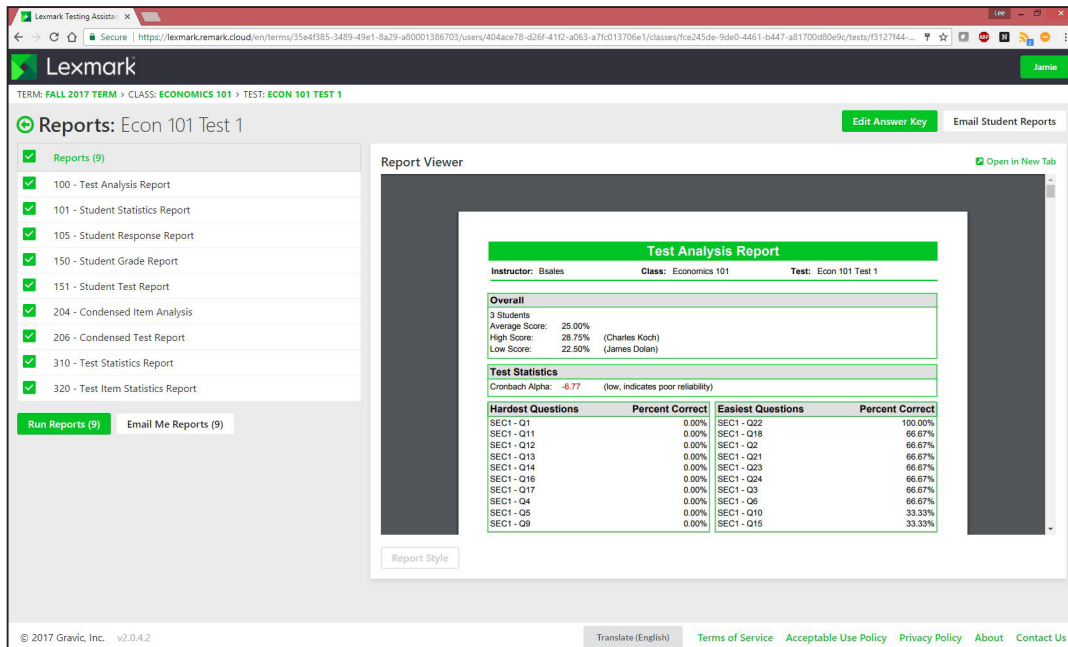
- The solution leverages Lexmark MFPs' ability to scan and email tests to teachers so they can upload them to Lexmark Testing Assistant for grading. Scans can also be sent to cloud services or USB sticks, for example, and then uploaded to Lexmark Testing Assistant later.
- The solution alerts teachers of exceptions within a scanned answer sheet when the OMR technology is unable to determine marks or detects an unanswered question. Teachers can choose to change the student's grade or ignore the exception.
- It also flags scanned pages that do not appear to belong to the test. For instance, if a teacher accidentally adds a student's homework assignment into the batch of tests that they want to grade, the solution will flag it, so the teacher can discard the scanned image, ignore it for now and address it later, or keep the image for reprocessing and continue the grading process.
- Teachers can opt to ignore crossed-out responses on answer sheets, which can be useful for removing a question after you've printed the test, but before they administer it, rather than reprinting a whole new batch of tests and answer sheets.
- To ensure a bias-free grading and analysis environment, teachers can configure the solution to anonymize students' identities when reviewing data and grading write-in responses.

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REPORTING AND ANALYTICS

- The reporting feature can help teachers visualize test data to better evaluate and re-evaluate their lesson plans and identify overarching trends or problem areas in the curriculum that are difficult to see with the naked eye.



Lexmark Testing Assistant offers more built-in reports and metrics than other OEM solutions.

