SCRATCH 1

GETTING STARTED:
AN INTRODUCTORY COURSE

LESSON PLANS

learscratch.org
Lesson Layout

**Title**: Playing with Color

**Introduction**: Review

**Practice**: Scratching Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

**Closing Assignments**: Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

**Extensions**:
1. Experiment with different rates of changing the color.
2. Experiment with two sprites and see how they change colors.
3. Experiment with different keys to control how a sprite changes color.
4. Experiment adding sounds when you change colors.

**List of Tutorials**:
- Tutorial Part 1: Change Color
- Tutorial Part 2: Pressing Keys

**Additional Exercises**
# List of Lessons

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**Class Management**

**TIME SCHEDULE**
This course has been designed so that each lesson will occupy one meeting session with the students.

Once the lesson has been reviewed, the activity of the student will concentrate on mastering the new concepts presented.

Practicing with Scratch and exploring all the possibilities of the new concepts learned is essential for a robust learning process.

The exercises proposed in the Extensions section are designed to reinforce the learn-by-doing approach.

**SCRATCH ACTIVITIES**
After studying the tutorials the students will replicate on their own Scratch environment the activities presented during the lesson.

The students are encouraged to explore, beginning with the environment presented in the tutorials, all the possibilities open by the newly learned concepts.

**EXTENSIONS**
The exercises presented in the Extensions section provide suggestions to develop and reinforce the knowledge and techniques learned in the tutorials.

They also provide a schedule support by allocation a variety of work assignments for each lesson.
**DVD WITH COURSE MATERIALS**

Schools and institutions can reduce their internet demands for using these materials by installing them locally in their labs and computers.

To receive DVDs with these materials, send the institutions mailing address via the “Contact Us” link at learnscratch.org.

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**SOLUTIONS TO EXTENSIONS EXERCISES**

Scratch programs with solutions to the Extension exercises can also be obtained sending a request via the “Contact Us” link at learnscratch.org.

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**ADDITIONAL COURSES**

New courses using Scratch are being developed to be incorporated into the K-12 curriculum. Information on these courses will be available at learnscratch.org.
INTRODUCTION - REVIEW
This tutorial introduces the basic programming elements to move the sprite (in this case the cat) several steps forwards or backwards. You will learn how to select building blocks from different menus (beginning with the Blue menu of Motion) and how to execute an action by double-clicking on it. In this lesson we add a sound (the sound of a drum) every time the Sprite moves. You will learn how to select building blocks from the Sound Menu, and how to interconnect two building blocks in order to execute them at the same time. The "play drum" block allows you to select the type of sound (one among many) and the length of the sound.

PRESENTATION - VIDEO TUTORIALS
Tutorial Part 1: Start Moving
Tutorial Part 2: Add a Sound
Tutorial Part 3: Start a Dance
**PRACTICE**

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

**CLOSING - ASSIGNMENTS**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

**EXTENSIONS**

1. Experiment with step sizes: very small, small, larger, very large.
2. Experiment with sounds: select and combine different sounds.
3. Experiment with dances: two, three, more steps in the dance. Select and combine short and long steps.
INTRODUCTION - REVIEW

In this lesson we include the first control block, "forever", from the orange Menu of Control. We move the four blocks of previous examples - move and play drums - into the "mouth" of the "forever" control block. When we double-click on it, the actions are repeated forever, making the Sprite dance continuously. To stop the action we need to use the red Stop icon. In this lesson we also introduce a new control icon, the "green flag." When we click on the green flag anything connected to it will be executed.

PRESENTATION - VIDEO TUTORIALS

Tutorial Part 1: Again and Again

Tutorial Part 2: The Green Flag
**PRACTICE**

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

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**EXTENSIONS**

1. Experiment with a second repeat block (for a second dancing sprite.)
2. Experiment playing sequences of multiple sounds again and again.
3. Experiment creating two or three repeat blocks and control them one by one, or all together with the green flag and the stop sign.

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**CLOSING - ASSIGNMENTS**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.
LESSON 3
Playing with Color

INTRODUCTION - REVIEW
From the Menu of "Looks", we introduce in this tutorial the block of "change effect". When we click on this block, the Sprite will change its color by the amount specified. We can also select other graphic changes, such as whirl, mosaic, etc. In this lesson we also introduce another control block to execute actions. The block "when key pressed" will execute all the actions of the blocks connected to it.

