

Tutorial One: Using Maths View's Maths Tools

In this tutorial, you will create a new Kidspiration project using multiple pages to explore each of Maths View's Maths Tools.

- Using Kidspiration Colour Tiles™, you will explore maths concepts as you represent maths expressions and explore area.
- Using Kidspiration Pattern Blocks™, you will build designs with line symmetry, and identify and count shapes.
- Using Kidspiration Base Ten Blocks™, you will represent quantities and regroup within multi-digit addition and subtraction problems.
- Using Kidspiration Fraction Tiles™, you will find equivalent fractions.
- Using Kidspiration Fraction Boxes™, you will represent fractions, find common denominators and operate on fractions.

In the process, you will also learn to do the following:

- Create a multiple page project in Kidspiration's Maths View
- Add your name and save your work
- Work with items from the Maths palette
- Use the tools on the Bottom toolbar
- Undo and redo your work
- Use the Teacher menu
- Print your project

Starting Kidspiration

To start Kidspiration on a Macintosh:

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



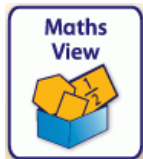
The Kidspiration Starter opens.

To start Kidspiration in Windows:

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

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 **Maths View** button to open the Maths Tool Starter.



Kidspiration Colour Tiles

We are going to start our project using the Kidspiration Colour Tiles Maths Tool.

- Click the **Colour Tiles** button on the **Maths Tool Starter**.



A new blank workspace opens in the Kidspiration Colour Tiles Maths Tool.

Adding your name to the project

1. On the **Maths** toolbar, click the **Pupil Name** button.

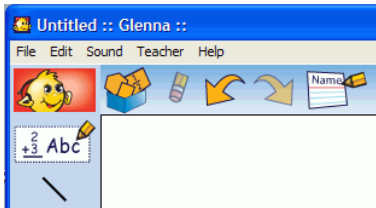


2. Type your name in the box where indicated.
For the examples in this tutorial we will use the name “Glenna.”
3. To choose where you want the name to appear on the page, select **Left**, **Centre** or **Right**.

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

4. Click **OK**.

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



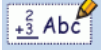
Saving your work

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**.

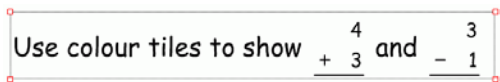
Kidspiration suggests the name “Glenna” based on the pupil name, but you can use a different name.

Using a Maths Text Box






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

1. Click the **Maths Text Box**  in the **Maths palette** and drag it onto your workspace.




2. Click inside the text box and write **Use colour tiles to show 4 plus 3 and 3 minus 1**, but follow the steps below so it looks like this:



Use colour tiles to show $\frac{4}{3}$ and $\frac{3}{1}$

3. Click the **Open Maths Frame** button  on the **Bottom** toolbar to create the vertical frames and use the **Plus Sign**  and **Minus Sign**  buttons on the **Bottom** toolbar to add the plus and minus signs.
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.

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


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

Moving colour tiles onto the workspace

Now you'll bring out some colour tiles to represent the first expression.


1. Click on the red colour tile on the **Maths palette** and drag it onto the workspace. Do this three more times or just click on the tile in the palette three more times to create multiple instances of it.
2. Align the tiles horizontally on your workspace, somewhere below the text box. Notice that the tiles "snap" together as you are lining them up.
3. Drag out three yellow tiles and snap them into alignment with the four red tiles.

Resizing manipulatives on the workspace

- Resize all of the colour tiles on the workspace by clicking the **Resize Manipulatives** button  once on the **Bottom** toolbar.


Your project should look something like this:

Use colour tiles to show $\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$ and $\begin{array}{r} 3 \\ - 1 \\ \hline \end{array}$



Using the Cross-Out Stamp

Use the Cross-Out Stamp to mark tiles and visually represent the subtraction in second expression.

1. Drag out three blue tiles and align them below the first representation.
2. Select one blue tile.
3. Now click the **Cross-Out Stamp** button  on the **Bottom** toolbar.

