Enabling Digital Fluency

Ages 8 to 12

Objective

The WhoCodesProgram learning platform is looking to introduce "Computer Science Fundamentals" (CSF) curriculum for kids in the age group 8-12 years

EduJoy Learning proposes a customized curriculum designed for students in 8-12 years age group which builds CSF concepts in a fun and engaging manner

Audience

- Batch : 8-12 Years

Detailed Implementation Plan

Classroom Overview

Overview
- 18 Classes (customized for 8-12 age group)
- Develops Critical Thinking, Collaboration, Creativity and Communication

Core concepts:
- Digital Citizenship
- Sequencing, Loops, Events
- Conditionals
- Binary and Data
- Games and animations

Attitudinal goals:
- Programming is fun
- It's okay not to get it right the first time
- I can solve problems if I keep trying

Key teaching tips:
- Use the stories as a read-aloud and discuss the scenarios as a class
- Use pair programming where possible and encourage students to help each other
- Work through sample problems with students as a class
- Celebrate persistence as well as successes
- Remind students that they can go back and fix mistakes

Standards Mapping

This curriculum references CS Fundamentals which was written using both the K–12 Computer Science Framework [k12cs.org] and the 2017 Computer Science Teachers Association (CSTA) standards as guidance.

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Materials

- Laptop/Desktop (1:1)
    - Internet Connection
    - Google Classroom
    - Code.org
    - Zoom
- Headphones (1:1)
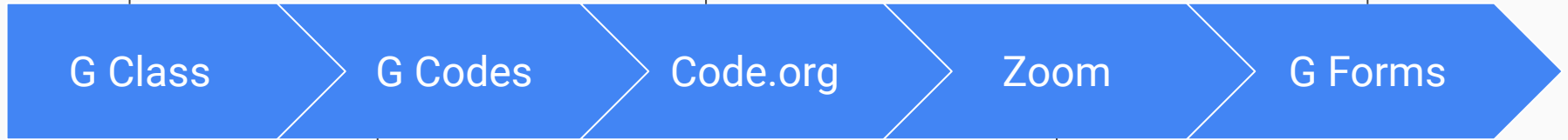
Classroom Methodology and Tools

Teacher:

Creates **Google Classroom** and account for each Student

Teacher:

Loads the Activity for each Student before the class

Teacher:

Assesses assignments and shares personalized feedback using G Class

| G Class | G Codes | Code.org | Zoom | G Forms |

Teacher:

Shares **Google codes** for each student and ensures access

Teacher:

Delivers lesson and facilitates knowledge and sharing
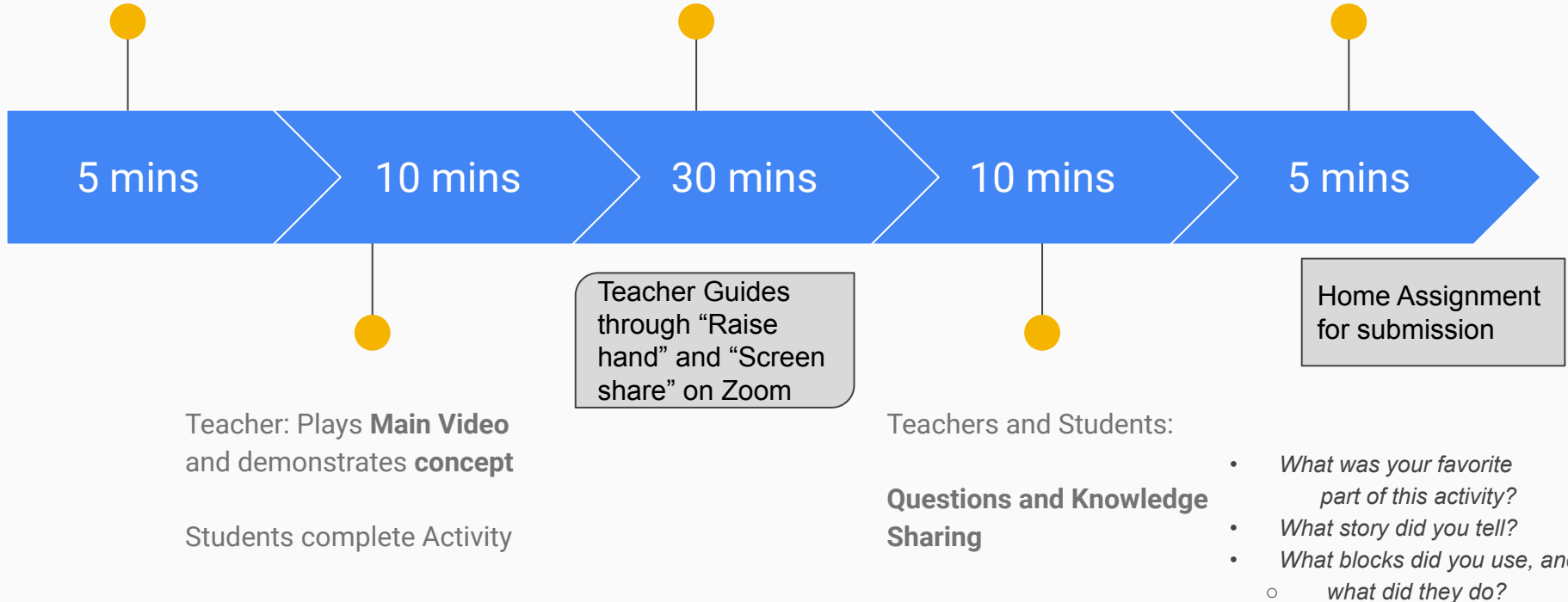
60 Minutes Detailed Plan

