

## **Tutorial Three: Exploring place value with base ten blocks**

In this lesson you will create a new project using the Kidspiration Base Ten Blocks® Math Tool. In the context of representing quantities and regrouping within multi-digit addition and subtraction problems, you will learn to do the following:

- Start Kidspiration
- Start a new Kidspiration Base Ten Blocks project
- Add your name to a project
- Save your work
- Add a Math SuperGrouper to your project
- Resize a Math SuperGrouper
- Move an item on the workspace
- Duplicate items on the workspace
- Label a Math SuperGrouper
- Change the background color of a Math SuperGrouper
- Move base ten blocks onto the workspace
- Add pages to your project
- Add a place value mat
- Use a Math Text Box
- Delete an object from the workspace
- Undo and redo your work
- Lock an item
- Create a password for the Teacher menu
- Select multiple items on the workspace
- Change the color of base ten blocks
- Solve an addition problem by regrouping blocks
- Lock a page

- Change the labels on a place value mat
- Resize manipulatives on the workspace
- Solve a subtraction problem by regrouping blocks
- Use the Cross-Out Stamp
- Print your project
- Close your project and return to the Kidspiration Starter

## Starting Kidspiration

### To start Kidspiration on a Macintosh:

- Open the **Kidspiration 3** folder and double-click the **Kidspiration icon**.



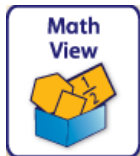
The Kidspiration Starter opens.

### To start Kidspiration in Windows:

- Click the Start button, point to Programs and click **Kidspiration 3**.

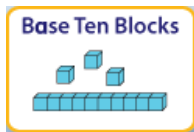
The Kidspiration Starter opens.

The Kidspiration Starter is the place where you start new projects, open existing projects and use the many different Kidspiration activities. You will begin by clicking the **Math View** button to open the Math Tool Starter.




## Starting a new Kidspiration Base Ten Blocks project

To start a new Kidspiration **Base Ten Blocks** project, click the **Base Ten Blocks** button on the **Math Tool Starter**.



A new blank workspace opens in the Kidspiration Base Ten Blocks Math Tool.

## Adding your name to a project

1. On the **Math** toolbar, click the **Student Name** button .
2. Type your name in the box where indicated.

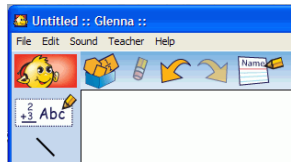
For the examples in this tutorial we will use the name “Glenna.”

3. To choose where you want the name to appear on the page, select **Left**, **Center** or **Right**.

A preview of how the name will appear on the page is displayed in the box on the right side of the dialog box.

4. Click **OK**.

The student name appears in the title bar of the document.



## Saving your work

1. On the **File** menu, click **Save**.
2. In the folder list, click the folder where you want to save the project.
3. Type a name for the project, and then click **Save**.

Kidspiration suggests the name “Glenna” based on the student name, but you can use a different name.

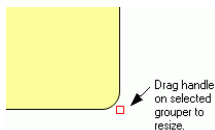
## Adding a Math SuperGrouper to your project

Math SuperGroupers are similar to the SuperGroupers in Picture View. They are used for grouping, sorting, categorizing and counting activities. Here you will use Math SuperGroupers as bins for representing quantities with base ten blocks.

- Click and drag a rectangular **Math SuperGrouper** from the **Math palette** onto the blank workspace.

## Resizing a Math SuperGrouper

- Click and drag on the Math SuperGrouper's corner handles to make it about 20% taller and wider.



## Moving an item on the workspace

- Click on the Math SuperGrouper and drag it over to the left side of the workspace.

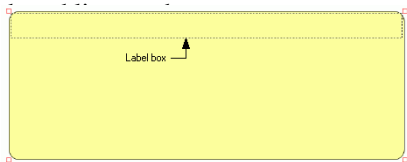
## Duplicating items on the workspace

Ultimately you want three Math SuperGroupers that are the same size to represent three different quantities using base ten blocks. Use Copy and Paste options to create two more groupers on the workspace.

1. Select **Copy** from the **Edit** menu and then click on an area of open workspace to the right of the first grouper.
2. Click **Paste** on the **Edit** menu. Move your cursor to another area of open workspace and click **Paste** again.
3. Drag the groupers into a row across the middle of the page.

## Labeling Math SuperGroupers

1. Notice that when you have a grouper selected, a label box appears in



2. Double-click inside the first grouper's label box to select it and a cursor will appear.
3. Type **25**, and then select the label in second grouper and type **103**. Type **57** into the third one.

## Changing the background color of Math SuperGroupers

Change the background color of two of the groupers to give your document visual interest.