The tiles should look like this:

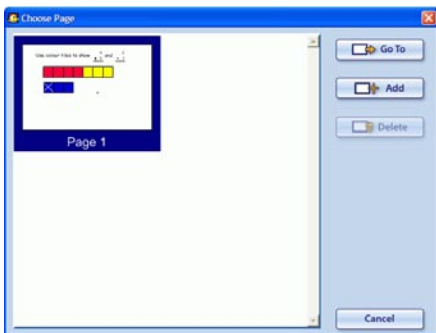



Adding pages to your project

Maths 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 pupils the opportunity to show their thinking using one or more tools.

Now you'll learn how to add a new page to your project so you can continue working with Kidspiration Colour Tiles.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue.





2. Click the **Add Page** button  to add a new page.
3. Choose **Colour Tiles** from the **Maths Tool Starter**.

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.

Using a background grid

A background grid can help you to organise colour tiles on the workspace, making it easier to create bar charts, build models, and explore perimeter and area.

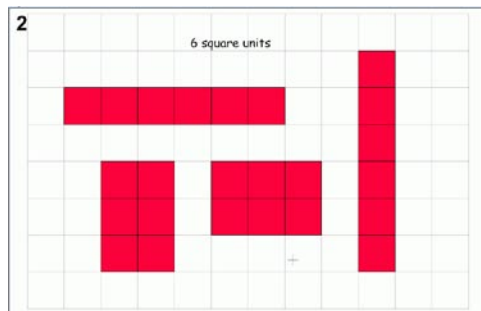
1. Click the **Show Background Grid** button  on the **Bottom** toolbar.
2. Resize the grid to large by clicking the **Resize Manipulatives** button  on the **Bottom** toolbar one time.
3. Drag one **Maths Text Box** onto the workspace.
4. Type **6 square units** into the box.

5. Position your cursor on the workspace and click a colour tile in the **Maths palette** six times.
6. Move tiles on the grid to make a rectangle with an area of 6 square units.

Notice that the tiles “snap” into position on the grid.




7. Continue bringing out tiles to create all possible rectangles with areas of 6 square units.

Your project should look something like this:

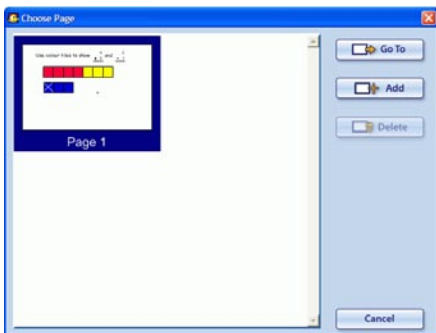



Kidspiration Pattern Blocks

Now let's add another new page and learn how to use the Kidspiration Pattern Blocks Maths Tool.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button  to add a third page to your project.
2. Choose **Pattern Blocks** from the **Maths Tool Starter**.
3. Click the **Maths Text Box**  in the **Maths palette** and drag it onto your workspace, positioning it toward the top centre.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue.





2. Click the **Add Page** button  to add a new page.
3. Choose **Colour Tiles** from the **Maths Tool Starter**.

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.

Using a background grid

A background grid can help you to organise colour tiles on the workspace, making it easier to create bar charts, build models, and explore perimeter and area.

1. Click the **Show Background Grid** button  on the **Bottom** toolbar.
2. Resize the grid to large by clicking the **Resize Manipulatives** button  on the **Bottom** toolbar one time.
3. Drag one **Maths Text Box** onto the workspace.
4. Type **6 square units** into the box.

Creating a password for the Teacher menu

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

1. On the Teacher menu, click **Application Options**.
2. Place a tick in the box next to **Password Enabled**.
3. Click **Set Password**.
4. The Set Password dialogue box appears.
5. Type the password you want to use in the **Enter Password** box.
6. 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.

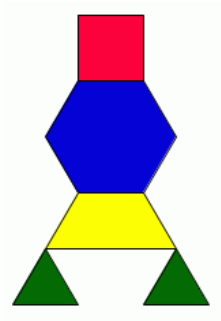
Note: If you forget your password, you can access the Teacher menu by using the password “Kidspiration3.”

Moving pattern blocks onto the workspace

Now you'll bring out some pattern blocks to create a design with line symmetry.

