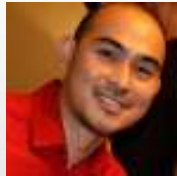


## Virtual Manipulatives Medley for ABE Teachers



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Statewide Trainer/Facilitator  
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Florida IPDAE

## Objectives

To improve overall adult student achievement by:

- Explore ways to plan, teach and assess multiple math concepts and skills outlined in the **College and Career Readiness Standards for ABE Mathematics** using virtual manipulatives.
- Identify the **Standards of Mathematical Practice** when employing instructional strategies that involve the use of manipulatives.
- Exploring readily available **resources** on the use of virtual manipulatives from the IPDAE Website.

## The McGraw-Hill Virtual Manipulatives Web App



### The Toolbar



- Hand Tool
- Text Tool
- Pen Tool
- Straight Line Tool
- Ruler
- Stopwatch
- Protractor
- Timer

### The Toolbar



- Help Menu
- Clear Background
- Clear Objects
- Print Screen
- Recycle
- Pen and Line Colors



## Object Demonstrations

- Spinners – Probability and Odds
- Fraction Tiles – Operations on fractions, equivalent fractions, reducing and ordering fractions
- Number Line – Operations on fractions and integers, the number system

## Work Mats and Toolbar Demonstrations

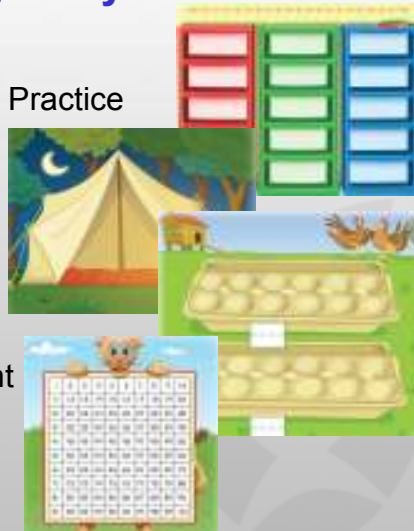
- Algebra Mat – Solving polynomial equations and inequalities
- Coordinate Grid – Scatter plots and lines of best fit
- In-and-Out Table – Patterns, Functions and Equations
- Number Lines - Operations on fractions and integers, the number system
- Place Values
- Rows of 6 – Equivalent ratios and proportions (Tape Diagrams)

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- Algebra Mat – Solving polynomial equations and inequalities
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## Tips for Using Storyboards

- Modeling
- Worksheets or Independent Practice
- Group Work
- Graphic Organizer
- Games
- Word Problem Visualization
- Reference
- Formal/Informal Assessment



## Using the Platform in Complex Problem Solving

- Linear Modeling – Grid Backgrounds
- Area, Volume, Surface Area Problems – Story Boards
- Theoretical and Experimental Probability – Spinners
- Modeling – Number System Problems

## Other Virtual Manipulatives Web and Mobile Apps

- NLVM – National Library of Virtual Manipulatives  
<http://nlvm.usu.edu/en/nav/vlibrary.html>
- App Store – Virtual Manipulatives  
<https://itunes.apple.com/us/app/virtual-manipulatives/id471341079?mt=8>
- Math Playground  
[http://www.mathplayground.com/math\\_manipulatives.html](http://www.mathplayground.com/math_manipulatives.html)



## Summary

- We explored ways to plan, teach and assess multiple math concepts and skills outlined in the College and Career Readiness Standards for ABE Mathematics using virtual manipulatives.
- We identified the Standards of Mathematical Practice when employing instructional strategies that involve the use of manipulatives.
- We explored readily available resources on the use of virtual manipulatives from the IPDAE Website.

# Training Evaluation

<https://www.surveymonkey.com/r/VSQ85HV>



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**Thank You!**