- Select the second grouper and choose red from the **Color** buttons



on the **Bottom** toolbar. Choose dark green for the third one.

Your project should look like this:



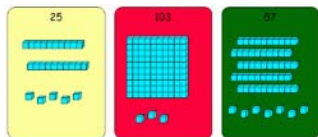
## Moving base ten blocks onto the workspace

Now that your groupers are ready, use base ten blocks to represent the numbers.

1. Click and drag two horizontal rods from the **Math palette** into the first grouper.
2. Click and drag a unit into the first grouper below the rods.

3. Click the unit four more times successively in the **Math palette** to place 4 more units in the first grouper.
4. Click and drag a flat into the second grouper. Now add three units below the flat, either by dragging or by multiple successive clicks.
5. In the third grouper, you will need to add five horizontal rods and seven units to represent the numbers.

Your project should now look something like this:



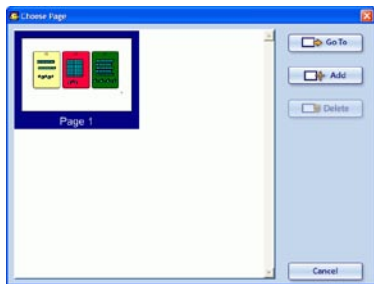
**Note:** Once manipulatives are placed inside a grouper, they will remain there until you remove them. Drag one of the groupers around the workspace and notice that the blocks move with it.



## Adding pages to your project

Math View allows for the creation of multiple pages within a single document, giving teachers the opportunity to create an extended activity with multiple parts, or students the opportunity to show their thinking using one or more tools.

Now you'll learn how to add two new pages to your project so you can continue working with Kidspiration Base Ten Blocks.

1. Click the **Go To Page** button  on the **Math** toolbar to open the **Choose Page** dialog.



2. Click the **Add Page** button  to add a new page.
3. Choose **Base Ten Blocks** from the **Math Tool Starter**, and repeat the process to add a third page also using Kidspiration Base Ten Blocks.
4. Navigate back to page 2 by clicking the **Go to Previous Page** button  on the **Math** toolbar.

**Note:** When you have more than one page in a project, a page number for the page you are working on appears in the upper-left corner of the workspace.


## Adding a place value mat

You can add a place value mat to the background of your Kidspiration Base Ten Blocks workspace as a visual structure for learning about place value and modeling problems. The mat has three basic layout options to choose from: a full-page mat with columns labeled “Hundreds,” “Tens” and “Ones,” a 3/4-page mat with columns labeled “Hundreds,” “Tens” and “Ones” and room for instructions or example work above, and a full-page mat with columns labeled “Thousands,” “Hundreds,” “Tens” and “Ones.”








- Click the **Place Value Mat** button on the **Bottom** toolbar twice to add the “Hundreds,” “Tens” and “Ones” place value mat with the open area at the top to the open workspace on page 2.

## Using a Math Text Box

Math Text Boxes allow students to describe their work with words, numbers and math notation, including structured frames for writing fractions, division problems and vertical math notations. Math Text Boxes also allow teachers to place instructions and helpful text in projects.



1. Click the **Math Text Box**  in the **Math palette** and drag it onto your workspace.
2. Click inside the text box and write **Use base ten blocks to solve 176 plus 36**, but follow the steps below so it looks like this:

Use base ten blocks to solve 
$$\begin{array}{r} 176 \\ + 36 \\ \hline \end{array}$$

3. Click the **Open Math Frame** button  on the **Bottom** toolbar to create the vertical frame and click the **Plus Sign** button  on the **Bottom** toolbar to add the plus sign.
4. Enlarge the text size by clicking the **Resize Text** button  on the **Bottom** toolbar once.
5. Click outside the box and then back on it to select it. When a text box is selected, it has corner handles .
6. Resize the text box by dragging on one or more of its corner handles so that all of the text fits on one line.
7. Move the text box up so it is near the top of the workspace.
8. Click back inside the box and drag your cursor over the word “solve.” Italicize it by clicking the **Italic** button  on the **Bottom** toolbar.
9. Click outside the text box and then back on it to select it. Add a border and a background color to the text box by clicking the **Border** button  on the **Bottom** toolbar, and then the **Background Color** button  next to it.

Choose a background color from the palette.

**Note:** If you make a mistake in your work, you have several options on the Math toolbar:

- You can delete an item by selecting it and clicking the **Clear** button  on the **Math** toolbar.
- or–
- You can undo up to the last eight changes in your project by clicking the **Undo** button  on the **Math** toolbar.
- or–
- You can redo up to the last eight changes you used the **Undo** button to undo by clicking the **Redo** button on the **Math** toolbar.

