

PWR Act Transitional Math

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Use this link to sign in to today's summit

bit.ly/pwrsummit

PWR Act

PaCE

Competency-based education

Endorsements

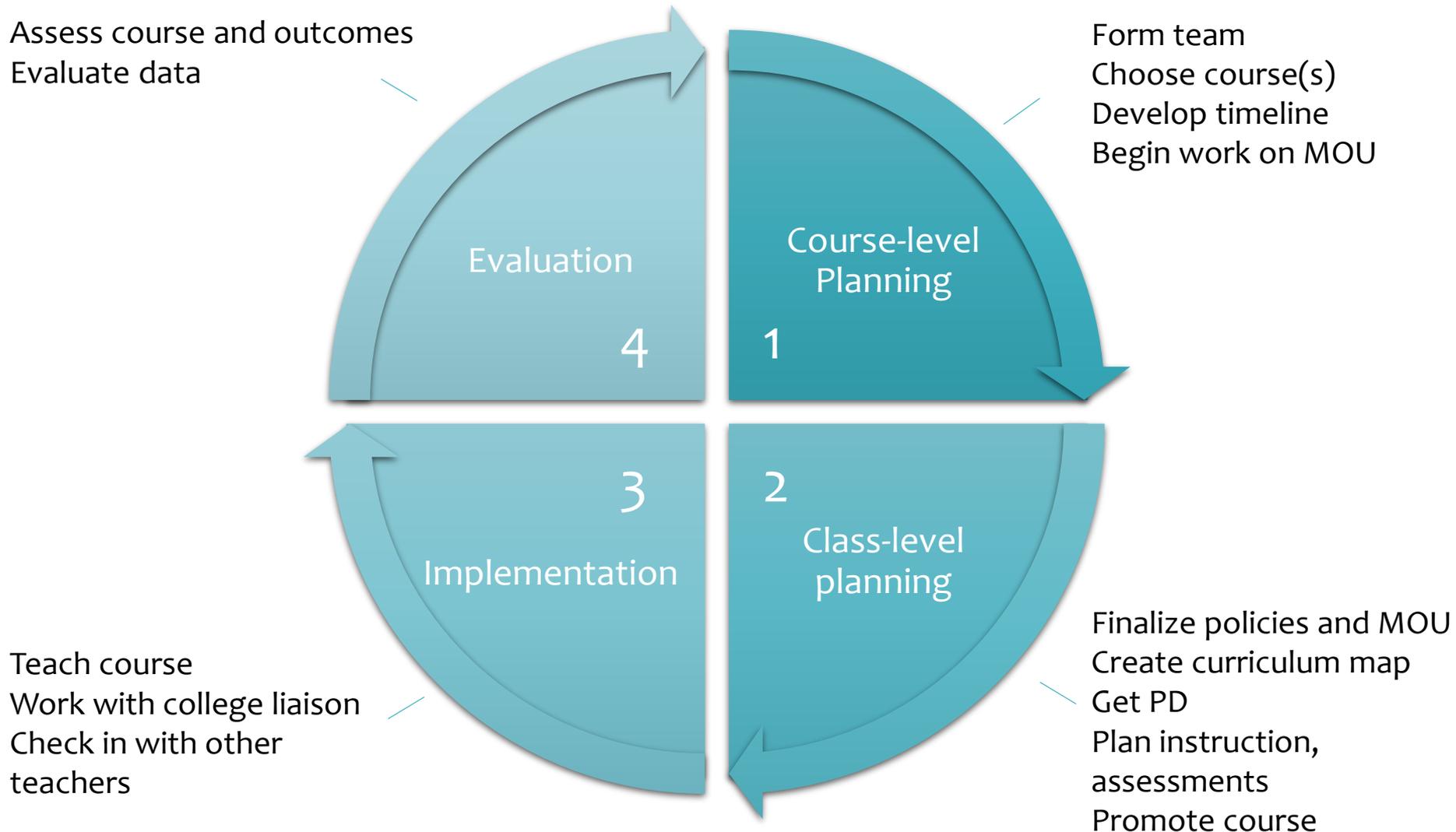
Transitional courses

Outcomes

1. Understand components to PWR Transitional Math.
2. Form your school team.
3. Discuss with your team next steps.
4. Submit school plan. (This is an estimate and can change in the future)
5. Begin MOU discussion.

Implementing Transitional Math

Like Polya's method and the assessment cycle, we will plan, do, look back, and repeat.



