Quick Guides for Etoys on the OLPC XO

Squeak Etoys is a "media authoring tool"-- software that you can download to your computer and then use to create your own media. You can write out your project and share it with others. Etoys runs on any Mac or Windows machine, as well as on the OLPC XO machine.
It is free. Find out about Etoys.

Guides about topics in EToys
Help screens for the OLPC XO machine.

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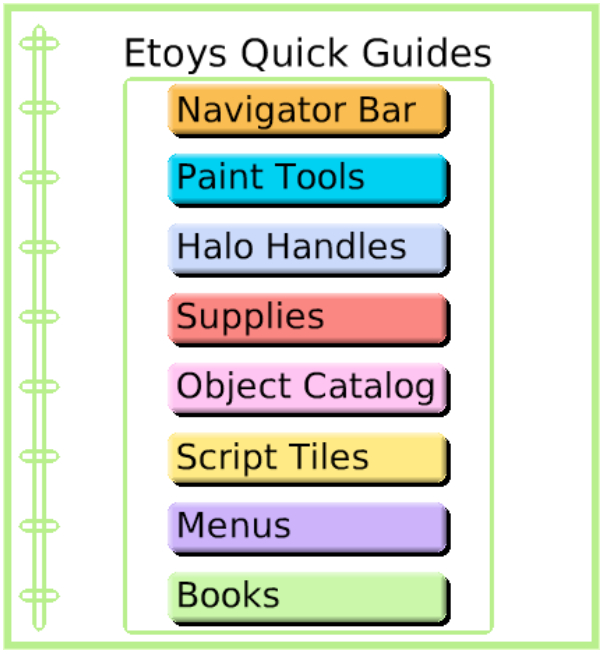


Each guide is an interactive book created to help you learn one useful tool, tile, or technique.

The ideas in these guides can be combined and recombined to create many kinds of projects.

You can create projects about any subject. Make puzzles, games, animations, simulations, and visualizations.

Some of the most basic books are listed first.

The guides are arranged in sets but it is not necessary to read them in any particular order.

Try a few and then follow your imagination and look for the guides that help you travel new paths.

Etoys is a tool to explore ideas.

Go forward boldly and if something isn't working the way you want, think again. Or, close Etoys and start again.

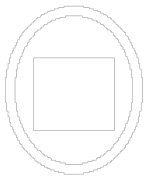
There are always surprises when you learn new things.

Wonder why.
Wonder how.
Wonder.

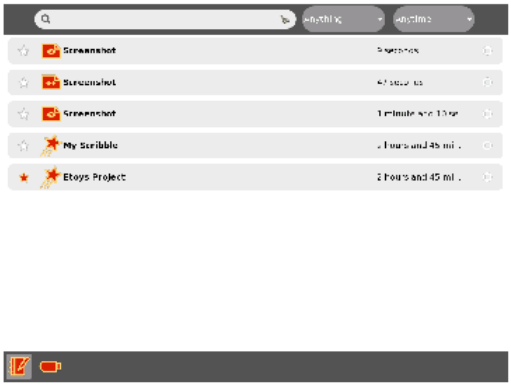
Keep Find Projects

Navigator Bar: Keep a Project and Find It Again

Click the Journal icon in your Navigator Bar to Keep a project.



The project becomes an entry in your Journal (XO only); you will find it there.

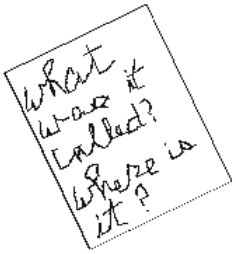


Open your journal to Find a project.

Open a detailed view and change the name of the project or add tags to help you sort ideas later.

Click to open it.

Give projects meaningful names; nonsense is hard to remember.



lost project magnet

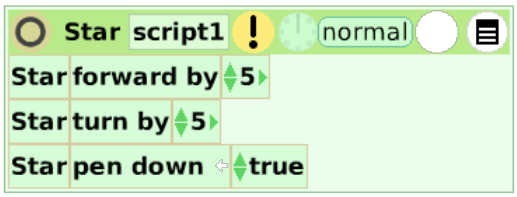
Choose a Language

Navigator Bar: Choose a Language

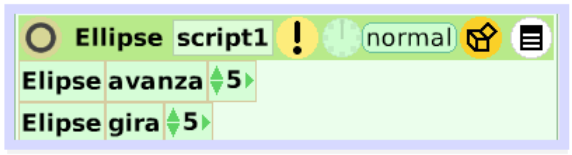
Etoys is available in many languages.

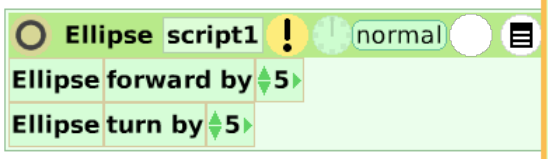
Click on the flag in the Navigator Bar to open the menu of choices.

Click on the flag and choose a new language to translate this script. Finished scripts can be translated to any of the available languages.

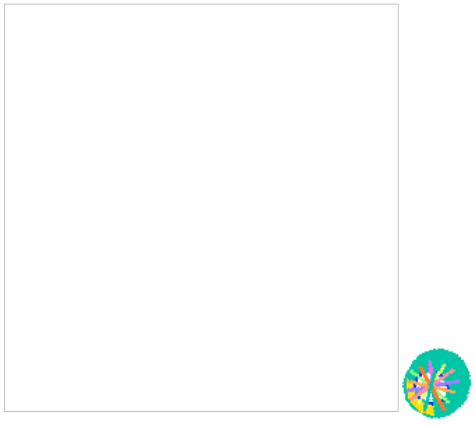


Compare the same script in English and Spanish.





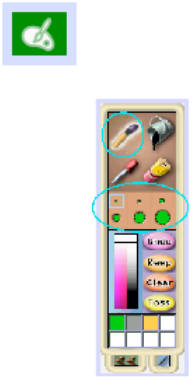
Volunteers have worked to provide these choices and more volunteers are working to add other languages to the menu.



Brushes

Paint Tools: Six Sizes of Brushes, Erasers, and Clean Edge Tools

Click on the paint palette in your Navigator Bar and paint using all six brush sizes.

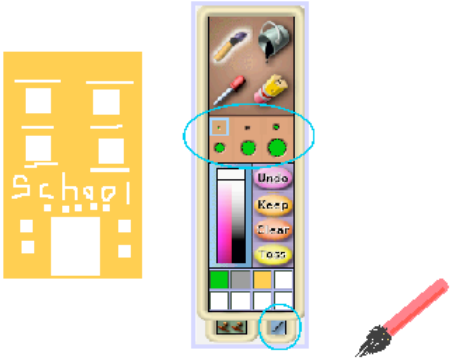


Click the eraser tool to make small detail changes.

There are six eraser sizes too. Experiment.

Click the tab on the lower right of the paint palette to open the clean line tools.

There are six sizes for each of these tools too.



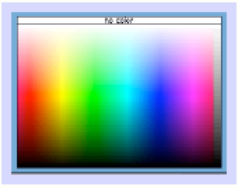
Color Palette

Paint Tools: A Palette of Colors

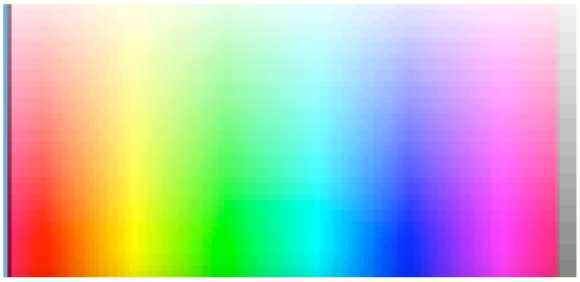
Click on a paint palette in your Navigator Bar.

Hover over the pink and black colors to open this rainbow of colors.

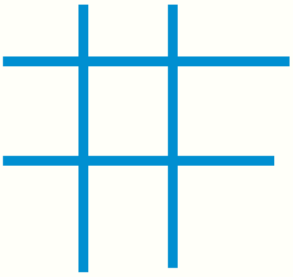
Click on a color to select it.



Look for colors like these.



Find gray.

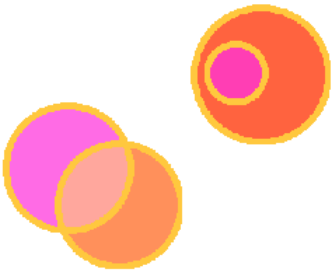


Bucket Tool

Paint Tools: The Paint Bucket Fills Spaces with Color

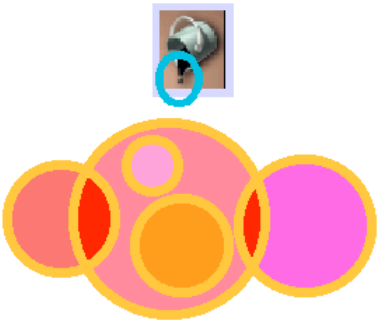
Click on the Paint Palette in your Navigator Bar.

Draw a shape with a brush. Select the Paint Bucket Tool and click to fill an area with paint.



Put the tiny + at the tip of the Paint Bucket on the part of the sketch you want to color.

The design's background color can be changed with this tool too.



If the shape has a opening in its edge, the Paint Bucket's color will flow out beyond the shape.

Straight Line Tool

Paint Tools: Straight Line Tool

Click on the paint palette in your Navigator Bar and then on the white tab on the lower right edge to open or close the straight line tools.

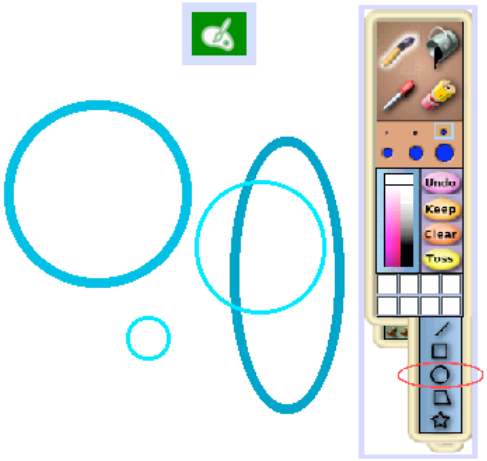
Experiment.

Use the straight line tool and hold down shift to make perfect vertical and horizontal lines or forty-five degree angles.

Try all six brushes sizes with the straight line tool.

Ellipse Tool

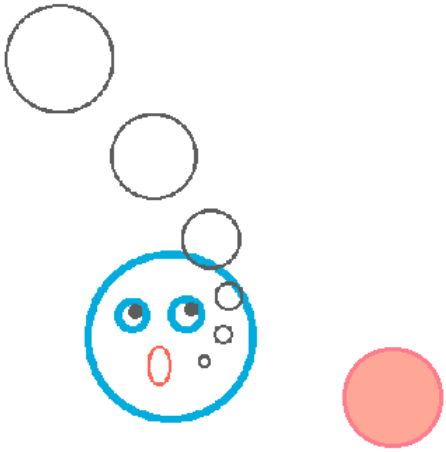
Paint Tools: Perfect Ellipses and Circles with a Clean Edge Tool



Open a paint palette from your Navigator Bar then click the white tab to open the clean edge tools.

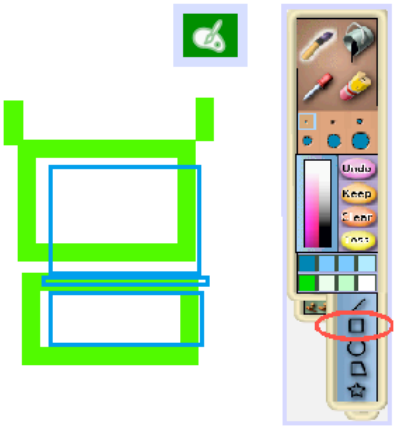
Select the Ellipse tool and then choose a brush size. Try all six sizes.