Teacher:

Recapitulation of Previous concepts

Students complete **"add on" activities/puzzles**

Guided by Teacher

Wrap up: by Teacher

Students submit project for assessment. Personalized feedback shared

| 5 mins | 10 mins | 30 mins | 10 mins | 5 mins |

Teacher: Plays **Main Video** and demonstrates **concept**

Students complete Activity

Teacher Guides through "Raise hand" and "Screen share" on Zoom

Teachers and Students:

Questions and Knowledge Sharing

Home Assignment for submission

- *What was your favorite part of this activity?*
- *What story did you tell?*
- *What blocks did you use, and*
  - *what did they do?*

Coding Camp (8-12 years)

	Class Name	Activity	Platform	Objective
T	Dance Party Animation	Animation	Code.org	Students build a dance animation . Introduction to Code.org, Google classroom and Cpding/Computer Science
1	Sequence	Puzzles	Code.org	Students will develop sequential algorithms step through the existing code to identify errors and fix them
2	Debugging and Passwords	PPT, Video, Puzzles, Game	Code.org	Students learn about passwords
3	Loops	Puzzles, Video	Code.org	Students learn about repetitions
4	Loops Practice	Puzzles, Video	Code.org	Students do art loops and also have fun with Minecraft
5	Binary Bracelet	Puzzles, PPT, Video	Code.org	Students learn about Binary

Coding Camp (8-12 years)

	Class Name	Activity	Platform	Objective
6	Build your Game - 1	Play Lab	Code.org	Students will create their own games using Play Lab demonstrating concepts learnt so far!
7	Events and Flappy Game	Puzzles	Code.org	Introduces events and build your own game!
8	Events and Star Wars Game	Puzzles	Code.org	Introduces events and build your own game!
9	Nested and Art Loops	Puzzles, Video	Code.org	Students learn Nested loops
10	Conditionals	Puzzles	Code.org	Students learn conditions and how to apply them
11	While and Until Loops	Puzzles	Code.org	Students learn while/until loops and how to apply them

Coding Camp (8-12 years)

	Class Name	Activity	Platform	Objective
12	Digital Citizen-2 and Binary images	Puzzles	Code.org	Students learn about binary images and how to draw them.
13	Build your own Games - 2	Puzzles	Code.org	Students will create their own games using Play Lab demonstrating concepts learnt so far!
14	Games and Animations Intro	Game Lab	Code.org	Students are introduced to Game Lab and begin to use it to position shapes on the screen
15,16	Shapes and Parameters	Game Lab	Code.org	Students develop familiarity with shapes and different parameters on how to modify them
F	Final Project		Code.org	Final project demonstrating concepts learnt. Demo to Parents and Certificates Handling