1. Click on the blue hexagon on the **Maths palette** and drag it onto the workspace. Do the same with the red square and the yellow trapezoid.
2. Click twice on the green triangle on the **Maths palette** to add two of them to the workspace.


3. Click and drag each pattern block into a design that looks like this:



Notice that the blocks “snap” together into position.

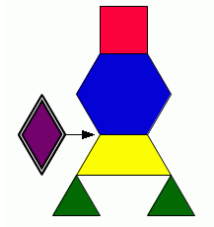
Using the Rotation tools

Use the Rotation tools on the Maths toolbar to rotate blocks on the workspace when building patterns, models and designs.

1. Drag two of the large purple rhombuses onto the workspace, one on either side of your pattern.
2. Click the rhombus on the left to select it, then click the **Rotate Block Clockwise** button  on the **Bottom** toolbar twice.

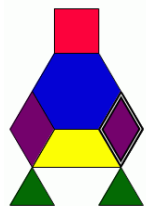
Note: You can also rotate shapes on the workspace by selecting them and then clicking your spacebar to rotate them clockwise, or by holding the **Shift** key down and clicking your spacebar to rotate them anticlockwise.

3. Drag your rhombus into position so that it “snaps” into place against the hexagon and the trapezoid.




4. Now select the rhombus on the right and repeat step number 3 above.

Your design should now look like this:



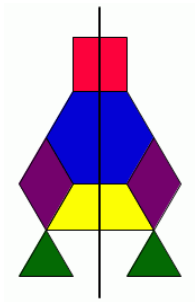
Creating a line of symmetry


You can use a line from the **Maths palette** to reinforce the concept of symmetry in the Kidspiration Pattern Blocks Maths Tool.

1. Click and drag a line  from the **Maths palette** onto the workspace.
2. With the line selected, drag on one of its handles while you hold down the **Shift** key, and move the line into a vertical position. (When you hold down the Shift key, you can rotate a line in 45 degree increments.)
3. Drag the line over the middle of the design so it bisects it.

4. You may need to lengthen the line so it extends a little beyond the top and bottom of the design.

To lengthen the line, drag on one of its handles. Your design should now look something like this:



5. Click the **Resize Manipulatives** button  on the **Bottom** toolbar once to enlarge your design on the workspace.

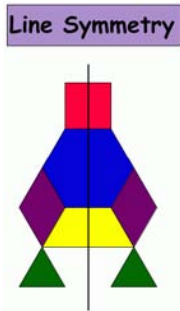
Selecting multiple items on the workspace


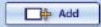
1. After you resize items, you may need to adjust their location on the workspace.
 - To multi-select items on the workspace, click an area of open workspace and drag your cursor over them.
 - or–
 - Hold down the **Shift** key and click each item you want to select.

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 Maths View's Bottom toolbar when **Stylus Mode** is turned on in **Application Options** on the **Teacher** menu.

Note: The Teacher menu must be enabled in order to access Application Options. To turn the Teacher menu on or off, click **Enable Teacher Menu** on the **Teacher** menu.

2. Drag the design into position on the workspace so that your project looks like this:



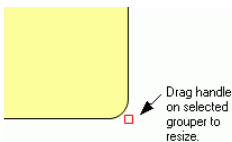
3. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button  to add another new page.
4. Choose **Pattern Blocks** from the **Maths Tool Starter** again.

Working with Maths SuperGroupers™

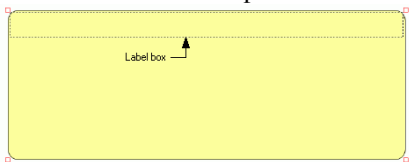
Maths SuperGroupers are similar to the SuperGroupers in Picture View. They are used for grouping, sorting, categorising and counting activities. Here you will use Maths SuperGroupers for shape identification and counting.

1. Click and drag 2 rectangular **Maths SuperGroupers** from the **Maths palette** onto the blank workspace on page 4, placing the first one toward the top centre, and the second one toward the bottom centre.

- Click to select each one and drag on one or more of their corner handles to make them wide across the page.



- Notice that when you have a grouper selected, a label box appears in dotted lines at the top.



- Double-click inside the label boxes one at a time to select them and a cursor will appear.