Hold down the Shift key on the keyboard and use the Ellipse tool to draw perfect circles.



Rectangle Tool

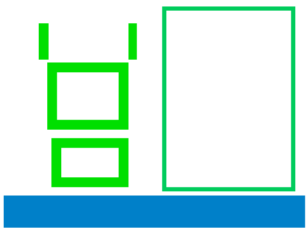
Paint Tools: Rectangle Tool for Straight Lines and Right Angles



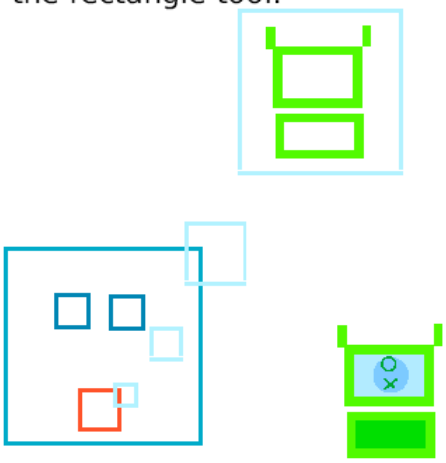
Click on a paint palette in your Navigator Bar.

Click the white tab on the lower right corner to open or close the tools. Select the rectangle.

Experiment with the rectangle tool and all six brush sizes.

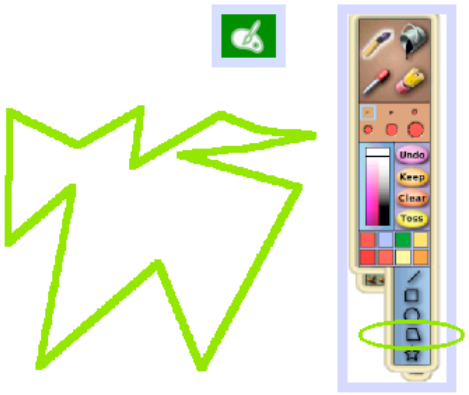


Draw squares by holding down the Shift key on the keyboard while using the rectangle tool.



Polygon Tool

Paint Tools: The Polygon Tool for Straight Edges and Sharp Vertices



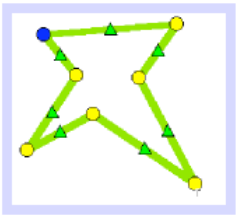
Open a paint palette from your Navigator Bar.

Click the white tab on the lower right corner to open the clean edge tools.

There are five tools in the set. The polygon is fourth from the top.

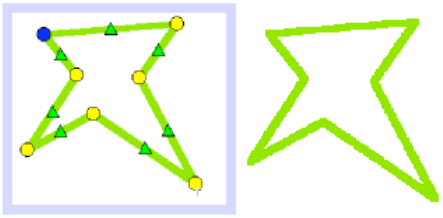
The polygon tool will draw a closed shape with as many edges and vertices as you wish.

Drag the small circles and triangles; they are handles to change the shape.



If the handles close, they won't come back for that drawing.

Click to open a new polygon tool if a different shape is needed. Click Keep to close the paints and use scripts.



Color Picker

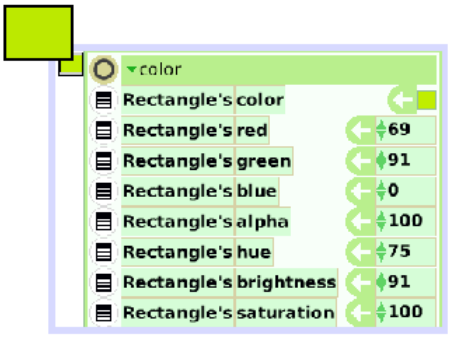
Paint Tools: The Color Picker Matches Colors Exactly

Click on the paint palette in your Navigator Bar and click on the Color Picker.

Touch its tip to any color and click.

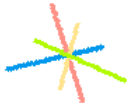
The Color Picker fills a brush or paint bucket tool with the color you chose.

The Color Picker identifies colors with mathematical precision.



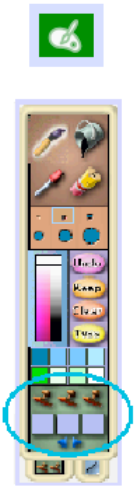
Open a paint palette and match these colors exactly.

Try with and without the Color Picker.



Stamps Tool

Paint Tools: Stamp Copy



Click on a paint palette in your Navigator Bar; draw a shape.

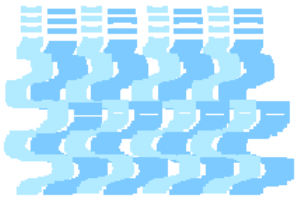
Click the white tab on the left corner of the paint palette to open the stamp tools. Click on a tool.

Use the angle that replaces your cursor to drag a box around all or part of the shape.

Use the stamp tool to add texture and shading.

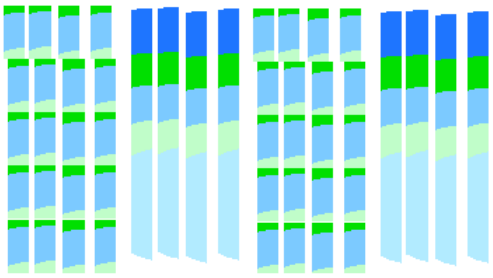
Stamp-move-stamp will look differently from stamp-slide-stamp.

Experiment.



Make patterns with stamps too.

Click on a different tool in the paint palette to close the stamp tool.

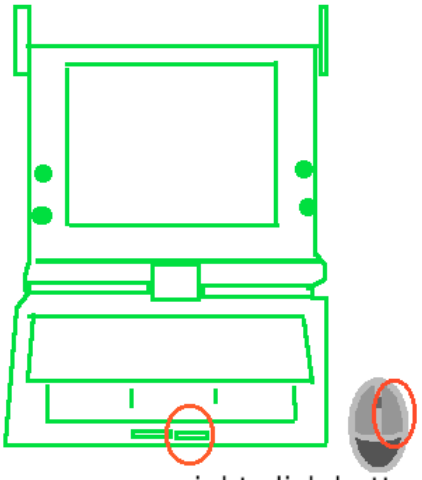


Make the Handles Show

Halo Tools: How to Make the Halo Handles Show

Here are halo handles around a green rectangle. The halo is a set of controls that let you make changes to objects in Etoys.

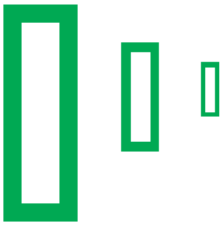
Right click on the rectangle to open a usable halo called "rectangle1".



right click button

Try to open a halo for each of these rectangles.

Halos for very small things with fine lines are the most difficult to open because the point of the arrow must be exactly on the line.



Every thing has a halo and every halo handle has a help balloon.

There are layers of objects on the screen. Find a halo for the book, the page, and the text.

Open a halo for the green rectangle and experiment with the controls its halo handles provide.

Viewer of Script Tiles

Halo Tools: The Viewer

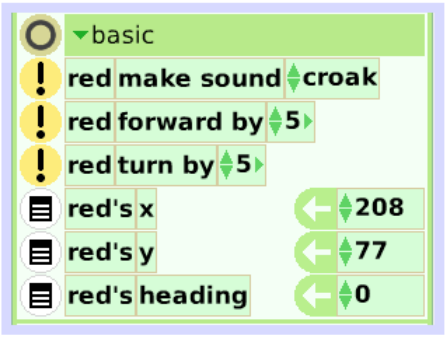
The Viewer contains script tiles that provide information and control the actions and properties of objects.

Right click on the red design and then click on that Halo's Viewer to see a set of script tiles.

To write a script: click on the turn tile and drop it on the screen. Click its green clock.

Viewer script tiles are organized into categories.

Some tiles appear in more than one category.



There are more than 150 tiles grouped into more than 20 categories plus more than 100 menu commands.

A tile selected from the basic category in the red1's Viewer forms this script.

Click the green clock.

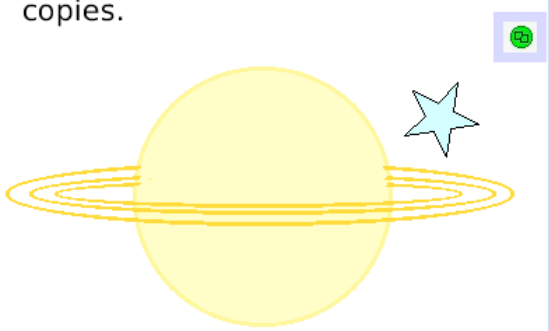
It takes time to learn about the many possibilities in Etoys and to control the power of the ideas they bring.

Welcome!
Good Luck!
Good Thinking!
Get Started!

Size Color Copy

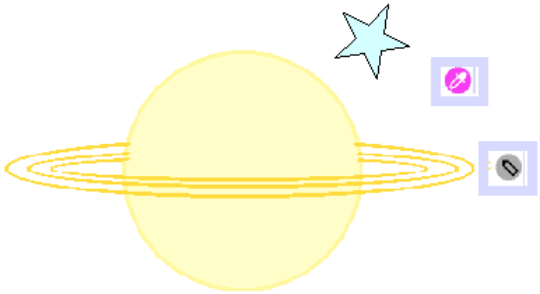
Halo Tools: Change Size or Scale, Repaint, and Duplicate

The Halo's green handle makes copies.



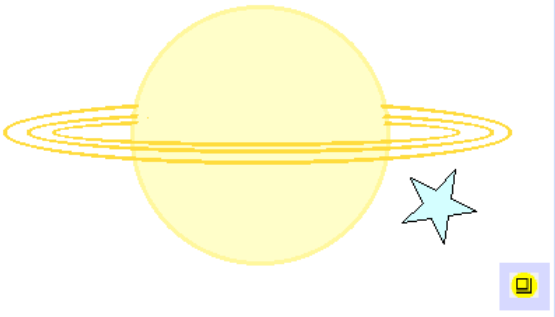
Draw a shape and keep it; click on a Star in Supplies.

The repaint tools for drawings and for objects from Supplies are different. Experiment with both.

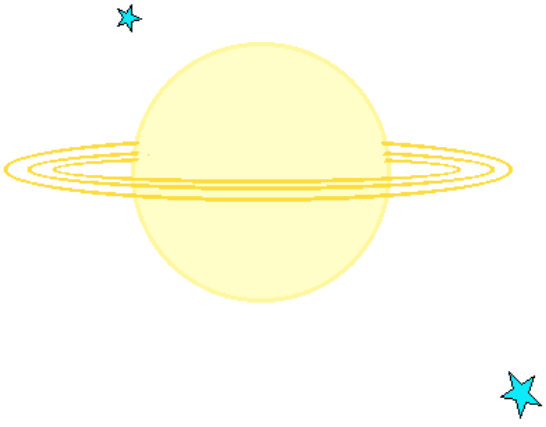


Use the yellow handle to change the size.

Hold down Shift and drag to change the proportions.



Copies of objects with scripts will include those scripts too.



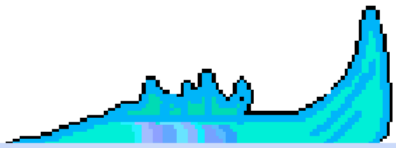
Move and Pick Up

Halo Handles: Move and Pick Up

Lift this fish with its black halo handle to remove it from the book and drop it in the world.

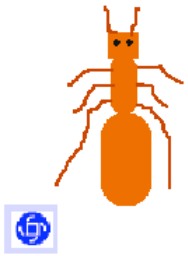
Lift this fish with its brown halo handle and it can not be removed from the book.

Use this fish's brown handle to move it higher on the page.