## Locking an item on the workspace

Now that your Math Text Box is set up, you can lock it so that it cannot be moved or deleted.

- With text box selected, click **Locked Item** on the **Teacher** menu.

A checkmark appears next to *Locked Item* when the text box is locked, and the corner handles change on the box.

**Note:** The Teacher menu must be enabled for the Locked Item option to appear. To turn the Teacher menu on or off, click **Enable Teacher Menu** on the **Teacher** menu.

## Creating a password for the Teacher menu

You can create a password for the Teacher menu to prevent students from using it and changing teacher preferences.

1. On the **Teacher** menu, click **Application Options**.
2. Select the **Password Enabled** check box.
3. Click **Set Password**.

The **Set Password** dialog box appears.

4. Type the password you want to use in the **Enter Password** box.
5. Type the password again in the **Confirm Password** box, and then click **OK**.

When you enable the Teacher menu, you will be prompted to enter your password.

**Note:** If you forget your password, you can access the Teacher menu by using the password “Kidspiration3.”

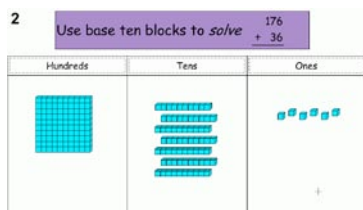
## Selecting multiple items on the workspace

Now you’ll bring out some base ten blocks and arrange them on the place value mat to represent the addition problem.

1. Click on the flat in the **Math palette** and drag it into the “Hundreds” column on the place value mat.

2. Drag a horizontal rod into the “Tens” column and then click the same rod successively in the **Math palette** to create six more instances of it.
3. Finally, add six units to the “Ones” column, by clicking somewhere inside the column, and then clicking on the unit in the **Math palette** five more times.

You have now represented 176 on the place value mat, and your project should look something like this:



Now position blocks at the top of the workspace.

1. First, drag all blocks inside each column so that they are centered within each column near the top.

Simply click on the flat to drag it into position.

2. To multi-select the blocks in the other two columns, place your cursor over an open area beyond them but inside the column they are in, and drag it over them to select them.

–or–

Hold down the **Shift key** and click each item you want to select.

**Tip:** You can also turn Shift-select on, which allows you to select multiple items on the workspace without holding down the Shift key. Click the **Shift-select** button on the **Bottom** toolbar to turn **Shift-select** on or off. The Shift-select button appears on Math View’s **Bottom** toolbar when **Stylus Mode** is checked in **Application Options** on the **Teacher** menu.


3. To move multi-selected items, click and hold your cursor on one of the items and drag them all into position.

To represent 36, you will bring in additional blocks.

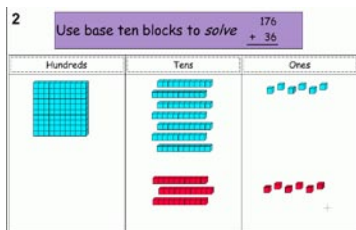
- Now add three new horizontal rods to the “Tens” column, and six new units to the “Ones” column to represent 36.
  - You can click them in the **Math palette** and drag them into position below the existing representations, or you can multi-select the number you need of each in their respective columns and use the **Copy** and **Paste** options on the **Edit** menu.

## Changing the color of base ten blocks

To help distinguish between the two addends being represented on the place value mat, you can change the color of the blocks representing 36.


- To change the color of the blocks representing 36, click each one or multi-select all of them (you can multi-select across columns on the mat) and then click one of the **Color** buttons on the **Bottom** toolbar. To select a color from the expanded palette, click the **More Colors** button .

Your project should look something like this:



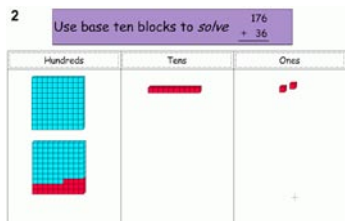
## Solving an addition problem by regrouping blocks

Now you are ready to solve the equation using the base ten blocks on the place value mat.

- Begin in the “Ones” column and multi-select six blue units and four red units and then click the **Group** button  on the **Bottom** toolbar.
- You now have a new rod composed of six blue units and four red units. Drag this rod into the “Tens” column.
- Now multi-select ten of the rods in the “Tens” column and click the **Group** button again.

4. Move this new flat into the “Hundreds” column.
5. To tidy up your project, you can now drag the remaining blocks in the “Tens” and “Ones” to the top of their columns.
6. You have solved the addition problem using base ten blocks on a place value mat and the answer is 212.


Your project should look something like this:



## Locking a page

Before moving on to page 3, you might want to lock page 2. The ability to lock pages in a document allows you to set up an example within an activity and prevent students from altering any of the items on the workspace, or adding to the page.