Type **5 blue hexagons** into the first one and **4 green triangles** into the second one.

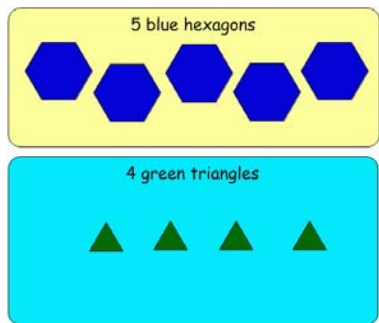
- Change the background colour of one of the groupers to give your document visual interest.

Select the 4 green triangles grouper and choose light blue from the **Colour** buttons on the **Bottom** toolbar.



- Now that your groupers are ready, use pattern blocks to represent the labelled quantities. Drag 5 blue hexagons from the **Maths palette** into the first grouper, and 4 green triangles into the second grouper.


Your project should look 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 tiles move with it.

Kidspiration Base Ten Blocks

Now let's add a fifth page to our project and learn how to use the Kidspiration Base Ten Blocks Maths Tool.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button




2. Choose **Base Ten Blocks** from the **Maths Tool Starter**.

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 modelling problems. The mat has three basic layout options to choose from: a full-page mat with columns labelled “Hundreds,” “Tens” and “Ones,” a 3/4-page mat with columns labelled “Hundreds,” “Tens” and “Ones” and room for instructions

or example work above, and a full-page mat with columns labelled “Thousands,” “Hundreds,” “Tens” and “Ones.”

1. Click the **Place Value Mat** button on the **Bottom** toolbar twice to select the “Hundreds,” “Tens” and “Ones” place value mat with the open area at the top.
2. Click the **Maths Text Box**  in the **Maths palette** and drag it onto the workspace, into the open area at the top of the place value mat.
3. 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
$$\begin{array}{r} 176 \\ + 36 \\ \hline \end{array}$$

4. Click the **Open Maths 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.
5. Enlarge the text size by clicking the **Resize Text** button  on the **Bottom** toolbar once.
6. Click outside the box and then back on it to select it. When a text box is selected, it has corner handles .
7. Resize the text box by dragging on one or more of its corner handles so that all of the text fits on one line.
8. Move the text box up so it is near the top of the workspace.

Moving base ten blocks onto the workspace

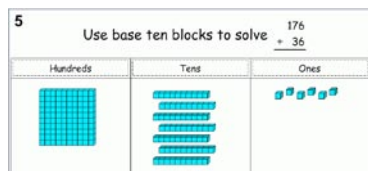
Now you'll bring out some base ten blocks and arrange them on the place value mat to represent the addition problem.

1. Click on the flat in the **Maths 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 **Maths 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 **Maths palette** six times.
4. To position blocks at the top and centre of their columns, simply click on the flat and drag it into position.

Multi-select the blocks in the other two columns, one column at a time, and click and hold your cursor on one of the blocks to drag them all into position.


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



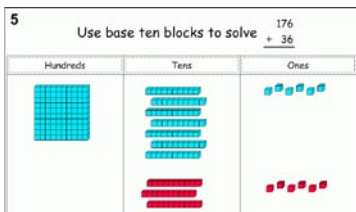
5. Now to represent 36, you will bring in additional blocks.
Add three new horizontal rods to the “Tens” column, and six new units to the “Ones” column to represent 36.

Changing the colour of base ten blocks

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


- To change the colour 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 **Colour** buttons on the **Bottom** toolbar. To select a colour from the expanded palette, click the **More Colours** button .

Your project should now look something like this:



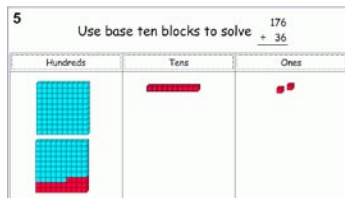
Solving an addition problem by regrouping blocks

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

- Begin in the “Ones” column and regroup by multi-selecting six blue units and four red units and then clicking 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 to represent “carrying.”
- 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 6, you might want to lock page 5. The ability to lock pages in a document allows you to set up an example within an activity and prevent pupils from altering any of the items on the workspace, or adding to the page.

- To lock page 5, click **Locked Page** on the **Teacher** menu.

