
Math Redesign Toolkit

For Faculty Redesigning Developmental and Collegiate
Math Programs/Courses

August 2015 • Version 1



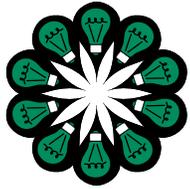


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Portions of the Math Redesign Toolkit were contributed by the National Center for Academic Transformation (www.thencat.org). Contributed items are denoted by ❖.

How to Use This Toolkit

Pearson has embarked on a global education initiative to dedicate itself to the pursuits of improved learner outcomes and improved efficacy—the measurable impact on improving an individual’s life through learning. Data indicate that redesign is a way to accomplish just that. To that end, we have created this Math Redesign Toolkit—a combination of best practices for successful implementations of Pearson digital products and the achievements of redesign objectives developed jointly by the [National Center for Academic Transformation \(NCAT\)](#), the [Charles A. Dana Center at the University of Texas at Austin](#), [Pearson’s Faculty Advisor Network](#), and other industry thought leaders.

The content within the toolkit is organized by topic and worksheets are provided to help you and your team to develop a carefully planned and actionable road map of your redesign. The ways in which you use this guide will depend on your individual role in redesign process. Keep in mind that all successful and documented redesigns have required collaboration across stakeholder groups. Since Pearson began collecting data on higher education redesigns, we’ve noticed that specific redesign characteristics and proven best practices result in repeatable, above-average learning gains, as well as gains that continue to improve over time and throughout the course sequence.

We’ve only begun to scratch the surface of the various math redesign models being implemented by higher education educators around the world. We are committed to supporting those efforts by working with educators who are ready to take risks, to frequently review their results, and to refine their implementations in order to discover the best combination of best practices for their institutions.

Our most recent efficacy report, [Active Learning: Implementation Strategies for High Impact](#), identifies four active-learning models—emporium/lab based, blended/hybrid, flipped classroom, and fully online—via 12 case studies across a variety of disciplines, each of them full of compelling, data-supported research.

Contact Pearson with questions about this toolkit or to share ideas, best practices, and Pearson digital product implementation results.

We look forward to hearing from you.

Mary Jo Lawless
Efficacy Results Manager
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*Pearson does not endorse nor are we responsible for the content or accuracy of non-Pearson websites.



Thorough planning is essential to ensuring a successful redesign implementation, but moving to implementation of your redesign as quickly as possible is equally important. Practice makes perfect!

Topic I. Readiness Checklist*

Before beginning a redesign, most institutions find it useful to assess their readiness. A successful redesign requires that both institutional support and needed resources be in place before the redesign begins. Use the checklist to identify gaps in planning. Use the spaces to assign a date and/or lead person who will be responsible for each action.

- Have you clearly identified the problem or issue you want to solve? Do you have data to support the extent of it? Do others on campus also acknowledge it? _____
- Have you identified the quantifiable goals you want your redesign to achieve? _____
- Can you identify specific learner outcomes that will enable you to reach these goals? _____
- Have the course's expected learning outcomes and a system for measuring them been identified? _____
- Will you partner with Pearson's Efficacy Results team to help analyze data and document learning gains? _____
- Have you chosen a redesign model to deliver content and implement technology? _____
- Have you selected the technology and text that will help you achieve your redesign goals? _____
- Have you formed a redesign team that includes faculty, administrators, technology professionals, and assessment experts? Does the team understand the scope of the task? _____
- Have you established specific assignments for team members and involved parties to complete during the planning period? _____
- Have team members and other involved parties read the [MDRC Report](#) that analyzes how the New Mathways Project is laying the groundwork for implementation of multiple pathways, successful redesigns on the [NCAT website](#), [Pearson's Results Library](#), or [here](#), and discussed them? _____
- Are you open to incentivizing redesign committee members? _____
- Have you devised a plan to handle negative feedback from your redesign committee? _____
- Have you determined how you will handle redesign fatigue and verbal dissenters? _____
- How open are team members to partnering with a Pearson Change Management service? This could include wrap-around professional development services, Faculty Advisor consultations, and other services that could support the team and increase member confidence. _____
- Is the team open to consulting with external parties (e.g., Pearson, experienced redesign educators from other campuses)? At what stage in your redesign would you do this? _____
- Have you isolated Change Management issues from redesign issues? _____
- Will you conduct a pilot implementation before embarking on a full-scale rollout? _____
- Do you have the resources to support a redesign? Have you identified sources of external/internal funds? _____
- Do the parties who schedule classroom space understand the needs of the redesign? Do they have sufficient information to make appropriate decisions? _____
- If your campus is unionized, has the redesign plan been discussed with union leadership? Have you shared common assessments, syllabus, assignments, essays, and so forth? _____

