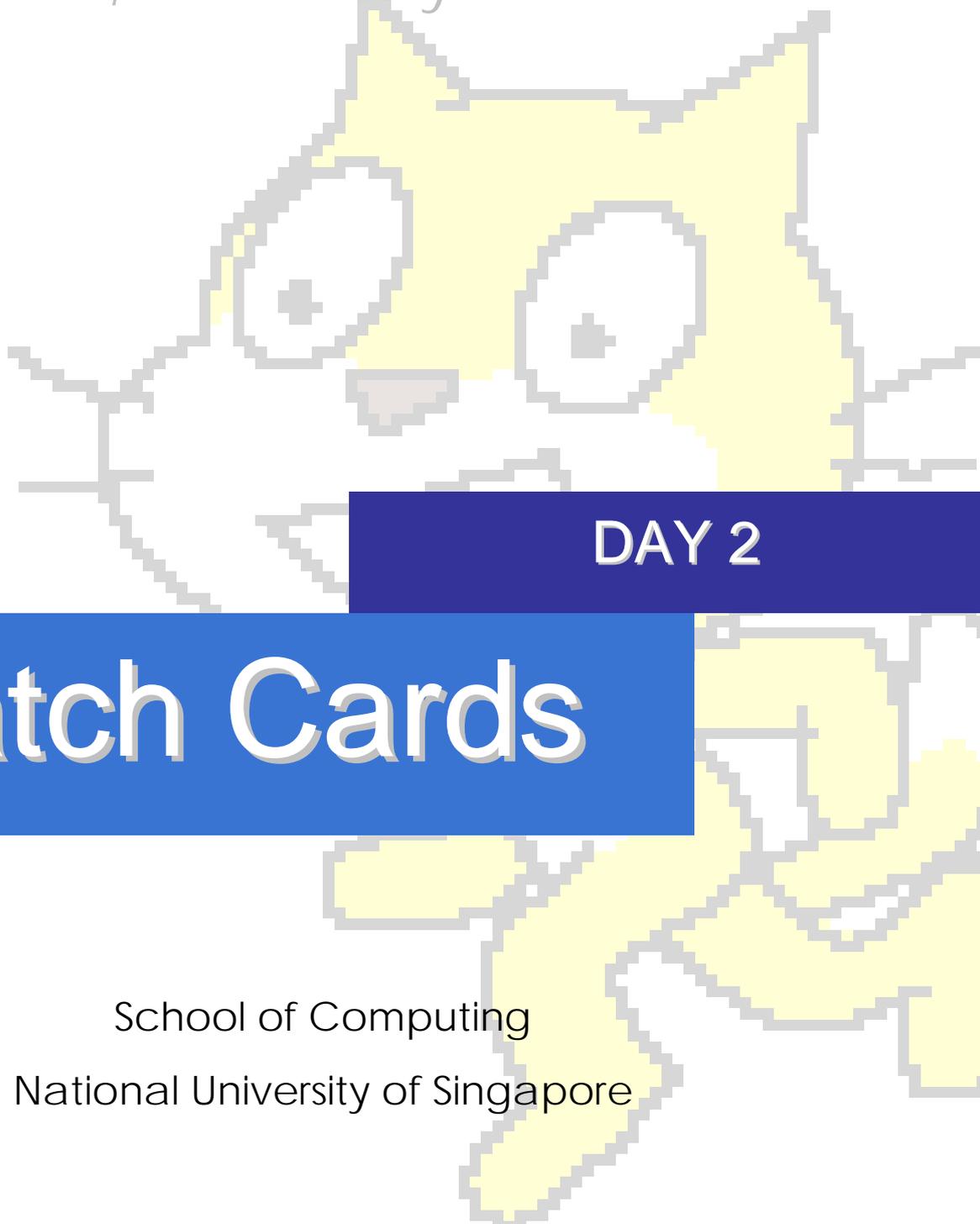


# Scratch Workshop

21, 24-27 May 2010

A pixelated yellow Scratch cat character is the background of the slide. It has large white eyes with black pupils and a small pink nose. The cat is looking towards the left.