Overview

Alphabet soup

Board:

ISBE

ICCB

IBHE

High
School

Community
College

University

HS: High school

CC: Community College

TM: Transitional math

OER: Open (free) educational resources

PWR: Postsecondary and Workforce Readiness Act

ESSA: Every Student Succeeds Act

CCR: College and Career Readiness

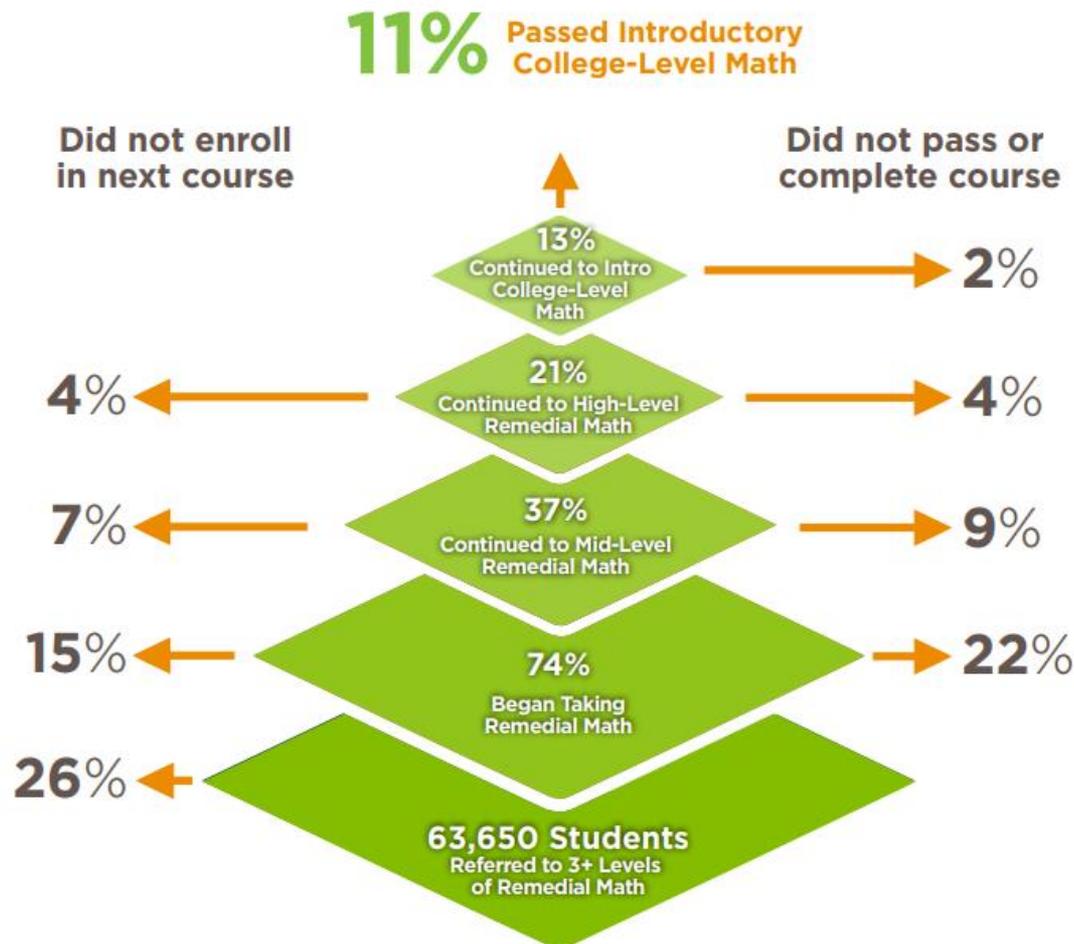
IAI: Illinois Articulation Initiative

By the numbers

1. On average, **50%** of IL HS graduates are placed into remedial education.
2. Fewer than 40% of CC students complete any type of degree or certificate within six years (Source: Bailey, 2015). Remediation plays a role.
Individuals without a degree or certificate have dramatically reduced earning potential (Source: Belfield and Bailey, 2017).
3. By 2020, **65%** of all jobs in the economy will require postsecondary education and training beyond high school.*
4. **8 out of 10** Illinois employers say they need employees with some postsecondary education (Source: 6oby25.org).

By the numbers

Student Progression Through the Developmental Math Sequence



Source:
Community
College
Research
Center

Discussion Questions:

1. Who will be on your high school or college team? Include an administrator, counselor/student services rep, and math faculty at minimum.
2. (HS) What does the data say about your remediation rates? Check the Illinois Report Card.
3. (CC) Who will be your liaison and what are their duties? How will the position be funded? As the summit goes on, you may want to add to the liaison duties list.

Talk for 5 minutes.