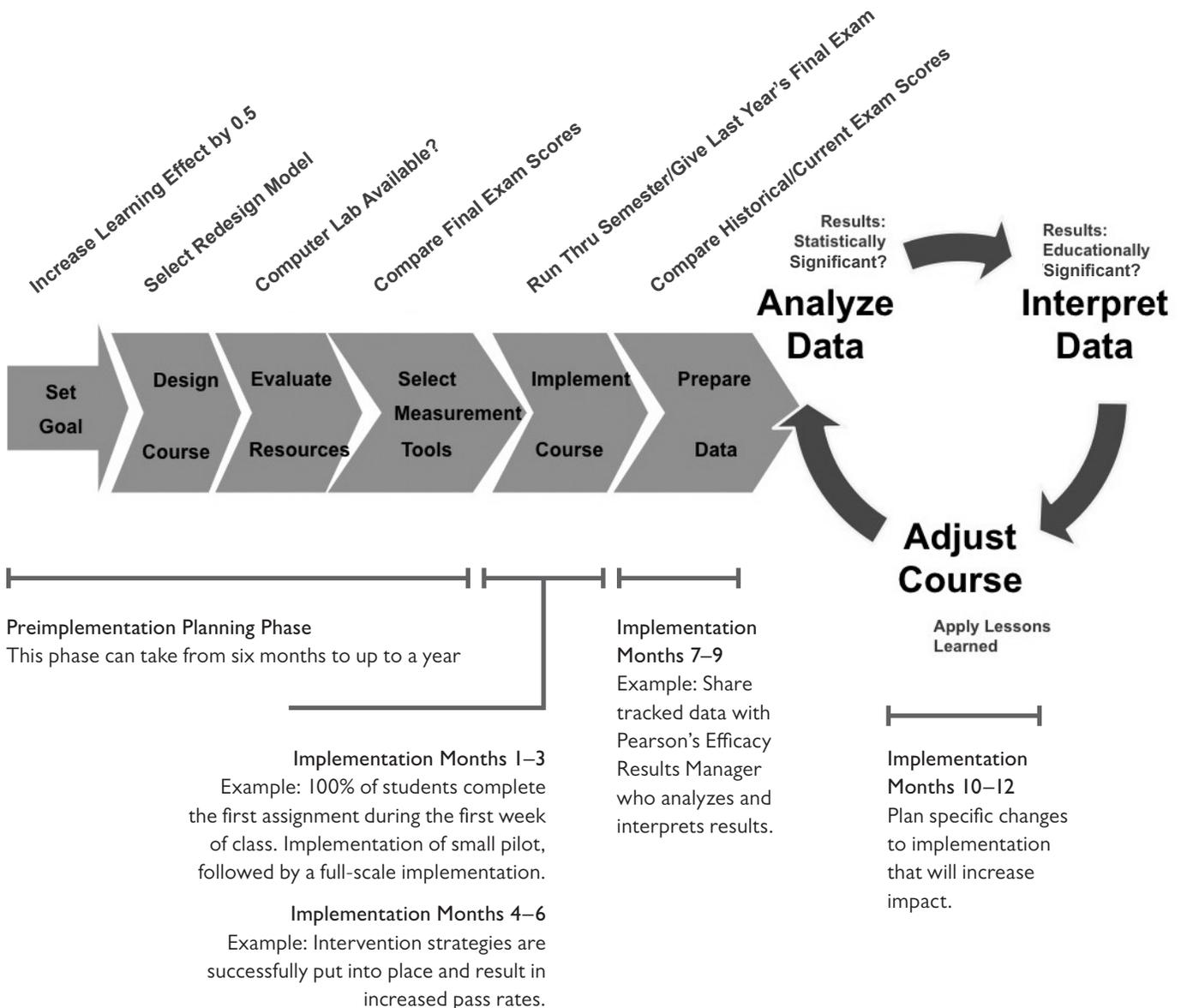
Topic 2. Redesign Timeline



To connect with a Pearson Faculty Advisor, contact your local Pearson representative or visit <http://community.pearson.com/fan>.

Sample Timeline

Below is a sample redesign timeline showing key milestones and approximate time frames. See the following pages for a worksheet designed to guide you through the process of creating a timeline specific to your redesign.



Timeline Worksheet

Use this worksheet to establish the foundation of your institution's redesign timeline. Be as thorough as possible and, when relevant, include due dates and responsible team members. Once you've determined each key element, use the answers to build your timeline noting key milestones from preimplementation through implementation.

▶ **Set Goal**

Term/year: _____

▶ **Design Course**

Timeline: _____

Team members involved and responsibilities assigned:

▶ **Evaluate Resources**

Timeline: _____

Team members involved and responsibilities assigned:

Campus resources needed:

Financial resources needed:

Technology resources needed:

Other resources:

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► **Select Measurement Tools**

How will you assess student learning?