DAY 2

## Scratch Cards

School of Computing  
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# Scratch Card 8

1. Go to File > New to create a new Scratch project.
2. Delete the cat sprite.
3. Click on the *paint new sprite* button to display the Paint editor.
4. In the paint editor, choose the text tool.
5. Type 'Happy Mother's Day'. Change font, size, and color to your liking.
6. Click OK to close the paint editor.
7. Select Stage in the Sprite List.
8. Select the Backgrounds tab in the scripts area.
9. Click on the Edit button to open the stage in paint editor.
10. Select fill tool (the paint bucket icon), choose a color, and fill the stage with the selected color. **Note:** you can have horizontal, vertical or circle gradient fill options from the options area beneath the toolbar.
11. To save, click *File* | *Save As* & give a location and filename.

*Exercise: Frame the stage in second color and shrink the stage*

# Scratch Card 9

Continue from Scratch Card 8.

1. Select *Choose new sprite from file* from the Sprite List.
2. Click on Costumes, Letters, and open the funky folder.
3. Choose D and click OK. D appears on the screen. Finish spelling “Dear Mom” from the funky letters folder.
4. Drag the letters to any preferred point on the stage.
5. To save, click *File | Save As &* give a location and filename.



# Scratch Card 10

You can continue with sprites created in Card 8 and 9, but start with an empty stage.

1. Select the Happy Mother's Day sprite and go to the Scripts tab.
2. From **LOOKS** palette, drag the **hide** block.
3. From **CONTROL** palette, drag and snap the **when flag clicked** block to the top of the **hide** block.
4. Drag **show** from the **LOOKS** palette and snap it below **hide**. This is to make sprites reappear on the stage.
5. To see the animation effect, add a waiting time, say 0.5 secs, between **hide** and **show**.
6. Hide and show each of the letters that spell Dear Mom using the same script. **Tips:** *Drag the script to the sprite to which it needs to be copied.*
7. To save, click *File* | *Save As* & give a location and filename.

## *Exercises :*

- (i) Give meaningful names to the sprites instead of Sprite1, Sprite2, etc.*
- (ii) Make the letters appear one at a time.*

# Scratch Card 11

{Revising instructions from previous cards}

1. Import a stage. In the example script we have used 'moon' from Nature folder. Color the moon surface to any color of your choice.
2. Use the Happy Mother's Day, D, E, A, R, M, O, M sprites from Card 10. Delete the scripts attached with the above sprites. Add a script to each sprite to hide on When Flag clicked. In the following steps we will make Greeting pulsate and make letters 'D' 'e' and 'a' reappear.

Steps 3 to 11 will make the greetings pulsate on the screen :

3. Select the Happy Mother's Day sprite.
4. Drag a **when space bar clicked** to the script area.
5. Add a **show** block.
6. From the **CONTROL** palette, drag the **forever** block to the script area.
7. From the **LOOKS** palette, drag the **set size to \_%** into **forever** block.
8. Change the value to 70%.
9. Add another **set size to \_%** and change its value to 167%.
10. From the **CONTROL** palette add the **wait 1 secs** block below each **set size to** blocks.
11. From the **CONTROL** palette, add a **broadcast** block between the **show** and **forever** blocks.
12. On the **broadcast** block, add a new message : Dear Mom.
13. Add a **When Flag Clicked** block on top. Click the flag to see Happy Mother's Day pulsate on the stage.

Next, we make the letter 'e' reappear.

14. Select sprite for letter 'e' from the sprite list.
15. Drag the **when I receive Dear Mom** control block to the script area.
16. Add a **show** block from **LOOKS** palette.
17. From **CONTROL** palette, snap the **repeat 10** block below the **show** block.
18. From the **LOOKS** palette, add **change color effect by 25** block to the **repeat** loop. Change the color to whirl from the drop-down list.
19. From the **LOOKS** palette, drag the **clear graphics effects** block and snap it below **repeat** block.
20. Add a **broadcast** block with message 'next a'.