- Lexmark Testing Assistant comes with 11 pre-built reports to help teachers track individual and class-wide progress. Reports can be adjusted after they generated; teachers can adjust style elements like fonts, headers, footers, terminology, page formatting, and so on. According to Lexmark, new reports can be added to Testing Assistant through the dealer.

o **Test Analysis Report:** Shows overall test performance, including the average, high, and low scores, the hardest and easiest questions (by percentage correct), a list of questions with distractors selected more than the correct answer, a list of questions with poor discrimination, and the classes against each learning objective set by the teacher.

o **Student Statistics Report:** A breakdown of each students' individual performance for each section and the test as a whole. Teachers see the total amount of correct responses out of the total amount of possible responses (as a fraction and by percentage), a breakdown of each section by objective responses (multiple choice and math) and subjective responses.

o **Student Response Report:** A table that displays all the students in the first column, their total points accumulated in the second, their test score as a percentage (0-100), and a new column for each question along the first row. The correct answer for each question is displayed in the second row, and each student's response is displayed beneath that. Each cell is color coordinated, with correct answers highlighted green, incorrect answers highlighted red, and unanswered or other incorrect responses highlighted white; an asterisk indicates that there were multiple responses marked for that question.

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- o **Student Achievement Report:** A breakdown of “achievement gaps”—the difference between a student’s score and the benchmark for each objective set—by each section of a test.
- o **Student Grade Report*:** Displays a student’s overall results and performance by section, plus a visual expression of the student’s results against the benchmarked objectives. It also displays each response that yielded partial credit or was flat out incorrect.
- o **Student Test Report*:** Shows an overlay of the completed test for each student. The student’s responses are highlighted red (with the correct response marked next to the bubble choices) when they are incorrect, and highlighted green when they’re correct.
- o **Class Learning Objectives Report:** Displays each learning objective as well as the number of correct responses out of total questions asked for that objective as a fraction and visually as a percentage against the benchmark; these are broken down further as the number of correct responses out of the total questions asked by subjective and objective (math and multiple choice) questions.
- o **Condensed Item Report:** A visual breakdown of all the responses for each question. Each response is color coded, with correct responses highlighted green, incorrect responses highlighted red, and distractors chosen more than correct answers highlighted yellow.
- o **Condensed Test Report:** Like the condensed item report, this report is a breakdown of the response frequencies for each question, but with a more details and in a single table. Teachers can see the upper and lower 27%, as well as the total percentage of correct group responses, plus the point biserial value. Numbers highlighted in red represent distractors chosen more than correct answers, and there is a column that lists the non-distractors for each question. This report also displays the total possible points, total student score, standard deviation, median and mean score, reliability coefficient (KR20), and the maximum, minimum, and range of scores.
- o **Test Statistics Report:** Displays score data (number of graded items, total points possible, maximum score, minimum score), statistics (mean score, mean percentage score, benchmark, range of scores, standard deviation, and variance), percentiles (25th percentile, median score, 75th percentile, and interquartile range), confidence intervals (95%, 99%), and test reliability (KR20, KR21, Coefficient Alpha, and Standard Error of Measurement) for overall test results, as well as by each section.
- o **Test Item Statistics Report:** Breakdown of each question by how many were graded, correct, incorrect, or missing, plus the biserial value, and a visual representation of the percent of questions with correct responses.

- Teachers can run one, a selection of, or all the reports and print them directly from the browser, download them to their smartphone, tablet, laptop, or desktop, or email them to themselves or to their students.
- o It should be noted that when emailing reports to students, only the Student Statistics Report, Student Achievement Report, Student Grade Report, and Student Test Report can be sent. This is a great feature, as it prevents teachers from accidentally disclosing private test information, which can violate FERPA.

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- Teachers can export or email test data (a list of each student who took the test and their response for each question) and gradebook data (a list of each student who took the test and their grades).
 - Test data can be exported or emailed as csv, txt, accdb, xlsx, or roa (Remark Office Archive’s proprietary file type) files.
 - Gradebook data can be exported or emailed as csv and txt files, or in whichever form is required for Blackboard, Canvas LMS, Moodle, ParScore, Pinnacle, and Sakai Gradebook 2, which can further help the overall grading process.
- Teachers can set objectives for overall test scores, individual questions, a group of questions, or entire sections, and set benchmarks to compare performance.

