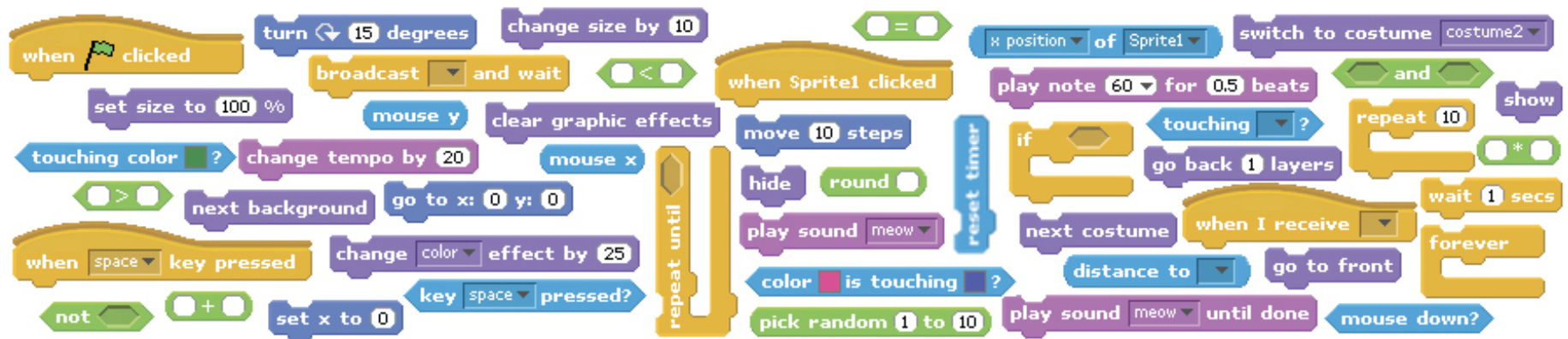


Creative Computing

A CS4HS Workshop

MIT Media Lab and Google

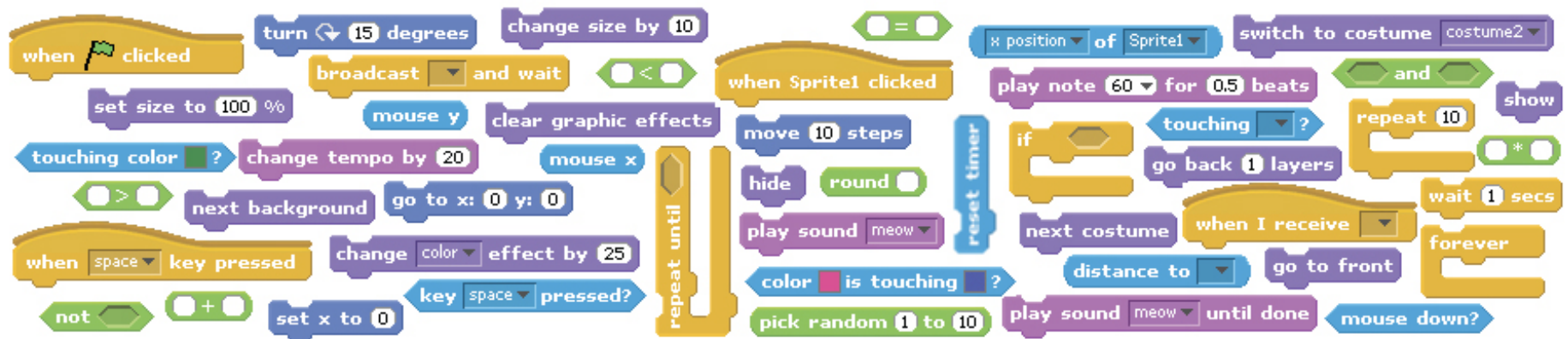


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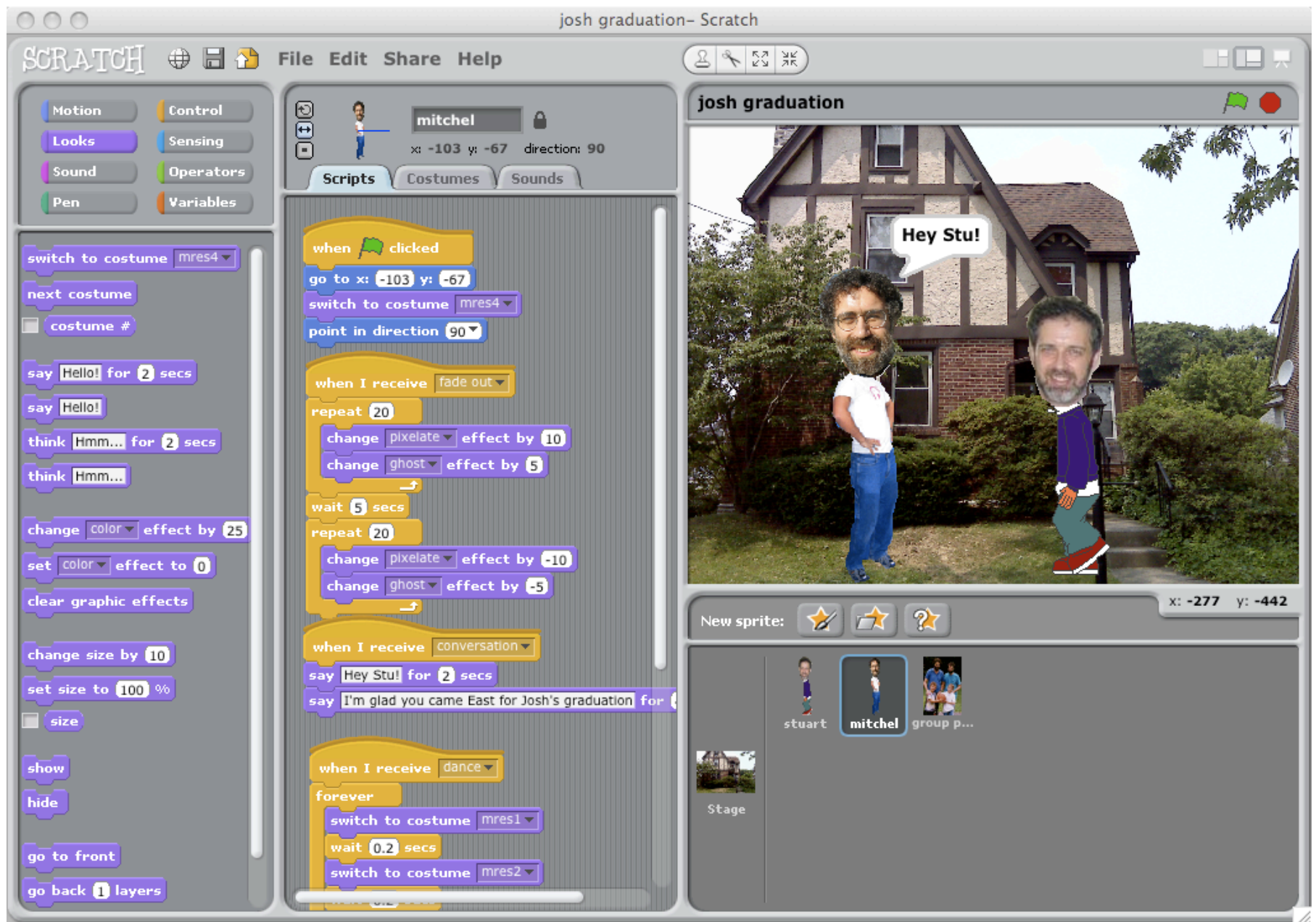
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Creative Computing

A CS4HS Workshop

Cultivating Computational Thinking and
Computational Creativity in the Classroom



	A	B	C	D	E	F	G	H	I
1	2007	Set 1	Set 1	Set 2	Set 2	Games	Games	Sets	Sets
2		K	M	K	M	K	M	K	M
3	6-Jan	6	1	2	3	8	4	1	0
4	8-Jan	5	5	0	0	5	5	0	0
5	15-Jan	6	3	1	1	7	4	1	0
6	22-Jan	1	6	5	2	6	8	0	1
7	8-Feb	6	3	3	2	9	5	1	0
8	12-Feb	6	5	0	0	6	5	0	0

30	29-Sep	7	6	2	1	9	7	1	0
31	8-Oct	2	6	0	0	2	6	0	1
32	22-Oct	6	3	1	2	7	5	1	0
33	29-Oct	2	6	2	1	4	7	0	1
34	5-Nov	6	4	1	0	7	4	1	0
35	10-Nov	6	4	0	0	6	4	1	0
36	19-Nov	6	3	3	2	9	5	1	0
37	26-Nov	5	4	0	0	5	4	0	0
38	3-Dec	4	6	0	0	4	6	0	1
39	23-Dec	7	5	0	0	7	5	1	0
40	27-Dec	5	6	0	0	5	6	0	0
41	Total	195	162	47	41	242	203	22	9