Next we make letter 'a' reappear.

21. Copy the script of letter 'e' sprite to letter 'a' sprite.
22. On the **when I receive Dear Mom** block, change "Dear Mom" to "next a".
23. In the **change color effect by 25** block, change the value "color" to "fisheye" from the drop-down list.
24. Change the message in the **broadcast** block to a new message 'next D'.
25. Click the flag, followed by space bar to run the script.
26. To save, click *File | Save As* & give a location and filename.



Figure 11 Pulsating Greeting

```
when clicked
hide
```

```
when I receive Dear Mom
show
repeat 10
change whirl effect by 25
clear graphic effects
broadcast next a
```

Figure Sprite 'e' script

```
when clicked
hide
```

```
when I receive next a
show
repeat 10
change fisheye effect by 25
clear graphic effects
broadcast next D
```

Figure Sprite 'a' script



# Scratch Card 12

Continue from Scratch card 11. In this card we will make D reappear.

1. Add the block **when I receive 'next D'** to the script of sprite for letter 'D'.
2. Add the **show** block.
3. From **MOTION** palette, add the **turn clockwise 15 degrees** block to the **show** block. Change "15 " to "25".
4. Wrap the **turn clockwise 15 degrees** block in a **repeat 10** block.
5. Add a **broadcast** block and create a new message "next a".
6. Click the spacebar to watch the 'D' spin on the stage.

*Do you see that D looks reversed ? Fix it so that D displays correctly.*

7. To save, click *File | Save As* & give a location and filename.
8. Exercise : Display the remaining letters.

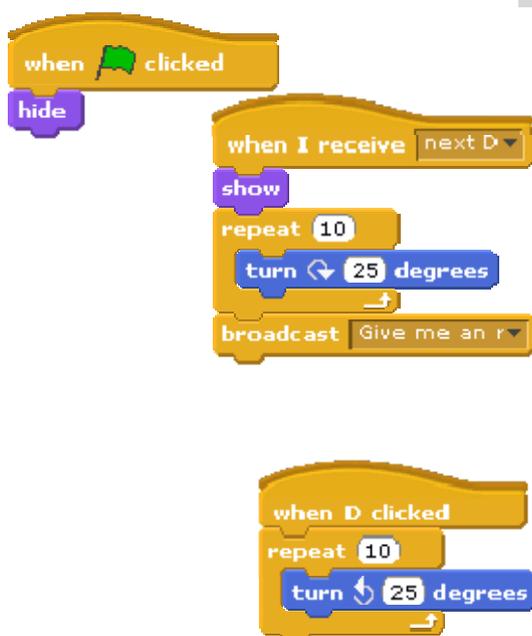


Figure Card 12 Sprite 'D' script

# Scratch Card 13

1. Start a new Scratch project. Select Stage from the Sprite List.
2. From scripts area click the Backgrounds tab.
3. Import a background.
4. From backgrounds list , delete the default background by clicking X next to the *Copy* button.
5. Open the background in Paint Editor by clicking *Edit* button.
6. Give the slideshow a title by using the Text tool.
7. Save *File*.
8. Import a batch of photos from a saved location. From Backgrounds tab of the Stage, click *Import* to display the Import Background dialog box. Browse to saved location of the photos, and add each photo to the project, one at a time.
9. Save *File*.
10. From the **CONTROL** palette, drag **when space key pressed** block to the scripts area. Change value from “space” to “right arrow”.
11. From the **LOOKS** palette, add **next background** block to the **when right arrow key pressed** block.
12. To add ability to start over : Drag another **when space key pressed** block into the Scripts area.
13. From **LOOKS** palette, add the **switch to background** block to the **when space key pressed** block.
14. Change the background name on the **switch to background** block to be the title screen.
15. Save *File*.

