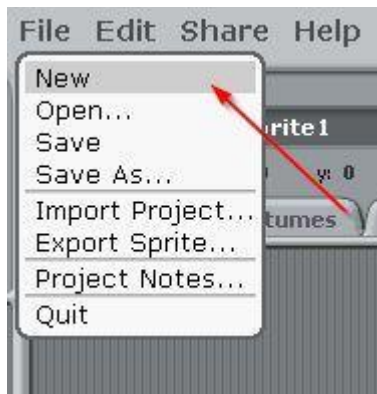# GAME:IT Elementary

Starting our Farm

Scratch Farm

In this section we are going to introduce some new functions of Scratch and create our own farming adventure.

If you currently have a project open in Scratch, the first thing you need to do is create a new project.

➡ To do this, first, save your existing project (if desired). Then, go up to the menu and select File > New.

Scratch Farm

Now that we have our new project open, we want to select a new sprite (since our cat would not make a good farmer).

➡️ Let's go ahead and delete our cat sprite. You can do this by either right clicking on the cat in the stage or on the icon and going to delete.

➡️ Now we need to get a new sprite for our farmer. Scratch doesn't have a specific farmer sprite. So, you can either save a image from the internet to use or select a sprite that is available from Scratch.

Depending on the image you have chosen
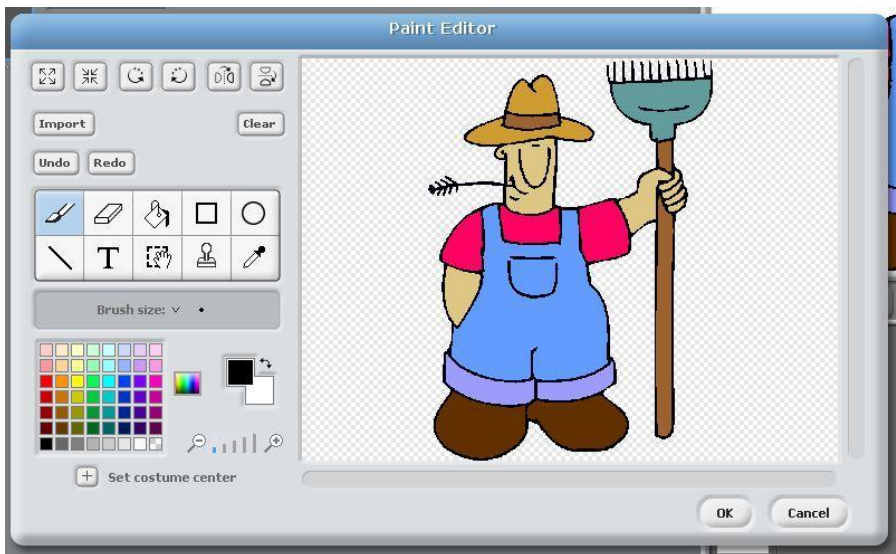you may need to resize your sprite to make it
smaller or larger.

The sprite I choose is a little too big, so next, we are
going to go over how to make a sprite smaller.

Scratch Farm

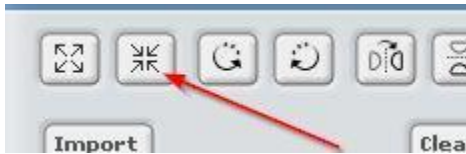With our sprite active we are going to go up to costumes located above our scripts area.
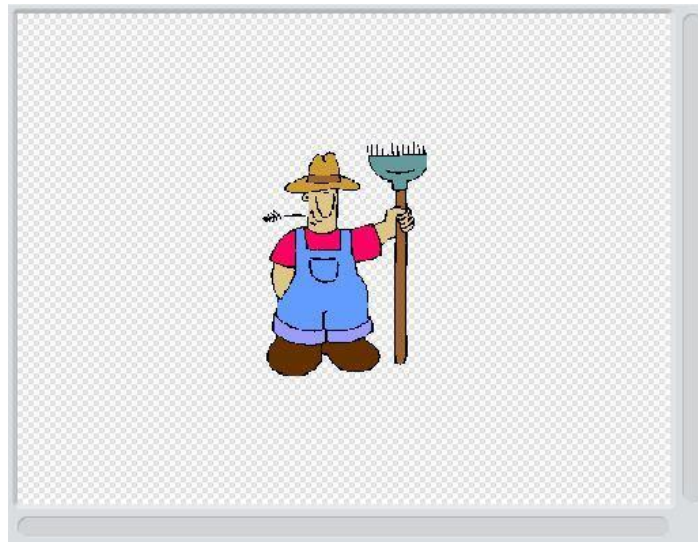
From there we want to select edit.