Rotate Handle

Halo Tools: Rotate an Object with the Blue Halo Handle



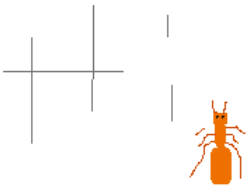
Right click on the ant to open the Halo Handles.

Drag the blue halo handle; see the heading change.

Click to highlight 45 in the tile below and type in a new heading.

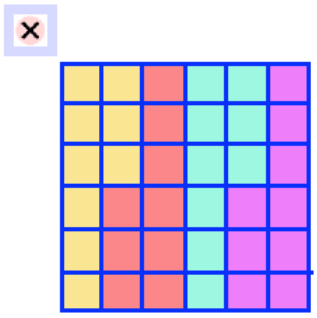
Press Enter and the ant's heading changes. Use the rotate handle to point it back to 45 again.

Start the script and draw a letter or number by using the blue rotate handle to change the direction.



Trash

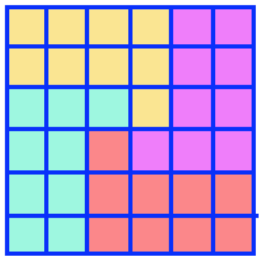
Halo Tools: Move to Trash
. . . and How to Get Things Out Again



Right click on the design example to open its halo and click on the **X**.

Open a halo for this drawing and click on the **X**.

The Trash Can on the world screen will hold as many things as you want to throw away.



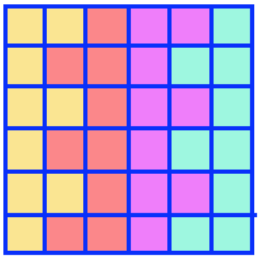
Example Trash Can

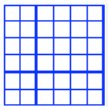
Things can be dragged into the Trash too. Try it.

Double click on your Trash Can to see what has been thrown away.

Turn the pages of the Trash Can's book to see everything there.

Drag out the things you want to use.

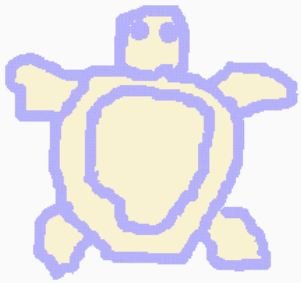




Arrow at Center

Halo Tools: An Arrow at the Center of Rotation Shows the Direction of Motion

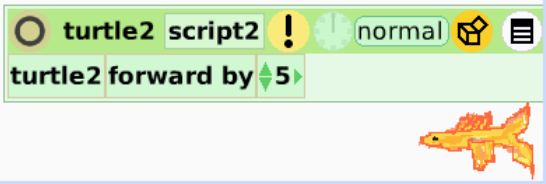
Right click on the turtle, hold down the shift key, then drag the tiny arrowhead at the center of rotation to a new direction.



This turtle's head points at the top of the screen but the direction arrow points to a heading of 45.

Click the green clock to start the script. Try it. Change it.

A drawing can be rotated to any heading with its Halo's Rotation handle and its green direction arrow can point in any direction too. Try it.

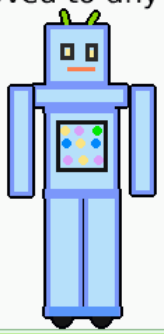


Center of Rotation

Halo Tools: Center of Rotation

Every object has a center of rotation. The center can be moved to any place on the screen.

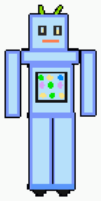
Click the green clock to start the script.



leftArm script1 normal
leftArm turn by 5

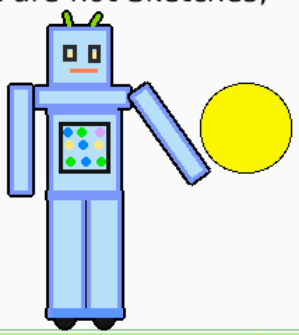
Open a halo for the bot's left arm and find the center-of-rotation handle, a small blue circle with red crosshairs inside.

Hold down the Shift key and drag the red + to a new place.



leftArm1 script2 normal
leftArm1 turn by 5

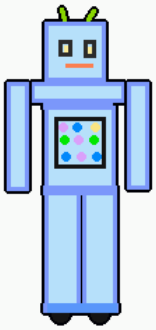
For objects that are not Sketches, rotate the blue Halo handle to see the direction and center controls.



leftArm2 script3 normal
leftArm2 turn by 5

leftArm2 script4 normal
leftArm2 turn by -5

The center of rotation can be far from the center of the drawing. Click the green clock to try this script.



bot spaceCadet normal
bot turn by 5

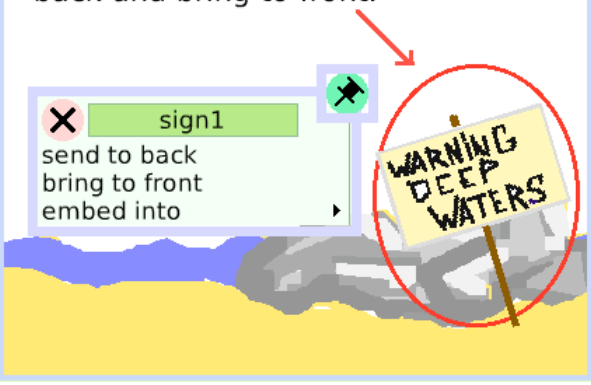
\+ The red + marks the bot's new center of rotation.

Menu Tools

Halo Tools: Menu Choices for Control and Convenience

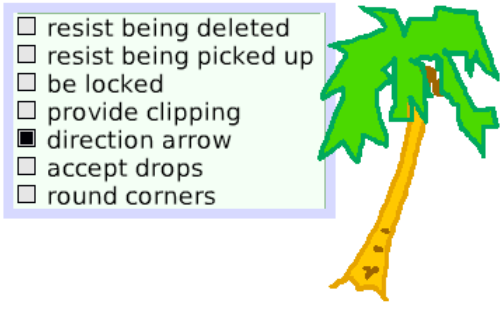
Right click on the sign to open its halo then click on the Menu handle.

Click Menu's push pin to keep it open and easy to read. Try: send to back and bring to front.

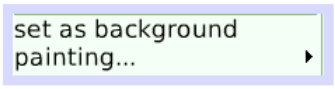


It takes time to learn what is in this Halo Menu and how to use these tools and commands.

Experiment with each choice for the palm to see what happens.



Try these Menu choices for the ocean.

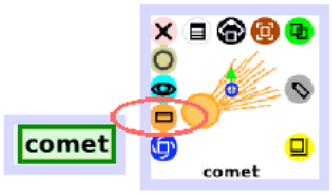


Some actions can be undone; click the arrow in your Navigator Bar.

Make a Script Tile

Halo Tools: Make a Tile Representing This Object

The Halo's Tile handle lets you assign properties or behaviors of one object to another one.



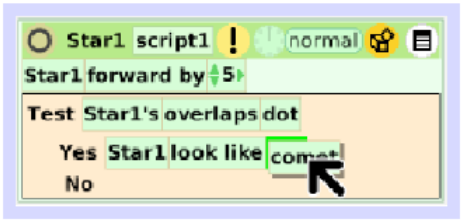
Draw one object and open a Viewer for it.

Draw another object; open its Viewer too.

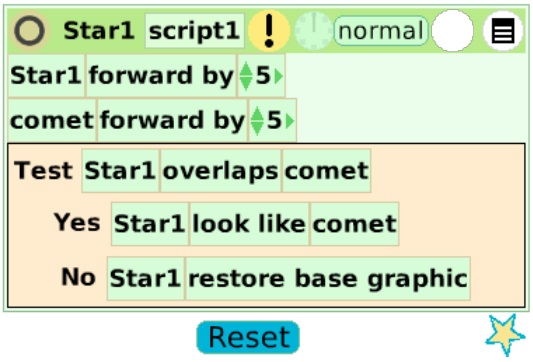
Make a script like this for one object.

Change the word dot by getting a tile from the other object's halo.

Change dot in both places in the script.

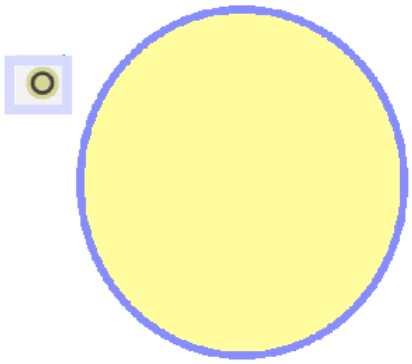


Click the green clock to start the script.



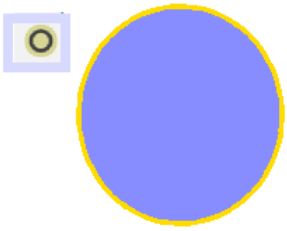
Collapse

Halo Tools: Collapse Reduces an Object to a Small Button



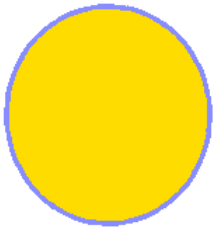
Click on an Ellipse in Supplies and open its halo of handles.

The collapse handle does not show while things are in a book, a holder, or a playfield. Drop them in the world to reveal the collapse handle.



Lift this circle with its black handle, drop it in the world and the collapse handle will show.

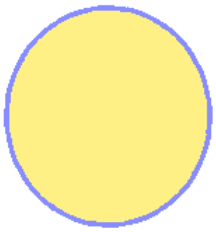
Collapsed objects become a button in the top left corner of the world that can be moved to new locations.



Collapsed, it look will look like this.

Click to throw it away.

Click to expand it again.



Color Property Sheet

Halo: Color Properties Sheet

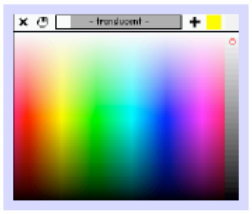
Properties Sheets provide tools to customize the appearance of objects from Supplies and from the Object Catalog.

Click on an Ellipse in Supplies for your experiments.

Right click to open the Ellipse's Halo and then click on its magenta handle.

Click the + in the top border of your Ellipse's color palette to open its full Properties Sheet.

These Properties include: solid fill, gradient fill, radial fill, direction and origin, border color, style and width, adding a drop shadow with options for its color and offset distance.

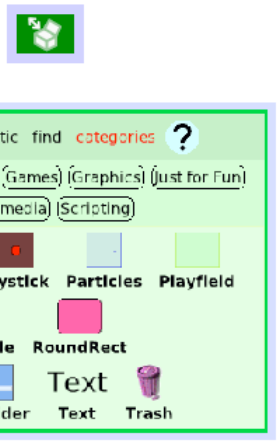


This gigantic Ellipse's color properties have been changed ten ways:
color
gradient fill
second color
radial fill
radial fill origin
radial fill direction
border width reduced to 0
drop shadow added
drop shadow width selected
drop shadow new color chosen

Experiments with these properties will build a vocabulary of ideas that make your projects look the way you imagine.

Object Catalog

Supplies: The Object Catalog Contains Tools and Objects Ready to Use

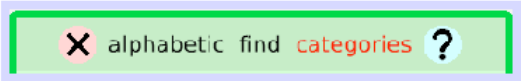


Click on an Object Catalog in Supplies.

Each button opens a bin of objects and tools.

Click on alphabetic to see a list A-Z.

Hover over each icon in the top border of your Object Catalog to read the information in the help balloons.



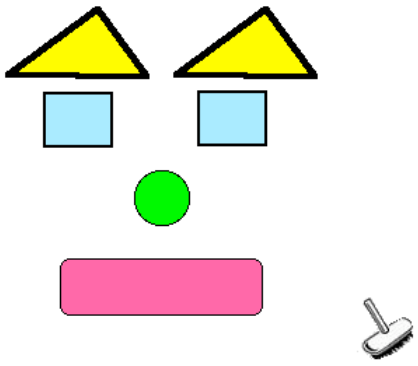
Click on an object in the Catalog to get a copy to use in your project.