What will you measure and why? What would you like to learn from the data?

Team members involved and responsibilities assigned:

► **Implement Course**

Will you run a pilot? _____

If so, when and how many sections? _____

► **Prepare Data**

Timeline: _____

Will you be sending data to Pearson's Efficacy Results Manager for analysis and interpretation? If so, have you been in contact with that person to set expectations and timeline? _____

► **Analyze Data**

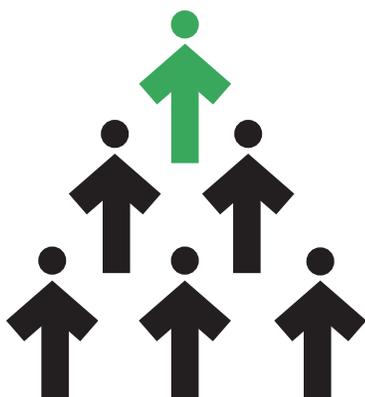
Are the results statistically significant? _____

► **Interpret Data**

Are the results educationally significant? _____

► **Adjust Course**

What will you do differently next term?



Topic 3. Models for Math Redesign

Developmental education programs are undergoing tremendous change as educators across the country explore innovative ways to increase student success. Pearson has partnered with faculty from a variety of institutions to develop products that work with these emergent course and program models. Click on the model to see how Pearson's high-quality content works with new modes of instruction and delivery to support educators as they strive to meet every student's needs and increase student success.

All in One and/or Modular Programs

A course sequence that is usually divided into modules or units. Students are encouraged or required to move through the sequence at an accelerated pace, so many instructors prefer a technology/print solution that covers content for the entire sequence in one text and/or MyMathLab course.

Compressed Courses

A "fast track" option in which two courses are covered during one semester.

Co-Requisite Courses

Complete, college-level math courses with just-in-time, integrated reviews of select developmental algebra topics.

Pathways

New course options for students on different paths, typically STEM versus non-STEM. See the Charles A. Dana Center at the University of Texas at Austin [New Mathways Project](#).

Non-Course-Based Remediation

Nonsemester-based programs that offer quick review and remediation to help students place into higher-level courses.

Topic 4. Choosing the Right Digital Courseware*

It is useful for teams to consider the range of technology options now on the market. Prior to making a technology selection, a team should invite various vendors to demonstrate products and discuss institutional, departmental, and course needs in order to determine how well a technology package could meet those needs.

The following list was developed by Phoebe Rouse, director of precalculus mathematics at Louisiana State University. It provides a structure for teams to use as they consider which digital courseware would work best with their students at their institutions.

Must Haves (without these, nothing else matters!)

- **Reliability.** Students and faculty need to know that the software will operate consistently—and without major or frequent downtimes.
- **High-quality content.** Faculty must feel confident that the content included is comprehensive, current, and well explained.
- **User-friendliness.** The software must be easy to use. Explanations to faculty for setting up the software with the appropriate learning resources, homework, and assessments should be clear. Software should be easy for students to use so that they can focus on learning the course content, not learning the software.

Other Features to Consider

- Ease of installation
- Cost to student
- Cost to institution
- Quality and accessibility of technical support
- Vendor willingness to provide training
- Browser restrictions
- Platform restrictions
- Capability for faculty to communicate with students
- Tutorial features



Choosing the right technology product for your redesign can help focus pedagogy, course structure, and organization. Choosing a software package upfront will allow you to focus on the more important and more difficult elements of redesign. In addition, you cannot begin to implement your redesign without having made a technology choice. This should be done early in the planning process.

- Textbook included
- Videos
- Partial credit for multipart questions
- Pooling for tests
- Sophistication of testing mechanism
- Coordinator/master course capability
- Grade book features
- Ease of ability to export grades
- Feedback after submission
- Ability to print student work
- Multiple attempts allowed on assignments
- Settings for individual students
- Software compatibility with Americans with Disabilities Act



For a demonstration of how a Pearson digital product can be used to support your redesign goals, please **contact your local Pearson representative.**



Topic 5. How to Assess Student Learning[❖]

The basic assessment question is: has improved learning been achieved as a result of the redesign? Answering that question will require that you compare learning outcomes from the course as delivered in both traditional and redesigned formats. First, establish a method of obtaining data and then choose the measurement method.

How and when do you obtain the data?

There are several ways to acquire the data.

► During the Pilot Term

This comparison can be accomplished in either of two ways.

- **Parallel Sections (Traditional and Redesign)**
Run parallel sections of the course in traditional and redesigned formats and look at whether there are any differences in outcomes—a classic “quasi-experiment.”
- **Baseline Before (Traditional) and After (Redesign)**
Establish baseline information about student learning outcomes from an offering of the traditional format before the redesign begins and compare the outcomes achieved in a subsequent (after) offering of the course in its redesigned format.