Note : You can switch to presentation mode to display your project in full screen.

```
when right arrow key pressed
  next background

when space key pressed
  switch to background fower-bed
```

Figure Card 13 script



# Scratch Card 14

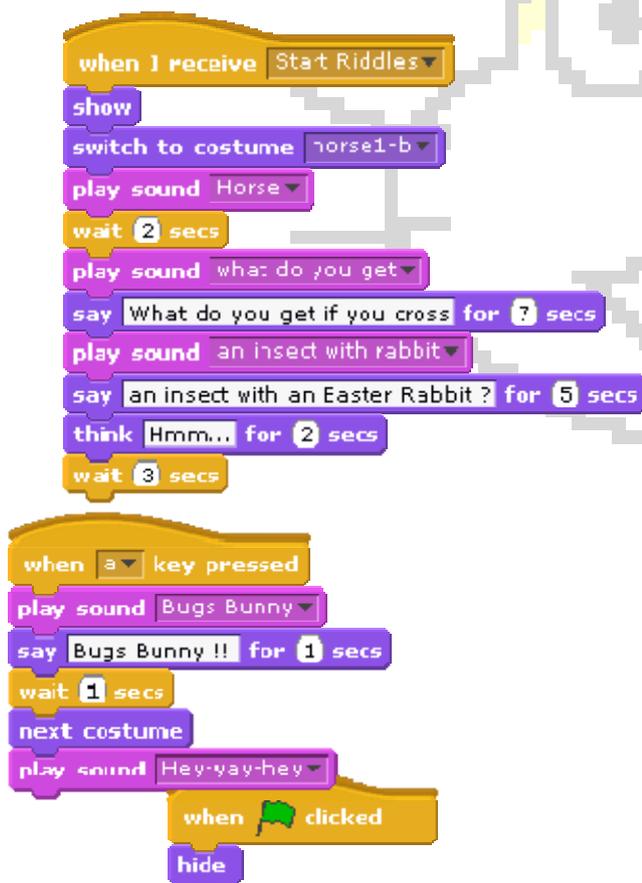
1. Start a new project. Create TOC : Let's have two chapters in our e-book. We need two clickable sprites to lead to a chapter when we click on the entry of TOC.
2. Create a new sprite using *paint new sprite* button.
3. Click *Import* to display the Import Image dialogue box
4. Follow *Costume* , *Things*, *Button*. Click OK to add to the Paint Editor's canvas.
5. Use the Text Tool to type a label, for example, "Jokes" in any font you want. Resize and position the label to fit into the button. Click OK and save your work. Name the sprite "Jokes".
6. Create a similar sprite "Riddles" with a button labeled "Riddles".
7. Create a text sprite TOC that displays "Table of Contents"
8. Create another text sprite Instruction that displays "Click on the chapter button to begin."
9. Save *File* with an appropriate name.
10. To add a background to our project to represent pages of the chapter : From *Backgrounds* tab, click *Import*. Choose the hay-field image from the *Outdoors* folder.
11. Make costumes of the background. Let one of the costumes have a title 'Jokes & Riddles' , and an instruction 'Press space bar to start'.
12. In another costume, import the microphone from *Costumes | Things* folder. Click *shrink* to adjust size. Position the microphone to blend well with the landscape.
13. Save *File*.

14. Have hay-field displayed on the stage by clicking on the hay-field from list of stage backgrounds.
15. Add a new sprite by clicking on the *choose new sprite from file* button.
16. Select horse1-b from the Animals folder and click ok. Name this sprite Horse.
17. Position the horse next to the microphone. Resize it using shrink and grow tools.
18. Click on Costumes tab to display the list of costumes.
19. Click the *Import* button to open import costume dialog box
20. Select horse1-a image from Animals folder and click ok.
21. Click on each costume in succession to view how the sprite appears on the stage.
22. Save File.
23. Select Table of Contents sprite from the spritelist. Drag When flag clicked followed by Hide block in Looks palette. For each sprite, copy this script.
24. Save File.
25. Let's identify the events user can trigger . A user can 'Open the Book' , 'click on the Jokes' , 'click on the Riddles'.
26. To trigger 'Open the Book' event , book cover with Title and instruction should be visible to the user. For Stage script, have the **when flag clicked** followed by **switch to background** \_\_\_\_\_ which has the title and the instruction. For all other sprites you have given the hide instruction, in step 23, when Flag is clicked.
27. To 'Open the Book' user presses space bar. At this event the stage background needs to change to the one without title and instruction. For Stage script, have the **when space bar clicked** followed by **switch to background** \_\_\_\_\_ which does not have the title and the instruction. Also a message 'Open the Book' needs to be broadcast to Sprites on table of contents page.