SOFTWARE INTEGRATION

- Testing Assistant can export test and grade data to proprietary file types for Blackboard, Canvas LMS, Moodle, ParScore, Pinnacle, and Sakai Gradebook 2. The system can also export data to an Excel file or in CSV format for use in other programs.
- Teachers can import test answer keys from their Google Drive account directly to Lexmark Testing Assistant.

USABILITY

Overall, Lexmark Testing Assistant is very easy to use. The UI is clean and consistent across the browser- and MFP-based portions of Lexmark Testing Assistant. Creating a test is as easy as filling out an interactive form. Grading tests is a two-step process: a one-touch scan workflow, and dragging and dropping files into the grading queue before clicking upload tests. Creating and sharing reports is very simple, only requiring teachers to hit a few buttons to decide which reports they want, the format they want them in, and where they want them sent.

CREATING TESTS

- In a class, all the existing tests are displayed. Teachers can toggle display modes between Cards (a box with the test’s name, average score, and creation date, the number of questions and graded tests, and buttons to view, edit, copy, or delete the test) or Table (a table with all the same information that is displayed in a card).
- The main menu for any created test will display all the students enrolled in the class, along with their score and other data related to objectives and benchmarks. On the right-hand side of the screen, teachers can view test status (review test data and flagged images), test breakdowns (reports and export data), the objectives legend, and the test questions document, if uploaded.
- It’s very easy to create, configure, and print answer sheets in Testing Assistant. Teachers select the

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“New Test” button in the desired class’s menu, or copy an existing test to use as a template and assign it to the desired class; the latter is very handy for teachers who teach multiple sections of the same course.

- Most of the test creation occurs in the aptly named Test Designer. There are three tabs in the Test Designer: Primary, Design, and Layout. Basically, each tab is a very easy-to-follow interactive form that teachers fill out to create the test. Clearly labeled options and a simple layout plus the use of drop-down menus and check boxes make it easy to quickly apply settings.
 - o The Primary tab changes based on the type of section the teacher wants to create. When configuring a multiple-choice section, teachers are asked to fill in how many questions they’d like to create along with the number and type of answer choices (for instance, five answer choices as ABCDE). When creating Math sections, teachers select how many digits they’d like the response to have, and how those bubbles should be oriented. The use of checkboxes makes it easy to tailor the question to the teacher’s needs. For Subjective sections, teachers enter the minimum and maximum points awarded for a correct response, and format the question using drop down menus.
 - o The Design and Layout tabs are the same for all section types. The former enables teachers to name each section and select the starting question number for that section. This means that teachers can choose to start each new section from number one, which can reduce the instances of students filling in bubbles that correspond with different questions. The latter enables teachers to configure alignment settings—side-by-side (best fit) or full-width—and to insert horizontal lines, line breaks, and page breaks before a section.
- The Test Preview box lives to the right of the Test Designer, so teachers can see how the test will look with the applied settings before printing. This eliminates the waste of time and resources associated with having to reprint test answer sheets because teachers notice a mistake after they have been printed.
- Configuring the answer key was very easy. To configure correct answers for multiple choice questions, teachers simply click the desired bubble(s). For math problems, teachers simply key in the correct answer. And on subjective problems, they key in the maximum points allowed, or click the up or down arrows on the right side of the field.
- Applying scoring conditions was very easy. Teachers select one or more questions from across multiple sections using checkboxes, and apply scoring settings in an instant to those questions only.
 - o While teachers can select and apply settings for multiple choice, subjective, and math problems at the same time, they can only adjust the “treat all points as extra credit” and “require all correct answer to be selected” settings; if they want to access the multiple choice-exclusive scoring conditions, they’ll have to do so separately. While BLI technicians were happy with the existing functionality, they’d be happy to see the ability to configure the multiple choice-centric settings while math or subjective answers are also selected.
- Once configured, teachers can print the answer key—with the option to print the answer key and test document (if the test document was uploaded)—with a few mouse clicks directly from the browser. They can also opt to download the test directly from the browser to the device they’re using.