Note: The number of students assessed should include at least 100 from the traditional format and 100 from the redesigned format.

► During the First Term of Full Implementation

Because there will not be an opportunity to run parallel sections once the redesign reaches full implementation, use baseline data from an offering of the traditional format before the redesign began, or the parallel sections of the course offered in the traditional format during the pilot phase.

The keys to validity in all cases are the following:

- Use the same measures and procedures to collect data in both kinds of sections.
- Ensure as fully as possible that any differences in the student populations of each section are minimized (or at least documented so that they can be taken into account).

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What measures should you use?

The degree to which students have actually mastered course content appropriately is, of course, the bottom line. Therefore, some kind of credible assessment of student learning is critical to the redesign project.

There are four measures that may be used.

► 1. Comparisons of Common Final Exams

One approach is to use common final examinations to compare student learning outcomes across traditional and redesigned sections. This approach may include subscores or similar indicators of performance in particular content areas as well as simply an overall final score or grade. *(Note: If a grade is used, there must be assurance that the basis on which it was awarded is the same under both conditions, e.g., not curved or otherwise adjusted.)*

Examples

Parallel Sections

“During the pilot phase, students will register for either the traditional course or the redesigned course. Student learning will be assessed mostly through examination developed by departmental faculty. Four objectively scored exams will be developed and used commonly in both the traditional and redesigned sections of the course. The exams will assess both knowledge of content and critical-thinking skills to determine how well students meet the six general learning objectives of the course. Student performance on each learning outcome measure will be compared to determine whether students in the redesigned course are performing differently than students in the traditional course.”

Before and After

“The specifics of the assessment plan are sound, resting largely on direct comparisons of student exam performance on common instruments in traditional and redesigned sections. Faculty have developed a set of common, objective questions that measure the understanding of key concepts. This examination has been administered across all sections of the course for the past five years. Results obtained from the traditional offering of the course will be compared with those from the redesigned version.”

► 2. Comparison of Common Content Items Selected from Exams

If a common exam cannot be or has not been given, an equally good approach is to embed common questions or items in the examinations or assignments administered in the redesigned and traditional delivery formats. This design allows common baselines to be established. For multiple-choice examinations, a minimum of 20 such questions should be included. For other kinds of questions, at least two or three complex problems should be included.

Examples

Parallel Sections

“The primary technique to be used in assessing content is common-item testing for comparing learning outcomes in the redesigned and traditional formats. Direct comparisons of learning outcomes will be obtained from 15 common complex problems embedded into course assessments: five early in the semester, five at midsemester and five in the final examination in both the traditional and redesigned courses.”

Before and After

“The assessment plan will address the need to accommodate a total redesign. The plan calls for a before/after approach using 30 exam questions from the previously delivered traditionally-configured course and embedding them in exams in the redesigned course to provide benchmarks for comparison.”

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► 3. Comparisons of Pre- and Posttests

A third approach is to administer pre- and posttests to assess student learning gains within the course in both the traditional and redesigned sections and to compare the results. By using this method, both posttest results and value-added analyses can be compared across sections.

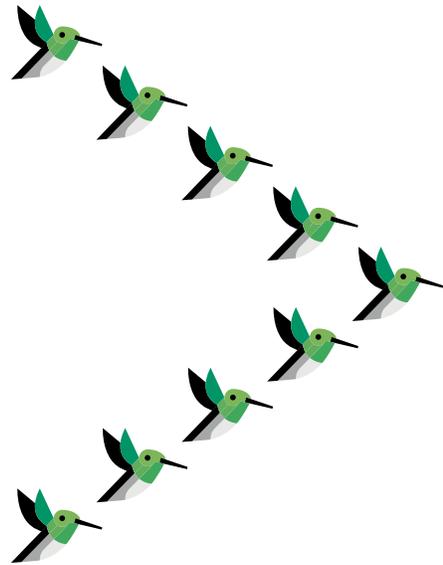
Examples

Parallel Sections

“The most important student outcome, content knowledge, will be measured in both redesigned and traditional courses. To assess learning and retention, students will take: a pretest during the first week of the term and a posttest at the end of the term. The faculty, working with the evaluation team, will design and validate content-specific examinations that are common across traditional and redesigned courses. The instruments will cover a range of behaviors from recall of knowledge to higher-order thinking skills. The examinations will be content-validated through the curriculum design and course objectives.”

Before and After

“Student learning in the redesigned environment will be measured against learning in the traditional course through standard pre- and posttests. The college has been collecting data from students taking this course, using pre- and posttests to assess student learning gains within the course. Because the same tests are administered in all semesters, they can be used to compare students in the redesigned course with students who have taken the course for a number of years, forming a baseline about learning outcomes in the traditional course. Thus, the college can compare the learning gains of students in the newly redesigned learning environment with the baseline measures already collected from students taking the current version of the course.”