Postsecondary and Workforce Readiness Act (PWR Act)

Public Act 99-0674 (HB 5729); signed by Governor on 7/29/16

1. Postsecondary and Career Expectations (PaCE)
2. Pilot of Competency-based High School Graduation Requirements
3. College and Career Pathway Endorsements on High School Diplomas
- 4. Transitional Math Courses**
 - 4th year high school math courses designed to smooth transition to college and reduce remediation rates
 - Not dual credit or AP courses
 - Not for college credit

Goal: Reduce Remediation

1. Determine who is not college-ready for math in the junior year.
2. Remediate with new transitional courses in the senior year.
3. Provide guaranteed placement at all IL community colleges and some universities.

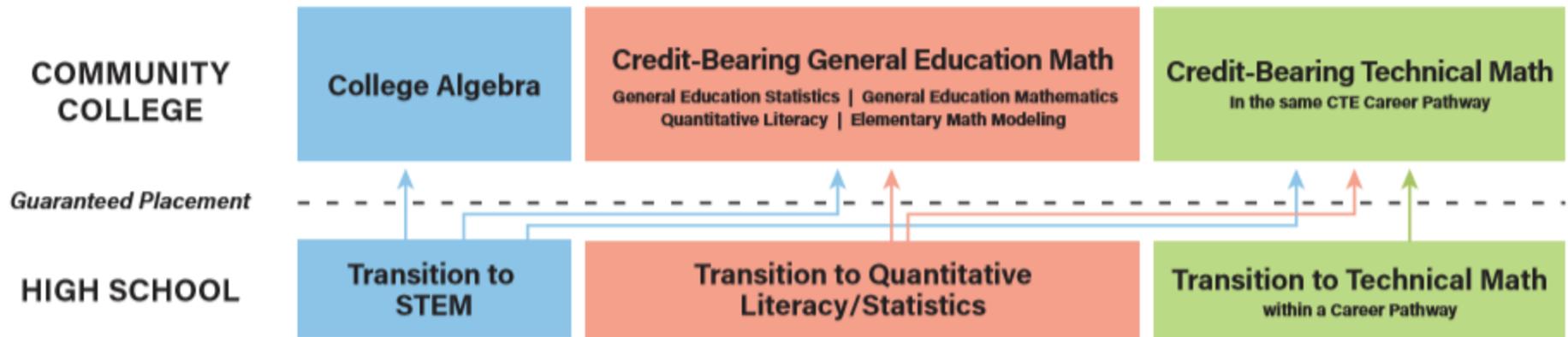
Result: Students start at college-level coursework, increasing their chances of completing a certificate or degree.

This initiative is about more than completing a class, but also a degree or certificate.

Transitional Math Logistics

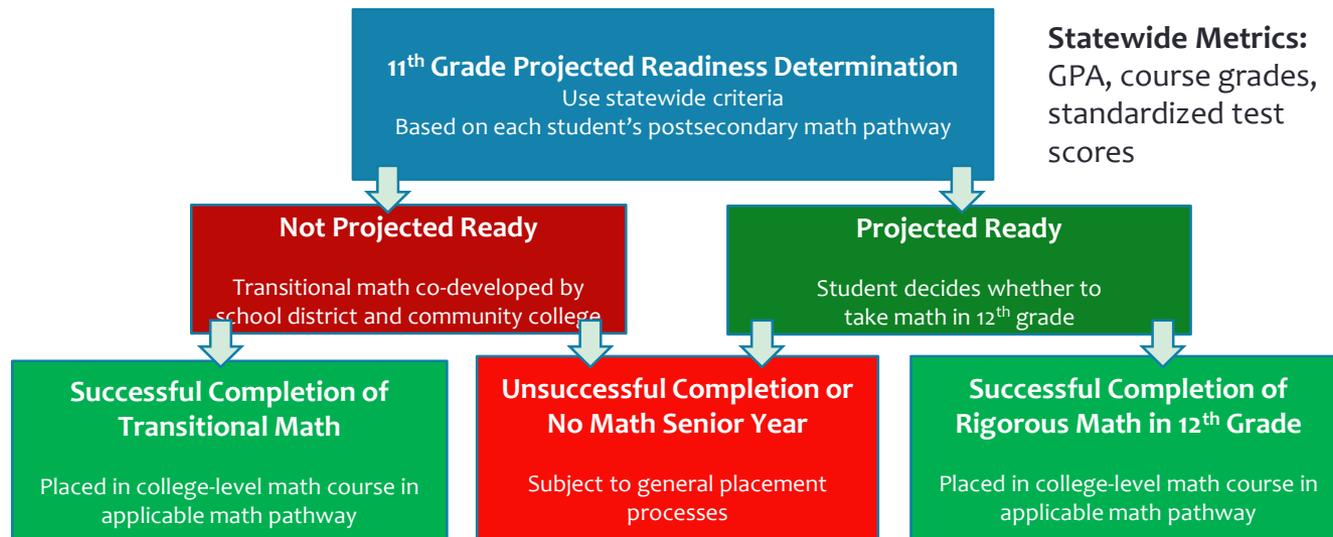
- Courses are based on a student's meta major.
- Courses are for seniors who have met or who are meeting third year state graduation requirement in math
- Placement lasts 18 months after receiving it and is based on final grade in course.
- Courses will be transcribed at high school level using a portability code
 - 3 New ISBE SIS course codes will be available for ISBE reporting purposes
- Courses can be one semester (still one credit) or one year (allows for senior year dual credit)
- Dual credit qualifications for teachers do not apply. Flexibility in where course is offered at HS.