A tick 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. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button



to add another new page.

2. Choose **Base Ten Blocks** from the **Maths Tool Starter** again.
3. Click the **Place Value Mat** button on the **Bottom** toolbar once to add a new mat to your workspace.
4. Double-click inside a label to select it.

You should see a cursor appear.

5. 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) on your keyboard to remove the existing text.

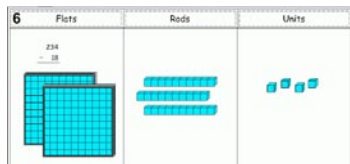
6. Type **Flats** into the first label, **Rods** into the second one and **Units** into the third one.
7. Drag a **Maths Text Box** into the “Flats” column to write a subtraction problem.
8. Click the **Open Maths Frame** button on the **Bottom** toolbar and write the expression **234 minus 18**, using the **Minus Sign** button on the **Bottom** toolbar to represent minus. The text box should look something like this:

A rectangular text box with a light blue background and a thin border. It contains the subtraction problem $234 - 18$ written in a simple font. The minus sign is centered between the two numbers. There are small red squares at each of the four corners of the text box, indicating it is a draggable element.

9. 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.

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

11. 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 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.


1. 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.

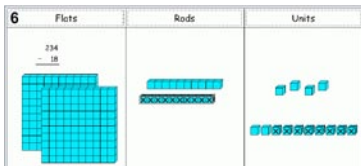
2. Move the new units into the “Units” column.

Using the Cross-Out Stamp

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




1. Select eight units in the “Units” column and click the **Cross-Out Stamp** button  on the **Bottom** toolbar.
2. 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:



Kidspiration Fraction Tiles






Now let's add a seventh page to our project and learn how to use the Kidspiration Fraction Tiles Maths Tool.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button .
2. Choose **Fraction Tiles** from the **Maths Tool Starter**.
3. Click the **Maths Text Box**  in the **Maths palette** and drag it onto your workspace.

- Click inside the text box and write **Find three fractions that are equivalent to one-half**, but follow the steps below so it looks like this:



Find three fractions that are equivalent to $\frac{1}{2}$

- Click the arrow  to the right of the **Open Maths Frame** button  in order to see all of the **Bottom** toolbar.
- Click the **Fraction Frame** button  at the end of the toolbar to create the fraction.
- Enlarge the text size by clicking the **Resize Text** button  on the **Bottom** toolbar once.
- Click outside the box and then back on it to select it. When a text box is selected, it has corner handles .
- Resize the text box by dragging on one or more of its corner handles so that all of the text fits on one line.
- Click and drag the box up so it is positioned at the top of the workspace.

Using whole trays

Whole trays can be used as a container to hold fraction tiles. A whole tray represents 1 (or whole) when filled with tiles, and is the same size as the tile from the Maths palette representing 1 (or whole).

- Click on the whole tray in the **Maths palette** and drag it onto the workspace.
- Either drag three more out or click on the whole tray in the **Maths palette** three more times successively to create three more trays.
- Align them top-to-bottom vertically on the workspace. Notice how the whole trays “snap” together as you line them up.

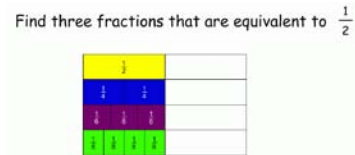
Moving fraction tiles onto the workspace

Now that the whole trays are ready, use fraction tiles to represent one-half and its equivalent fractions.

1. Click and drag a $\frac{1}{2}$ tile from the **Maths palette** into the first whole tray.
2. Drag fraction tiles out into the trays below to represent fractions that are equivalent to $\frac{1}{2}$, beginning with $\frac{1}{4}$ and ending with $\frac{1}{8}$. Notice how the tiles “snap” into position.


Note: After the first tile is dragged into each whole tray, successive clicks on the tile in the **Maths palette** will “snap” the next tile into place.

Your project should now look something like this:









Hiding fraction labels

If your activity requires it, you can hide fraction labels.

- Hide the fraction labels by clicking the **Hide Fraction Labels** button  on the **Bottom** toolbar. Click it again to turn fraction labels back on.

