

## In-Class Activity Sample

This in-class activity sample is very simple. The box below presents a pair of related Arizona K-12 content standards [high school mathematics] along with a corresponding AIMS assessment item. After examining this information, follow the steps presented in the "Behaviorist Approach" as well as the "Constructivist Approach" activity sections to access Web-based material designed to help support the learning of the selected mathematics standards. As you explore the different instructional approaches, record what you believe are the individual strengths and limitations of each lesson, using the "Strengths & Limitations of Observed Web-Based Instructional Contexts" chart to help you organize your thoughts. Base your observations and judgments on how well you think the instructional material could facilitate the learning of the specified standards. When you have completed this task, compare your responses to those of others in the workshop.

### Arizona Standards:

PO 2. Solve applied problems using angle and side length relationships\*

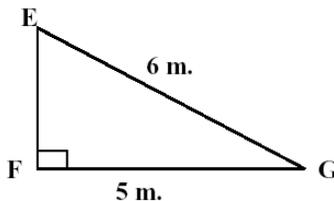
PO 3. Solve applied problems using the Pythagorean theorem\*

\*Note: These outcomes include the condition "Given a sheet listing required formulas..."

### AIMS Assessment:

This sample was taken from the AIMS Mathematics Released Items (Core-Form A):

- 16** Alex is building a ramp for a bike competition. He has two rectangular boards. One board is 6 meters long and the other is 5 meters long. If the ramp has to form a right triangle, what should its height be?



- A 3 meters
- B 4 meters
- \* C 3.3 meters
- D 7.8 meters

\* Students who answered this item correctly = 39%

## Computer-Based Behaviorist Approach

**Step One:** Navigate to the following site:

<http://www.thegateway.org>

**Step Two:** Fill out the form as indicated in the picture below and click the "Search" button:

The screenshot shows a Microsoft Internet Explorer browser window displaying the website <http://www.thegateway.org>. The page title is "The Gateway to Educational Materials". The search form is located in the center of the page and includes the following elements:

- Search criteria: 1.  Search by:  and  2.  Search by:
- Search by Broad Subject:
- Search by Narrower Subject:
- Select all grades / educational levels that apply:
  - Pre-K  K  1st  2nd  3rd  4th  5th
  - 6th  7th  8th  9th  10th  11th  12th
  - All
  - Community College  Vocational Education
  - Higher Education  Adult / Continuing Education
- I want ONLY free resources
- Buttons:
- Footer: GEM logo, "The Gateway to Educational Materials™ Project is sponsored by the U.S. Department of Education", and the website URL [www.thegateway.org](http://www.thegateway.org).

**Step Three:** From the search return list of lessons, choose the following two "behaviorist-oriented" approaches to learning the skills indicated within the selected standard:

### Pythagorean Puzzle

<http://www.pbs.org/wgbh/nova/proof/puzzle/>

### A Picture Proof of the Pythagorean Theorem

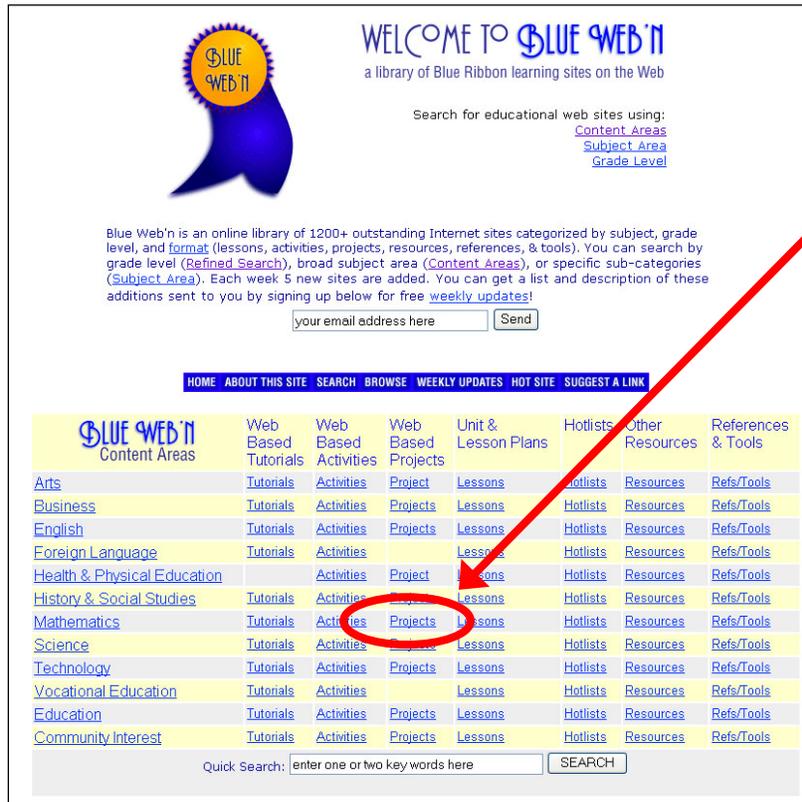
<http://www.utc.edu/~cpmawata/geom/geom7.htm>

## Computer-Based Constructivist Approach

**Step One:** Navigate to the following site:

<http://www.kn.pacbell.com/wired/bluewebn/>

**Step Two:** Select the menu item "Projects" from the "Mathematics" content area:



WELCOME TO BLUE WEB'N  
a library of Blue Ribbon learning sites on the Web

Search for educational web sites using:  
[Content Areas](#)  
[Subject Area](#)  
[Grade Level](#)

Blue Web'n is an online library of 1200+ outstanding Internet sites categorized by subject, grade level, and format (lessons, activities, projects, resources, references, & tools). You can search by grade level ([Refined Search](#)), broad subject area ([Content Areas](#)), or specific sub-categories ([Subject Area](#)). Each week 5 new sites are added. You can get a list and description of these additions sent to you by signing up below for free [weekly updates!](#)

HOME ABOUT THIS SITE SEARCH BROWSE WEEKLY UPDATES HOT SITE SUGGEST A LINK

BLUE WEB'N Content Areas	Web Based Tutorials	Web Based Activities	Web Based Projects	Unit & Lesson Plans	Hotlists	Other Resources	References & Tools
<a href="#">Arts</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Project</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Business</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">English</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Foreign Language</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Project</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Health &amp; Physical Education</a>		<a href="#">Activities</a>	<a href="#">Project</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">History &amp; Social Studies</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Mathematics</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Science</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Technology</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Vocational Education</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Education</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>
<a href="#">Community Interest</a>	<a href="#">Tutorials</a>	<a href="#">Activities</a>	<a href="#">Projects</a>	<a href="#">Lessons</a>	<a href="#">Hotlists</a>	<a href="#">Resources</a>	<a href="#">Refs/Tools</a>

Quick Search:

**Step Three:** Select "Mr. Pitonyak's Pyramid Puzzle" for the list of projects (it's near the bottom). <http://wcv.t.com/~tigr/>

# Strengths & Limitations of Observed Web-Based Instructional Contexts

*Standards the instructional samples support:*

- PO 2. Solve applied problems using angle and side length relationships
- PO 3. Solve applied problems using the Pythagorean theorem

*Type of Instructional Contexts Presented*

	Behaviorist-Oriented	Constructivist-Oriented
Strengths		
Limitations		