Rethinking Math: 12th Grade to 1st Year College



- Algebra varies with pathway
- Contextualization throughout
- Default is QL Pathway

Junior year: determine college readiness



See competencies/policies document for more information.

Placement requirements to determine projected readiness for college math

A high school junior who has successfully completed state math graduation requirements and meets at least two of the following criteria **is projected to be ready for college level coursework in mathematics when arriving at a postsecondary institution in Illinois**. This determination is conditional based on enrollment in a senior year of math.

- B or better in Algebra 2
- C or better in a course higher than Algebra 2
- GPA ≥ 3.0
- Standardized Assessment: Math SAT or PSAT ≥ 530 or Math ACT ≥ 22
- Placement test score (such as ALEKS, Accuplacer, Compass, local placement instrument, etc.) into college-level math at the partner community college after taking their placement exam
- PARCC math score of 4 or 5
- Teacher and/or advisor recommendation of college-level math in the senior year

TM and graduation

TM will not satisfy a 3rd year state graduation math requirement

- Why not?
 - Supplements ILS, does not replace them
 - Would open up course to juniors who would run out of time to use placement
 - Juniors could end up skipping senior year of math (defeating the purpose)
 - Lose college buy-in with remedial courses counting for HS graduation
 - Like NCAA, since the content remediates, it is not a core course for graduation*

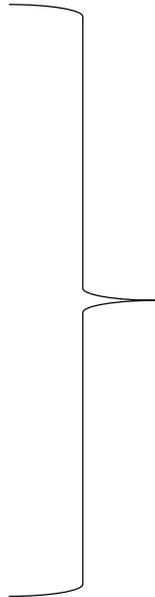
Takeaway: seniors can get graduation credit or transitional placement, but not both from the same course

Senior math course options

College – level course
(e.g, at College Algebra or
Stats level or above, DC, DE)

TM if a student has met grad
requirement or concurrently
enrolled

Complete grad requirement if
not eligible for TM



Optional

Portability

Portability: placement that goes where a student goes



Portability of courses to be determined at the state level
Verify competencies and policies are met

Courses may be approved portable starting spring 19 for fall 19 pilots.
Not approval to offer or name course

Discussion Questions:

1. (HS) What concerns or questions do you have about TM? What do you need more info on?
2. (CC) Which department at the college will be transcribing placement? Who do you need to talk to in that department to begin discussing logistics?

Talk for 5 minutes.

Implementation

Factors critical to transitional math success

MOU establishing expectations that have been agreed upon by HS and CC

Training and ongoing support for teachers, including a CC liaison

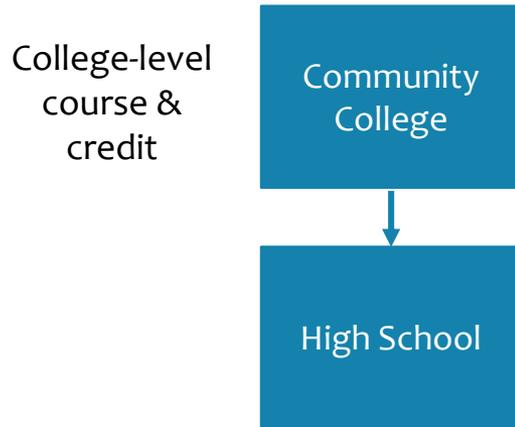
Comprehensive counseling approach

Evaluation and improvement of courses over time

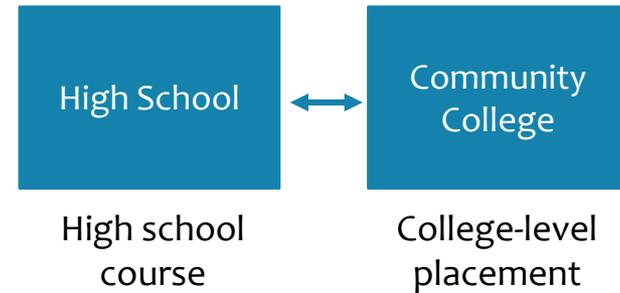
Working relationship between HS and CC and between faculty and administrators

Making TM happen: A different approach to high school partnerships

Dual Credit Course



Transitional Course



Keys to success: communication and trust, not blame

Small school solutions

- Co-op with other nearby schools
- Dual purpose course (juniors cannot receive TM placement)
- Illinois Virtual School
 - Would you use this option?
 - What pathway are you most interested in being developed first?

