

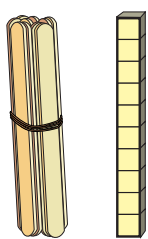
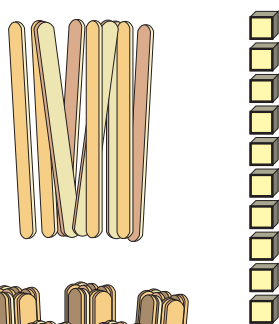
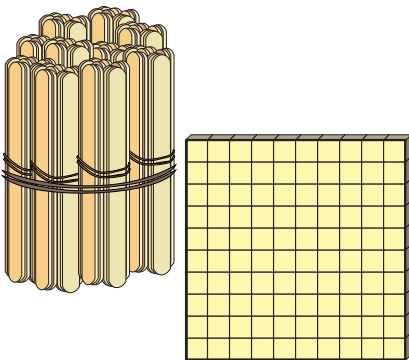
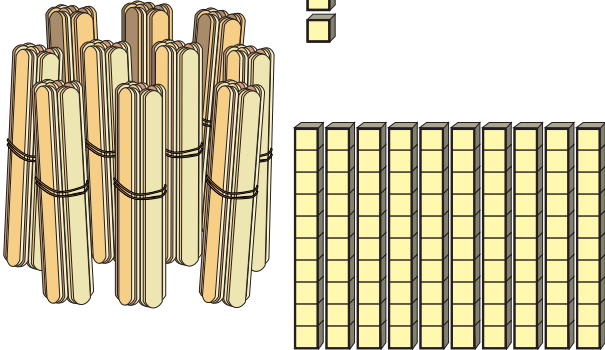
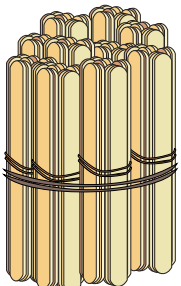
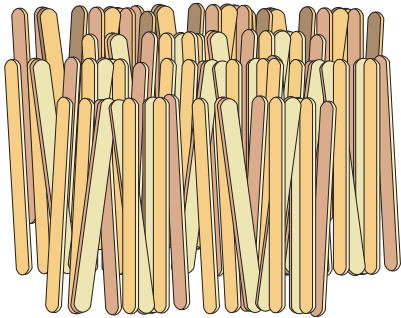
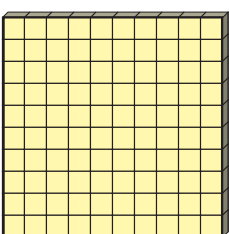
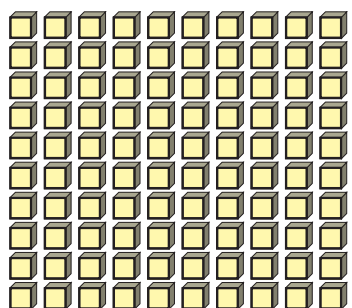
Overview:

The Number Expander shows students the value of each of the digits in a number with Hundreds, Tens and Ones.

It allows for Bundling Sticks and Base Ten Blocks to be grouped and regrouped to show that each place is ten times the size of the place to its right.

By clicking on the EXPANDER, each place is opened or closed and allows the on-screen manipulatives to animate to match the expander.

The app includes the following visual models for numbers to 999:

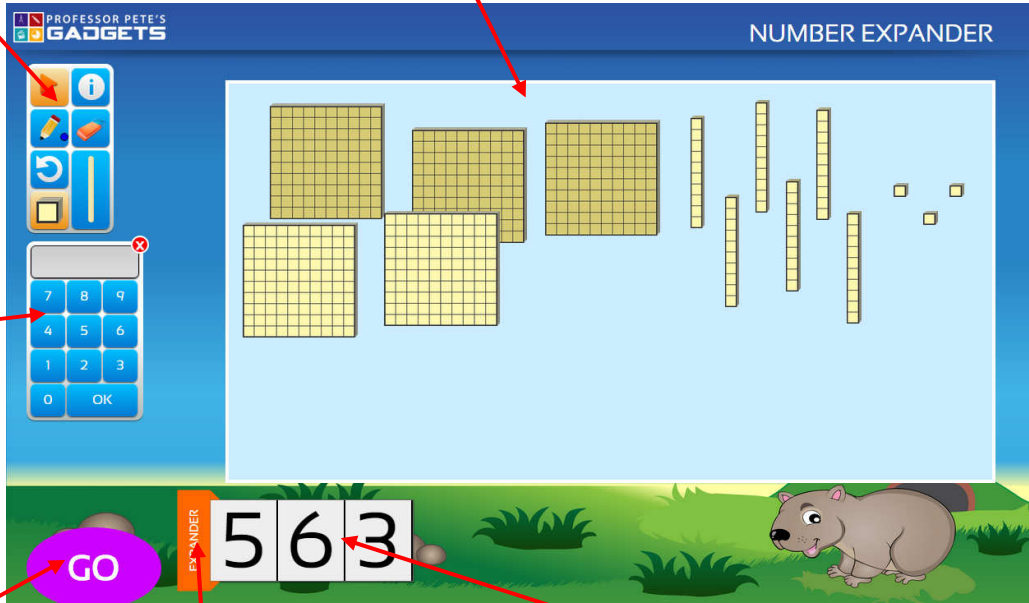
1 ten =		= 10 ones	
1 hundred =		= 10 tens	
1 hundred =		= 100 ones	
1 hundred =		= 100 ones	

Main Interface:

Toolbox: multiple tools allow for on-screen manipulation

Materials: base ten blocks or bundling sticks

Keypad: for entering numbers to 999 to be shown on screen



GO: initiates animation to show blocks as per the expander setting

EXPANDER label: shows or hides the numbers in the expander

Expander: opens and closes each place showing the values of the digits. Click **GO** and the blocks will animate to match the expander display

Tool Box:



Pointer: resets cursor to a pointer

Pen: hold down for a pop-out panel to select one of the nine shades available

Reset: resets screen back to zero

Base Ten Blocks: selects base ten blocks



Information: about the program

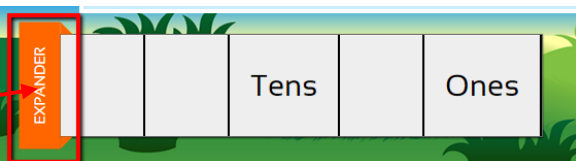
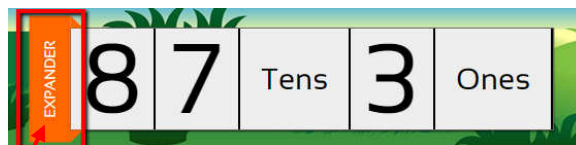
Eraser: removes all pen marks

Bundling Sticks: selects bundling sticks



Hide or reveal: show or hides number entered into keypad for teacher reference or to hide from students when screen is displayed for students

Keypad: enter numbers here, then click OK



Hide or reveal: digits in the expander

EXPANDER function:

NUMBER EXPANDER



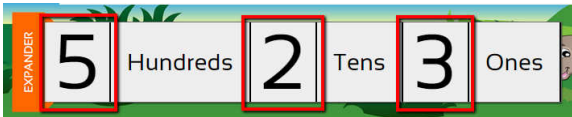
Click here: "Ones" opens or closes



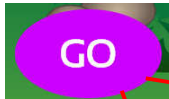
Click here: "Tens" opens or closes



Click here: "Hundreds" opens or closes



Fully Open: Shows each place name



Go: Begins animation to show blocks or bundling sticks as shown by the number expander