This will bring up our Scratch paint editor.

Scratch Farm

Once inside our paint editor, the button we want to use is located near the top and is called "Shrink".

➡ We will need to click this button a few times to get a sprite down to a size we can work with. I had to click mine 4 times but yours may be different.

Scratch Farm

We want our sprite to have dimensions between 100 x 100 and 200 x 200.

After you click ok in the paint editor you can see these dimensions in your sprites costume page.
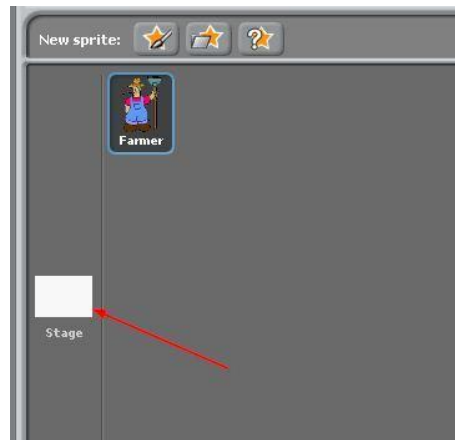

➡ Once we have our sprite at our desired size let's go ahead and rename our sprite "Farmer".

Scratch Farm

Next we want to change our background, or stage, to a farm setting.
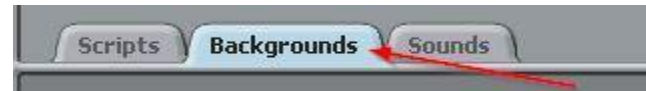
➡ To do this, we want to select stage down in our sprite area.

Once we have that selected, we can see our tabs above the scripts area have a changed a little.
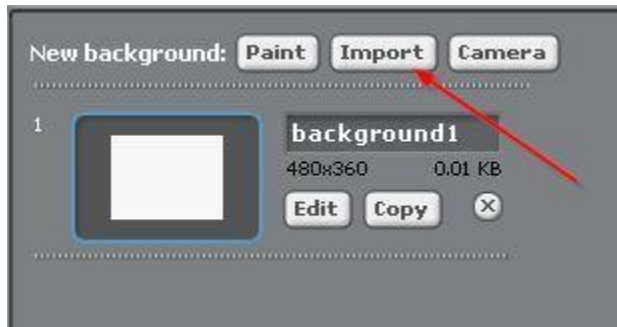
Costumes has changed to Backgrounds.

➡ This is the one we want to select now.
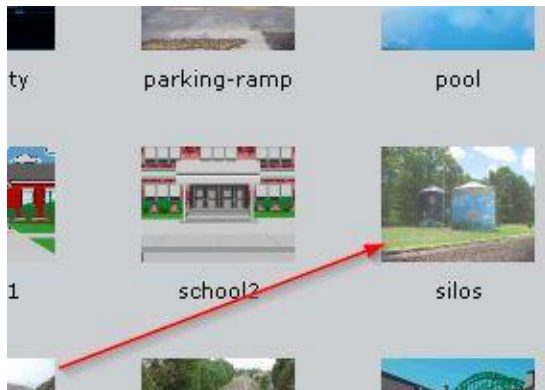
Scratch Farm

➡️ Once in that tab, select Import.

This will bring us to the backgrounds folder in Scratch.

➡️ Let's select the folder called Outdoors.

➡️ Once inside the folder let's find the file titled "silos" and select it.

Scratch Farm

➡ Now that we have the background imported we can delete our default background to eliminate any confusion.

Now that our farmer is set and our background is selected, we can start building some scripts.
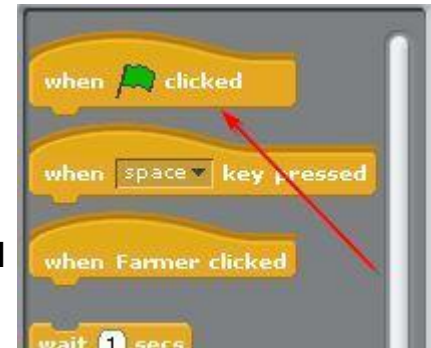
➡ Let's make sure our farmer is selected in our sprite area and select the scripts tab.

Scratch Farm

The first thing we want to do is add a starting control block to our project

➡ Let's go to our blocks navigation menu and select Control.

Then we want to drag the first block titled
"when (green flag) clicked" to our scripts area.

➡ Once that is in place, let's go back to our blocks menu
and select the Looks blocks menu.