Topic 6. How Pearson Can Help You

Pearson's Efficacy Results Team: Our Mission

The core focus of the Efficacy Results Team is to help educators make efficacy—the measurable impact of learning—a reality. We partner with educators to produce evidence, including case studies, white papers, course redesign presentations, and data-rich video clips, that documents observable gains in student learning via innovative instruction using Pearson digital products and solutions. Our goal in sharing these results with educators is to highlight best practices that lead to better outcomes. To learn more, visit [Pearson's Results Library](#) or consult [Efficacy in Education](#), a description of Pearson's long-term efficacy goals.

Participating in an Efficacy Study

Are you interested in partnering with Pearson on a case study? Perhaps you are being asked to report on student learning outcomes, are implementing a course redesign, or you are wondering, to what extent, your Pearson digital product is having an impact on your students' success. Our goal is to document and share successful digital implementations and results with other instructors interested in using (or new to using) a Pearson digital product. Your success—and how you achieved it—can be helpful and inspiring to your peers.

Questions to Consider

- What are the issues and challenges you are trying to address?
- What specific, quantifiable outcomes are you trying to achieve?
- How will you measure these outcomes?
- How will you implement your chosen Pearson digital product to generate results?

What Quantitative Results Can Be Measured?

What results you measure will depend on your specific course goals and course design, but may include:

- Comparison of grade distributions before and after a digital implementation
- Comparison of final course grades before and after required use of technology
- Comparison of test averages, pass rates, success rates, or retention rates over semesters
- Accelerated completion of remedial courses
- Completion and achievement in subsequent course success
- Classroom time savings or departmental cost savings with the use of learning technology
- Improvement of placement test scores after completing work in a Pearson digital product

Don't Forget about Qualitative Observations, such as:

- Students are coming to class more prepared and more engaged
- Improved class discussions, students are asking higher-level questions
- Students taking ownership of their learning, demonstrating agency and purpose in pursuit of their academic goals

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The Case Study Process

1. Overview call with Pearson efficacy results manager to discuss challenges and goals, identify measures of success, and agree on an implementation plan and next steps.
2. Submission of quantitative and qualitative results and discussion of outcomes. Your Pearson efficacy results manager is ready to assist with data analysis, document best practices, and share reporting for evaluation and determination of next steps.
3. Pearson completes the case study and sends it to the instructor for review and approval.
4. Pearson publishes the case study on its [Results Library](#) for sharing with other Pearson digital product users and potential users.
5. The instructor may choose to share the published results with colleagues, at conferences, and so on.

If you'd like to participate in a case study or would to receive downloadable data-collection tools in an editable format, please contact the relevant Pearson efficacy results manager listed below.

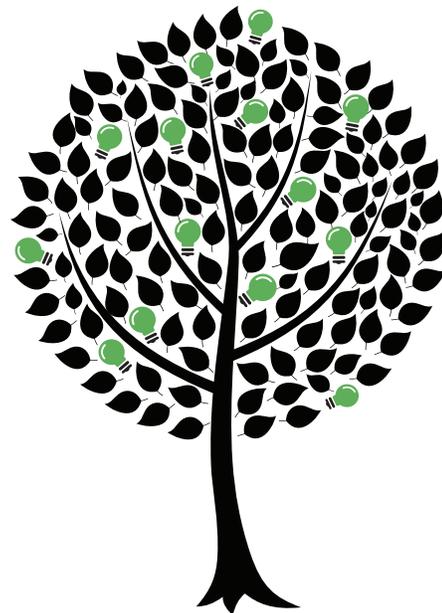
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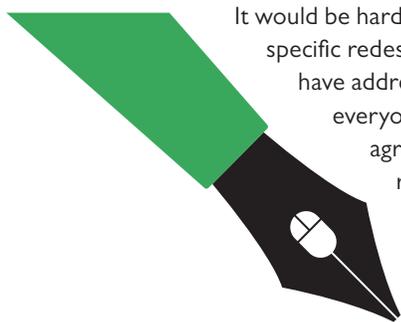


See [Pearson's Efficacy Program and Standards for Efficacy Research](#) for more information on how we measure and improve our likelihood of impact on learners and ensure we're doing all we can do to equip learners for success.



Topic 7. Redesign Getting Started Worksheet

Pearson is committed to providing higher education institutions with the tools they need to achieve their student access, success, and retention goals. After years of working with a diverse and countless number of community colleges, public and private colleges, and universities, we can confidently say that all postsecondary institutions are capable of achieving improved outcomes. To further support your implementation's success, Pearson has created the worksheets on the following pages. They are designed to be printed, filled out, referred to, and revised throughout your implementation.