Courses

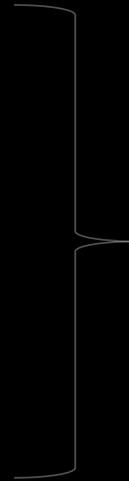
PWR Act Transitional Math: Complex problems, not just complex procedures

- Designed for seniors to give them a different experience their last year (from first 3 years or traditional dev math)
 - **The content is not new, so the experience must be.**
- Integrate contextualized learning, problem solving, and college and career readiness
- Students get to “do math”
 - See how math comes together and applies to their lives, work, and courses
 - Career exploration with authentic situations

Readiness from a college math perspective: a working knowledge of content

Students can:

- Read and think critically
- Use mathematical skills
- Use technology
- Solve problems with words



CONNECT
APPLY
RETAIN

Competencies: content in action

- Competencies are broad learning goals. They illustrate how a student can integrate and apply skills in context
- Key performance indicators (KPI's) are more like standards
 - Emphasize higher elements of Bloom's taxonomy

Competencies define a core foundation with the ability to supplement for additional specific fields

Postsecondary & Workforce Readiness Act

Statewide Transitional Math
Competencies and Policies

August 2018



See competency document for details.

bit.ly/TMcomps

Transition to Technical Math

Student population:

Student in or will be in a CTE field

NOTE: This varies locally. Work with CC.

Outcome course goal:

Use numeracy in a technical math course

TM course emphasis:

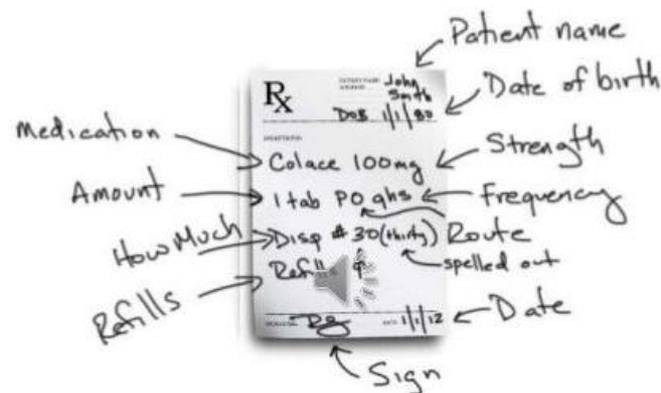
Using numeric skills easily in a variety of applied situations

A doctor orders dicloxacillin sodium 125 mg p.o. q.6.h. for a child who weighs 55 lb. The recommended dosage of dicloxacillin sodium for children weighing less than 40 kg is 12.5 to 25 mg/kg/day p.o. in equally divided doses q.6.h for moderate to severe infections. Is the dosage safe?

Abbreviation definitions

p.o. – medication is taken orally

q.6.h. – frequency of medication taken (every 6 hours in this case)



Transition to Quantitative Literacy and Statistics

Default pathway

Student population:

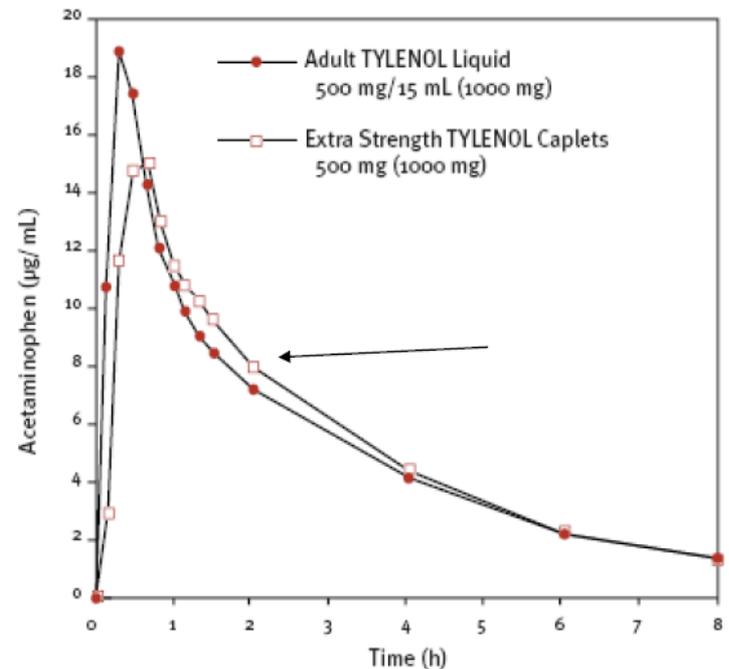
Student headed to a non-STEM field that requires liberal arts math and/or statistics

