Let's begin.

Click on the + sign next to the matrices. Notice that the matrices in the setup must be square, and notice that the matrices are the starting world from the website.

Make sure you've downloaded the starting world.

The Matrix

Other basic Alice concepts:
- Variables, helper methods, billboards, and programming ideas covered include arrays.
- Easier forgotten multiplication process.
- This tutorial will help reinforce each step in the matrix multiplication tool in Alice.

This tutorial will show you how to create an interactive matrix multiplication tool in Alice.

Overview
Deciding when to start the game:

- Drag 3 a Do in order onto the Nothing.
- Click on any key, and select Space.
- Create a new event in the top right.
- Val to False.
- Make it type Boolean, and set its starting true.
- Click create new variable, and name it start.
- Properties panel.
- Click on world in the object tree, and go to its
- Decide on start the game.

Matrix Notation:

- Click on matrixinstructions.
- Select false.
- In order in the event that you just made, and
- Drag into properties tab. Drag insowing into the do
- Click on matrixinstructions in the object tree, and
- Create that you are
- What goes on in the
- So that you understand
- Read the instructions
- Picture.
- The screen like in the
- That it covers most of
- Move and resize
- and find matrixinstructions.
- At the top of Alice, click File, Make Billboard,
- matrixinstructions file from the website.
- Make sure you've downloaded the
- Adding instructions
called numbmerentered.
- Create one new number variable in the method.
  If 3D text doesn’t come up as an option – Make sure you’ve downloaded the latest version of Alice.
- Create 3 new parameters: numbmerobject (other, 3D text), spot (object), and index (number).
- Create a new method called 8 times to fill all of the spaces.
- Generatemethods.
- Click create new method, and name it.
- Click on word in the object tree, and go to its.

Generatemethods

When a number is clicked...

When

Select set value, leftmatrix, left(0,0).
- Drag numbmerclicked onto the nothing and
- Change anything to leftmatrix, left(0,0).

Click on something when the mouse is
- Create a new object variable in world’s properties named numbmerclicked.
- Create a new object variable in one of the matrices.
- Clicks on a number in one of the matrices.
- When a new event occurs, we tell when the player

We want to be able to tell when the player

Replicating events

When

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Replicating events
Making the number appear

(1) In that order, (2) In that order, (3) In that order, (4) In that order, (5) In that order, (6) In that order, (7) In that order, (8) In that order.

Set the items to let(0,0), let(1,0), let(1,0), let(0,1), let(0,1), let(0,0). Set the items to let(0,0), let(1,0), let(1,0), let(0,1), let(0,1), let(0,0).

Click new item 8 times so that you have items 0-7, which will check make a list, and change list.

The matrices represent all of the numbers in matrixnumbers, of type number, in world's properties tab, click number values.

We want to keep track of all the values that are in the matrix "other", and type "enter a number" and go to its functions.

Click on world in the object tree.

expressions, expressions, expressions, expressions, expressions, expressions, expressions, expressions.

functions, functions, functions, functions, functions, functions, functions, functions.

To make the number show up as an integer rather than a decimal, drag in a string (from world's default string), and select default string. From world's functions tab, drag what a string onto string, for now.

numbervalues, set duration to 0. 

numbervariables, set duration to 0.

• Drag numbervariables into the method, select set item
In other words...

expression index, For now.

From world's methods, drag generated numbers.

Times, and click on show complicated version.

Drag a loop into calculations, which runs 8

(0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), 

Items to left (0,0), left (0,0), left (0,0), right (0,0), right (0,0), right (0,0), right (0,0), right (0,0), right (0,0),

Add items until there are items 0-7, and set the

And make it an object array.

Create another world variable named all spots,

Since we also need to loop through all the spots,

And we are also need to loop through all the spots,

So how do we code that?

change 0 to 4 and 1 to 6.

Doing the same so that you have item 4.

Click on the last arrow in the line and select method +, 1.

Drag matrix numbers onto the t, and select item 4.

Math, *.

Click on the last white arrow in the line and select

Drag matrix numbers onto the t, and select item 0.

Drag #trans(0,0) into the method, and select set value, 1.

