# ScratchJr

## Software Test Plan

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# FEATURES TO BE TESTED

## Project Editor Page

**Stage:** This is where the action takes place in a project. Move characters around with your finger, and program their actions with scripts that are made up of combinations of blocks. To delete a character, press and hold it.
**Note:** *Dragging a character on the stage will not record change.*

## Icons above the stage

**Home:** Saves the current project and returns to the project library.

**Presentation Mode:** Expands the stage to full screen-mode.

**Grid:** Toggles on (and off) the x-y coordinate grid.

**Change Background:** Returns to the background library to select or create a background.

**Text Editor:** Add text of varying sizes and colors to the stage. Text can be dragged around the stage.

**Reset:** Resets all characters to their starting positions on the stage. Tapping reset stops any script. (Drag characters to set up new starting positions.)

**Green Flag:** Starts all scripts that begin with a "Start on Green Flag" by tapping here.

**Project Information:** The orange 'folded' corner in the top right of the interface changes the title of the project, and saves it.

## Programming the blocks

Dragging and tapping blocks from the blocks palette down to the programming area connects the action/function of a block to

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characters on the stage. The blocks attach to each other to trigger and control sequences (scripts) of motion, appearance, and sound.

There are six blocks categories, each of which contain a number of blocks in its palette. The Motion, Looks, and Control blocks have numerical inputs allowing for greater control over the action of the character. Motion blocks and Looks blocks permit negative numerical inputs.

**Triggering blocks (yellow):** Attaching the Flag, Tap, or Touch blocks to the left side of a block or sequence of blocks determines how the block or script's action is initiated. The Start on Message and Send Message blocks relay a script's information to another character on the same stage.

**Motion blocks (blue):** Allows characters to move left, right, up, down, turn left or right, and to hop. The Go Home block resets the character's location to its starting position.

**Looks blocks (mauve):** Allows characters to grow, shrink, disappear, reappear and reset to default size. There is also a speech bubble block in this section.

**Sounds blocks (green):** Tapping the Record Sound block prompts the iPad's microphone and allows the user to record her/his own sound, up to one minute long. Dragging and tapping the Play Recorded Sound block onto the programming area plays the recorded sound. There is also a pre-set "pop" sound.

**Note:** *In order for the Play Recorded Sound block to be visible, activate the microphone permissions. Settings>Privacy>ScratchJr. When opening ScratchJr for the first time, the prompt will appear to "allow" or "don't allow" the microphone.*

**Control blocks (orange):** Allows characters to stop, pause, speed up, slow down, and to repeat a set amount of times.

**End blocks (red):** Allows blocks and scripts to end, repeat or jump to a specified page.

**Undo/Redo:** Undo reverses a mistake, and redo reverses the last undo.
> **Note:** *It is important to test the efficacy of undo and redo functions by deleting/changing characters, pages and scripts.*

*Ensure that the order with which the undo and redo of multiple deletes/changes is accurate.*

# Thumbnails

**Character thumbnails:**
 - ➢ Select among the characters in a project, or tap the plus sign to add a new one
 - ➢ Once a character is selected, you can edit its scripts, tap its name to rename it, or tap the paintbrush to edit its image in the paint editor
 - ➢ To delete a character, press and hold it
 - ➢ To copy a character to another page, drag it to the page thumbnail
 - ➢ Page thumbnails scroll vertically when more than four characters are in a project

**Page thumbnails:**
 - ➢ Select among the pages in a project, or tap the plus sign to add a new page
 - ➢ Each page has its own set of characters and a background
 - ➢ To delete a page, press and hold it
 - ➢ To reorder pages, drag them to new positions
 - ➢ Movement of a character on the stage should be reflected in the page thumbnail