It would be hard to overstate the importance of having a written, specific redesign plan. Writing things down ensures that you have addressed each issue. Writing things down ensures that everyone involved in the redesign knows what has been agreed to. And a written plan can be referenced and revised throughout the process when necessary, serving as a road map to keep everyone on track. ❖

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Course Name: _____

TOPIC	NOTES
<p>ISSUES: What are the main issues you are trying to solve through a redesign? <i>E.g., Too many students drop out of the course too early thus jeopardizing completion rates in general at our institution.</i></p>	<p>Getting Started</p>
<p>GOALS: What are the quantifiable goals you want the redesign to achieve? <i>E.g., Increase retention rates by 7–8% within 12 months.</i></p>	
<p>LEARNER OUTCOMES: Identify specific learner outcomes that will enable you to reach the above goals. <i>E.g., 1. 100% of learners register by first day of class. 2. 100% of learners complete their first assignment by the due date assigned. 3. Learners demonstrate persistence by completing a series of assigned activities that results in mastery.</i></p>	

TOPIC	NOTES	TOPIC	NOTES
The Redesigned Course			
Delivery format E.g., lecture, lab, fully online		Which redesign model(s) did you choose to deliver content and implement technology? (See Solutions for Math .) Some redesign models and their results: Modular, Compressed, Non-Course-Based, Emporium . See also The New Mathways Project . ♦	
Annual enrollment		Annual enrollment	
Section size/semester		Section size/semester	
Textbook in use		Textbook to be used	
Technology in use		Technology to be used	
 Being specific about your redesign prior to its initiation will minimize the number of problems you'll have during the startup phase. ♦		If you haven't yet chosen course materials, how will you evaluate the content and technology you'll be using to redesign?	
Structure (meeting times per week)		Structure (meeting times per week)	

TOPIC	NOTES	TOPIC	NOTES
The Current Course	<div data-bbox="305 1178 537 1755" style="border: 1px solid #ccc; border-radius: 15px; padding: 10px; background-color: #fff9c4;">  <p>Redesign involves a lot of change, a lot of moving parts, and a lot of people. Be clear about the specific changes you plan to make and be able to explain them to multiple audiences. ✦</p> </div>	The Redesigned Course	
		Team leader	
		Team Members	
		How will you measure learning gains? (See Topic 5. How to Assess Student Learning)	
		Will you run a pilot? If so, how many sections and when?	

TOPIC	NOTES
<p>INSTITUTIONAL SUPPORT: Do you have institutional leaders (e.g., deans, provosts, chairs) who are supportive of your redesign commitments?</p> <p>FINANCIAL SUPPORT: What financial resources are available to support the redesign? Pearson Grant Help</p> <p>FACULTY SUPPORT: Are faculty teaching the redesign course(s) on board?</p> <p>PROFESSIONAL DEVELOPMENT PLAN: Have you put together a professional development plan for faculty? If you are adopting the New Mathways Project model, contact the Dana Center for faculty workshops and professional learning services.</p> <p>TECHNOLOGY SUPPORT: Do you have the support of the campus technical or IT group?</p> <p>PEARSON SUPPORT: For more information on how Pearson can help support your redesign efforts,</p> <ul style="list-style-type: none"> • see the MyMathLab Implementation Guide, • consult Pearson's Educator Training and Support Web page, or • contact a Pearson representative. 	<p>Available Support</p>

Appendix A. Pearson's Efficacy Program and Standards for Efficacy Research

At Pearson, we believe that learning is a life-changing opportunity and that education should have a measurable, proven impact on learners' lives. It's what Pearson's efficacy program and tools are all about. They're how we measure and improve our likelihood of impact on learners and ensure we're doing all we can do to equip learners for success.

What Pearson Means by *Efficacy* and *Effectiveness*

- *Efficacy* describes whether a product or intervention has a positive effect on learning, such as reducing wrong answers, increasing retention rates, or raising final exam scores.
- *Effectiveness* measures the size of the educational improvement from a product or educational intervention.

Why Pearson Is Interested in Efficacy Studies

To deliver the best educational experience for students, we need to understand how Pearson's content is performing and to verify the learning gains associated with the use of our products. Toward that goal, we actively seek out educators who wish to explore educational research questions and investigate the efficacy of Pearson's digital learning solutions.

Pearson's Efficacy Research Team

Our research team includes PhD-level statisticians who provide practical advice about tracking and analyzing student data after the redesign of a course to incorporate technology. Our research team also includes experts in psychometrics, educational statistics, and journal publications. These individuals support instructors who want to conduct efficacy studies, provide our editorial staff with detailed reports on the quality of our online content, and advise our software engineers of new methodologies for collecting and processing the student learning data within Pearson's digital learning solutions.