28. Add **when I receive 'Open the Book'** , followed by **show** block in each of the Jokes, Riddles, TOC, and Instruction sprites.
29. To view Riddles Chapter, user clicks on Riddles button. Add a **when Riddles clicked** followed by **broadcast 'Start Riddles'** onto the script of Riddles. The Riddles sprite needs to hide just after that. Add a **hide** block below the broadcast message 'Start Riddles'.
30. Add **when I receive 'Start Riddles'** , followed by **hide** block in each of the Jokes, TOC, and Instruction sprites.
31. Add **when I receive 'Start Riddles'**, followed by **show** block to Horse and Mic sprites.
32. To make the Horse sprite ask riddles, let's do following : Add to Horse script , below the show block, switch costume to horse1-b so that it always appears in that costume whenever the Chapter is opened.
33. Click on the Sound tabs and import a Horse sound.
34. Add **play sound Horse** block from sound palette, followed by **wait 2 secs** block from **CONTROL** palette.
35. You can record a riddle in your own voice using the Sounds tab.
36. Import a sound 'Hey-yay-hey' or any other sound of your choice.
37. Next, we use these sounds to make our script interesting.
38. Add **play sound** \_\_\_\_\_ , the one you recorded, block from sound palette.
39. Add say Hello for 2 secs block from **LOOKS** palette. Change Hello to the riddle text , and 2 to an appropriate value based on the recording time of the riddle.
40. Add think hmmm for 2 secs block from the **LOOKS** palette followed by Add a wait 1 secs block from **CONTROL** palette.
41. To add the answering ability to Horse sprite let's add following : On pressing 'a' the answer to riddle is displayed.

42. Add **when a key is pressed** from **CONTROL** palette, followed by **say Hello for 1 secs** block from **LOOKS** palette. Change “Hello” to the answer text.
43. Record a sound in your own voice for the answer, and add play sound \_\_\_\_, the one you recorded, block from sound palette.
44. Add wait 1 sec block from control palette.
45. Add **next costume** block from the **LOOKS** palette.
46. Add play sound Hey-yay-hey .
47. Save File & Run the script.

*Exercise : Develop a meaningful chapter for Jokes.*



```
when I receive Start Riddles
show
switch to costume horse1-b
play sound Horse
wait 2 secs
play sound what do you get
say What do you get if you cross for 7 secs
play sound an insect with rabbit
say an insect with an Easter Rabbit? for 5 secs
think Hmm... for 2 secs
wait 3 secs

when a key pressed
play sound Bugs Bunny
say Bugs Bunny !! for 1 secs
wait 1 secs
next costume
play sound Hey-yay-hey
when clicked
hide
```

Figure Sprite 'Horse' script

```
when clicked
hide
```

```
when I receive Open the book
show
```

```
when I receive Start Jokes
hide
```

```
when I receive Start Riddles
hide
```

Sprite 'Instructions' script

```
when clicked
hide
```

```
when I receive Open the book
show
```

```
when Jokes clicked
broadcast Start Jokes
hide
```

```
when I receive Start Riddles
hide
```

Sprite 'Jokes' script

```
when clicked
hide
```

```
when I receive Start Riddles
show
```

Sprite 'Mic script



```
when  clicked
hide
```

```
when I receive Open the book
show
```

```
when Riddles clicked
broadcast Start Riddles
hide
```