42		55%	45%	53%	47%	54%	46%	71%	29%

	A	B	C	D	E	F	G	H	I
1	2007	Set 1	Set 1	Set 2	Set 2	Games	Games	Sets	Sets
2		K	M	K	M	K	M	K	M
3	6-Jan	6	1	2	3	8	4	1	0
4	8-Jan	5	5	0	0	5	5	0	0
5	15-Jan	6	3	1	1	7	4	1	0
6	22-Jan	1	6	5	2	6	8	0	1
7	8-Feb	6	3	3	2	9	5	1	0
8	12-Feb	6	5	0	0	6	5	0	0

30	29-Sep	7	6	2	1	9	7	1	0
31	8-Oct	2	6	0	0	2	6	0	1
32	22-Oct	6	3	1	2	7	5	1	0
33	29-Oct	2	6	2	1	4	7	0	1
34	5-Nov	6	4	1	0	7	4	1	0
35	10-Nov	6	4	0	0	6	4	1	0
36	19-Nov	6	3	3	2	9	5	1	0
37	26-Nov	5	4	0	0	5	4	0	0
38	3-Dec	4	6	0	0	4	6	0	1
39	23-Dec	7	5	0	0	7	5	1	0
40	27-Dec	5	6	0	0	5	6	0	0
41	Total	195	162	47	41	242	203	22	9
42		55%	45%	53%	47%	54%	46%	71%	29%

Interim Set 1: Use binomial expansion to calculate expected distribution of 6 games

$$(a+b)^6 \quad \text{where } a=0.55 \quad \text{and } b=0.45$$

<u>Score</u>	<u>Binomial Term</u>	<u>Probability</u>
6-0	a^6	0.028 0.03
5-1	$6 a^5 b$	0.14
4-2	$15 a^4 b^2$	0.28
3-3	$20 a^3 b^3$	0.30
2-4	$15 a^2 b^4$	0.19
1-5	$6 a b^5$	0.06
0-6	b^6	0.008
		<hr/> 1.008 cbk enough!