➡ Then let's add a "say" block to say "Today is a good day to farm" for 2 secs.

Our script should look like this when we
are done.

Scratch Farm

Since a farmer's day starts early we should probably add a rooster to our script.

➡ To do this let's go to the Sounds tab above our scripts area.

➡ Once there select import to open the Import Sound window

➡ We want to select the animals folder
located in our Scratch sounds folder.

Scratch Farm

➡️ Once in the folder scroll down and select the sound titled "rooster"

We can see that our sound has now been imported into our project and is
ready to be used

➡️ So lets go back and our scripts tab and select Sound in the blocks navigation

Scratch Farm

Now go to the first block on the list titled "play sound Rooster" and drag it to our script so it is inbetween our two current blocks.
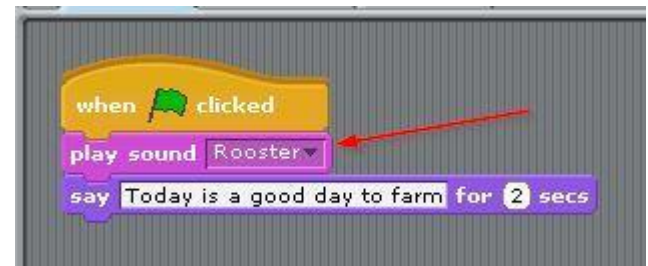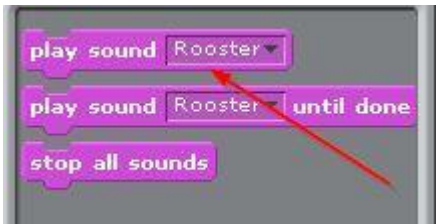
Now, if we click the green flag above our stage we can hear our rooster sound and see the farmer say "Today is a good day to farm".

Scratch Farm

The first thing our farmer needs to do in the morning is milk the cow, so we need to add a cow to our project.
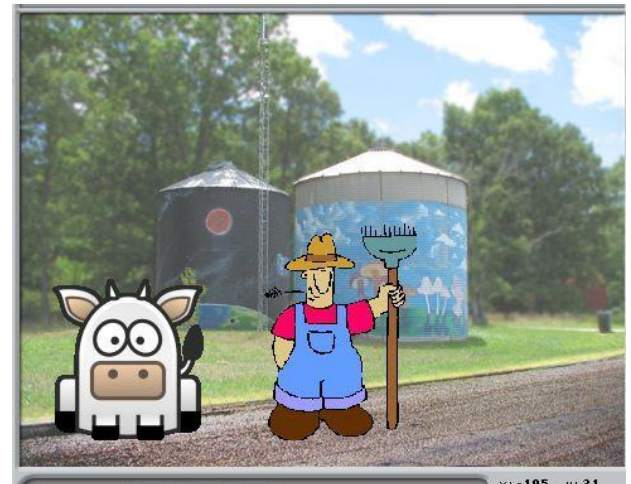
➡ Let's go ahead and click to choose a new sprite

from a file

Like we did with the farmer you can save a sprite off the internet to use or select one from Scratch.

Also, like before we want to resize our image to be between 100 x 100 and

200 x 200.

➡ And we want to rename this sprite to "Cow"

and move him to the bottom-left of our stage

Scratch Farm

Now we are going to introduce some blocks. These blocks are located in the Control blocks section and are called "broadcast".

Broadcast blocks are used to send a command from one sprite to other sprites to let them know to start scripts.

This is useful to make sprites interact without having to have them touch like with did with the touching block previously.

➡ Let's go ahead and go to the control blocks and find the broadcast blocks


"broadcast" and "broadcast and wait" are going to be used to send the prompt to start a script.
The "when I receive" block will be used to start scripts.

Scratch Farm

➡ To start building our first broadcast command let's select our Farmer sprite and select the "broadcast" block and insert it at the end of our existing script.

➡ Once that is in place select the drop down arrow and go to new...
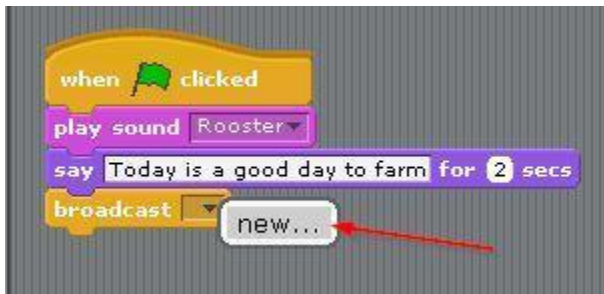
That brings up a window asking for a message name.

