

**Scratch Jr. Tufts University + MIT Media Lab. +
Playful Invention Company + Two Sigma**

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Scratch Jr.

Scratch for preschool children Beeps and/or recorded sounds

App for Android or IOS Repeat N times

NO variables NO if-then-else

Scenes + Actors (background and sprites)

Simple interactions (start, touch, hit)

Simple messages (6 “colours” only)

PARALLEL execution of scripts for the same event

Games made of (up to 4) scenes

No interaction between Scenes (apart “switch to”)

C
T
O
R
S

Cat

Barn

Chicken

+



SCENES

Categories

ACTIONS

Scratch Jr action bar icons: Say, Move, Turn, Speak, Grow, Shrink, Rotate, Spin, Repeat, Undo, Redo



Reaction sequence for Cat: Flag (1), Move (4), Repeat (2)

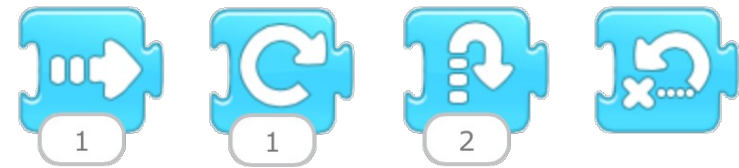
Reaction sequence for Chicken: Say (1), Repeat (1), Undo (4)

REACTIONS

Action Blocks

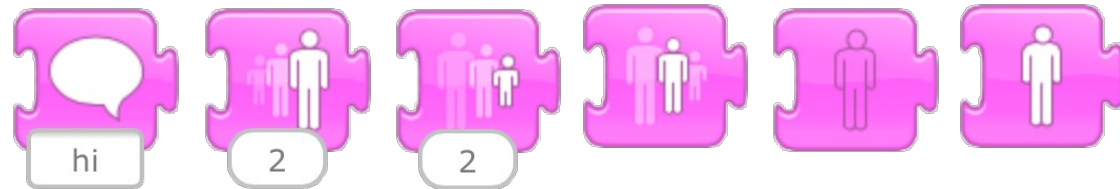
Motion

move/rotate/jump/go back



Look

say/grow/hide



Sound

”pop”/play recording



Control Blocks

Triggers



start on flag/touch/hit/got msg./send msg.

Control



wait/speed/halt/repeat

End

end/repeat forever/got to screen X



WHO'S MISSING?

IF/THEN/ELSE!!!

Interactivity

TOUCH

Kid vs. Agent (touch Agent)

Agent vs. Agent (Agent hits Agent)

HINT: to interact with the background use an “obstacle” Agent

TEXT or SOUND

Agent to kid (Agent shows message)

(Agent plays sound)

(Agent plays recording)

Styles of programming

Concurrent

Concurrent execution of multiple scripts for the same event

Event-based

Agent reactions to standard interactions AND/OR messages

Coordination

Message-based (messages are broadcasted to all agents in the SAME scene)

Time-based (by inserting wait)

MISSING

Variables

Values there's no input apart from movement/touch

IF-THEN-ELSE?

is “implicit” in the different events that could happen while the actors interact with each other

E.g. go to the “WIN/LOST” screen if goal reached/wall hit

C.T. concepts

Sequence/Algorithm ordered actions to solve a task

Loops repetition of the same sequence

Parallelism different actions done at the same time

Events something starting a reaction

External: touch/hit

Internal: messages

Example: Interactive Labirynth

Agents:

- Arrows
 send msg
- Star moving
 (if got msg)
- Walls
 To be avoided
 go to “LOST”
- Goal
 go to “WIN”