This project simulates a tennis match between Mitch and Ken, assuming that Ken wins $K\%$ of the games

To start: Click green flag, then press space bar

Registered: 2008-04-11
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... when your mum says go to bed and u think



Computational and Mathematical Concepts

sequence, iteration, conditionals, variables, event handling,
data structures, threads, synchronization, randomness, ...

Computational and Mathematical Concepts

sequence, iteration, conditionals, variables, event handling,
data structures, threads, synchronization, randomness, ...

Problem-Solving Skills

identifying, formulating, decomposing, & debugging problems

Design Skills

imagining, creating, tinkering, evaluating, remixing

Social-Emotional Skills

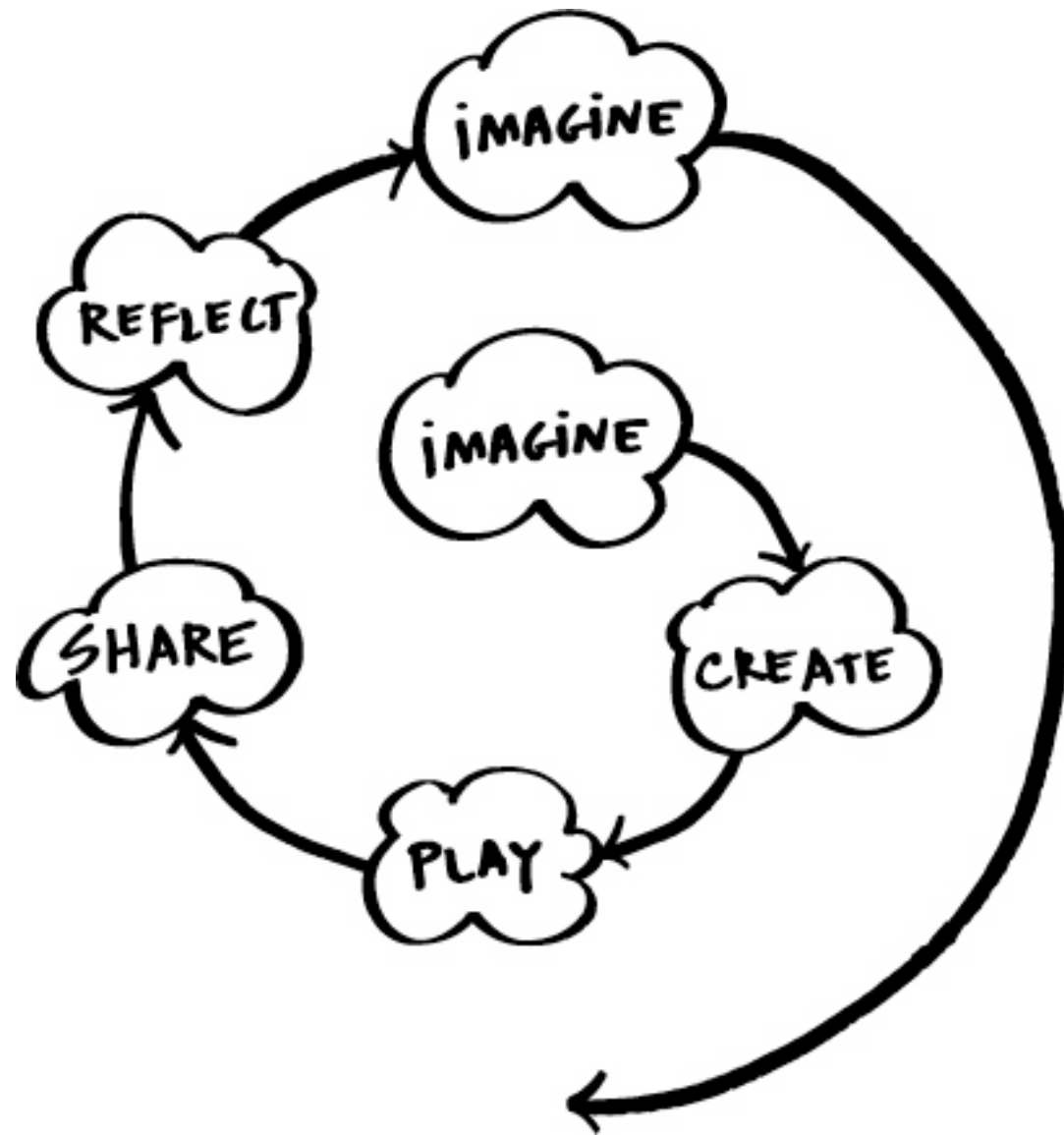
collaborating, sharing, persevering, reflecting

