

# **SqueakCMI Notebook: Projects, Tools, and Techniques**

## **Introduction**

Welcome to eToys/Squeak: an object-oriented programming language. This notebook was written to introduce Squeak to curious beginners with step-by-step descriptions of projects and how they were done.

Advice is freely given in the hope that the path you take to learning eToys/Squeak is quick and smooth. The Squeak community will be generous with their time, their knowledge, and their willingness to help newcomers. The Office for Mathematics, Science, and Technology Education at the University of Illinois Urbana-Champaign invites you to use these materials to the benefit of students everywhere.

These projects can be explored on the computer by opening them from [www.Squeakcmi.org](http://www.Squeakcmi.org). This dynamic experience of projects on the computer in conjunction with the written materials should give you a range of ideas and possibilities to combine in many ways and for many purposes.

## **Section I**

This section contains two easy projects designed to help you get started with Squeak. They are followed by an extensive description of the rich resources, tools, icons, supplies, and conventions that make Squeak what it is.

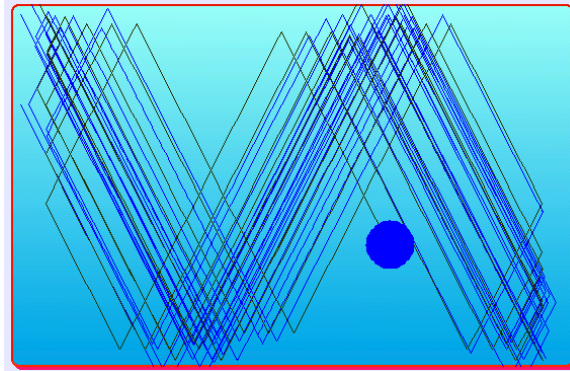
## **Section II**

This section explains more complicated projects. They are in alphabetical order by the name of a Squeak tool used predominantly in that project. The projects are not in sequential order by level of difficulty. The project's name can be used to locate that project at [www.Squeakcmi.org](http://www.Squeakcmi.org). So, if you wonder, "What is a scale factor and how could it be used in a Squeak project?" you can find out.

[www.Squeakcmi.org](http://www.Squeakcmi.org)

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[www.SqueakCMI.org](http://www.SqueakCMI.org)

Resources, projects, tutorials, and standards-based lessons applying Squeak in math, science, language arts, social science, and art. Additional projects and essays can be found on the website. Tutorials developed by math specialists show the myriad ways Squeak enriches the study of geometry and trigonometry. The SqueakCMI community can answer questions, share ideas, and schedule workshops.



[www.squeakland.org](http://www.squeakland.org)

The origin of Squeak: software, tutorials, and example projects. Get the most current versions of the software at Squeakland. The site includes interesting essays about the nature of learning, about programming and thinking.

[www.squeak.org](http://www.squeak.org)

Technical information for experienced programmers and developers

Kathleen Harness

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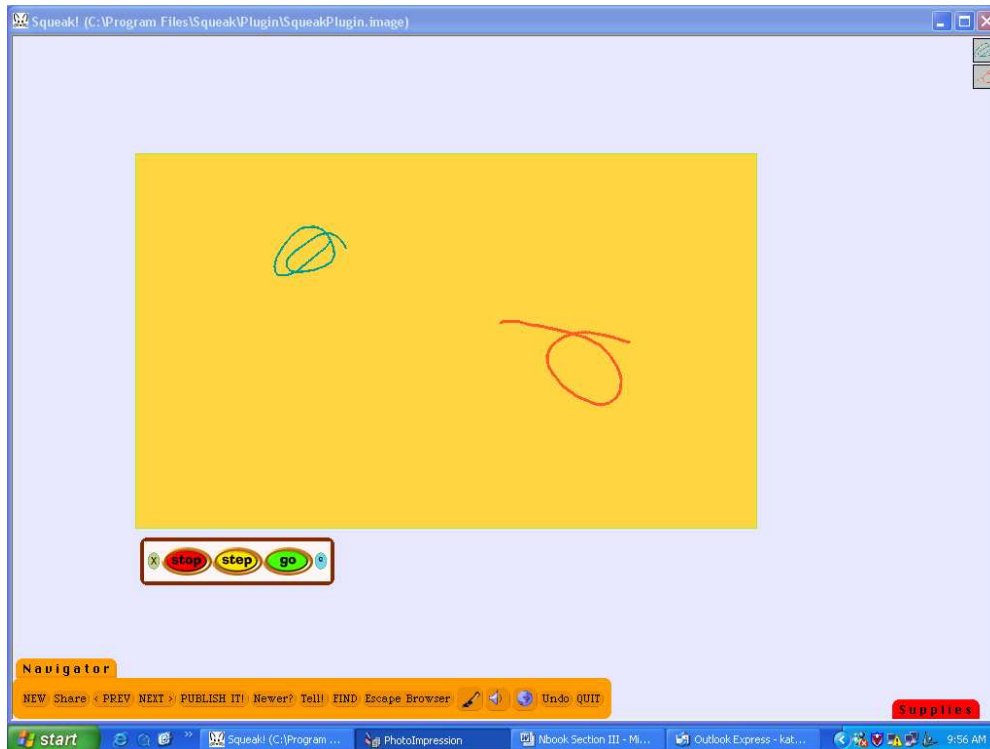
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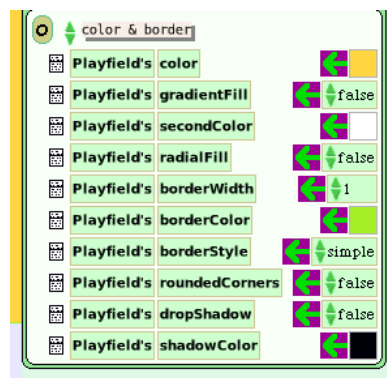
## Sound: ouchnb

