



SCRATCH 1

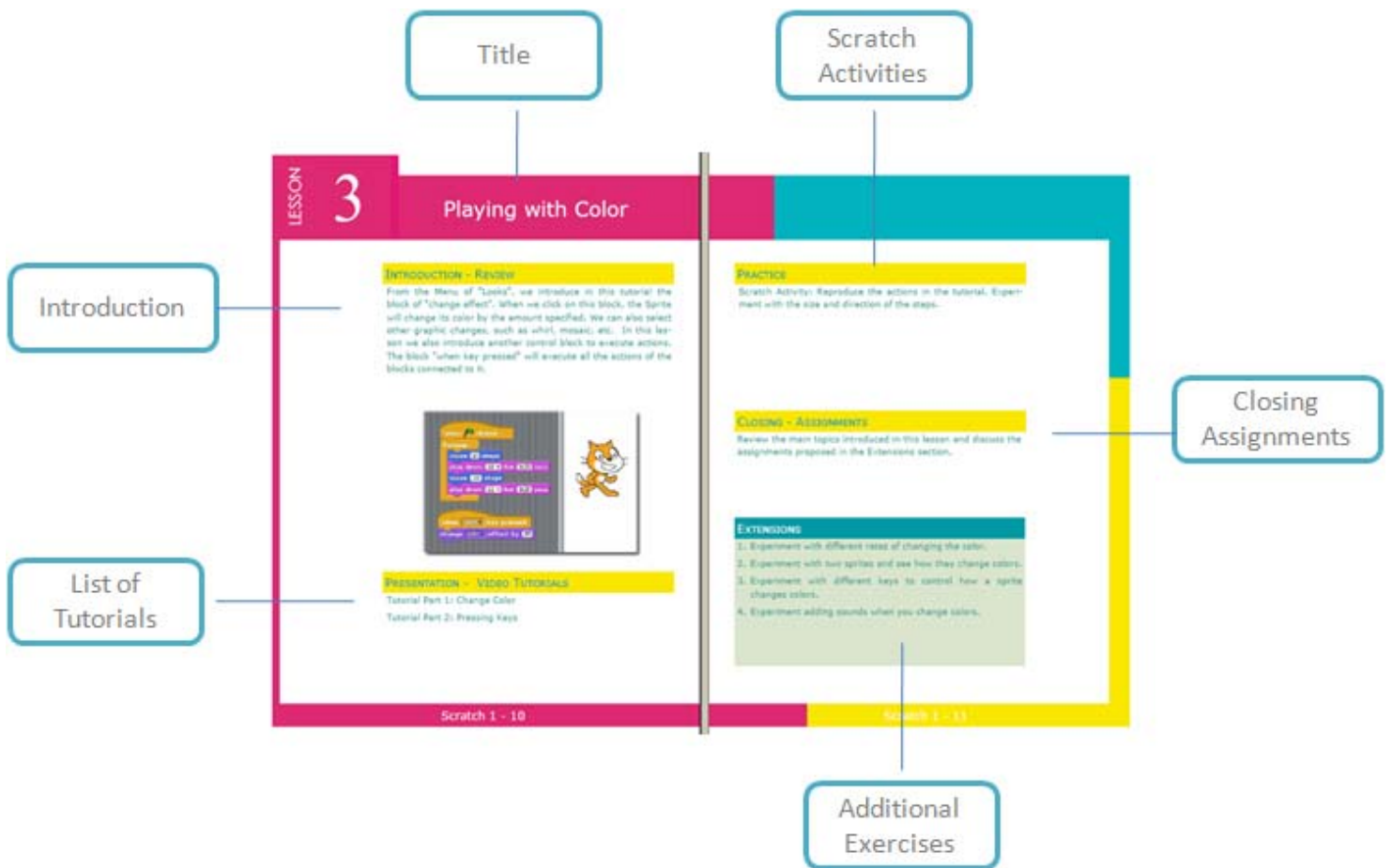
GETTING STARTED:
AN INTRODUCTORY
COURSE

LESSON PLANS



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Lesson Layout



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.

Class Management

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.

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.

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.

Motion and Sound

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.