- To lock page 2, click **Locked Page** on the **Teacher** menu.

A checkmark appears next to Locked Page when the page is locked, and a **Locked Page** indicator  appears next to the page number.

**Note:** The Teacher menu must be enabled for the Locked Page option to appear. To turn the Teacher menu on or off, click **Enable Teacher Menu** on the **Teacher** menu.

## Changing the labels on a place value mat

You can change the column labels on a place value mat to whatever you like. For instance, you may want to change the labels from “Hundreds,” “Tens” and “Ones,” to “Flats,” “Rods” and “Units” to more closely align with your curriculum.

1. Go to page 3 of your project by clicking the **Go to Next Page** button  on the **Math** toolbar.

2. Click the **Place Value Mat** button on the **Bottom** toolbar once to add a new mat to your workspace.

3. Double-click inside a label to select it.

You should see a cursor appear.

4. Select the existing text by double-clicking inside the label one more time.

–or–

Click and drag over the existing text to select it.

–or–

Use your **Backspace** or **Delete** key (Windows) or your **Delete** key (Macintosh) or your keyboard to remove the existing text.

5. Type **Flats** into the first label, **Rods** into the second one and **Units** into the third one.

6. Drag a Math Text Box into the “Flats” column to write a subtraction problem.


7. Click the **Open Math Frame** button on the **Bottom** toolbar and write the expression **234 minus 18**, using the **Minus Sign** button on the **Bottom** toolbar to represent minus. The text box should look like this:


$$\begin{array}{r} 234 \\ - 18 \\ \hline \end{array}$$

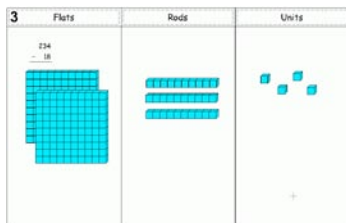
## Resizing manipulatives on the workspace

When you resize manipulatives, all manipulatives on the workspace (in this case, base ten blocks) resize at once.

1. Drag blocks into the columns to represent 234. You should have two flats in the first column, 3 rods in the second column and four units in the third column.

2. Click the **Resize Manipulatives** button  on the **Bottom** toolbar once to make them larger.

- Now move the blocks around in the columns so your project looks something like this:




You can click and drag the rods and units around one at a time, or multi-select all of the them in each column and drag them into their new position.

## Solving a subtraction problem by regrouping blocks

Now you are ready to solve the equation using the base ten blocks on the place value mat.


- Since eight units cannot be taken away from four units, you need to “borrow” from the rods.

Use the **Break Blocks Apart** button  to break the bottom rod in the “Rods” column into 10 units.

- Move the new units into the “Units” column.

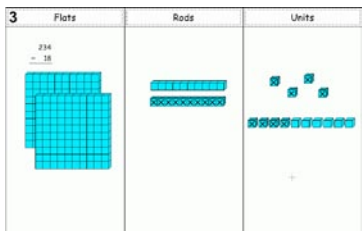
## Using the Cross-Out Stamp

Use the Cross-Out Stamp to mark blocks and represent subtracting the quantity 18.

- Select eight units in the “Units” column and click the **Cross-Out Stamp** button  on the **Bottom** toolbar.
- Select the bottom rod in the “Rods” column and click the **Cross-Out Stamp** button again.

3. You have now visually represented subtracting 18 using base ten blocks on a place value mat and the solution is 216.

Your project should look something like this:



## Printing your project

To print a project, click **Print** on the **File** menu.

You can also choose from the following options before printing:

### Selecting page orientation

In Math View, landscape orientation is the default. To switch to portrait orientation before printing a project:

1. On the **File** menu, click **Page Setup**.
2. Next to **Orientation**, click the **Portrait** or **Landscape** icon (Macintosh).

–or–

Under **Orientation**, select **Portrait** or **Landscape** (Windows).

### Selecting paper size

Letter is the default paper size in Kidspiration. To select a different paper size:

1. On the **File** menu, click **Page Setup**.
2. In the **Paper** list, select the paper size you want (Macintosh).

–or–

3. Under **Paper**, select the paper size you want in the **Size** list (Windows).

### Printing page numbers

If you choose to print page numbers, they will appear at the bottom of the page. To print page numbers:

1. Click the **Student Name** button.
2. Select the check box where indicated.

### Closing your project and returning to the Kidspiration Starter

Congratulations! You have completed *Tutorial Three: Exploring place value with base ten blocks*. To close your project and return to the **Kidspiration Starter**, click the **Go to Starter** button.



When you return to the Kidspiration Starter, you are prompted to save the open project. Click **Yes** if you want to save the project.