➡ Let's name this Start Day and select Ok

Scratch Farm

Now let's complete the second half of our broadcast command.

➡️ Go ahead and select our Cow sprite and in the control menu. Select "when I receive" and drag it to our scripts area.

As you can see, our Start Day broadcast automatically inserts since it is the only one we have created right now.
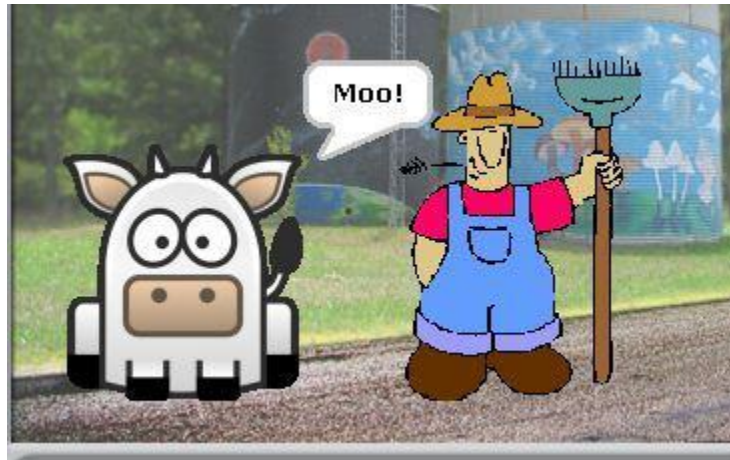
➡️ Now, let's just add a simple say block to have the cow say "Moo!" for 1 second.

Our final script should look like this

Scratch Farm

Now, when we click our green flag, we can see the Farmer go through his script and then the cow will say "Moo!"

But, we have an impatient cow and he keeps mooing until we milk him.

To make this happen, we are going to add another say block to our script and put it within a forever block.

Scratch Farm

➡ First we want to add a say block to our script. With the cow selected, add a say block, but delete the words "Hello!" and leave it blank and change the seconds to 1.

➡ Next, we want to add a forever block from our Control blocks menu so it goes around our two "say" blocks.

In the end our script should look like this

When we click the green flag we can see the Farmer do his script and then the Cow say "Moo!" pause and say "Moo!" again forever.

➡ Let's press the red stop sign to stop this script.

Scratch Farm

In this lesson, we have had a nice introduction to the broadcast blocks.

We have also learned how to import and resize images, to change the background, as well as how to import sounds.

Next, let's expand further on the broadcast blocks and figure out how we can easily place sprites on our stage in specific spots.
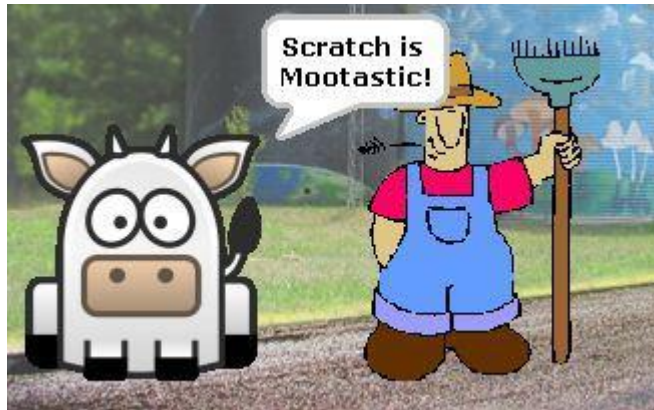
STEM Education

As we have started building our farm adventure using Scratch have you noticed any STEM concepts we have come across so far?

STEM Education

One STEM concept we used in this unit is "dimensions".

The dimensions of an object is a measure of how much space an object takes up. The most basic way to state the dimensions of an object are by the length and width. We changed a sprites dimensions when we resized our sprites.

Let's think about how you might use dimensions in a future career and in everyday life. Can you think of a way you might use dimensions in a future career?

STEM Education

One career that often uses the concept of dimensions is Architecture.

Architects are the ones that design all kinds of buildings, including the one you are in now.

Dimensions are important to architects because they need to know the size of the building they are creating and the size of the rooms inside the building.

How are dimensions important in everyday life?

STEM Education

Here is an example. Let's say your parents bought a new couch that is really heavy. As they move it into the house they realize that it might not fit through the doorway.

You could suggest they measure the dimensions of the doorway and the dimensions of the couch before they try to move it in.

Now, without even lifting the heavy couch, your parents can know beforehand if it will fit through the doorway, just by using dimensions!

Can you think of any other times you use the concept of dimensions in life?