PRESENTATION - VIDEO TUTORIALS
Tutorial Part 1: Change Color
Tutorial Part 2: Pressing Keys
1. Experiment with different rates of changing the color.
2. Experiment with two sprites and see how they change colors.
3. Experiment with different keys to control how a sprite changes colors.
4. Experiment adding sounds when you change colors.

Practice
Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

Closing - Assignments
Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

Extensions
1. Experiment with different rates of changing the color.
2. Experiment with two sprites and see how they change colors.
3. Experiment with different keys to control how a sprite changes colors.
4. Experiment adding sounds when you change colors.
LESSON 4
Creating Your Own Sprites

**INTRODUCTION - REVIEW**
In this lesson we learn how to import other Sprites into our projects. As an alternative we can use the graphic editor to create new Sprites.

**PRESENTATION - VIDEO TUTORIALS**
Tutorial: Create a Sprite
**PRACTICE**

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

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**CLOSING - ASSIGNMENTS**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

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**EXTENSIONS**

1. Experiment drawing and painting your own sprites.
2. Experiment by having your sprites dance, change colors, play sounds, etc.
3. Experiment and explore the large library of sprites of Scratch.
4. Experiment by creating groups of related sprites.
INTRODUCTION - REVIEW

This lesson introduces the programming blocks that allow us to display a speech or a thought bubble with its corresponding message. The message is presented permanently or for a fix duration of time.

PRESENTATION - VIDEO TUTORIALS

Tutorial: Speaking
**PRACTICE**

Study Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

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**CLOSING - ASSIGNMENTS**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

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**EXTENSIONS**

1. Experiment by writing ideas and thoughts.
2. Experiment with two sprites speaking to each other.
3. Experiment by using key of the keyboard to control when they speak.
4. Experiment by adding sounds when the sprite speak.
LESSON 6

Creating Image Effects

**INTRODUCTION - REVIEW**

In this lesson we use the block "change effect by" to apply other graphic effects. This block allows us to change the color, create mosaics, pixelate, create whirl and ghost effects, etc.

**PRESENTATION - VIDEO TUTORIALS**

Tutorial: Image Effects
1. Experiment with all graphic effects: fisheye, whirl, pixelate, mosaic, brightness, and ghost.

2. Experiment by applying two simultaneous image effects to the same sprite.

3. Experiment by controlling the values of the image effects applied.

4. Experiment by adding sounds to the image effects.

**PRACTICE**

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

**CLOSING - ASSIGNMENTS**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

**EXTENSIONS**

1. Experiment with all graphic effects: fisheye, whirl, pixelate, mosaic, brightness, and ghost.

2. Experiment by applying two simultaneous image effects to the same sprite.

3. Experiment by controlling the values of the image effects applied.

4. Experiment by adding sounds to the image effects.
INTRODUCTION - REVIEW

Using the tab "Sounds" in the programming area, we can associate audio files recorded by us or imported from elsewhere with our Sprites. We can associate multiple audio files with each Sprite.

PRESENTATION - VIDEO TUTORIALS

Tutorial: Add Audio
1. Experiment by exploring all the sounds in the Scratch libraries.

2. Experiment with two or more sprites singing together.

3. Experiment adding image effects with the voices and music.

4. Experiment controlling with the keyboard the sequence of sounds.

PRACTICE

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

CLOSING - ASSIGNMENTS

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

EXTENSIONS

1. Experiment by exploring all the sounds in the Scratch libraries.

2. Experiment with two or more sprites singing together.

3. Experiment adding image effects with the voices and music.

4. Experiment controlling with the keyboard the sequence of sounds.
INTRODUCTION - REVIEW

Using the tab "Costumes" in the programming area, we can associate images or costumes with our sprites. We can import existing costumes, or we can use the graphic editor to create new ones. We can associate multiple costumes with each Sprite. The change of costumes can be used to create animation effects.

PRESENTATION - VIDEO TUTORIALS

Tutorial: Animation
**Practice**

Scratch Activity: Reproduce the actions in the tutorial. Experiment with the size and direction of the steps.

**Closing - Assignments**

Review the main topics introduced in this lesson and discuss the assignments proposed in the Extensions section.

**Extensions**

1. Experiment by creating your own sprite costumes and make your own animation.
2. Experiment making animations with some of the sprites from the Scratch Libraries.
3. Experiment by animating two or three or more sprites at the same time.
4. Experiment by adding sounds as the sprites are animated.
Scratch Courses

This guide and materials were prepared by Juan Carlos Olabe and other members of the LearnScratch Team.

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