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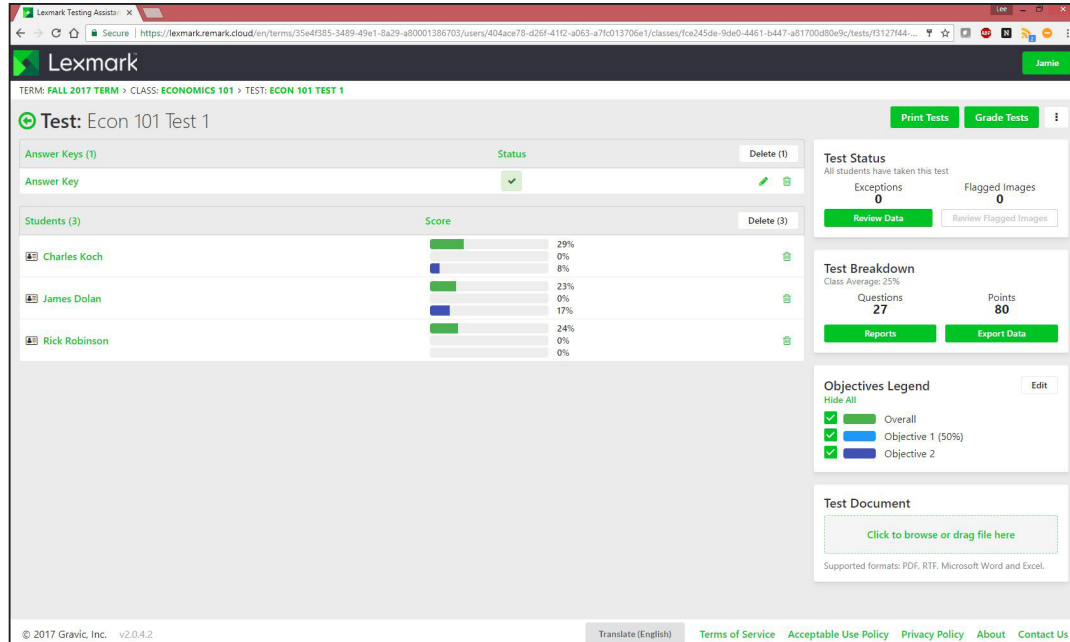
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GRADING TESTS

- Once students complete the test, teachers load the documents into the document feeder, click the test grading shortcut on the control panel, and hit the scan button; the documents are automatically routed to the email address associated with the teacher’s account. Test documents can also be scanned and routed to other destinations without using the Testing Assistant application, like a USB drive or cloud service, should teachers prefer using those instead.
 - o The shortcut is very simple. There is a column on the left side of the screen where users can change color, file type, document size, resolution, darkness, image type, express scanning, blank page removal, custom job, scan quality, edge erase, and image and color handling settings.
- Alternative methods of grading tests include scanning documents to a file and uploading the scanned test documents to Testing Assistant via drag and drop or by browsing their device’s file repository. They can also upload scanned test documents from Google Drive directly from Testing Assistant with only a few clicks. All uploaded documents are held in a queue until teachers are ready to run them through Testing Assistant for grading.
- When grading is complete, teachers review exceptions and flagged images before finalizing the grades. The interface and user experience for both tasks is very similar.
 - o For exceptions, teachers are presented with a close-up of the exception area of the scanned original, while a box on the left displays a digital, interactive recreation of the scanned original; the solution highlights the specific question on the original that requires the teacher’s attention. There are buttons to cycle through the exceptions, and the exceptions are not cleared until addressed. Teachers can adjust the student’s answers that the OMR technology was unsure of or didn’t detect, or click the “No Response (Not Reviewed)” button to skip over or ignore the exception.
 - o For flagged images, teachers are presented with a copy of the scanned original on the left-hand side of the screen, while a box on the right-hand side asks teachers if the images belong to the test. Teachers can select a radio button to either ignore the image for now, discard the image, or to reprocess the image.
- The Objectives screen features a list of test objectives on the left-hand side (this list will be empty when you’re working on a test from scratch, or a copied test that didn’t have objectives set), and a list with checkboxes for each question on the right-hand side. Once teachers click the “New Objective” button, located right above the list of objectives, they’re asked to name the objective, and select which question(s) to add to that objective. There is also a field for setting the benchmark; teachers can key in or use the up and down arrows to set from 1 to 100 percent.