Kidspiration Fraction Boxes

Now let's add an eighth page to our project and learn how to use the Kidspiration Fraction Boxes Maths Tool.

1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue, and click the **Add Page** button  .
2. Choose **Fraction Boxes** from the **Maths Tool Starter**.
3. You will use Maths Text Boxes to write two fractions. Click the **Maths Text Box**  in the **Maths palette** and drag it onto the left side of your workspace, toward the top.
4. Drag another one out and place it below the first one.
5. Add fractions to the text boxes following the steps below:
6. Click the arrow  to the right of the **Open Maths Frame** button  in order to see all of the **Bottom** toolbar.
7. Click back on the first text box to select it and click the **Fraction Frame** button  at the end of the toolbar. Type text into the frames to create the fraction 3/4.
8. Click on the second text box and create the fraction 5/8 in the same way.

$$\frac{3}{4}$$


$$\frac{5}{8}$$

Limiting the denominator in fraction boxes


For this Kidspiration Fraction Boxes project, you may want to limit the denominator on all fraction boxes in this document, the default maximum for which is 36.

1. Select **Limit Denominator...** on the **Teacher** menu.
2. Enter a new denominator of 16 in the **Set Denominator** dialogue box.

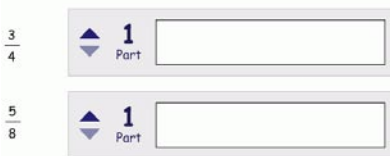
Notes:

- Your document must not have any fraction boxes on it yet. If you try to limit the denominator with fraction boxes already in the document, you will get a warning message to clear all fraction boxes from the document before setting a new maximum denominator.
- When you limit the denominator, it applies to fraction boxes all pages in the current document.
- The Teacher menu must be enabled for the *Limit Denominator* option to appear. To turn the **Teacher** menu on or off, click **Enable Teacher Menu** on the **Teacher** menu.

Dragging fraction boxes onto the workspace

1. To visually represent the fractions, click the fraction box  in the **Maths palette** and drag it onto the workspace to the right of the first text box.
2. Either drag another one out or click on the fraction box again in the **Maths palette** to create another one on the workspace.


- Align the second one with the first one vertically on the workspace. Notice how they “snap” into position when you have them aligned.



Note: To move a fraction box, click in the grey area and drag the box.

Changing the denominator in a fraction box



When you first drag a fraction box out onto the workspace, it has only one part, or a denominator of one.

- To increase the denominator on the top fraction box, click the **Increase Denominator** button  four times to divide it into four parts.
- Repeat this with the lower fraction box to give it eight parts.

Tip: You can also click and hold down the **Increase** and **Decrease Denominator** buttons to change the denominator.

Adding colour to the parts and activating tiles

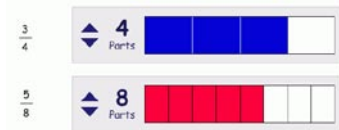
Filling the parts within fraction boxes with colour and/or a pattern makes them active.

- Colour $\frac{3}{4}$ by multi-selecting the first three parts in the top fraction box (hold down the **Shift** key and click each item you want to select).
- With the three parts selected, click one of the **Colour** buttons  on the **Bottom** toolbar to represent $\frac{3}{4}$. To select a colour from the expanded palette, click the **More Colours** button .

3. Now multi-select the first five parts in the lower fraction box and colour them a different colour to represent $\frac{5}{8}$.

You now have active tiles in both fraction boxes.

Your project should look something like this:



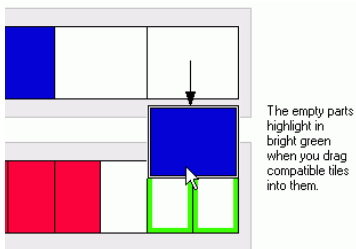
Moving the tiles inside and between fraction boxes

Active tiles can be moved into empty parts within fraction boxes.

- Click the far right active $\frac{1}{4}$ tile in the top fraction box and drag it into the empty part on its right.