There are more than 100 objects in the Catalog. Some have special tiles to use with them.

Try this:
Click on a Polygon and open its Viewer to look at the category menu. Select "polygon" to see 13 special tiles to control its behaviors and properties.

Some things work now; some must be scripted for the purpose you intend.

The broom works now; read its balloon help. Experiment more.



Text

Supplies: Adding Text to Projects

Text

Click on Text in your Supplies. Highlight the word and start typing.

Press Enter on the keyboard to start a new line of typing.

Right click on your text to open a halo of handles.

Three handles in Text's halo are menus of choices for font styles, sizes, and emphasis.

Try the extra halo handles to learn how the effects look and imagine how they will affect *your* readers.

The example below is Komika Text size 60 Bold.

Open a Viewer for text and select the color category.

Text

Text's Viewer includes a special category of script tiles called text. Try them.

Text is an object; make it move.

Click the green clock to start the script.

words are all I have

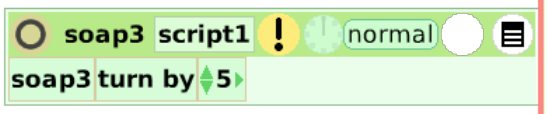
Words

All Scripts

Supplies: All Scripts
Stop Step Go Button

Make a sketch and create a script with a forward by 5 tile.

Click the green clock to start and stop your script.



Use the bright green halo handle to make copies of your sketch after the script is paused.

The copies will have the same script, also paused.

The copies and their scripts can be changed.

Open Supplies and drag out an All Scripts Button.

Click go and all the scripts will be started at the same time.

parrot fish photo base from
www.fishtaxidermist.com

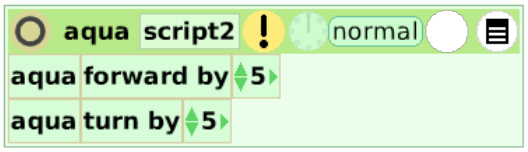
Joystick Control

Supplies: Joystick Remote Control

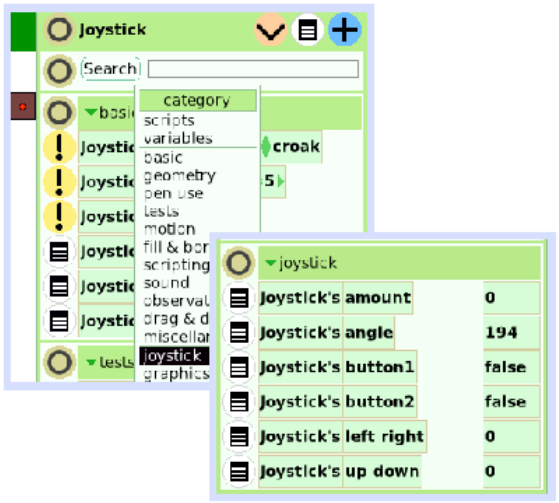
Try it. Click and drag the red dot.

Create a drawing and a script.

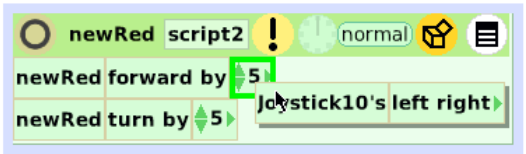
Click on a joystick in Supplies and open a Viewer for it.

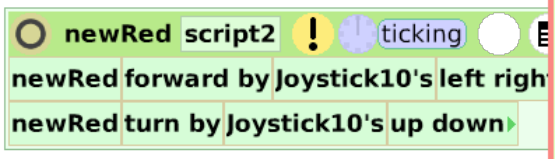


Click basic to find special joystick tiles.



Combine tiles; use the bright green outline to line up the two tiles.





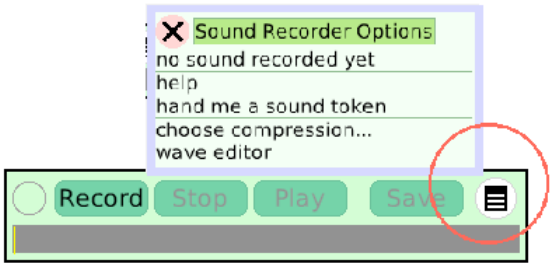
Sound Recorder

Supplies: Sound Recorder

Record sounds and add them to the Etoys sound library to use in projects.

Open Supplies and click on a Sound Recorder.

Click the white menu to read more help about the recording tools.



. . . or just go ahead and try it.

Click Record and speak or sing into your computer's microphone.

A red button will show a recording session has started.

A yellow bar will show the volume level information.

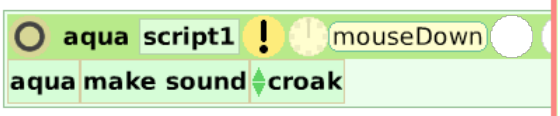
Click Stop and then click Play to hear your recording.

Record again using the same tool if needed.

Click Save, type a name for the new sound and click accept.

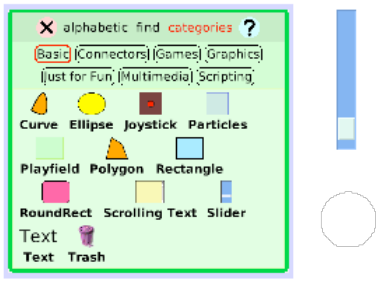
The new sound is added to the list.

Click on croak to see the menu list of sounds.



Slider Bar

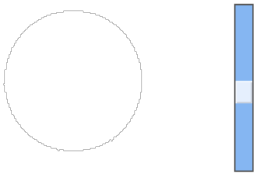
Object Catalog: Slider for Remote Control



A Slider bar can be scripted to control other objects.

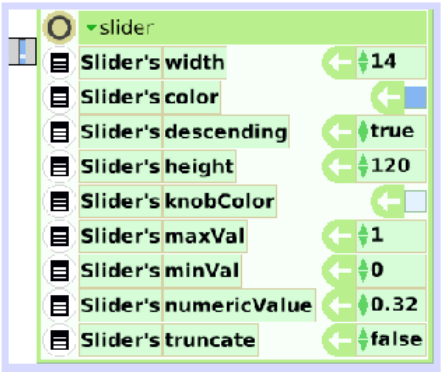
Create a drawing and a script like this one.

Get a Slider from the Object Catalog and open its Viewer.

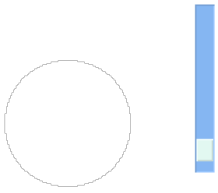


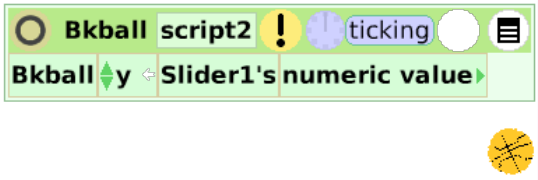
Click on basic to open the category menu for the slider.

There is a special set of tiles for the Slider. Open it.



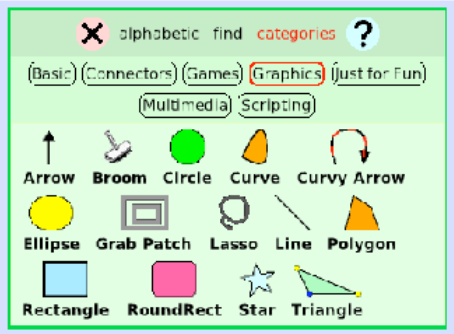
Combine tiles by joining a Slider's numeric value tile to the y value tile for the basketball.





Grab Patch Tool

Object Catalog: Grab Patch Copy Tool



Copy anything with this tool.

Click on an Object Catalog in Supplies and then click on Graphics.

Click on the Grab Patch tool in the Graphics tab of the Object Catalog.

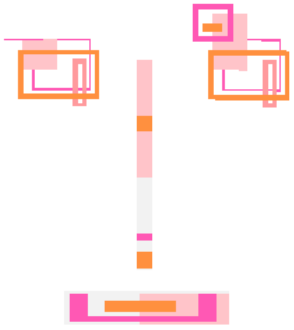
The tool changes to a black line right angle when it is selected.

Click and drag the Grab Patch tool around a sketch, design, or text; whole, part, anything.

The black lines will stretch from left to right and from top to bottom. The copy includes everything inside the lines when you let go.

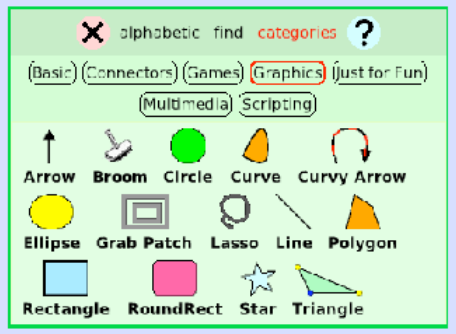
Grab Patch copies will be rectangular. Use the Lasso for irregular shapes.

Grab Patch copies' colors, sizes, and proportions can be changed. They can be scripted too.



Lasso Tool

Object Catalog: Lasso Copy Tool



Use the Lasso for freehand copies of anything.

Click on an Object Catalog in Supplies and then click on Graphics.

A Lasso looks like this in the Object Catalog.

The tool changes shape when it is selected and looks like a small plus sign.

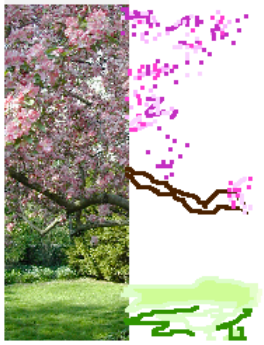
Click and drag the Lasso to copy any shape from the original.

Drop the new copy away from the original or it can be hard to find.

This drawing used lasso copy pieces of the color fields on page 3.

Digital Images

Object Catalog: Digital Images in Etoys Projects



Open the Journal and copy a digital image to the clipboard.

The clipboard is on the left edge of the frame (XO only).

From the clipboard, drag the photo into your Etoys project where it becomes just another object with a halo of handles.

Open its Viewer to make a script.

If the image is too big, use its yellow halo handle to make it smaller.

Or . . .

Click on its geometry category to change the scale factor.

Or . . .

Use the Grab Patch or Lasso Tool to copy the part you want to include in your project and discard the rest.

Digital images use a lot of storage space on your computer.

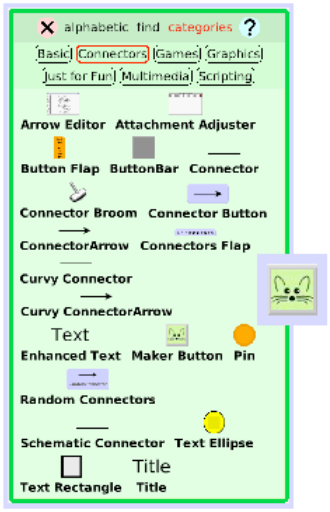
A Grab Patch or Lasso copy in a project uses less space than the original image.

Sometimes tracing part of a photo with Paints from the Navigator Bar is a way to include details you want.

Maker Button

Object Catalog: Maker Button

A Maker Button will make copies of anything you drop on it. Even copies of itself.



Click on an Object Catalog in Supplies then click on Connectors.

Click on a Maker Button and drop it on the world.

If you plan to use many Maker Buttons in a project, put a second Maker Button on top of the first one and it will make copies of itself.

Use the paint tools to draw something you will use many times.

Put your sketch on a Maker Button. Click for copies. If the object has a script before you put it on a Maker Button all the copies will have that script too.