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Data visualization capabilities make it easy for teachers to identify which students are struggling with the material.

- While grading tests was very easy, teachers can click the “Send Me Grade-By-Email Instructions” button should they need help.

GENERATING REPORTS AND EXPORTING TEST AND GRADE DATA

- Generating reports in Lexmark Testing Assistant is very simple. Teachers click the reports button in the Test Breakdown box on the left-hand side of the Test menu. Next, they are presented with a list of 11 reports. Teachers can select one, a collection of, or all 11 reports, and view them in the browser, download them to the device they’re using, or email them to the address associated with the teacher’s login. Teachers can also email reports to students, although those options are limited to reports regarding that specific student for compliance reasons.
- To export data, teachers click the export data button, located right next to the Reports button. Next, they’re presented with two drop downs—one for exporting test data, and one for exporting the gradebook. Teachers select their desired format, and can choose to email the data to the email address associated with the teacher’s login, or to download them to the device they’re using.

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IT ADMIN & SECURITY

Since the solution is hosted in the cloud, schools don't have to worry about any burdensome administration and maintenance tasks. Most of the administration at the school's level happens in the Account Dashboard and revolves around managing terms, teachers, classes, and students.

INSTALLATION / CONFIGURATION / ONGOING ADMINISTRATION

- Since the solution is hosted in the cloud and accessed through a web browser, no client or server-based software needs to be installed in schools. Dealers will handle the installation and setup of the solution's MFP-embedded applet, and dovetail it with each user's email address and Google Drive account.
- On the Account Dashboard, there are buttons for managing terms, teachers, classes, and students across the top of the screen, along with a button to access account settings, security settings, and account import functions. Below is a box displaying account constraints: terms, images, teachers, and students; and how many the school has allotted, in use, and remaining. A box on the right displays resource trackers.
- In the account settings tab, administrators can upload an account logo, and set up automatic submission replies and email submission whitelists. Administrators have the option to allow teachers to customize their whitelists.

CREATING AND MANAGING TERMS

- In the Term Management screen, you can add new terms, search existing terms, and edit or delete terms. In the center of the screen, administrators will see a list of all the terms with the date they were created and buttons to edit or delete them.
- Clicking on the edit button opens that term's "Term Details" page. Here administrators can rename the term, make it the current term, archive it, and save changes.

CREATING AND MANAGING TEACHERS

- In the Teacher Management Screens, administrators are presented with a list of all active teachers' first, last, and middle names, along with their salutation and username, plus buttons for editing or deleting each teacher's profile. The list can be filtered by active or all teachers. At the top of the screen, there is a search bar that can be used to search for a specific teacher, as well as buttons for scrolling through different pages of the directory.
- Clicking on the edit button enables administrators to change the teacher's salutation, first, middle, and last name, and their email address. A check box at the bottom of the screen enables administrators to make the user's profile active, or leave it unchecked to make the account inactive.

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CREATING AND MANAGING STUDENTS

- On the Student Management screen, administrators can view the school's entire roster of students, along with their first, middle, and last names, their student IDs, and their email addresses. Administrators can use the search bar to locate students, filter the list by active or all students, or search for students manually.
- Administrators can add new students to the system in two ways: manually from within Testing Assistant, or by importing a list from other applications.
 - o To add a student, or when editing an existing student's profile, administrators enter the student's ID, first, middle, and last name, and their email address. A check box at the bottom indicates that students are active; if left unchecked, students will be inactive.
 - o Administrators can import a CSV or Excel file to add an entire roster of students, with the option to add them directly to a class. These files require the students' IDs and first and last names, and can support middle names and email addresses, should the school decide to use that information.