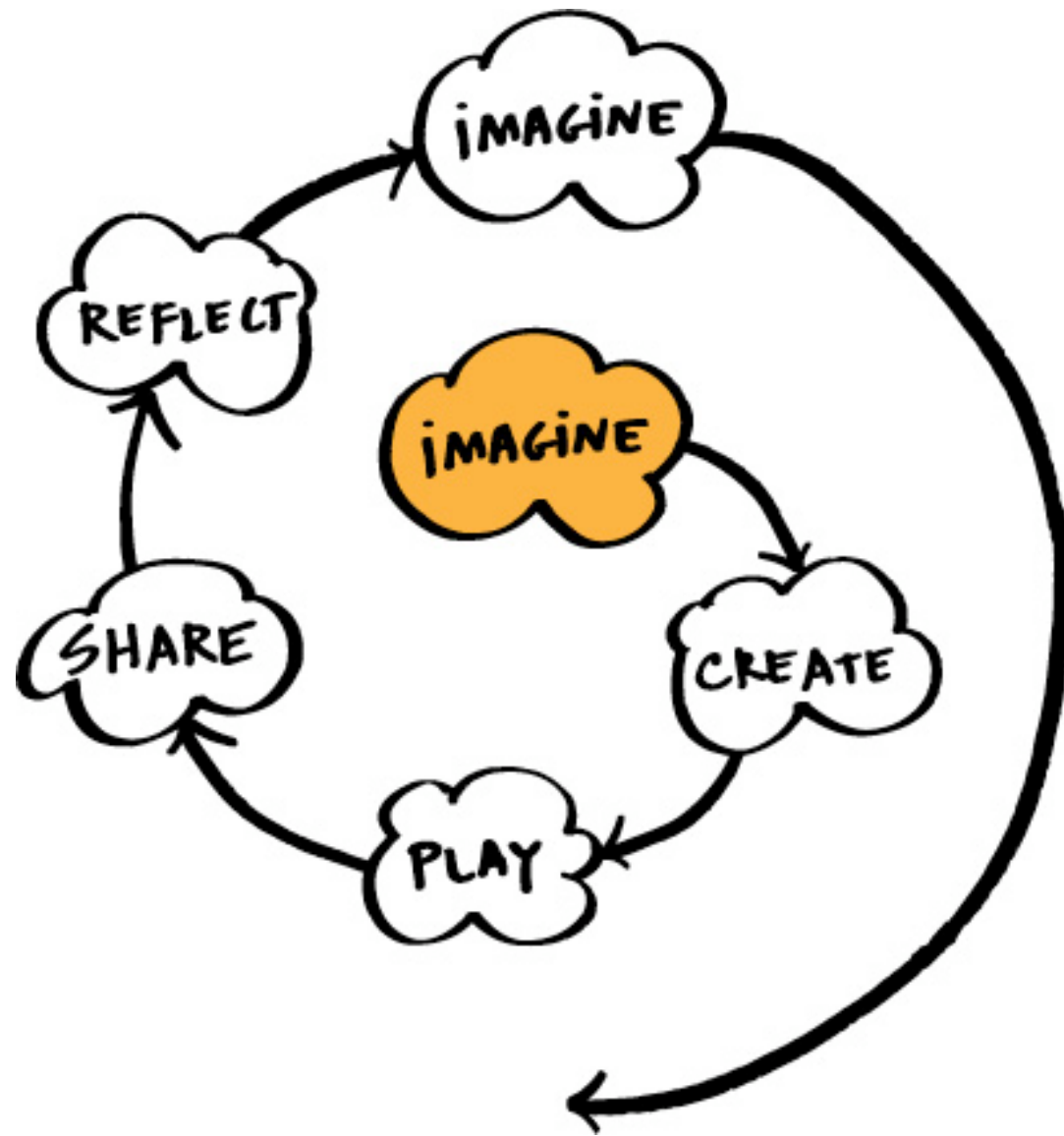
Pathways to Computational Thinking

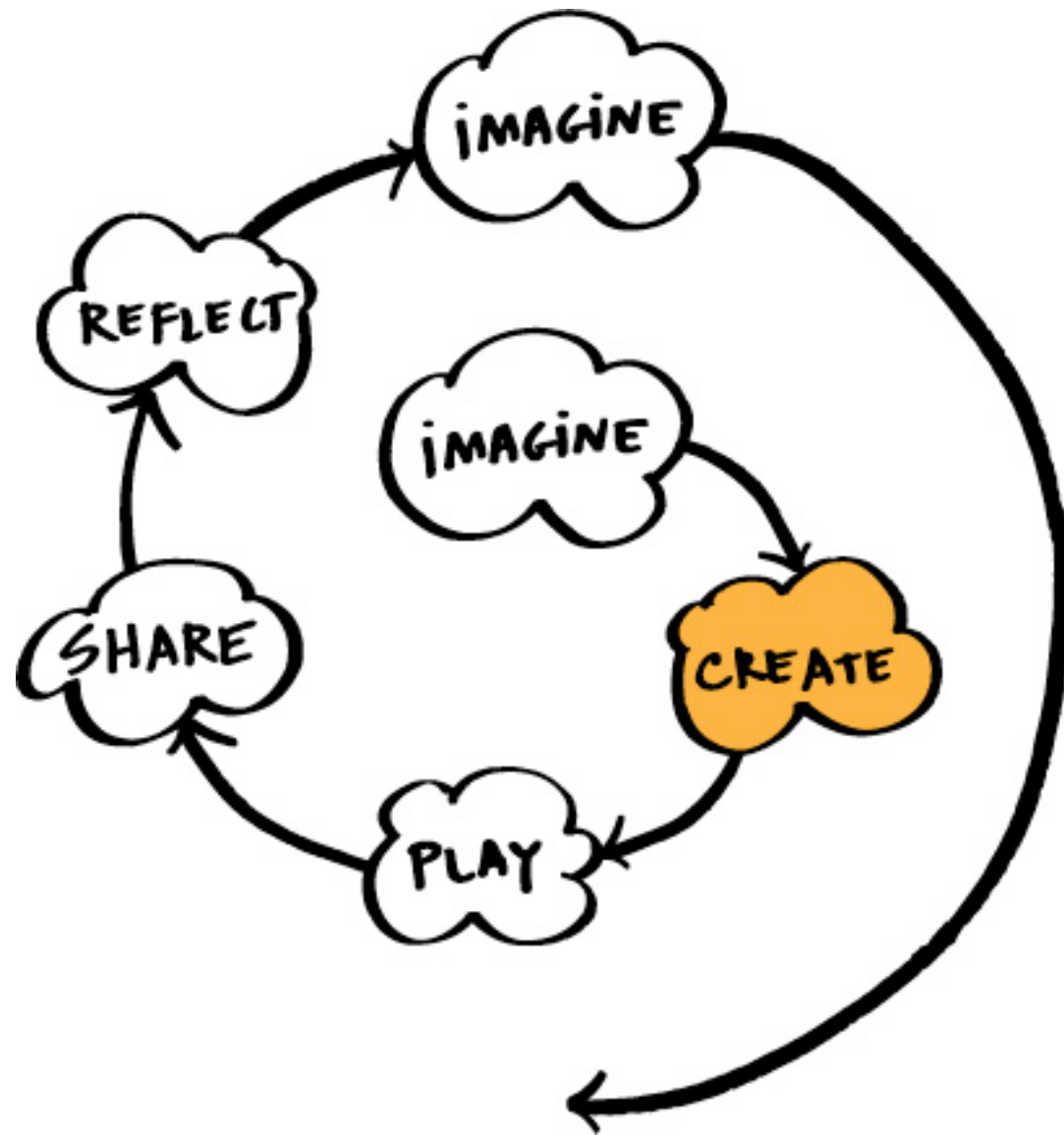
Learning through Designing

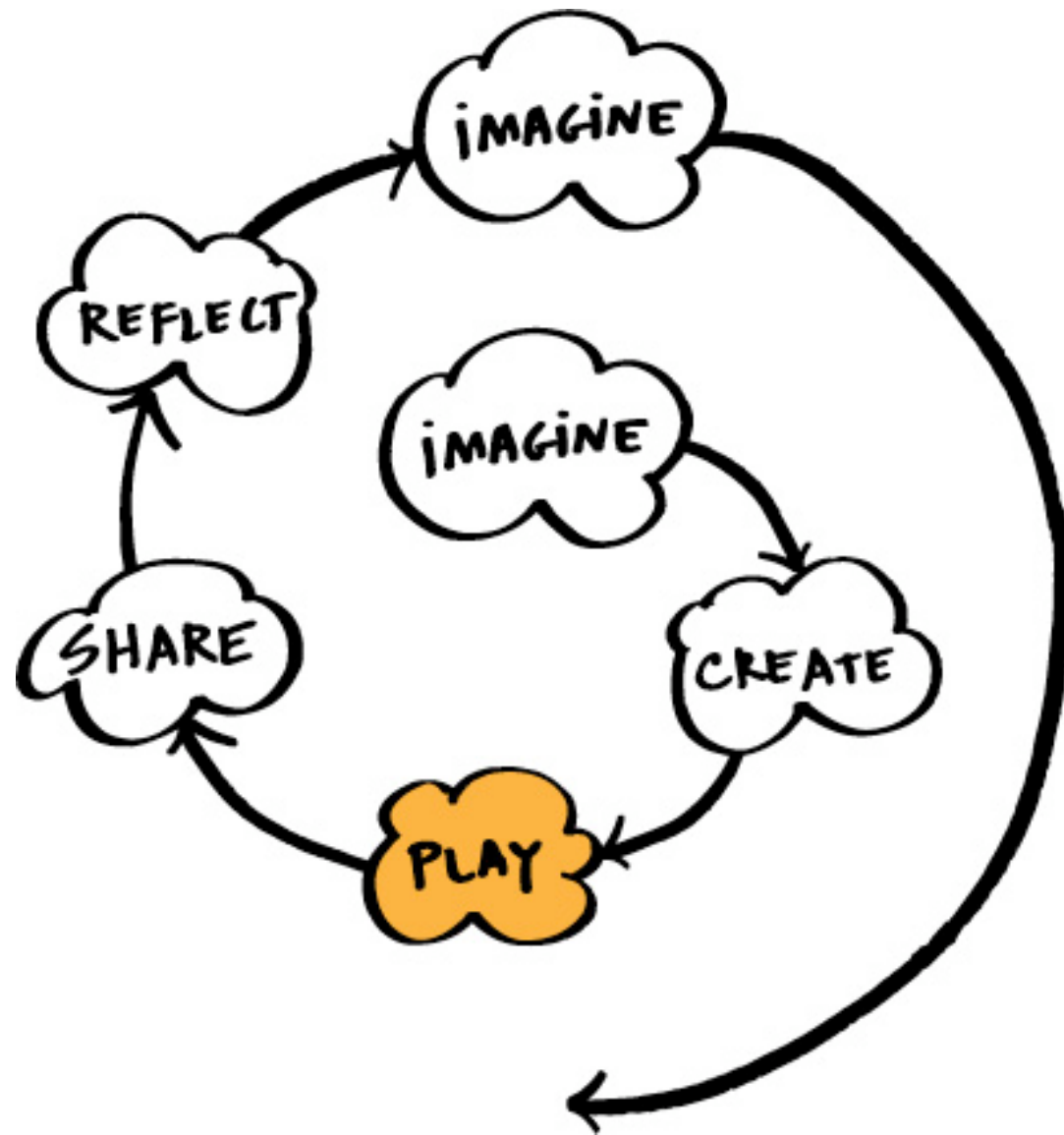
Building on Personal Interests

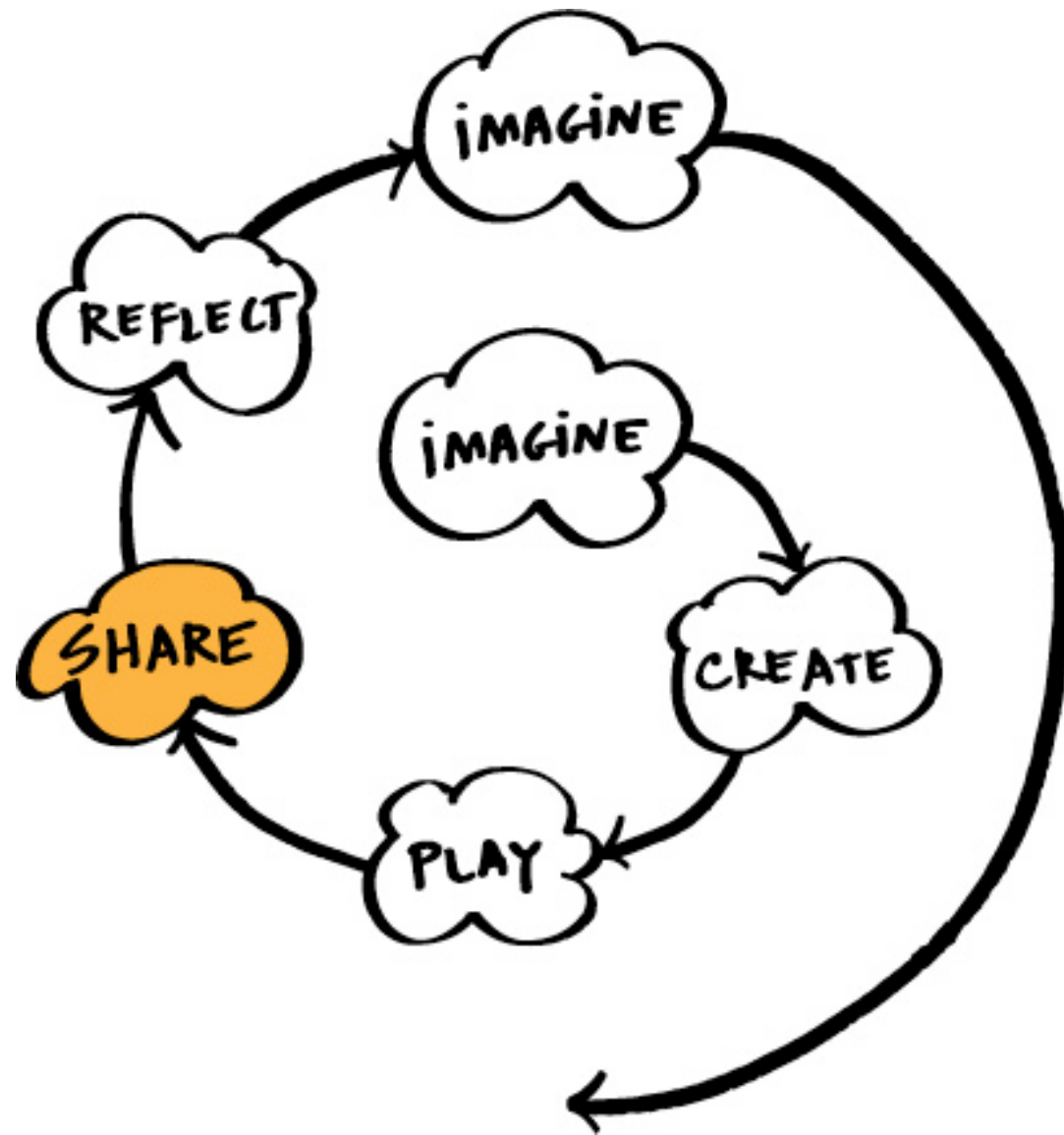
Collaborating Creatively

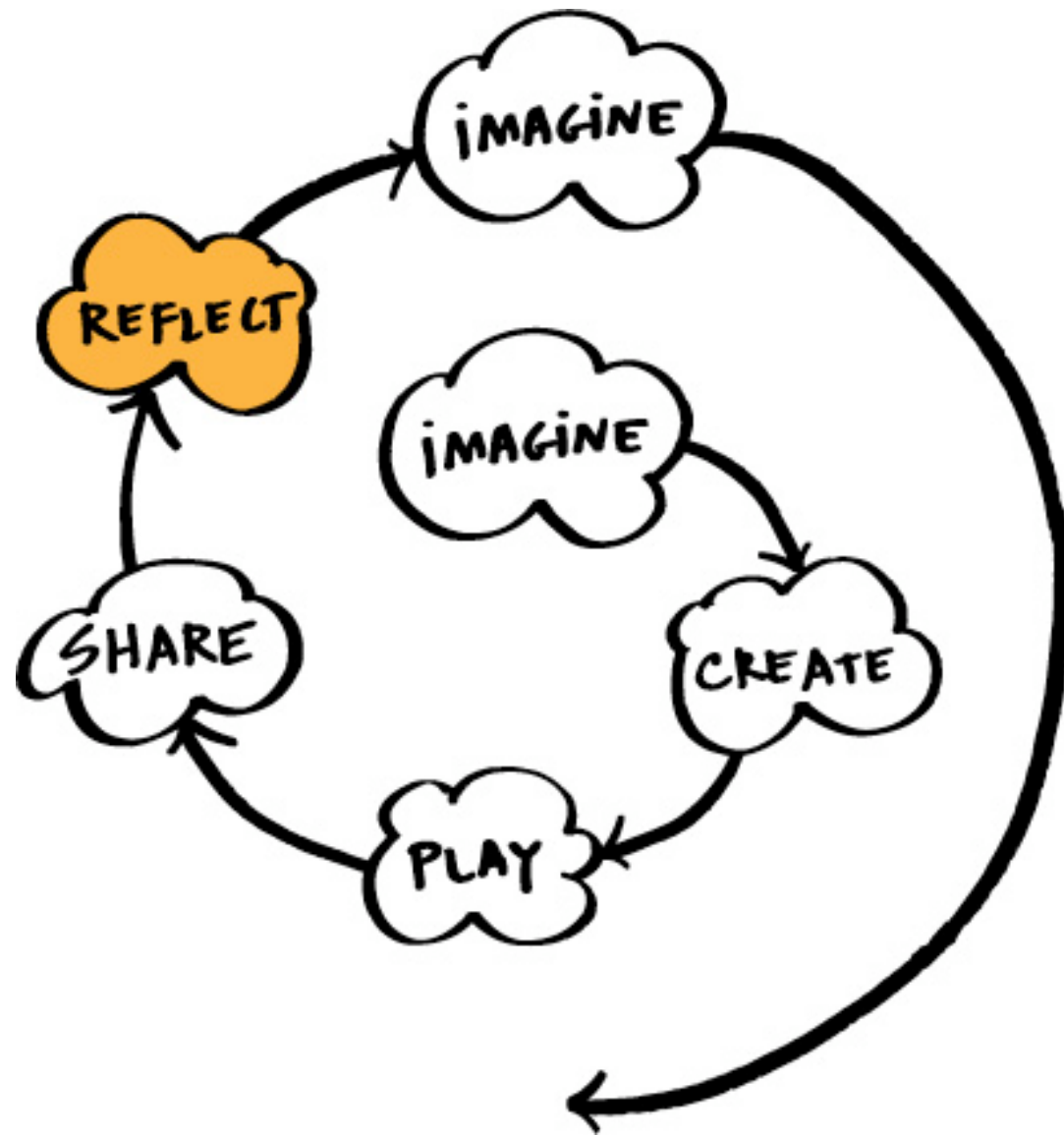


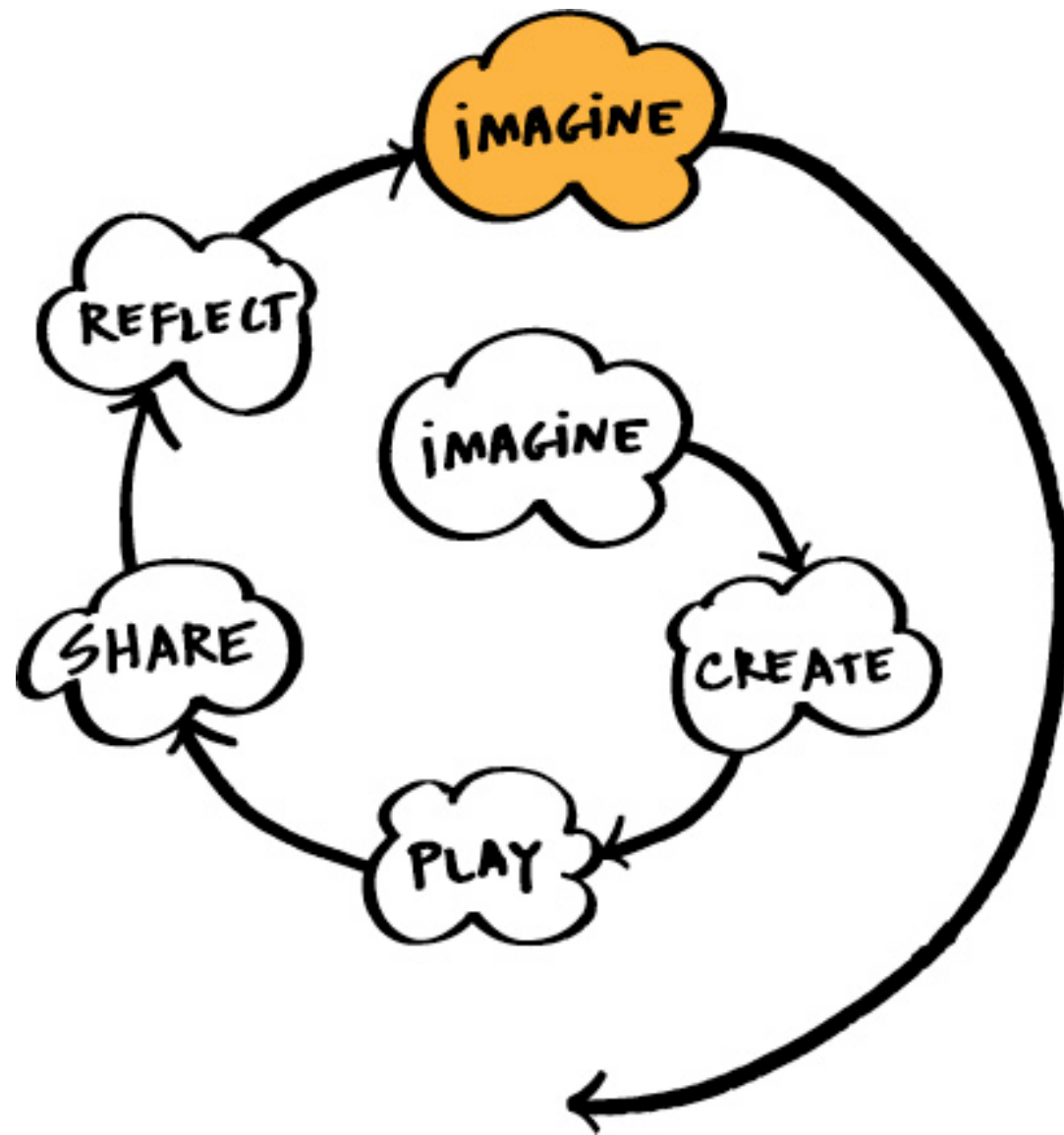