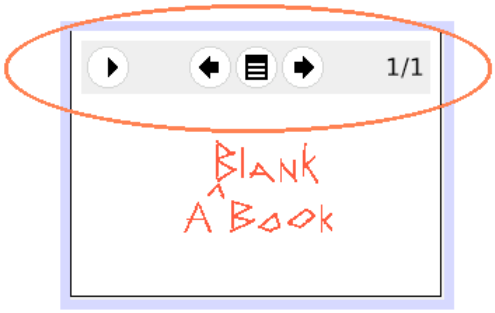
These examples are objects. Each will be put on a Maker Button.

These letters are on Maker Buttons and now will provide an endless supply for making words or patterns or . . .

Top Border Icons

Books: Five Top Border Icons

Click on Supplies and then on the book there.

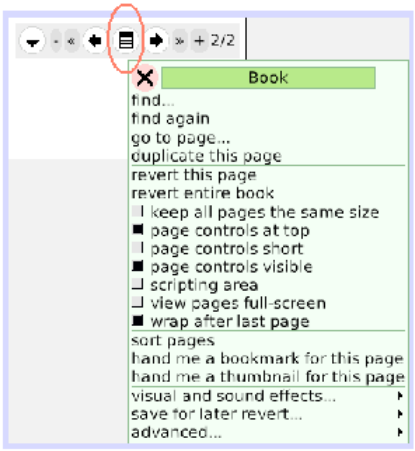


Click the top border's left button to open and close expanded controls.

Hover over each icon to read the help balloon.

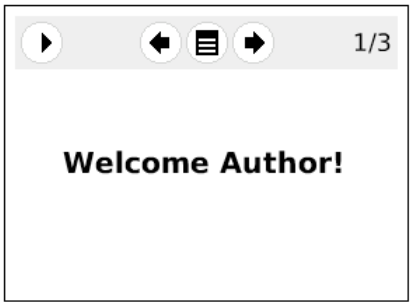
Experiment with these controls and the expanded controls.

The center icon opens a large menu of options to explore.



Click Text in Supplies and start writing your book.

Use the page turn arrows to read this little book.



Words!

Expanded Controls

Book: Tools in the Expanded Controls Menu

Click on Supplies and then on a Book.

Click on your Book's white circle and arrow to expand control options

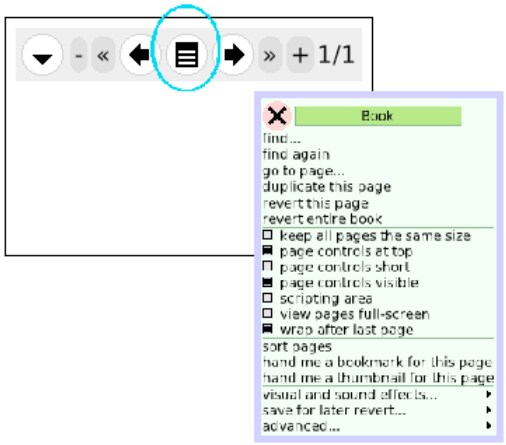
The Book's Halo handles provide all the tools, menus, and options available for any object.

Read the help balloons for each icon in the Book's top border.

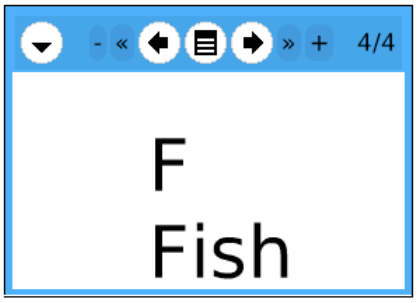
Your Book only has one page until you add more.

Click the + to add pages.

Click the white menu in the Book's expanded controls to open a long list of Book options.



Try these menu options in this blue book:
duplicate this page
sort pages



Experiment with the other options.

fiction, mystery, poe

Working with Layers

Books: Working with Layers of Objects

Open a Book from Supplies.

Everything is an Object. You can open Halos and use the handles, menus, and script tiles for any thing.

Right click in the middle of your book to open the book's halo and then, in the same place, right click again to open the page's halo.

Right click on your book's top border icons and find Halo handles for: Alignment, Page Controls, and ThreePhaseButton.

Open Viewers and experiment with script tiles and menus.

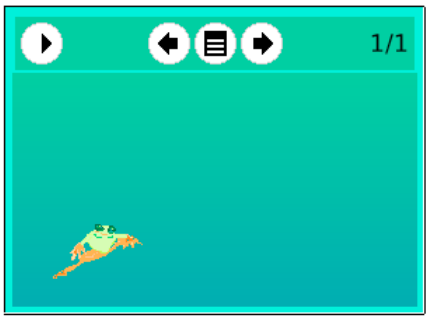
Put an ellipse in your book; the ellipse is on a page and the page is in a book.

Try: open a halo for the book, the page, and the ellipse.

Read the labels so you know which layer's halo you have selected.

Change things using halo handles for the book, the page, and the ellipse.

You decide what options will be best for your projects.



frog traced image from www.free-nature-photos.org

Navigation Tiles

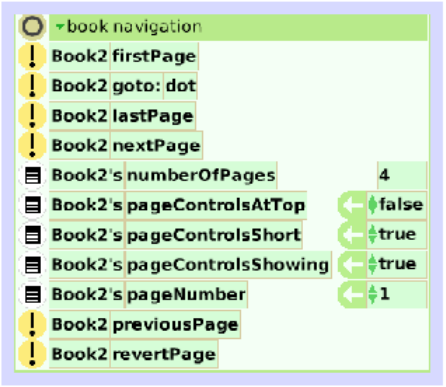
Books: Navigation Tiles in the Viewer

Click on your Supplies and then on the blank Book.

Open a Halo and a Viewer for your Book.

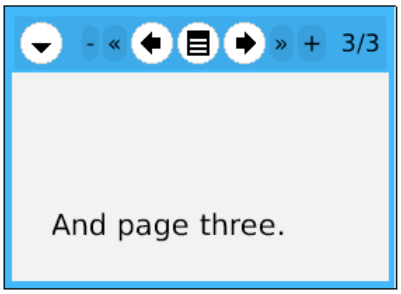
Click on basic to open the category menu and choose book navigation.

These script tiles help readers use a book the way you want.

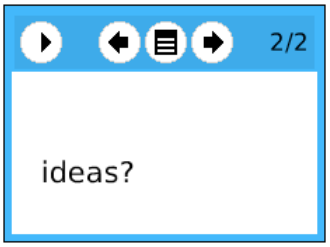


Click + to add more pages to books.

Try: change false to true, true to false.



Experiment with the other Book Navigation tiles to see how they work for your purposes.



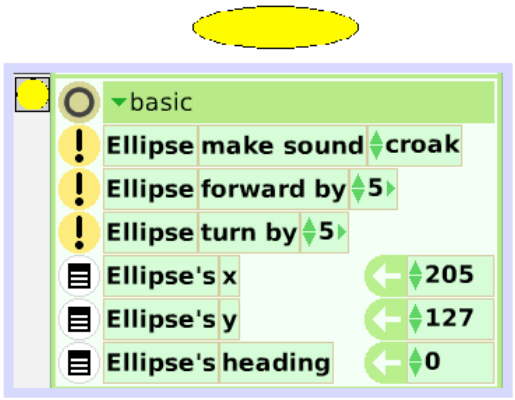
Forward by

Script Tile: Forward by 5, a Tile That Makes an Object Move.

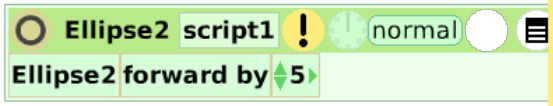
Open Supplies and click on an Ellipse.

Open a Viewer for the Ellipse with its halo's cyan eye.

Click on the Ellipse forward by 5 tile in your Viewer and drop it in the world.

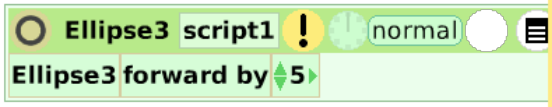


Your tile should look like this now.



Click the green clock to start and stop the script.

Try other positive and then negative numbers too.



Turn by

Script Tile: Turn by 5 Motion

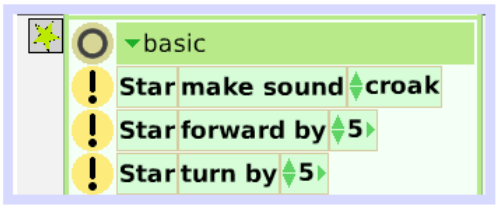
Make things move in projects.

Click on a Star in Supplies and open its halo.

Click the green clock to start and stop a script.

Open a Viewer for your star.

Click on the turn by 5 tile in the Viewer and drop the copy on the world to make a script.

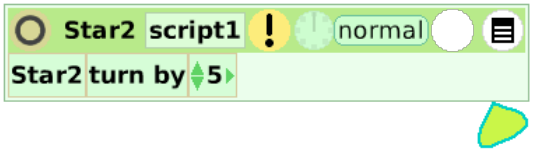


It should look like this now.

Try it. Click the green clock in your Scriptor and in this one.

Change the number in the Scriptor.

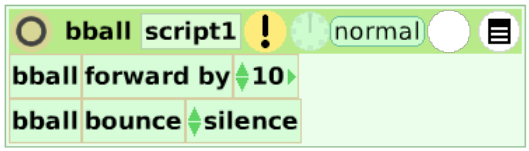
Use the tiny green arrows to change by one or two.
Or . . .
For bigger changes, highlight the number, type in a new value, and press Enter.



Bounce Motion

Script Tile: A Bounce Tile Changes an Object's Direction When it Touches an Edge

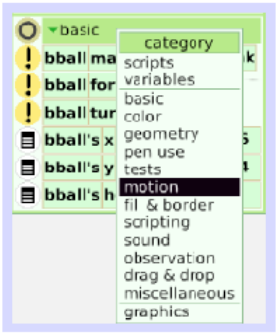
Click the green clock to start and stop the script.



Paint something and open its Viewer.

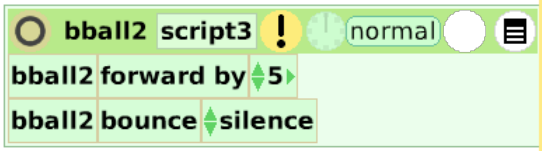
Make a script with forward by 5.

Click on basic and select motion from the category menu.

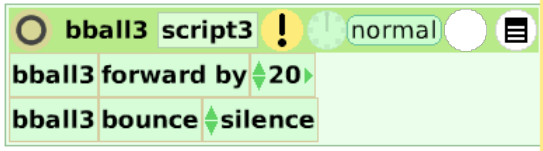


Add a bounce tile to your script.

Change the forward by number to a bigger number, like 10 or 20.



Click on silence in the script tile to see a menu of sound choices.



X and Y Tiles

Script Tile: X and Y Tiles Mark Places on a Grid

This red oval is assigned to an exact location on the X axis in the Guide. Try the oval on the world and find X=212 there.

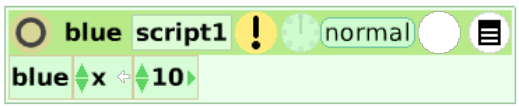
Move it left or right and it returns.

Click and hold down on the X in the tile below.

A menu opens, choose increase by.

Click on the green clock to start and stop the script.

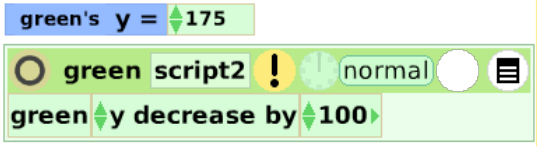
Choose X decrease by from the same tile menu and start the script.



Experiment. How far will it go?

Click on the number in the blue and green tile; type in a new value. Press Enter on the keyboard. The green oval is there.