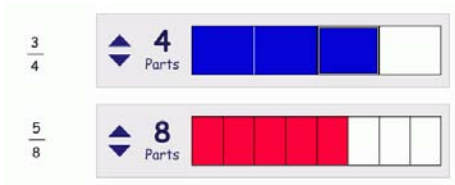
Active tiles can also be moved into empty parts in another fraction box if the denominators between the two are compatible. For example, a $\frac{1}{4}$ tile can move to two empty $\frac{1}{8}$ parts.





- Click the far right active $\frac{1}{4}$ tile in the top fraction box and drag it into the last two empty parts on the lower fraction box, as shown below:



- Now multi-select the last two active $\frac{2}{8}$ tiles and move them back into the upper fraction box, “snapping” them into place beside the other active $\frac{1}{4}$ tiles.



Your project should look something like this:




1. Click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue.
2. Click the **Add Page** button  to add another new page.
3. Choose **Fraction Boxes** from the **Maths Tool Starter** again.
4. Drag a **Maths Text Box** onto the open workspace.
5. Use the **Fraction Frame** and the **Plus Sign** buttons from the **Bottom** toolbar to create the expression $\frac{2}{3}$ plus $\frac{3}{4}$.
6. Enlarge the text size by clicking the **Resize Text** button  on the **Bottom** toolbar once.
7. Click outside the box and then back on it to select it. When a text box is selected, it has corner handles .
8. Click and drag the box up so it is positioned at the top of the workspace.

The image shows a text box containing the mathematical expression $\frac{2}{3} + \frac{3}{4}$. The text box has small red squares at each corner, indicating it is selected and can be moved or resized.

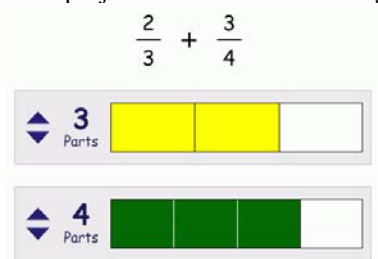
Finding and applying a common denominator

1. Click the fraction box  in the **Maths palette** twice to place 2 new fraction boxes onto the workspace.
2. Position them so that they “snap” into vertical alignment on the workspace and are centred below the text box.
3. Click and hold the **Increase Denominator** button  on the top fraction box three times to divide it into three parts.

Repeat this step with the lower fraction box to give it four parts.

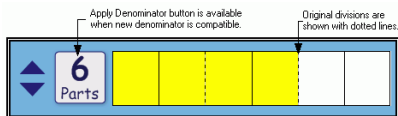
4. Select the first empty part in the upper fraction box and click one of the **Colour** buttons  on the **Bottom** toolbar twice to colour two tiles, or $2/3$ of the upper fraction box.
5. Do the same with the lower fraction box with a different colour to represent $3/4$.

Your project should look something like this:



6. Now click the **Increase Denominator** button on the upper fraction box and watch the appearance of the box.
 - When the number of parts is coloured red, it indicates that the new denominator does not yield a fraction that is equivalent to $2/3$. When an equivalent fraction, such as $4/6$, has been reached, the background of the fraction box turns blue, and the **Apply Denominator** button appears.

- Also, as you change the denominator in a fraction box containing active tiles, the original divisions are shown with dotted lines.






- To change the fraction into a new, equivalent fraction, click the **Apply Denominator** button to activate the new number of cells, and the dotted lines will go away.
- Experiment with increasing the denominator in both fraction boxes to find the common denominator of 12. Apply it in both fraction boxes.
- To add $\frac{8}{12}$ and $\frac{9}{12}$, you can multi-select four tiles from the lower fraction box and drag them into the upper one, and see the answer to the equation, which is $1 \frac{5}{12}$.
- Use another text box to record your answer.

Your project should look something like this:

$$\frac{2}{3} + \frac{3}{4}$$


$$= 1 \frac{5}{12}$$

11. Now click the **Go To Page** button  on the **Maths** toolbar to open the **Choose Page** dialogue.
12. Click the **Add Page** button  to add another new page.
13. Choose **Fraction Boxes** from the **Maths Tool Starter** one last time.
14. Drag two text boxes out onto the left side of the workspace, one at the top and one toward the middle.
15. Add the expression $\frac{1}{2}$ times $\frac{8}{9}$ to the top one, and $\frac{3}{4}$ minus $\frac{1}{4}$ to the lower one, using the **Fraction Frame**, **Multiplication Sign** and **Minus Sign** buttons on the **Bottom** toolbar.
16. Now bring out two fraction boxes and position them below the text boxes, centred across the workspace.
17. Click the **Resize Manipulatives** button  on the **Bottom** toolbar once to make them larger.
18. You may have to adjust their position slightly after resizing them. Click in the grey area to select them and drag them into vertical alignment with each other. Notice that they will “snap” into position.