Outcome course goal:

Use numeracy and basic algebra skills in general education math courses

TM course emphasis:

Reading word-based problems and determining the needed algebraic and numeric concepts



Transition to STEM

Student population:

Student headed to a STEM field OR one that requires college algebra

Ex: elementary education, business

Outcome course goal:

Use algebra 2 skills and concepts successfully in a College Algebra class

TM course emphasis:

Transition from procedural algebra to graphical representations

Emphasis on problem-solving in contextual and non-contextualized situations

Xbox Xponential

In 1965 Gordon Moore, computer scientist and Intel co-founder, predicted that computer processor speeds would double every two years. Twelve years later the first modern video game console, the Atari 2600, was released.



Benefits of transitional math to schools

Better serve underrepresented groups and increase equity and access

Improve a school's ESSA score in the CCR category

Reduced number of students in dev ed

- increased number of students in college math
- increased completion rates

Improved relationships and alignment between K-12 and colleges

Promoting TM

TM benefits students:

- Avoid a placement test
- Save time and money when going to college
- Address the math weaknesses they have in a new way

But we all must promote it since it is not required:

- Parent letter from the HS
- Parent meeting conducted by HS and CC personnel
- Flyers/marketing materials

Meet your instructors!

"These classes are a great way to satisfy your math requirements and save money on tuition. Ask us for more information."



Briana Mills
Assistant Professor of
Mathematics



Andrew Mansheim
Instructor of Mathematics



Quad-Cities Campus
6600 34th Avenue
Moline, Illinois

East Campus
26230 Black Hawk Road
Galva, Illinois

Bridging the Gap!



Bridging the Gap!

www.bhc.edu/apply

Bridge the gap between high school and college by taking math classes this summer or fall at Black Hawk College.

To get started, call Advising at **309-796-5100** or apply online at www.bhc.edu/apply.

Math 108

IAI Code: M1 902

Catalog Description: Statistics for General Education focuses on mathematical reasoning and the solving of real-life problems, rather than on routine skills. The course consists of descriptive methods (frequency distributions, graphing, measures of location, and measures of variation), basic probability theory (sample spaces, counting, factorial rule, combinations, permutations, and probability laws), probability distributions (normal, binomial, and the Poisson distributions), statistical inference (interval estimation and hypothesis testing), correlation, simple linear regression, and analysis of variance.

Math 110

IAI Code: M1 904

Catalog Description: A course designed to contribute to the general education of any college student. Contemporary problems will be investigated and solved using the mathematical concepts of sets, logic, counting techniques, probability, statistics, and financial formulas involving exponential and logarithmic expressions.

NOTE:

After successfully passing Math 092 & Math 094 during your senior year in high school, you would be able to enroll in either Math 108 Statistics for General Education or Math 110 Math for General Education at Black Hawk College the following summer or fall without further placement tests. If you wait to enroll until the following January you will need to take a math placement test in the fall to determine placement.

If you plan to attend another college or university in the fall, take either class this summer and transfer your credits. By taking your liberal arts required math course over the summer, you may be able to complete your mathematics requirements for a B.A. before you start your freshman year!

Both courses are 3 credits at \$149 per credit or \$447.00 per class. Be sure to get your financial aid application done in October. Financial aid is now available to use during summer sessions.

Your savings if you pass Math 092 & Math 094 during senior year of HS and take Math 108 or Math 110 at BHC next summer or fall.

Developmental course (pre-college level)	Number of credit hours	\$149 Cost per Credit Hour	Cost of Textbook and software	Total cost per course
Math 078 Pre-algebra	3	\$447.00	\$177.30	\$624.30
Math Lit 092	3	\$447.00	\$170.00	\$617.00
Math Lit 094	3	\$447.00	NA	\$447.00
Totals for 2-semesters	9	\$1341.00	\$347.30	\$1688.00

Curriculum & PD

Curriculum supports

Curriculum workgroup worked this summer:

- Created curriculum rubrics give specifics on what it means to attain a competency along with a sample task.
- Wrote scope and sequence charts for each pathway
- Started creating sample unit maps
- Tagged items into IOER

New workgroups will work this fall: (available in June)

- Finish sample unit maps to have coherent units of instruction
- Find more open tasks to support units
- Write sample tasks to complete units
- Tag all items into IOER



- Details
- Share & Follow
- Comments
- Settings
- Add Resources
- Activity

Library: PWR Transitional Math

Collections for this Library:

- Transition To QL/Stats
- Transition To STEM (College Algebra)
- Transition To Technical Math

- #### Filters
- Subject
 - Education Levels
 - Educational Use
 - Resource Type
 - Media Type
 - End User

Start typing to search... Learning Standards Most Relevant

Found 114 Resources

Medical Math Worksheets and Case Studies

Actions...