CREATING AND MANAGING CLASSES

- In the Class Management screen, administrators can view each current term's classes, their class ID, the teacher assigned to the class, and the term; administrators can filter between the current term and all terms plus active terms and all terms. Administrators can locate classes using the search bar, or by scrolling through the list of classes.
- Clicking a class's edit icon enables administrators to name the class, name the class ID, and assign the teacher and the term. A check box at the bottom can be clicked to make the class active, or can be unchecked to make the class inactive.
- Administrators can populate each class with students in two ways: manually from a list of students already in the system, or automatically using an existing file, such as one from a school's existing Student Information System (SIS), for example.
 - o If administrators chose to add students manually, they can search for students by name or ID, then add them to the roster one at a time.
 - o You can also import a roster of students using a CSV file with the students' IDs, and first and last names (the system is set up to also collect middle names and email addresses).

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SECURITY

- Administrators can put users into groups, and control what permissions they have in Testing Assistant based on the group they are a part of.
 - There are five account types—teacher, school, account, client, and world. Administrators can select which permissions each account type has from 43 different options. Groups can be named, and administrators can write a brief description about each group. Groups can be created from scratch or copied from an existing group.
- The solution can be set to require users to enter a password before deleting a term, class, student, or teacher.
- Passwords must meet a minimum complexity standard, which makes it harder for unauthorized personnel to breach the system by guessing their colleagues’ passwords. When a new account is created, a temporary password is created along with it; teachers are encouraged to change this password upon their initial login. Passwords are protected in the database as a nonreversible salted hash. SSL technology protects data in motion using server authentication and data encryption.
- Data are stored in data centers distributed across the United States. These data centers are staffed by accredited technicians, and protected by two-factor authentication, video surveillance, intrusion detection systems, fire detection and suppression systems, and 24/7 security personnel.
- Data are backed up on an hourly and daily basis to an encrypted, centralized backup system hosted off-site. Customer data are stored on a RAID 1 arrays.
- Magnetic storage devices used in these data centers are demagnetized and physically destroyed using industry-standard best practices once they’ve reached the end of their lifecycle, so you don’t have to worry about cyber criminals finding sensitive information on decommissioned devices.
- **The data centers are certified for:**
 - SOC 1 / SSAE 16 / ISAE 3402
 - SOC 2
 - SOC 3
 - FISMA
 - DIACAP
 - FedRAMP
 - DOD CSM Levels 1 – 5
 - PCI DSS Level 1
 - ISO 9001 / ISO 37001
 - ITAR
 - FIPS 140-2
 - MTCS Level 3
- According to Lexmark, the network provides protection against DDoS attacks, Man in the Middle attacks (MITM), IP spoofing, port scanning, packet sniffing, and other traditional network security concerns. Network security audits are performed regularly.

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SUPPORT & TRAINING

Support and training for Lexmark Testing Assistant are provided by the dealer and come at no additional cost to the customer. Teachers can watch the seven how-to videos or read the 15-page User's Guide to learn how to use the system. In addition, there is a "Send Me Grade-By-Email Instructions" button on each test's main page, which sends instructions on how to grade tests via email to the teacher's email address.

VALUE

Lexmark Testing Assistant carries a list price of \$159 a year per teacher, with volume discounts based on the number of teachers, length of subscription, and number of devices purchased. Since the solution is priced per user, it may be more expensive to deploy in districts with a lot of teachers when compared to other solutions that offer device-license pricing structures.

- The solution is hosted in the cloud, so school districts don't have to purchase additional servers to support the solution.
- Other traditional automatic test grading solutions use specialized, single function devices that are expensive to maintain, and require schools to stock costly, proprietary media. But with Lexmark Testing Assistant, school districts can use inexpensive Lexmark MFPs and ordinary office paper.

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