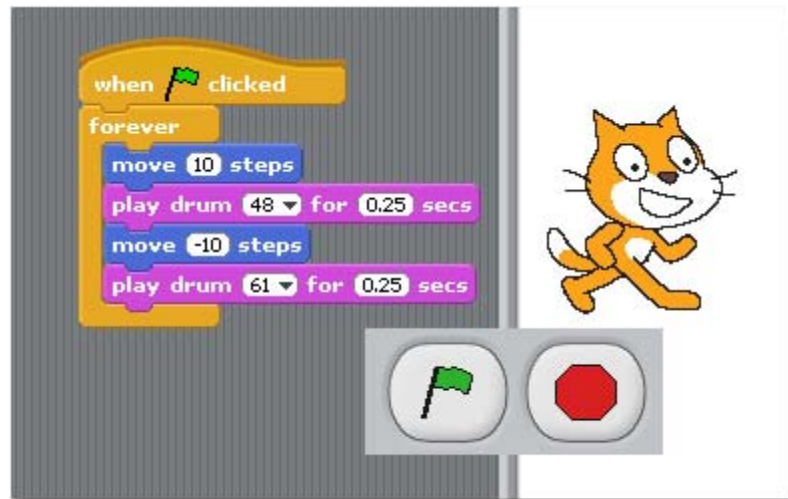
EXTENSIONS

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.

Repeating Actions

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.

CLOSING - ASSIGNMENTS

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

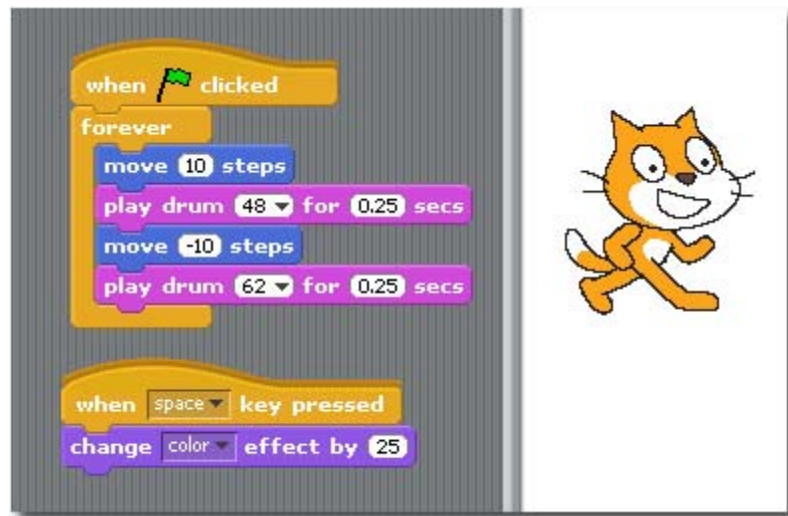
EXTENSIONS

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.

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

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.

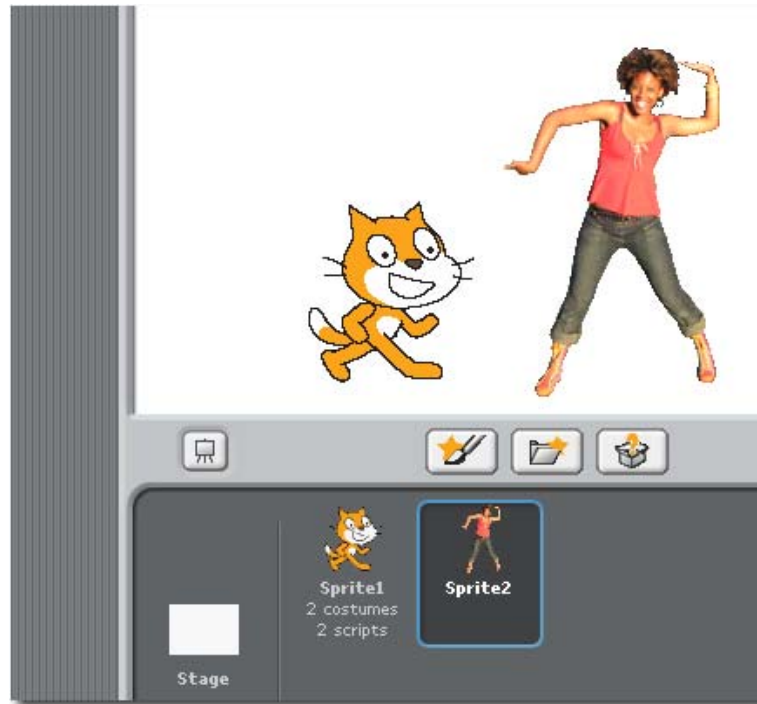
EXTENSIONS

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.

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.

CLOSING - ASSIGNMENTS

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

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.

Speaking and Thinking

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.

CLOSING - ASSIGNMENTS

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

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.

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

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.

Sounds, Voices and Music

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

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.

Creating Animations

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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