Worksheets and Case Studies involving unit conversions, calculating medical dosages using proportions and dimensional analysis, calculation dosages based on weight or body surface area, flow rates, and reading labels.

Teaching/Learning Center, Delta College			
TM-NS1.1.a.	TM-NS1.1.b.	TM-NS2.1.a.	
TM-NS2.1.b.	TM-NS2.1.c.	TM-NS3.1.a.	

- Mathematics
- Health Science
- Grade 8
- Grades 9-10
- Grades 11-12
- Learning Task
- PDF

Math for Nursing and Allied Health

Actions...

Worksheets for computing dosage calculations and flow rates. Uses ratio and proportion and formulas.

Teaching/Learning Center, Delta College			
TM-NS1.1.a.	TM-NS2.1.a.	TM-NS2.1.b.	
TM-NS2.1.c.			

- Mathematics
- Health Science
- Grade 8
- Grades 9-10
- Grades 11-12
- Learning Task
- PDF

Professional development

Fall 2018

- Webinars for counselors
- Summits

Spring 2019

- Summits including a virtual summit
- Webinars for teachers
- Webinar(s) for administrators
- 3 F2F regional events for high schools
- 2 F2F regional symposiums for CC faculty

PD will include face-to-face trainings and webinars with a plan for an online course with PD hours available.

Upcoming webinars

PWR Transitional Math Advising

Oct 30, 2018 from 2:00 to 3:30 PM CDT

[REGISTER](#)

This webinar will act as the second part of a two-part counselor professional development series. It will address issues that high school counselors will face as they advise high school juniors for senior math registration. Topics will include who is eligible for transitional math, which pathway best serves particular majors, how graduation requirements factor into transitional math, and more. Additional time has been built in to accommodate questions. The webinar will be recorded.

All attendees of this webinar are encouraged to watch the October 16 webinar (PWR Transitional Math Overview) prior to attending.

All high school counselors should attend this webinar or view its recording since it will serve as the second part of a two-part counselor professional development series. Additional attendees are also welcome.

Transitional Math Monthly Updates

[REGISTER](#)

Starting this month, a monthly webinar update will be provided to anyone who would like state-level updates and an opportunity to ask questions about transitional math implementation. Each month will have new updates.

Tues October 23, 3 to 4 pm [\(recording\)](#)

Tues November 20, 3 to 4 pm

Tues December 18, 3 to 4pm

This is a recurring monthly webinar. Please register for each month that you will attend.

Discussion Questions:

1. (HS) What pathway are you interested in starting work on?
If you need more data to make that decision, determine what data you need to get.
2. (HS) Do you have any current senior courses that you could convert into a PWR TM course?
3. (HS) Will your course be one semester, one year, or have both options?
4. (HS) Use this link to submit your school's TM plan.

bit.ly/pwrplan

NOTE: If you are offering intermediate algebra or math literacy this year, you are doing TM during the 2018-19 school year.

5. (CC) If there is a curriculum that you use that your high schools are interested in, discuss how you can provide PD and communication to support them.

Talk for 10 minutes.

Communication

Website

Current website: www2.iccb.org/iltransitionalmath

Will redirect you to new one soon

- Sign up for PWR eNewsletter
- Open curricular resources
- Professional development events
- TM starter kit
 - Statewide MOU template
 - Final policies and competencies document
 - Scope, sequence, and competency rubrics for each pathway
 - Portability documentation supports

Communication

- Presentations at conferences including ICTM in October
- Website
- General informational webinars
- Quarterly eNewsletter
- Monthly email updates
 - sign up for eNewsletter to be included in monthly email updates

Additional communication may also come from agencies and community colleges

Recent info sent out through PWR listserv

Several transitional math documents are now available for your use. Additional documents, updates, professional development, and more will be available over the coming months. In the meantime, the documents included can help support your transitional math implementation. Please read the following information before using them.

- ISBE, ICCB, and IBHE have agreed to the **competencies and policies** recommended by the statewide panel. This [document](#) is an updated version of the previous draft version. It incorporates any changes requested by the agencies and includes formatting for ease of use. No changes were made to the competencies themselves. However some minor changes in the introduction and portability panel travel information are included in this document from the previous version to reflect the evolution of this work.
- The [MOU template](#) is a *recommended* template from the state agencies. Your school's legal counsel may suggest changes that your partnership can incorporate. Also, the agencies may share recommendations for changes to the MOU as implementation continues. The template is provided to save your partnership time by providing a framework for the essential items to address and include so that the policies are met. Webinar updates will be provided this academic year to help you with questions you may have about the MOU template.