# Libraries

**Character library**

- ➢ Enter the character library by tapping the plus sign in the character thumbnails
- ➢ Once in the character library, double-clicking on a character thumbnail, or selecting and tapping the check mark in the top right of the screen, selects the character to the stage
- ➢ Tapping the paintbrush icon in the top right of the screen opens the paint editor
- ➢ Selecting the blank page at the top left and tapping the paintbrush icon opens the paint editor
- ➢ Selecting a character and tapping paintbrush icon enters the paint editor to edit selected character
- ➢ When a character thumbnail is selected, the name of the character should be seen at top of character library
- ➢ The word 'Character' for user-created characters should show at top of library if it has not been named
- ➢ Entire character library is accessed by scrolling vertically
- ➢ Tapping 'X' in top right corner exits character library
- ➢ All user-created characters are saved and listed in front of the pre-set characters

**Background library**

- ➢ Functions the same as the character library

**My Projects/Home page**

- ➢ Thumbnails should show number of pages in project in a 'stack' behind each other
- ➢ Projects are ordered numerically if not named by the user (the higher the number the more recent the project)

## Paint Editor

**1.** Tapping the paintbrush icon on a character's thumbnail on the main page opens
   paint editor
**2.** From the character library, selecting a character and tapping the
   paintbrush icon in the top right of screen opens paint editor
**3.** From the character library, selecting the blank page at top left and
   tapping paintbrush icon opens a blank paint editor

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**4.** When no character is selected in the character library, tapping the paintbrush icon opens a blank paint editor

## Using the tools on the left side of the paint editor

The line tool has two main functions:

Drawing freehand shapes and lines.
Adjusting thickness of an outline of any shape.
- ➢ Tapping a shape with line tool selected changes outline thickness depending on which thickness-icon is selected
- ➢ Adjusting line thickness functions identically for both pre-set shapes and user-created shapes

Select among the three shape tools below the line tool to create ellipses, squares, and triangles of various dimensions by tapping and dragging on the paint editor.

## Using the tools on the right side of the paint editor

**Arrow tool:** Tapping and holding a shape with the arrow tool selected allows the user to freely drag the entire shape
- ➢ Tapping shape with arrow tool selected activates the warp-tool points which can be dragged freely to distort shape
- ➢ Tapping on an existing warp-tool point deletes the point

**Rotate tool:** Tapping and holding a shape with the rotate tool selected allows the user to rotate the entire shape clockwise or counter-clockwise

**Stamp tool:** Tapping a shape with the stamp tool selected allows the user to make a copy of the shape
- ➢ After a copy is made, the arrow tool selects automatically and the copied shape can be separated and moved independently from the original.

**Scissors tool:** Tapping a shape with the scissors tool selected allows the user to delete the shape

**Camera tool:** Tapping a shape with the camera tool selected allows the user to activate the camera mode

- ➢ While in camera mode, the body of the shape functions as a camera lens.
- ➢ Tapping the camera-rotate icon in the top right-hand corner of the screen flips the perspective of the lens.
- ➢ Tapping the X in the top left exits camera mode.
- ➢ Tapping the camera icon in the bottom-middle takes a photo.

**Paint-bucket tool:** Tapping a shape with the paint-bucket tool selected allows the user to add or change the color of the shape.

**Undo/Redo:** Undo reverses a mistake, and redo reverses the last undo.

***Note:*** *Deleting a character in the paint editor and **not** creating another item before tapping the check mark to exit will **not** record a change.*

***Note:*** *Drag 3 fingers in the paint editor to adjust and navigate the perspective.*

## Using the color palette

The color palette functions with the paint bucket tool and the line and shape tools.
- ➢ Selecting a color and a shape/line tool allows the user to create a colored shape/line
- ➢ Selecting a color and the paint-bucket tool allows the user to add or change the color of the shape.

## Help and About pages

There are eight sample projects and a video tutorial to help the user to understand how ScratchJr works. To access the Help page, tap the question mark at the top of the screen.
- ➢ Although the tutorials are interactive, no changes will be saved after exiting
- ➢ Scripts can be deleted, but characters cannot be deleted

Detailed guides to the Project Editor (interface), the Paint Editor, and the blocks, are available in the About page, which can be accessed by tapping the open book icon on the top right of the screen.
**Note:** *Ensure that all of the circled numbers in the Interface and Paint Editor Guides can be tapped.*

## Known Bugs

1. Encompassing any block(s) with the orange repeat block if it has a red block attached to it, will not work.
2. Empty shapes created in the paint editor do not separate after being copied.