



CARNEGIE MATH  
**PATHWAYS**

# Review and Comparison of Contextualized Lessons

*Session 5*

*C2L PD Workshop*

*Madison Area Technical College*

*June 1-2, 2017*

What • Why • How  
is our contextualized mathematics  
project?

# Contextualizing Quantway for a Discipline Program

Removed the context and replaced it with discipline-specific content

Swapped the problem situations with real-world challenges frequently faced in the discipline

Designed the lessons to reinforce the language, operations, and non-math skills specific to the discipline



What ● Why ● How  
did we start this project?

# The Challenge: Applied Mathematics for Disciplinary Students

Disciplinary students who are **out of practice** in math often struggle with math applications in their discipline.

Meanwhile, disciplinary professors whose curricula rely on math application may not be equipped to bring these students up to speed.

In other words, there's a **disconnect**.



# This Is A Good Opportunity for Quantway<sup>□</sup>, Except...



Quantway effectively teaches math



Quantway promotes productive persistence and teamwork



Quantway engages students in critical thinking and thought-provoking discussions



The context is relevant to students' majors

Quantway delivers mathematics through **context**. So let's make the context **relevant to students' field of study**.

What • Why • How  
did we do it?

# Five Points of Comparison and Consideration



Users

Purpose

Structure

Mathematics

Language



# Five Points of Comparison and Consideration



Users

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Structure

Mathematics

Language



# Instructors

# Lesson Users: Instructors

## Quantway Lessons

Mathematics professor

Teaches course in computer lab and/or classroom

Teaches course 3 - 5 days per week, 1 hour each class

Teaches from Quantway<sup>□</sup> - includes lesson plan and homework

## Culinary Arts Lessons

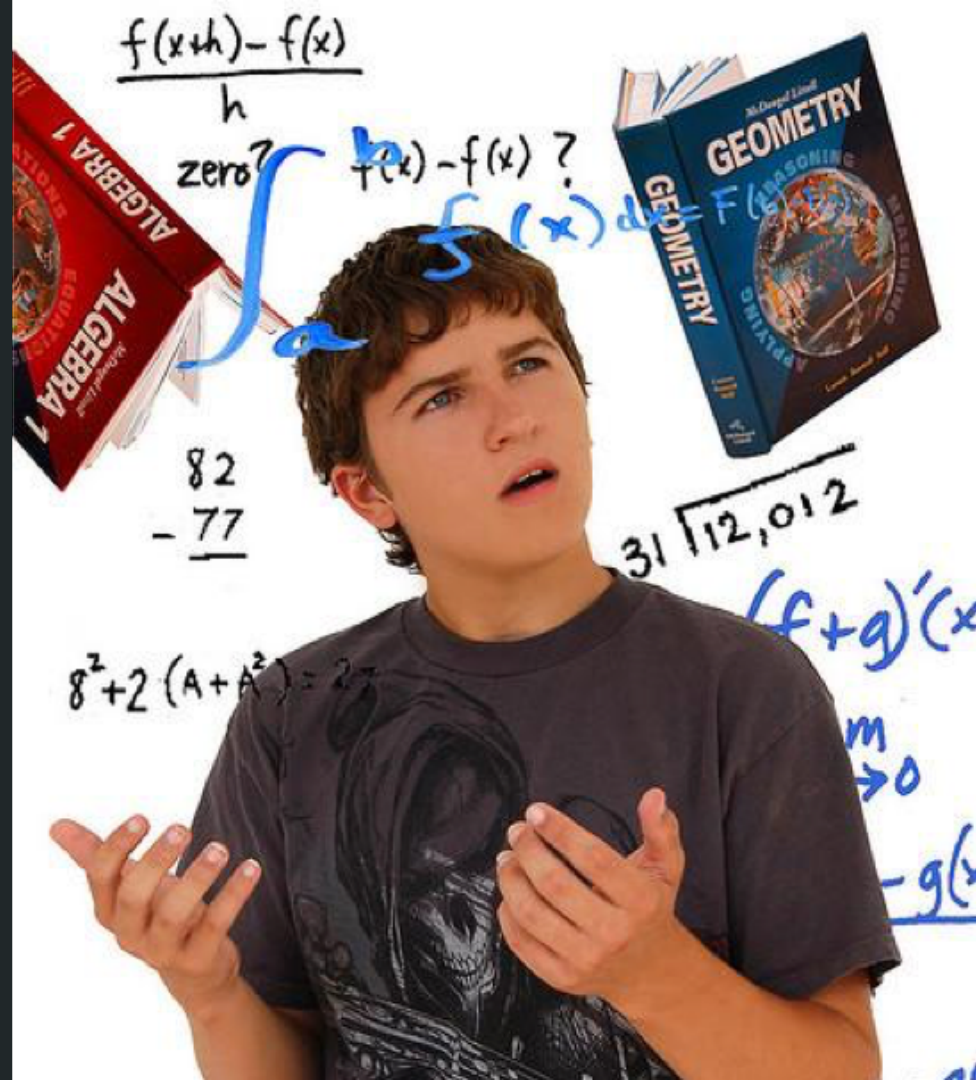
Culinary professor

Teaches course in kitchen

Teaches course 1 day per week, 3 hours each class

Assigns homework from culinary arts mathematics textbook

# Students



# Lesson Users: Students

## Quantway Lessons

Developmental mathematics students

Need to learn mathematics basics

Fear of math

## Culinary Arts Lessons

Beginning culinary arts students

Need to know how to *apply* basic  
mathematics in kitchen

Fear of math

# Five Points of Comparison and Consideration



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# Purpose of the Contextualized Mathematics Lessons

## Quantway Lessons

**Primary:** Teach developmental mathematics and quantitative reasoning

**Secondary:** Promote productive persistence, life skills, and critical thinking

## Culinary Arts Lessons

**Primary:** Teach the practical application of mathematics and quantitative reasoning in culinary arts

**Secondary:** Introduce basic kitchen operations, skills, and knowledge

# Five Points of Comparison and Consideration

Users

Purpose

Structure

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# Lesson Structure

Design Features for Instructors

Design Features for Students

What do we keep?

A large, empty rectangular box with a thin black border, intended for notes or answers related to the question 'What do we keep?'. It occupies the lower half of the first column.

What do we add?