Recent info sent out through PWR listserv

- The curriculum workgroup that convened this summer has created several documents. Use of these documents is **optional**. You are not required to use them in part or whole. You may use your own rubrics, unit maps, materials, tasks, and assessments. These documents are provided to show how the content can be developed and meet the goals of the pathways that are outlined in the policies and competencies document. If you choose to use them, you are welcome to use elements of them that appeal to your school and edit as needed. The ordering of competencies and unit themes are at the discretion of a high school. The samples provided do not represent the only way content can be organized and developed.

Sample unit maps are not being shared at this time because they are still under development. However, some broad information about the units is provided in the units of study documents so that you can see how the content can be organized. When the sample unit maps are made available in June of 2019, they will include curated and original free tasks as well as summative tasks and capstone projects. Again, the unit maps being developed are samples and are not required for use.

These documents should help high schools assemble the information required by local school boards and/or curriculum committees to gain approval to offer transitional courses in the future. Additional support for this process is coming soon.

Transitional math sample documents

[STEM competency rubric](#)

[STEM units of study](#)

[STEM competencies across units](#)

[QL/Statistics competency rubric](#)

[QL/Statistics units of study](#)

[QL/Statistics competencies across units](#)

[Technical math competency rubric](#)

[Technical math units of study](#)

[Technical math competencies across units](#)

The new transitional math website is coming soon and will contain all of these documents in Word and PDF form and much more.

Scaling

Scaling Transitional Math

Colleges or high schools implementing, or planning to implement TM

Community College Districts	Public High schools
2017: 31 out of 39 (79%)	2017: 95 out of 721 (13%)
2018: 32 out of 39 (82%)	2018: 171 out of 721 (24%)
2019: 39 out of 39 (100%)	2019: 278 out of 721 (39%)

Statewide scaling over next 3 – 4 years

Goal: 100% of public high schools and community colleges offer or opt out

NOTE: All high schools are opted in by the law by default. Schools can opt out through their school boards provided they meet the law's requirements to do so. (See 110 ILCS 148/65, subsection 4c)

Accepting universities

Outreach has also started with IBHE's support to public and private universities.

So far, these universities have committed to accepting placement or are in discussions:

Private

National Louis University

Trinity University

Roosevelt University

Public

SIU - Carbondale

ISU (QL and tech pathways only)

EIU

2018-19 Pilots: Where we are

Courses: use existing courses with adjustments if needed

Portability: none unless local agreements created

Resources: add to some available OER materials or use a college text

MOU: create an agreement where placement is based on course outcomes; use samples as a guide

Transcripting: by hand methods or local data agreements

2019-20 Pilots: Where we're going

Courses: use PWR transitional math courses

Portability: placement accepted at all CC and some univ for courses that are approved portable

Resources: use available developed OER materials or use a college text

MOU: create an agreement where placement is based on course outcomes; use statewide template

Transcripting: portability codes stated on transcripts for ease of college placement

MOUs

Memo of understanding (MOU)

A statewide MOU template is available for use.

NOTES:

- The MOU template will be used for courses starting in fall 2019.
- CC districts will have one MOU for all transitional math courses at any high school who partners with them.
- High schools have flexibility with whom they partner, but local partnerships are encouraged.
- **Will be regularly updated to reflect findings from data**

MOU Grading Requirements

- At least 25% of the overall grade must come from problem or project-based learning tasks.
- A single assessment may not be more than 50% of the final grade in the course.
- No more than 25% of the course grade can come from formative assignments such as homework.

NOTE: HS courses, not college courses but policies should **transition** students

Discussion Questions:

1. (10 minutes) With your school team (HS or CC), discuss what is important to you that needs to be reflected in the grading policies. List at least 2 items that are important.
2. (10 minutes) CC personnel should separate and move to be near high schools.
Share your important items and discuss them.
3. (Whole group – 10 minutes) Discuss important items for each CC's partnership school's MOU.

Follow up items (see worksheet)

1. Discuss when and how you will talk next to work on the MOU.
 - Who will write the first draft to send out for discussion?
 - Will you have a call, and in-person meeting, or edit asynchronously?
2. What is your next step for the TM work? If you're not sure of your next action or meeting, discuss with your team to determine it.

For more information

Kathleen Almy

Illinois Director of Transitional Math

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Current website: www2.iccb.org/iltransitionalmath

Contains public commenting summary and recommendations as well as policies and competencies document

Illinois Open Educational Resources (IOER) website: <http://ioer.ilsharedlearning.org>