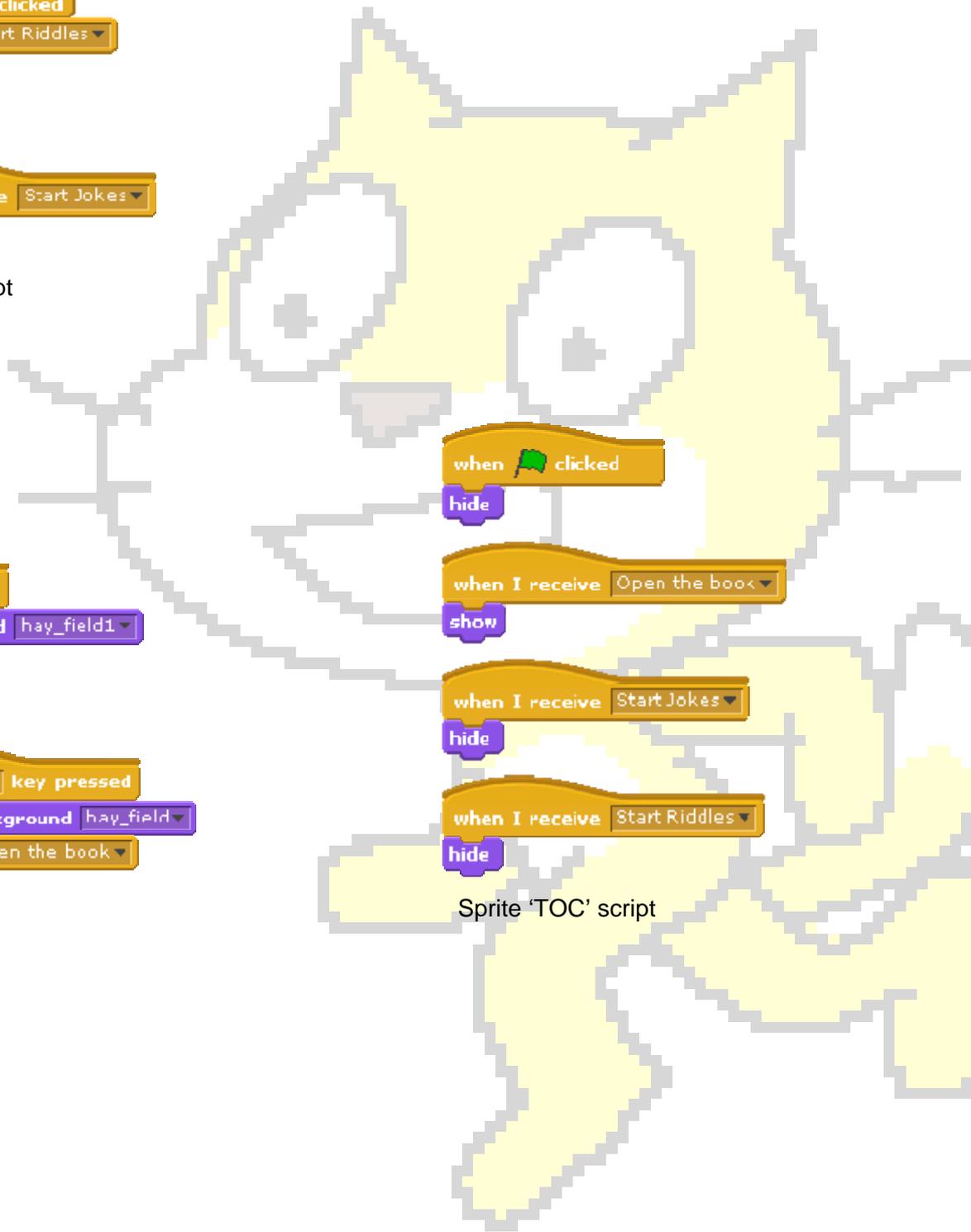
```
when I receive Start Jokes
hide
```

Sprite 'Riddles' script

```
when  clicked
switch to background hay_field1
```

```
when space key pressed
switch to background hay_field
broadcast Open the book
```

Sprite 'Stage' script



```
when  clicked
hide
```

```
when I receive Open the book
show
```

```
when I receive Start Jokes
hide
```

```
when I receive Start Riddles
hide
```

Sprite 'TOC' script