This project uses a sound recorder in Squeak to add new sounds to scripts.



Drag a playfield out of Supplies and drop it on the screen. Use the halo's cyan eye to open a viewer of scripts panel. This panel includes a large number of changes that can be made to the appearance of the playfield.

Here are the choices made for this project.

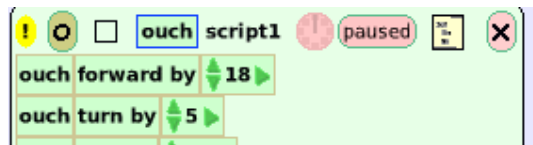


[www.Squeakcmi.org](http://www.Squeakcmi.org)

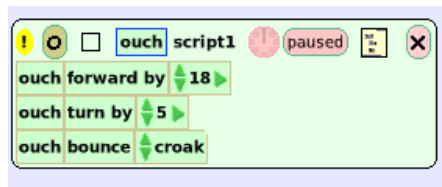
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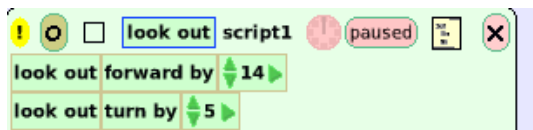
Use the paint brush and draw one shape on the screen and keep it. Put the squiggle into the playfield. Get the halo of handles for it and open a script viewer panel by clicking on the cyan eye. Make a script that looks like this one using forward and turn from the basic category of scripts.



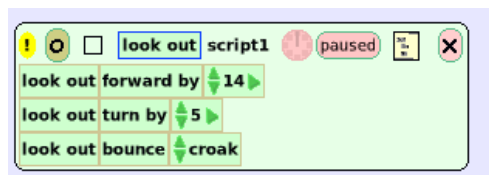
Add the phrase tile ouch bounce croak to the script.



Draw, keep, and make a script for the second object.



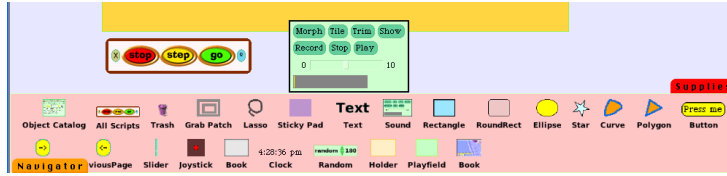
Add the phrase tile look out bounce croak to the script.



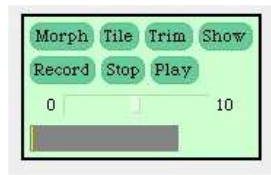
Notice that one of the scripts is named ouch and the other script and object is named look out.

To add sounds to the scripts drag out one sound tile from Supplies.





Click on Record and speak or sing into a microphone connected to the computer.



Click on stop to stop recording a sound.

Click on play to hear the sound just recorded.

Clicking on Morph makes a thin tile to drop into a wave editor.

Tile is used to add the new sound to the list of choices already available. Click on tile and a box will open asking for a name for the sound. Name it something meaningful and then accept or cancel it.

If you accept it a small green tile will be formed and put on the end of the cursor. Drop this tile onto the end of the phase tile 'ouch make sound croak'. The tile will become 'ouch make sound ouch'.

Here are the finished scripts for each drawing squiggle.

