

Instructor's Guide Scratch (9-11yo)

Our Learning Philosophy

Develop Mindsets

Fearless Exploration: Encourage them to explore and discover solutions on their own

Perseverance: Encourage them to try, experiment, and praise their success

Collaboration: Teach them to respect different opinions, and start by respecting theirs

Creative Expression: Encourage them to break the boundaries of the assigned challenges

Be Honest

Don't pretend to know something that you don't. It's ok to say "I don't know, let's find out".

Don't pretend to not know something that you do. It's also ok to say "I know, but I'll like you to try yourself."

Learn Together

There are no experts. Only learners. You're not there to provide answers, you're there to help them find their own.

Have Fun

Even if all everything fails, let's have fun failing!

MONDAY

1 Hour

Programme

Getting Started

- Explore Scratch
- Share what you've found!

Objectives

Instill the courage to explore, discover, and try new things without hand-holding.

Activities

- Introduce yourself. Keep it short. You'll do this again later in more details.
- Discuss class rules with kids.
- Introduce Scratch Slide 2.

- Show the students how to login. (Slide 3)
- Distribute the login ID and password. Students may use their own account if they already have.

- Encourage the students to go wild! Assure them that nothing is gonna to break.
- Move around, ask the students to show you what they've discovered. Challenge them to to discover more. (eg. if they made the cat move, challenge them to make it speak and sing).
- Get selected students to showcase what they have discovered. Don't leave the showcase to the end; it'll get too long and boring. Spread it out.

2 Hours

Programme

Showcasing You!

- Introduce yourself and a friend with Scratch
- Actions and Sequencing
- Movement and Animation

Objectives

Ice-breaker. Get to know others. Basic sequencing and events in Scratch.

Activities

- Introduce yourself again. This time using Scratch. (Intro.sb2)
- Show the students your Scratch program. Explain how it works. You may use slides 5 to 11.

- Ask them to get to know each other. They should find at least 2 friends (...can be more) and find out at least 1 interesting things about each of them.
- They should then create a Scratch program that introduce 3 interesting thing about themselves, as well as introduce their 2 (...or more) friends. Allow 2 mins per student.

2 Hours

Programme

This Takes the Cake!

- Events
- User controls
- Conditions and loops
- Parallelism

Objectives

- Understand the concept of “events” and how they trigger something to happen.
- Understand that the above concept don’t just apply to computers.
- Learn how to use “if ... else ...” and loops to control a program.
- Understand that multiple scripts are running simultaneously.

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
 - “Day 1-1 (Controls).sb2”
 - “Day 1-2 (Falling Cake).sb2”
 - “Day 1-3 (Catch the Cake).sb2”
 - “Day 1-4 (Mouse Pen).sb2”
- Save the programs, we’ll use it again tomorrow.

TUESDAY

1 Hour

Programme

- Keeping Track
- Variables
 - Using the image editor

Objectives

- Understand the concept of variables, and how one thing can represent another
- Use image editor

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
 - “Day 2-1 (Catch the Cake with Hunger).sb2”
- Demonstrate how to use the image editor. Challenge them to create their own sprite and background.

2 Hours

Programme

- Working Together
- Learning to collaborate
 - Interprocess communication
 - Sharing, critique, improvements

Objectives

- Collaborate, respect each other, accept criticism.

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
 - “Day 2-2 (Broadcast).sb2”
- Group the students in groups of 3 to 4.
- Students should work together to plan out a story using pen and paper.
- They should then work together on a single computer to create the story.
- Each student may program only one sprite.
- Randomly select students to present their collaborative story.
- Ask viewers to comment...
 - What can be improved.
 - What was confusing about the story.
 - What do you like about the story.
- Remind students that there are no right answers. Everyone will have a different opinion on what works and what don't.
- If there is sufficient time, do the review in the middle of the session, and let the students improve on their story after receiving comments.

2 Hours

Programme

- Cats Love Cheesy-Puffs
- Movement and interactions
- Keeping score

Objectives

- Control sprites using mouse.
- Practice programming movement, interactions, and variables.

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
- “Day 2-3 (Cat and Mouse).sb2”
- “Day 2-3 (Cat and Mouse with Cheesy Puffs).sb2”

WEDNESDAY

1 Hour

Programme

Just Add Friends
- Multiplayer games

Objectives

- Multiplayer game.
- Different game genre.
- Practice using variables.

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
- “Day 3-1 (Multiplayer race).sb2”

2 Hours

Programme

Fruits Pong
- Enhanced version of Pong
- Logic operators

Objectives

- Control sprites using mouse.
- Practice programming sprites to movement
- Practice using variables

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
- “Day 3-2 (Fruits Pong).sb2”
- “Day 3-3 (Fruits Pong with Score).sb2”
- “Day 3-4 (Fruits Pong with Fruits).sb2”

2 Hours

Programme

Save the Earth
- Multiplayer asteroid game
- Directions and movement

Objectives

- No new skills, but introduce the technique of shooting out a sprite.

Activities

- Demonstrate Scratch program. Let them try it out, then issue the challenges.
- “Day 3-5 (One Ship One Asteroid).sb2”
- “Day 3-6 (Two Ships Many Asteroids).sb2”

THURSDAY

1 Hour

Programme

Start and End

- ~~Starting, ending, multi-levels~~ (Amended)

Jump straight into the Ghost Busters game. We'll cover start and end in there.

Objectives

- Practice the learned skills using a complex and full featured game.

Activities

- Demo each stage of the game, but don't show how it is done.
- Show the challenge slide and let the kids figure it out themselves.
- Encourage them to be creative in creating their maze and game characters.

2 Hours

Programme

Ghost Busters I

- Combining everything into a complex game

Activities

- Continue with Ghost Buster game

2 Hours

Programme

Ghost Busters II

- Improving the game with traps and treasures

Activities

- Continue with Ghost Buster game
- Remind students to think about what they want to create tomorrow..