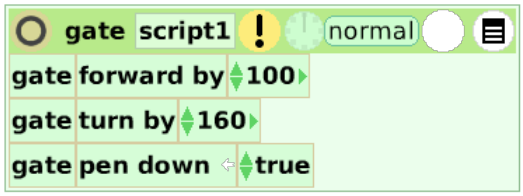
Or, start the script and watch.



Pen Use

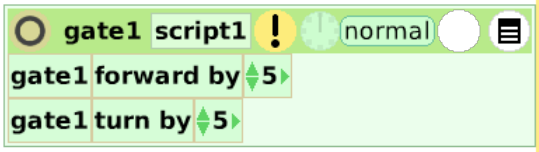
Script Tile: Pen Use Tiles Mark the Path of the Center of an Object in Motion

Click the green clock to start the script.



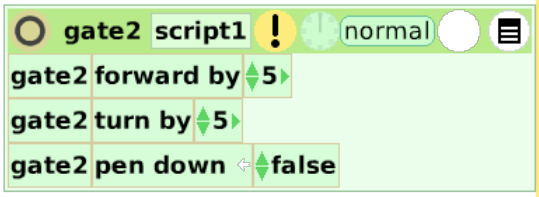
Create a drawing and open a Viewer for it. Make a script like this one.

Click on basic and choose pen use from the category menu.



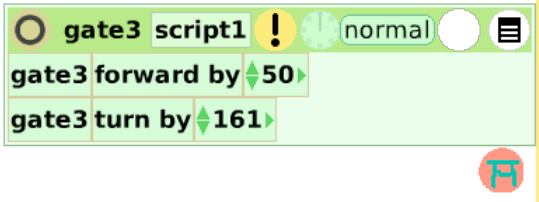
Drag a penDown tile into the script.

Change false to true; start the script.



The penDown tile can remain in the Viewer and will still work if true.

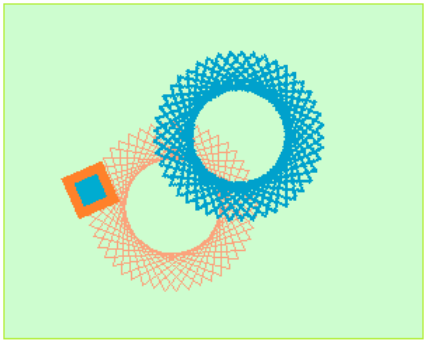
Try other trail styles and colors too.



Playfield Trail

Script Tile: Playfield Pen Trails

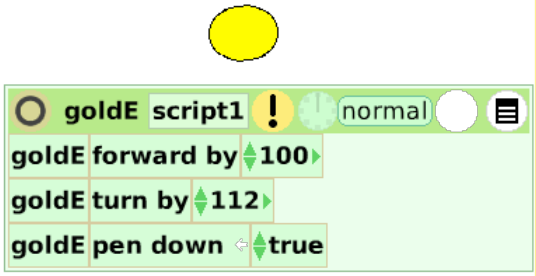
Beautiful and intricate pen trails drawn on Playfields can become picture objects that can be scripted.



Open Supplies. Click on an Ellipse and a Playfield.

Write a script for the Ellipse. Use tiles from basic and pen use categories.

Start the script to make a design. Experiment with other numbers.

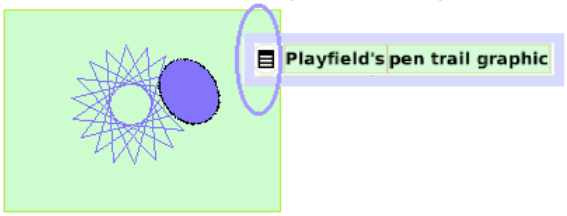


Put the Ellipse on your Playfield and start the script.

Open your Playfield's Viewer, click on basic and then select pen trails.

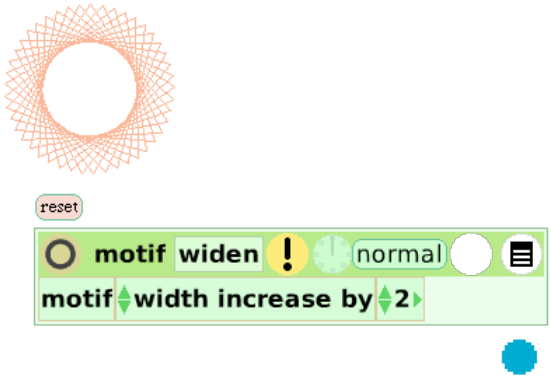
Open the white menu to the left of the tile Playfield's penTrailGraphic.

Click on hand me a picture of pen trail.



Create a script for your new object.

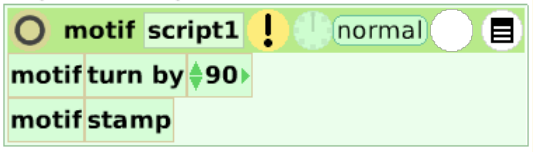
Try this script. Experiment more.



Stamps

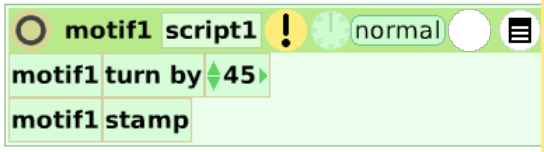
Script Tile: Miscellaneous Stamp

Click the green clock to start and stop the script.

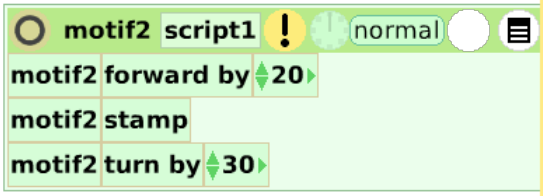


The miscellaneous category includes a stamp tile for each object.

Open a Viewer for your design motif and make a script like this one.



Change the order of the tiles and the numbers to change the effect.

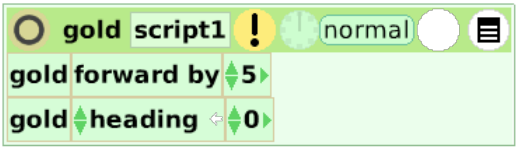


Stamps are like pen trails and can be cleared by clicking on the exclamation point in pen use.

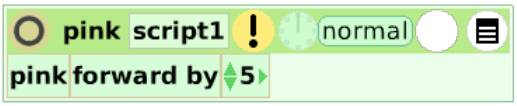
Heading

Script Tile: Heading

Click the green clock to start and stop the script.

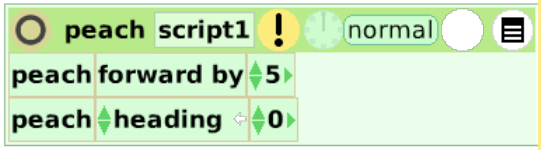


Draw an overhead view of a bug so it will move straight up on the screen with a forward by 5 script.

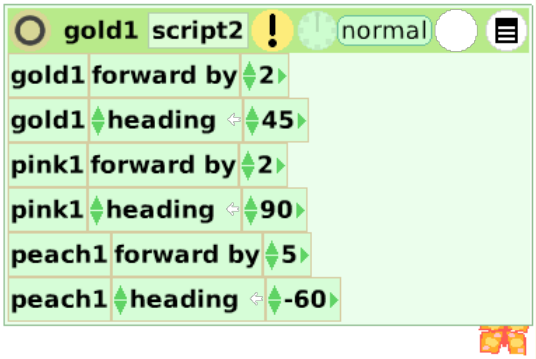


Add a heading tile to your script by dragging the tile by its white 'assignment' arrow.

Change the heading numbers to change the direction of flight.



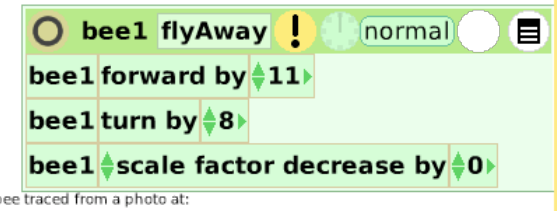
There are headings for every point of the compass; try many points.



Scale Factor

Script Tile: Change the Scale Factor of an Object.

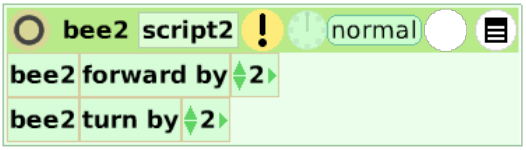
Click the green clock to start the script.



bee traced from a photo at:
www.abc.net.au/morthas/stories/s658414.htm

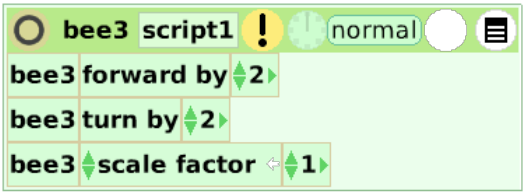
Create a drawing and open a Viewer for it.

Make a script like this one. Click on basic to open the category menu and select geometry.



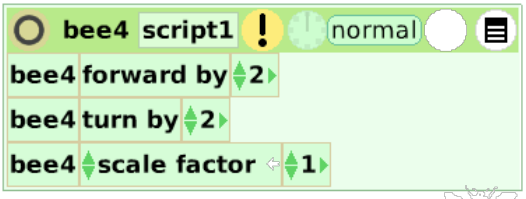
Drag a scaleFactor tile by its white assignment arrow into the Scriptor.

Experiment with changing the value in the scaleFactor tile.



Click on scaleFactor in the Scriptor to open a menu.

Choose decrease by; change the value to 0.05. Try other ideas too.



Hide and Show

Script Tile: Hide and Show Tiles

Click an exclamation point to run a script once.

Make a sketch, open its Halo and then open its Viewer.

Click on basic to open the category menu then click on miscellaneous.

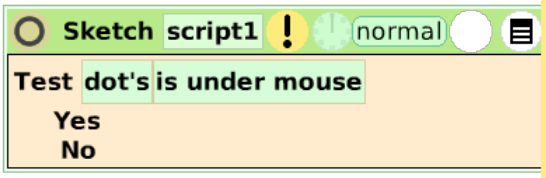
Click on the tile sketch hide and drop the tile on the world.

Try the new script.

For an interesting use of the hide and show tiles, make a script like this one for your sketch.

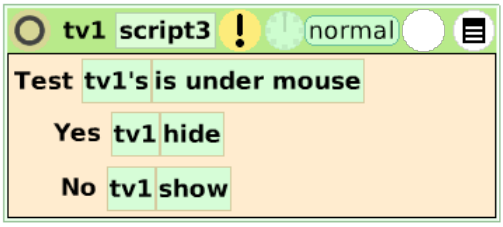
Click on Test Yes No in the Viewer to make a Scriptor with a test in it.

Put the tile sketch is under mouse beside the word Test in the Scriptor.



Add the tiles hide and show to your Scriptor.

Click the green clock to try this script.



World Input

Script Tile: Use Input from Keyboard Letters and Arrows Keys

The world is the light gray screen.

Open a halo for the world and find five handles:

Viewer

Menu

Color

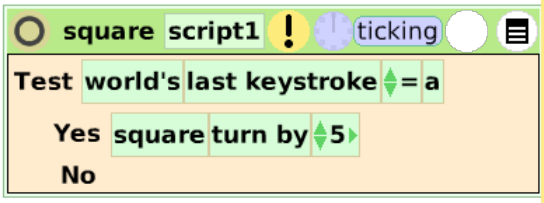
Make a Tile

Open a Viewer for the world and look at its menu of categories: scripts, variables, color, pen trails, playfield, collections, sound, and input.

Input is a way to make objects and their scripts respond to a keystroke rather than a click with the mouse.