A large, empty rectangular box with a thin black border, intended for notes or answers related to the question 'What do we add?'. It occupies the lower half of the second column.

What do we tweak?

A large, empty rectangular box with a thin black border, intended for notes or answers related to the question 'What do we tweak?'. It occupies the lower half of the third column.

# Five Points of Comparison and Consideration

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# Bridging the Gap

Progression

Diversification

# Five Points of Comparison and Consideration



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# Language Rule #1: **Keep it Simple**

"Are you taking any foreign language classes this year?"

"Yes, Math."



someecards  
user card

## Language Rule #2: **Keep it relevant**

**Portion**

**Icing Sugar**

**Yield**

**Product**

**Caster Sugar**

**Guest**

# Five Points of Comparison and Consideration



Users

Purpose

Structure

Mathematics

Language

# Five Points of Comparison and Consideration Guiding Questions

Quantway 3.1 (version 2.3) & Contextualized Culinary Arts Lesson 2

Users

Who are the students?  
Who are the instructors?

Purpose

What are the primary and secondary goals of the lesson/course?

Structure

What is similar?  
(what did the authors keep?)  
What is different?  
(what did they modify)? Why?

Mathematics

How is the math content treated?  
Note concepts of progression and diversification

Language

What considerations regarding language are made? How might choices regarding language relate to the Users and Purpose?



# Lesson Users: Instructors

## Quantway Lessons

Mathematics professor

Teaches course in computer lab and/or classroom

Teaches course 3 - 5 days per week, 1 hour each class

Teaches from Quantway - includes lesson plan and homework

## Quantway Healthcare Lessons

Mathematics professor

Teaches course in computer lab and/or classroom

Teaches course 3 - 5 days per week, 1 hour each class

Teaches from Quantway contextualized - includes lesson plan and homework

# Lesson Users: Students

## Quantway Lessons

Developmental mathematics students

Need to learn mathematics basics

Fear of math

## Culinary Arts Lessons

Developmental mathematics students

Need to learn mathematics basics

Enrolled in or interested in Allied Health  
program

Fear of math

# Purpose of the Contextualized Mathematics Lessons

## Quantway Lessons

**Primary:** Teach developmental mathematics and quantitative reasoning

**Secondary:** Promote productive persistence, life skills, and critical thinking

## QW Healthcare Lessons

**Primary:** Teach developmental mathematics and quantitative reasoning applied to healthcare contexts

**Secondary:** Engage students in allied health knowledge and practice

# Five Points of Comparison and Consideration Guiding Questions

Quantway 3.1 (version 2.3) & Quantway Contextualized Healthcare 3.1

Users

Who are the students?  
Who are the instructors?

Purpose

What are the primary and secondary goals of the lesson/course?

Structure

What is similar?  
(what did the authors keep?)  
What is different?  
(what did they modify)? Why?

Mathematics

How is the math content treated?  
Note concepts of progression and diversification

Language

What considerations regarding language are made? How might choices regarding language relate to the Users and Purpose?