

# **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.

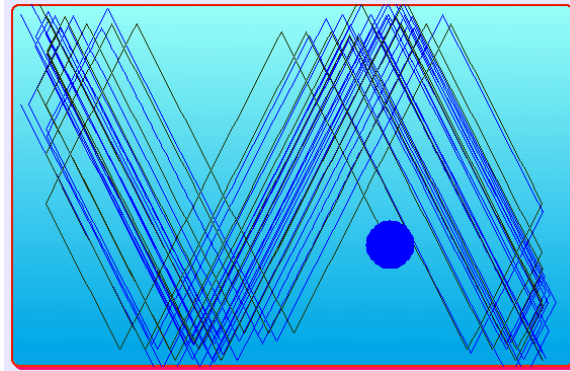
## **Section II**

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)

The Office for Mathematics, Science, and Technology Education  
University of Illinois Urbana-Champaign





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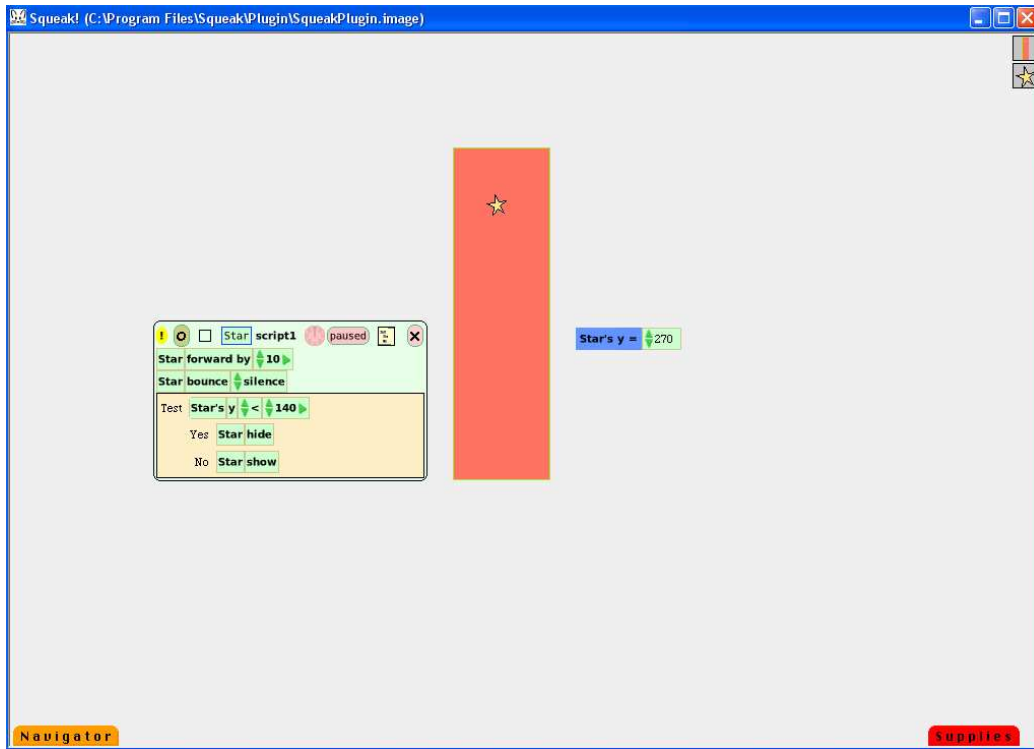
[www.Squeakcmi.org](http://www.Squeakcmi.org)

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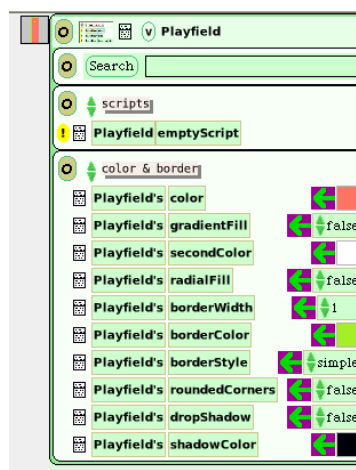


## Hide: fallingStar.nb

This project uses hide and show tiles to make a star appear and disappear.

