Curriculum Planning Tool

TIE Module 5
Mathematics and Technology

Use this Curriculum Planning Tool to assist you in planning the best use of an Online Academy module in your courses. The Planning Tool contains four pages. Page one (below) shows the module Table of Contents. Page two provides an overview of the module's contents, including the (1) goals of the module, (2) discussion questions relevant to the module, (3) the topic title of each lesson in the module, and (4) a list of the glossary words used in the module. Page three is a course integration plan form that allows you to record where the module could fit into the courses you teach. Page four contains a break-down of all the student tasks included in the module. There is also space on page four for you to plan where each task may fit into your course plan.

Module 5
Mathematics and Technology

Table of Contents:

Content Overview

PBS Module 2: Functional Assessment

This module highlights two forms of technology: graphic calculators and computerized math programs. Lessons differentiate "math content" from "math processes," as defined by the standards of the National Council for Teachers of Mathematics, and add a "math applications" section for real-life math instruction with technology. Some of the exemplary programs include technology components that could be added to a non-technology math program, while others described comprehensive technology-based math programs. The lessons end with descriptions of teacher-friendly databases about the foremost "research-in-progress" on math instruction and technology. (K-12 levels)

Goals:

1. Present current knowledge in how students learn math.
2. Discuss challenges students face while learning math.
3. Describe research-based practices that address the needs of diverse learners.
4. Illustrate ways in which technology may be integrated with instructional practices.
5. Describe promising practices in technology-based instruction.
6. Provide tips for teachers that facilitate integration of technology with research-based practices.

Discussion Questions:

1. What special challenges do students face when learning mathematics?
2. What research-based methods facilitate math instruction?
3. How can technology enhance research-based methods?
4. What are promising practices for using technology to teach math content, processes, and applications?
5. How can teachers implement technology in classroom-based settings?

Lesson Topics:

1. Math Content
2. Math Processes
3. Math Application

Glossary:

Anchored instruction
Basic fact deficits
Clip art
Cognitive Development
Computational strategies
Computer Assisted Instruction
Computer intensive instruction
Computer networks
Computer simulations
Concrete operational thought
Constructivist
Curriculum-based measurement
Direct Instruction
Drill and Practice
E-mail
Education 2000
Feedback
Fixed time recording
Formal mathematics
Formal operational thought
Graphs
High school
Hyperlinks
Hypermedia
IEP
Inert knowledge
Informal mathematics
Internet
Learned helplessness
Life Centered Career Competencies
Logo
Math application
Math content
Math learning disabilities
Math phobia
Math process
Math standards
Menu
Metacognition
Middle school
Multimedia
National Council for Teachers of Mathematics
Non-numerical situations
Numerical situations
Peer tutoring
Portfolios
Pre-operational
Primary
Probabilities
Problem solving
Qualitative descriptions
Repeated performance sampling
SCANS Report
Sensorimotor
Situated cognition
Spreadsheet programs
Statistics
Strategy instruction
Symbolic forms
Time-series data
Transfer of knowledge
Videodisc

Course Integration Plan

Course Integration: Courses in which this module would be applicable:	

Lessons	Courses in which the lessons would be applicable:
Lesson 1 Math Content	
Lesson 2 Math Processes	
Lesson 3 Math Application	

Notes:

Students' Tasks

The following is a comprehensive list of every task that students are asked to complete in this module. Use this task breakdown sheet to designate where each task best fits into your course(s).

Support Level Assessment	
Support Level Directed Questions	
Lesson 1 Assessment	
Lesson 1 Activity	
Lesson 1 Directed Questions	
Lesson 2 Assessment	
Lesson 2 Activity	
Lesson 2 Directed Questions	
Lesson 3 Assessment	
Lesson 3 Activity	
Lesson 3 Directed Questions	
Practice 1	
Practice 2	
Practice 3	

A Curriculum Planning Tool is available for each of the 22 modules produced by the Online Academy. The modules cover three content areas: Positive Behavioral Supports, Reading, and Technology in Education. All the Curriculum Planning Tools are available online at onlineacademy.org. Instructors are free to access the tools and print multiple copies.