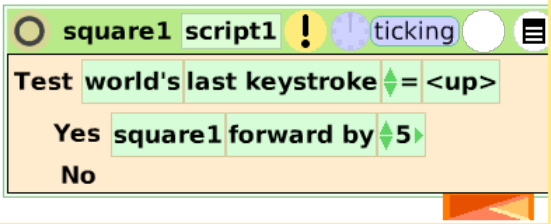
Draw a shape and make a script. Use the Viewer for the sketch and the Viewer for the world, a test, and combine the tiles into one script.

Click the "a" on your keyboard to try this example script.



To make the arrow keys work, you must type little brackets <> and the word up, down, left, or right.

Click the up arrow on your keyboard to see the effect.

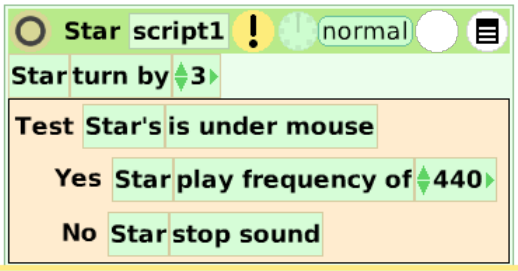


Sound Category

Script Tiles: Sound Category

You can set the pitch with a sound tile and make music in motion.

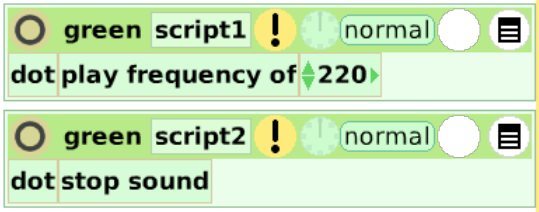
Click the green clock to start the script.



Click on a Star in Supplies and open its Viewer.

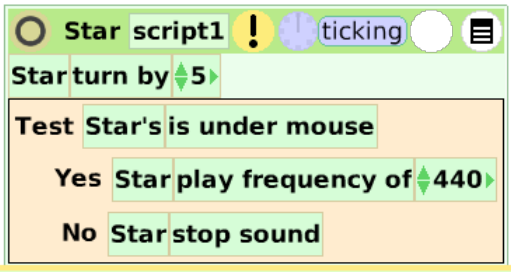
Click on basic to open the category menu and choose sound; make two scripts like these.

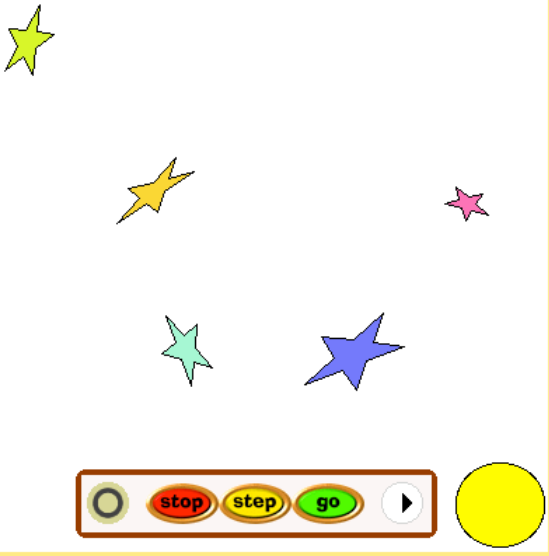
Click the exclamation points to start and stop the sound.



A440 is concert pitch for tuning orchestra instruments.

The pentatonic scale has five notes that combine well with each other.
C# 138.59 D# 155.56
F# 185.00 G# 207.65
A# 233.08





Random Numbers

Script Tiles: Random Numbers

Click a green clock to run one of the scripts. Stop that script and then try the other one.

Random number tiles can be added to any script tile with a number in it.

The range can be changed from 5.

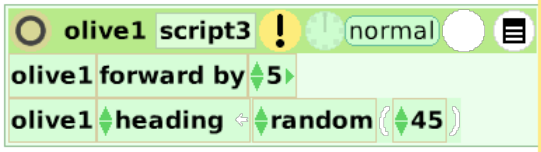
Random number tiles are found in the gold box in the top border of each Scriptor. The random tile is the third tile from the top.

The Object Catalog's Scripting tab also has random number tiles.

Click the green clock to start the script.

Read the heading changes showing in the watcher.

Change the random value to a different number.



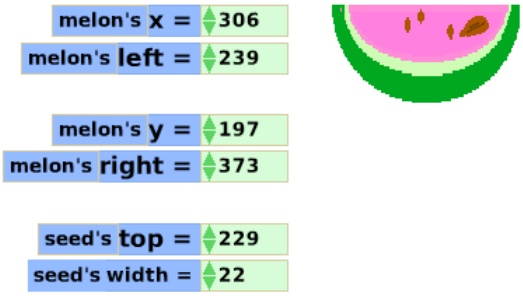
Experiment with combinations of these three scripts; change the values to learn more about the effect of random numbers.

Exact Location

Script Tiles: Exact Locations

Geometry tiles are information and control.

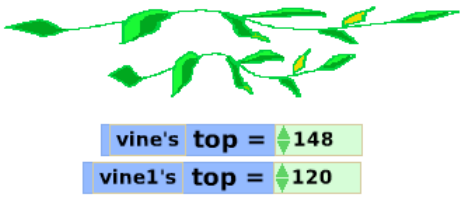
Try these arrows to make changes.



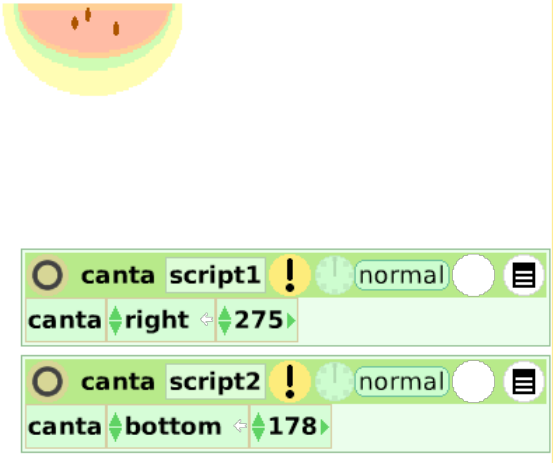
Experiment with these watchers' arrows to move the vines.

Open a Viewer for one of the vines and click on basic to open the catergory menu.

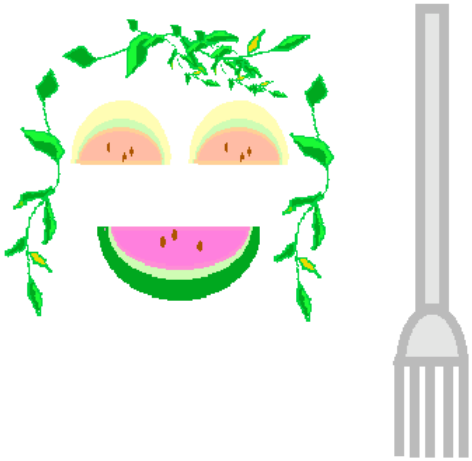
Select geometry to see the set of 17 tiles in that category. Try others.



Click the exclamation points to try these two scripts.



The geometry tiles will take time to explore and to learn how you want to use the controls they provide.



Width Length

Script Tiles: Width and Length

These watchers show the length and width of the letter G.

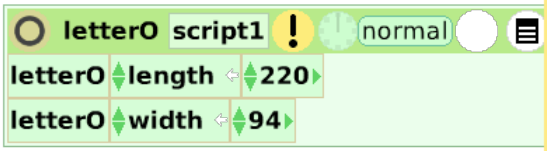
Use the green arrows to change these dimensions.

Draw a shape; click keep.

Right click on the shape to open its halo and then open its Viewer.

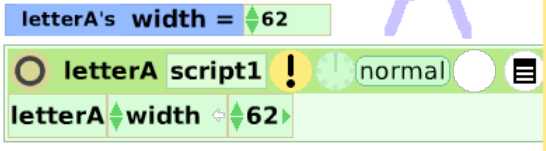
Click on basic to open a category menu and choose geometry. Or just,

Click the green clock to try this script. Change the numbers.

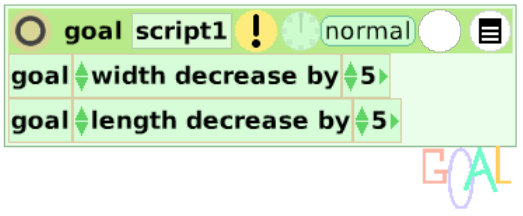


Click and hold down on 'width' in the Scriptor and choose increase by from the menu. Try decrease too.

Try multiply too but, think and be realistic about what your computer can do. Click the exclamation point to run the script one time when you first experiment with multiply by.



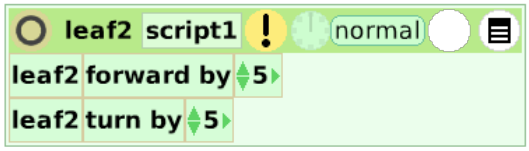
Experiment with this script too.



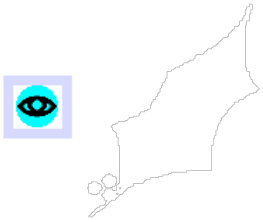
Foward and Turn

Script Tile: Forward and Turn Tiles in One Scriptor

Click the green clock to start and stop the script.



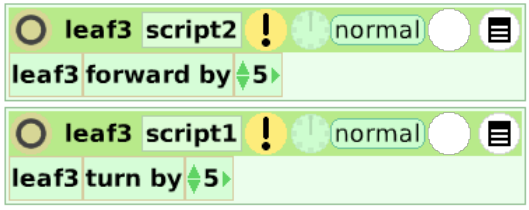
Draw a leaf and use its Halo's cyan handle to open a Viewer.



Drag out a forward by 5 tile and drop it to form a script.

Make a turn by 5 script.

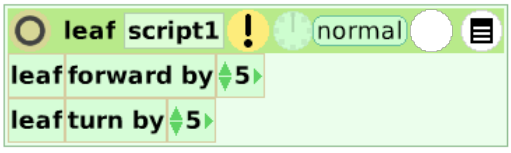
Start and stop the scripts.



or. . .

Both tiles can be in one Scriptor.

Change the numbers too.

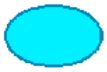


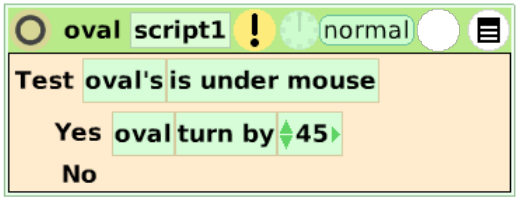
Tests Category

Script Tile: Test Category Tiles

Tests are used to make things happen the way you imagine.

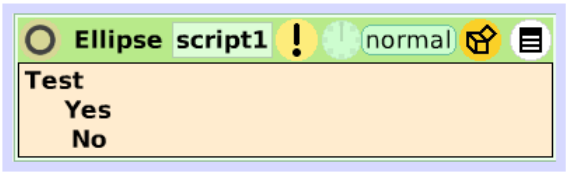
Click the green clock to start and stop the script.





Click on an Ellipse in Supplies and open a Viewer for it.

Click on a Test Yes No tile and drop it into the world; it changes into a Scriptor.



The top line asks:
If the top line's statement is true

The next two lines answer:
If yes (true) then . . .
If no (false) then . . .

It takes time to explore the potential of tests in projects.

The more you think about how to frame IF/THEN statements, the more ideas you will capture in Etoys.

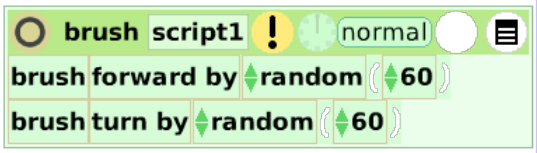
You can always open Viewers for the objects in projects to read, and change, their scripts.

Text is an object too.