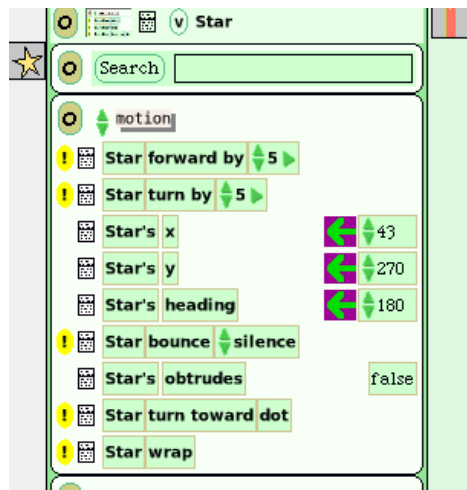


Drag out a playfield from Supplies. The playfield's color was changed for this project using the Color and Border menu of tiles.

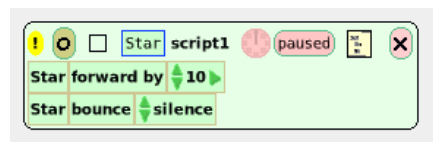


Drag out a star from Supplies. This project's star's color was changed using the Color and Border menu for the star. The size was changed using the yellow handle in the halo.

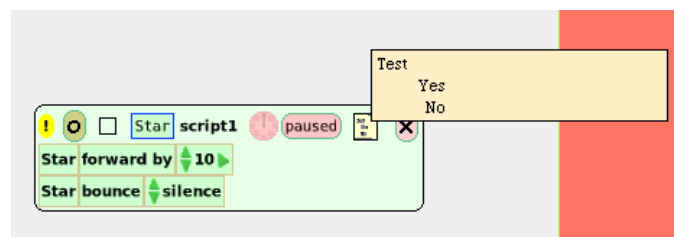
Make a script for the star using these tiles from the motion category.



Change the forward number to 10. Try the script.

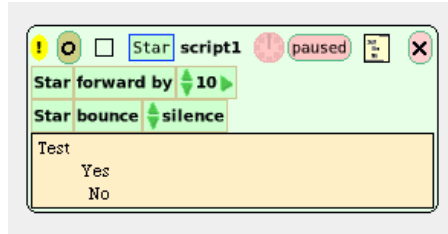


Click on the tan box near the word paused and add a test statement to the script.

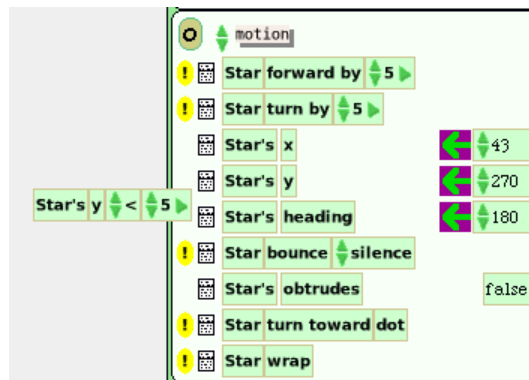


A test statement box allows you to set conditions and to ask if they are met, yes or no, true or false.





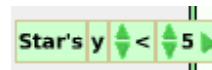
This test asks: Is the star higher than  $y=140$  in the playfield? If it is higher than 140, the star will show. If it is not higher, then the star will hide from view. The star will continue to move and since the script includes a tile star bounce it will make the trip up and down over and again.



The tile in the motion menu looks like this:



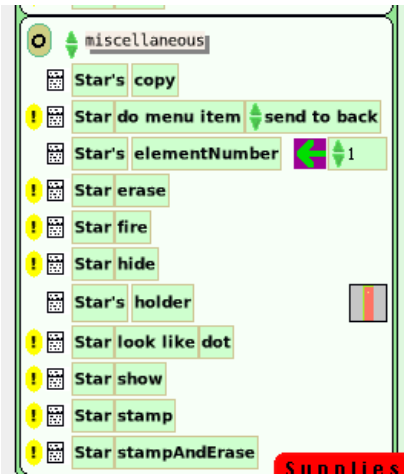
But, when it is picked up it looks like this:



The symbol '<' means 'less than'. The value was changed to 140 after the tile was in the test.

Open the miscellaneous category to find the tiles for hide and show.





The finished script looks like this.