Change 0 to 4 and 1 to 6.

Next time, and click on show complicated version.

Drag a loop into calculations, which runs 8.

(0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), (0,0), 

Items to left (0,0), left (0,0), left (0,0), right (0,0), right (0,0), right (0,0), right (0,0), right (0,0), right (0,0),

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And we are also need to loop through all the spots,
• Make sure all durations are set to 0 (or false) seconds.

○ Each example refers to the same answer.
○ Change the second and fourth to answer (T), the third.

• Make 3 copies of that line, and drag each of them.

Draw a String

○ On default string, drag what as a string
○ From world's functions, drag into a string

To deal with the answer, create 2 object parameters:
num2spot, num3spot, num4spot, num5spot, num6spot, num7spot.

○ And their respective spots: num7, num5spot, num4spot.

○ And number objects involved in calculating their answers.

This method will help the user calculate the answer.

○ Create a new world method named AnswerE이나t

○ On default string, and select camera.

○ On default string, and select camera.

○ Add text to the line below the first answer set.

○ Find answer(0) from the answermathmatics folder in your object tree, and go to its properties tab.
Check your code:

- objects are in the object tree
  - for num1 and num2
- select expressions, expression, expression, expression, expression, expression, expression, expression, expression, expression, expression
- return to your main method

Using answerObject

- for all of the numbers:
  - create a helper (world) method called
    - gray, and
    - move to the equation spot to
each number object that we’re dragging to
  - for each number object that we’re dragging to
  - opacity to 0, and set the duration to 0 seconds.
  - drag answerObject into the method, and select set

- (code on next page)...

- to light gray, and set the duration to 0 seconds.
- drag equationObject into the method, select set color
  - to move to, expressions, equationObject,
  - drag numberObject into the method, and select
    - numberObject;
  - from world’s properties, drag numberClicked onto
    - true, and select numberClicked = expression;
    - drag a while into the method, and select true:
    - color to green, and set duration to 0.5;
    - drag equationObject into the method, and select set
      - numberObject and equationObject.
  - create 2 object parameters for this helper method:
ans. move to ans. and select the true, and select numberrclicken = expression.

From word's properties, drag numberrclicken onto the true, and select numberrclicken = expression.

Drag in a While, and select true.

Drag in ans, and select set opacity to 0.

Drag in ans, and select set duration to 0.

Drag in ansspot, and select set opacity to 0.

Drag in ansspot, and select set duration to 0.

Drag in ansspot, and select set duration to 0.

Now, try to type ansspot into the Do Nothing, and select set value to answer.

Now, try to type ansspot into the Do Nothing, and select set value = answer.

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Connecting the methods

Now we want to call answerAnimation for all 4 of the items in the answerMatrix.

From world's methods, drag in calculateAnswers.

Go back to world's first method.

According to your knowledge of this program and multiplying matrices, try doing the next two lines yourself.

So let's code that

Finishing touches

From world's methods, drag answerAnimation into the method, and choose left(0,0), left(1,0), Spot, right(1,0), right(1,1), Spot, #world, ans(0,0).

These can be found in leftMatrix, rightMatrix, answerMatrix, and expressions/word's properties.

Drag in answerAnimation again, and choose left(0,0), left(1,1), Spot, right(0,0), right(0,1), left(0,1), left(1,1), Spot, left(0,1), Spot, right(1,1), left(1,1), Spot, ans(0,1), ans(0,0), ans(0,1), ans(0,0).

Drag isShowing into the bottom of my first method, and select true.

Check to see if you're right

3rd line: left(1,0), left(1,0)Spot, right(0,0), right(1,0), right(0,1)Spot, left(1,1), Spot, left(1,1), Spot, right(1,1), left(1,1), Spot, ans(1,0), ans(1,1), ans(1,1).

4th line: left(1,0), left(1,0)Spot, right(0,0), right(1,0), right(0,1)Spot, left(1,1), Spot, left(1,1), Spot, right(1,1), left(1,1), Spot, world, ans(1,1).

Change the brightness from 1 to 2.

Click on good job in the object tree, and go to its properties tab.
Good Job!!

Play Your World!!