Using a pattern with fraction boxes

You can add a pattern to fraction tiles just like you can change a colour. Adding a pattern to coloured tiles can help in representing multiplication of fractions.

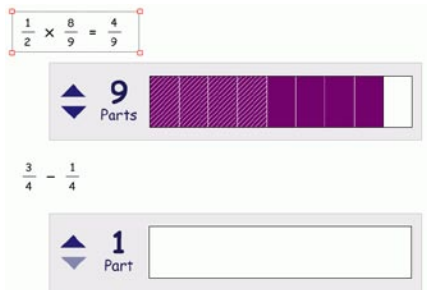
1. To represent $\frac{8}{9}$, select the upper fraction box, and click and hold down the **Increase Denominator** button until it has nine parts.
2. Click on the first part and then click a **Colour** button on the **Bottom** toolbar eight times to represent $\frac{8}{9}$.
3. To represent “taking half of” $\frac{8}{9}$, multi-select four of the eight tiles in that same fraction box and click one of the **Pattern** buttons

 on the **Bottom** toolbar.

You have now visually represented $\frac{1}{2}$ of $\frac{8}{9}$ and revealed the solution.

4. Add the answer to the first problem in the upper text box. Represent **equals $\frac{4}{9}$** using the **Equals sign** and another **Fraction Frame** from the **Bottom** toolbar.
5. You may need to resize the text box. Click off the text box and back on it to select it. Drag one of the handles until the expression fits on one line.


Your project should look something like this:



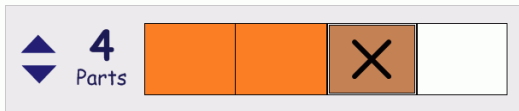
The screenshot shows a digital workspace with two fraction boxes. The top box contains the equation $\frac{1}{2} \times \frac{8}{9} = \frac{4}{9}$. Below it is a toolbar with a '9 Parts' button and a row of nine purple tiles, the first four of which are marked with diagonal lines. The bottom box contains the equation $\frac{3}{4} - \frac{1}{4}$. Below it is a toolbar with a '1 Part' button and an empty rectangular box.


Marking tiles for subtraction

It is easy to mark tiles in fraction boxes to represent subtraction. When you mark tiles for subtraction, they will be removed when you change the denominator.

1. Select the lower fraction box, and click and hold down the **Increase Denominator** button until it has four parts.
2. Click on the first part and then click a **Colour** button on the **Bottom** toolbar three times to represent $\frac{3}{4}$.
3. Click the **Subtraction** button  on the **Bottom** toolbar, and the last active tile will now be marked for subtraction.

You have now represented the equation $\frac{3}{4}$ minus $\frac{1}{4}$ equals $\frac{2}{4}$.



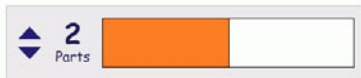
- To reduce your answer, now you can decrease the denominator and remove the marked tile.
 - Click the **Decrease Denominator** button  and stop when the equivalent fraction of $\frac{1}{2}$ is reached.
 - Click the **Apply Denominator** button and the fraction box now contains only 1 active tile.
- Add the answer to the second problem in the lower text box. Represent **equals 1/2** using the **Equals sign** and another **Fraction Frame** from the Bottom toolbar.
- You may need to resize the text box. Click off the text box and back on it to select it. Drag one of the handles until the equation fits on one line.

Your project should look something like this:

$$\frac{1}{2} \times \frac{8}{9} = \frac{4}{9}$$



$$\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$$



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 Maths 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 **Pupil Name** button.
2. Place a tick in the box where indicated.

Closing your project and returning to the Kidspiration Starter

Congratulations! You have completed *Tutorial One: Using Maths View's Maths Tools*. 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.