Normal Ticking

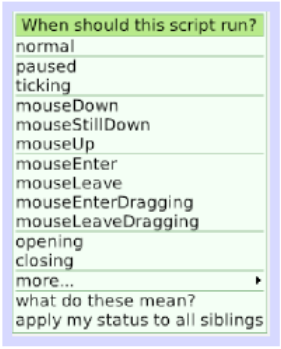
Menu Tool: What Is Normal or When Should This Script Run?

Click the green clock to start the script ticking and click again to pause.



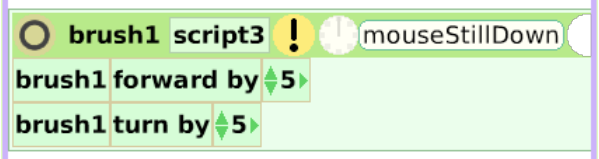
Make a sketch, open a Viewer, and make a forward by 5 script.

Click on Normal in your Scriptor to open a menu of options like this one.

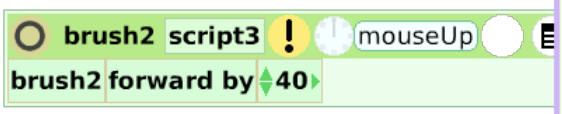


There are many options, this one is: mouseStillDown

It is working now; click on the brush not on the script clock.



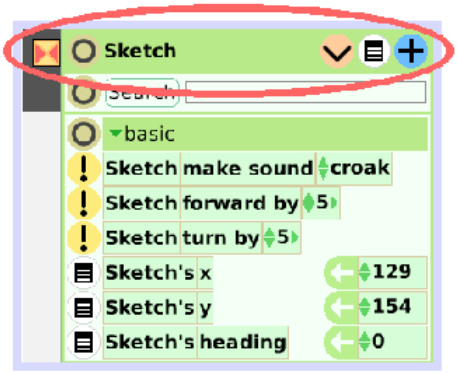
Click on the brush to try mouseUp, then experiment with other options in the menu.



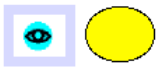
Viewer Icons Set

Menu Tools: Viewer Icons

The Viewer's top border icons are tools, information, and menus.



Open a halo for an Ellipse from your Supplies. Click on its Viewer handle.



The flap that opens is the Viewer.

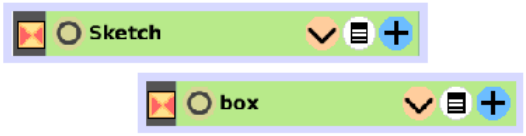
Click the tiny tab to open or close the Viewer.

Click the **O** to close the Viewer's flap and its tab.

Click on Ellipse in your Viewer to highlight it; change the name to something useful and descriptive.

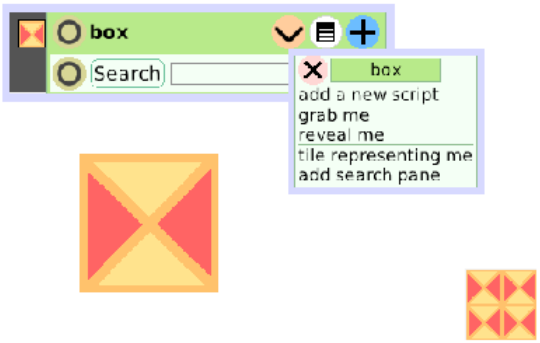
Click the **V** to add a variable. Create as many variables as your ideas requires.

Click the blue circle to add another category of tiles.



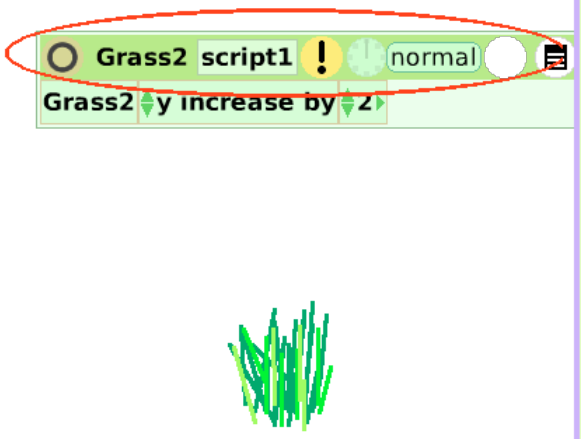
The white menu has five more tools. Try your Ellipse's menu tools.

Search means search-for-an-Etoys-tile like bounce, forward, or hide, not the name you just invented.



Scriptor Icons Set

Menu Tools: Eight Scriptor Icons

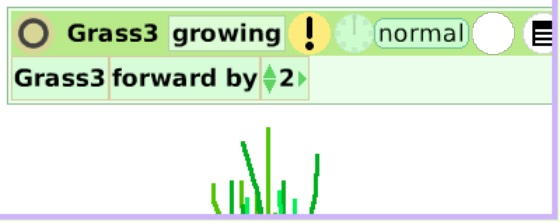


Scriptor boxes include many tools, menus, and commands.

The tan circle closes the Scriptor.

The name of the object on this page is Grass3. Use its Halo and Viewer to open the Scriptor again.

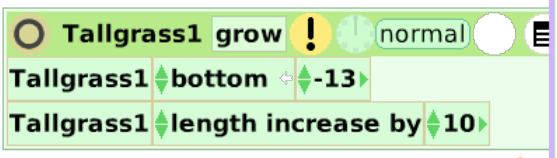
Script1 was renamed "growing".



The exclamtion mark runs the script one time for each click.

The green clock starts and stops a script. Hold it down to change the number of ticks per second.

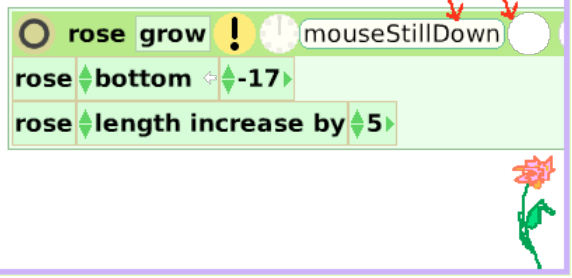
Hold down on "normal" to choose "When should this script run?" Experiment.



The gold box has eight frequently used tiles.

The white menu offers eleven more commands.

All of these take time to learn to use.



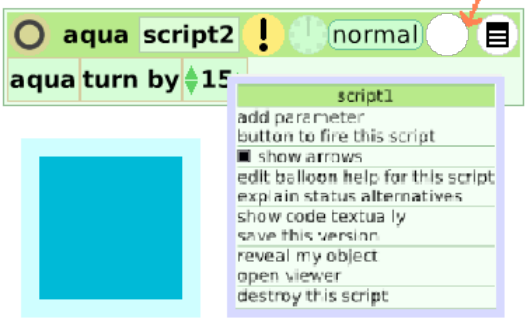
Button Fires a Script

Menu Tool: Button to Fire This Script

Click To Turn Gold Square

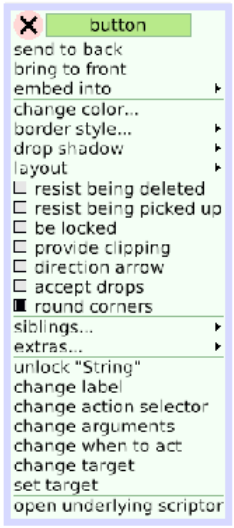
Make a button that will fire a script even if the script is not visible in the project.

Click on the white menu and choose "button to fire this script"

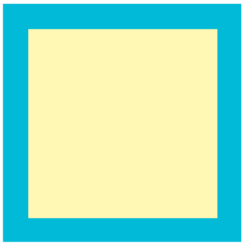


Use the button's halo menu to change the button's color, size, and label.

tinyaqua script1



The color, text, size, and style were changed using the menus.
Try the other options too.



big square move forward

button

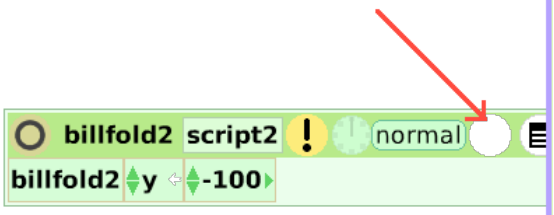
Grab Me Reveal Me

Menu Commands: Grab Me and Reveal Me

Find an object you can not see. Click the exclamation point to run the script and lose the wallet.

Then open the white menu and click on reveal my object.

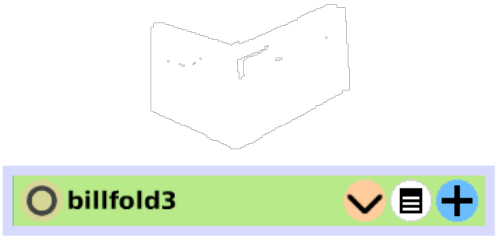
Click on the white menu in the top of the Scriptor on this page. Choose: reveal my object.



Or. . .

Open a Halo and a Viewer for this wallet.

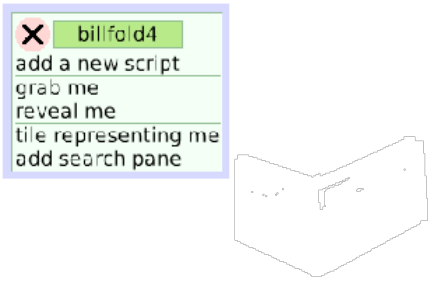
Click on the white menu in the top line of the wallet's Viewer.



Choose: grab me.

Or. . .

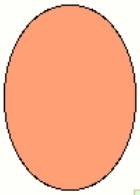
The Viewer's white menu includes: reveal me. Try it too.



Watchers

Menu Tools: Simple and Detailed Watchers Found in the Viewer

This simple watcher shows the X position of the oval on the page. Move the oval left or right and the location number will change.



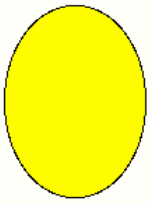
208

Open the blue oval's Viewer and click on the Scriptor's white menu to the left of the tiles.

This detailed watcher shows the Y position. Move this ellipse.

blue's y = 100

Drag the yellow ellipse out of the book.
Its watchers will tell where it is in the world too.

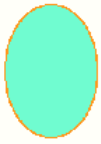


yellow's x = 209

yellow's y = 233

Even when the Viewer is closed, the watchers show information.

Make changes with the watchers too. Click the tiny green arrows, or highlight the number, type in a new one and press Enter.



Ellipse3's x = 212

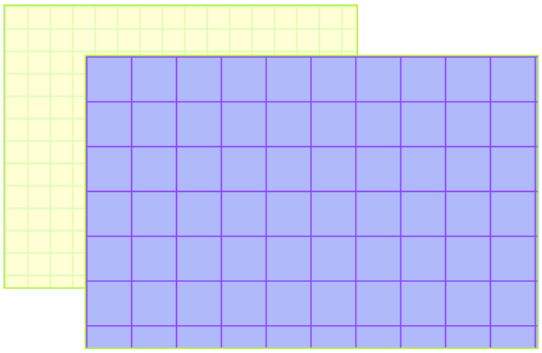
Ellipse3's y = 168

26

Playfield Graph Paper

Menu: Playfield Graph Paper Options

Use a standard 16x16 graph paper on a Playfield or make one with custom sizes and colors.



Click on a Playfield in Supplies; then right click to open its halo handles.

Click on its menu. Click the menu's push pin to keep it open.

Choose playfield options and keep that menu open too.

The second menu's list includes two choices:
use standard texture
make graph paper

MenuPlayfieldGraphPaper, page 3. If you choose make graph paper, a dialog box asks: Enter grid size. This example's grid size is 64.New dialog boxes will open that allow you to assign background and line color.

MenuPlayfieldGraphPaper, page 4. Click the green clock to run the scriptthat draws a graph on this grid.