How Pearson and Instructors Work Together

Every research project is unique. The process takes time—generally a semester or longer. Instructors interested in conducting studies can expect an interactive and rewarding partnership.

How Pearson Can Help Instructors Get Started

Pearson can provide templates, guidelines, checklists, and samples on course redesign, efficacy studies, data collection, and more. To maintain objectivity, Pearson does not offer compensation for participation in efficacy studies.

Research Standards

Pearson adheres to Software & Information Industry Association guidelines for evaluation of educational technology products. The key guidelines are:

- Ask the right question
- Support the implementation of the product or service
- Plan a study of sufficient size and duration to demonstrate an effect
- Plan for plausible causal claims
- Avoid (the appearance of) conflicts of interest
- Provide a comprehensive and detailed research report
- Make the research findings widely available
- Accurately translate research for customers

Correlational studies are not meant to imply causality. Rather, they demonstrate interesting associations that may be used for further theory building or theory testing in future experimental studies.

For more information, contact Mary Jo Lawless, Efficacy Results Manager at maryjo.lawless@pearson.com.

Appendix B. 10 Steps to Successfully Implementing Your Pearson Digital Product

Successful implementations do more than simply add learning technology to their curricula: the ways a Pearson digital product is implemented significantly contribute to their positive results. Below you'll find 10 recommended best practices that will help you and your students get the most out of your active learning implementation.

1. Identify the problems you want to solve. An examination of the most-successful Pearson digital product implementations show that one common thread emerges: schools that have achieved success knew precisely what they wanted to accomplish. They established clear educational goals at the outset and then designed implementations specifically so as to achieve them.

2. Choose the learning technology, textbook, and method of delivery that best fit your goals. Assign the specific Pearson digital product features that will help you achieve your stated goals.

3. Build an assessment plan. How will you measure success? What are the quantifiable goals you want to achieve? Pertinent metrics might include comparisons of homework grades, exam scores, final course grades, or retention rates with those of previous semesters; correlations between Pearson digital product assessment scores and exam scores; or student success rates in subsequent courses they take.

4. Get everyone—and keep everyone—on the same page. Communicate your goals clearly to colleagues, students, and administrators. Train all full-time instructors, part-time instructors, adjuncts, tutors, and other key players—and make available plenty of opportunities for continuous training. Pearson provides product and implementation training to help ensure that your implementation aligns with your goals.

5. Start small. Slowly integrate Pearson digital products into your course. Start with requiring homework such as chapter exams, study plans, or writing assignments. When you're ready, add more assignments and activities.

6. Position students for success. Students tend to skip optional assignments. Experienced users recommend counting use of a Pearson digital product as at least 10 percent of the final course grade. Provide structure: clearly communicate course and workload expectations and set firm and consistent deadlines. Finally, conduct a Getting Started orientation on the first day of class to show students how to access the MyLab & Mastering materials and assignments they'll be responsible for. Visit www.pearsonmylabandmastering.com/educators/support for details.

7. Connect and engage with students. Educators implementing Pearson digital products in their classes are unanimous about the importance of individually connecting with students both in class and outside class. Some educators recommend not waiting for students to ask questions about their work. Rather, they suggest circulating in the classroom proactively to assess what students need, thereby avoiding student embarrassment. For outside class, consider sending weekly emails containing kudos for those doing well and offering support and intervention to those who are having trouble or not completing their work.

8. Employ personalized learning. The most-successful learning solutions include personalization and immediate feedback that engage students in active learning and enhance and inform assessment. Students using Pearson digital products can complete assessments at their own speed and, via diagnostics performed as they progress, can follow a personalized learning path that both targets the exact content/skills they need to work on and delivers the right material they need for mastering the requisite skills.

9. Conduct frequent assessments. Educators have long recognized the necessity of assessment as both a measurement of how well students are learning and a tool for critical feedback. Pearson digital product implementations enable educators to exponentially increase the *power* of assessment by increasing the *number* of assessments, thereby offering students a firsthand account of what they know and what they do not know and providing educators more opportunities to intervene before a student falls too far behind.

10. Track learning gains. What you don't track you can't measure. And what you haven't measured you can't prove has actually happened in your class. Educators who consistently track and measure learning gains are able to make informed decisions about course transformations, redesigns, or programmatic shifts and can strengthen their ability to prove institutional effectiveness, meet accreditation standards, track quality-enhancement plans, and fulfill grant requirements.

Appendix C. Resources

Pearson's Math Redesign Solutions

The Pearson team has worked with institutions to create a print and technology solutions for various course models. We have Designed for You ready-to-go solutions available for the most popular models and can create a Designed by You personalized solution for your institution.

Pearson's Redesign Community

An online community where you can ask questions and share thoughts, ideas, and knowledge about redesign while also connecting with peers already involved in the redesign process.

Pearson's MyMathLab/MyStatLab Implementation Guide

An interactive instructor training guide designed to help you design, build, and implement a MyMathLab/MyStatLab course, as well as track and measure your students' learning gains.

Pearson's MyMathLab/MyStatLab Planning Toolkit

Help with planning, implementing, and evaluating the software in your course.

Pearson's Faculty Advisor Network

A community for educators successfully teaching with MyLabs, who are both passionate and willing to share their experience, advice, tips, and best practices.

Pearson's Professional Development Resources

Faculty Video Clips on Redesign

YouTube videos of educators using MyLabs in redesigns.

Webinar Series: Math & Stats

Links and videos of recorded professional development webinars.

Redesign Case Studies

Compressed

A Front Range Community College case study in which data from a developmental math redesign pilot indicated that the average rate of student progress in redesigned classes was nearly 40 percent higher than that in traditional classes.

Emporium

A Guilford Technical Community College case study in which after redesigning its developmental math sequence with MyLabsPlus in an emporium model, the average success rate of each developmental math course increased significantly and achieved an 85 percent average subsequent course success rate.

Fully Online

A State College of Florida case study in which MyMathLab plus its accompanying Video Organizer was implemented in a fully online, self-paced elementary algebra course. Data showed that student pass rates increased by 40 percent.

Modular

A Montana State University Billings case study in which students who participated in a modularized, combined Introductory and Intermediate Algebra course performed significantly better in subsequent college algebra and finite math courses than did students who took the traditional two-semester introductory algebra and intermediate algebra sequence.

Non-Course-Based

A Honolulu Community College case study in which MyFoundationsLab was used in a Boot Camp. Data showed that 35.6 percent of students tested out of the lowest level of developmental math, 75 percent of students tested out of developmental writing, and 82.8 percent of students tested out of developmental reading. In subsequent courses, Boot Camp students who were promoted achieved an average 63 percent success rate.

Pearson's Results Library

An archive of data-driven case studies illustrating that MyMathLab and MyStatLab programs deliver consistent, measurable gains in student learning outcomes, retention, and subsequent course success.

Non-Pearson-Affiliated Programs and Organizations

Charles A. Dana Center at the University of Texas at Austin

The Charles A. Dana Center at the University of Texas at Austin works to ensure that every student leaves school prepared for success in postsecondary education and the contemporary workplace. Based on research and experience, its work focuses on K–16 mathematics and science education with an emphasis on strategies for improving student engagement, motivation, persistence, and achievement. It develops innovative curricula, tools, protocols, and instructional supports and delivers instructional and leadership development.

New Mathways Project Implementation Guide

For colleges implementing mathematics pathways based on the [NMP Model](#).

The NMP Institutional Scaling Toolkit

Developed with input from college faculty, staff, and administrators, researchers, and external experts, the toolkit is designed to support colleges as they face the challenges of moving from initial implementation to scaling the math pathways. A readiness assessment helps users determine the tools that are most appropriate for each stage of implementation.

Step 1: Review the [Introduction and Readiness Assessment](#) to understand the structure of the toolkit.

Step 2: Use the [Readiness Assessment Toolkit](#) to plan how you will use the toolkit and to download the tools and resources.

NMP Mentorship Program

The Mentorship Program supports participants in implementing the [four guiding principles of the NMP Model](#). Each mentee college is paired with a coach who provides individualized assistance through the year prior to implementation of classes. Coaches work with college leadership teams through the planning process laid out in the [NMP Implementation Guide](#).

Contact the Dana Center at mathways@austin.utexas.edu for information about faculty workshops and other professional learning services.

American Mathematical Association of Two-Year Colleges

The AMATYC mission is to promote and increase awareness of the role of two-year colleges in mathematics education.

The California Acceleration Project

The California Acceleration Project supports the state's 112 community colleges to redesign their developmental English and Math curricula and increase student completion.

Completion by Design

Completion by Design is a five-year Bill & Melinda Gates Foundation initiative that started in 2011. It works with a selected set of [community colleges](#) to significantly increase completion and graduation rates by focusing on comprehensive institutional transformation at scale. Today, groups of community colleges in three states—Florida, North Carolina, and Ohio—are engaged in a systematic process of inquiry and design aimed at systemic changes in policies, programs, and practices to strengthen pathways to completion for most students on their campuses.

National Association for Developmental Education

NADE seeks to improve the theory and practice of developmental education at all levels of the educational spectrum, the professional capabilities of developmental educators, and the design of programs to prepare developmental educators.

The National Center for Academic Transformation

NCAT is an independent nonprofit organization dedicated to the effective use of information technology to improve student learning outcomes and reduce the cost of higher education. NCAT provides expertise and support to institutions and organizations seeking proven methods for providing more students with the education they need to prosper in today's economy.