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Control

Looks

Sensing

Sound

Numbers

Pen

Variables



Sprite12

x: 5

y: -42

direction: 90

Scripts

Costumes

Sounds

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: 5 y: -42

go to

glide 1 secs to x: 5 y: -42

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

☐ x position

☐ y position

☐ direction

when clicked

wait 1 secs

forever

wait 0.2 secs

next costume

when clicked

wait 0.4 secs

play sound varada1

when clicked

wait 14 secs

play sound Valdhya1

wait 21 secs

play sound Suvarna Water1

wait 17 secs

play sound petrol Suvarna1

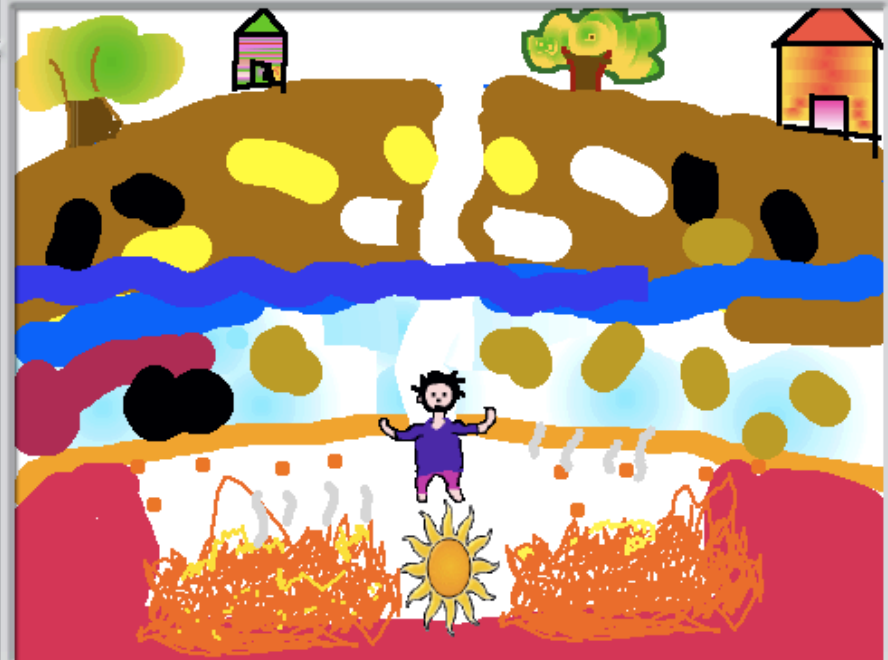
wait 14 secs

play sound Fire Suvarna1

when clicked

go to x: 12 y: 180

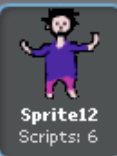
wait 10 secs



mouse x: 243
mouse y: -404

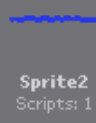


Stage



Sprite12

Scripts: 6



Sprite2

Scripts: 1



Sprite11

Scripts: 1



Sprite8

Scripts: 1



Sprite10

Scripts: 1



Sprite4



Sprite5

Scripts: 1



Sprite3

Scripts: 1



Sprite6

Scripts: 1



Sprite7

Scripts: 1



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when clicked
move 10 steps
play sound pop

Snap together blocks



to create
stories, games
and animations



and share your creations on
the web

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[Rectangles](#)



No circles, no
curvy lines, no
imported images.
What projects can
you make using

only the paint editor's Rectangle
tool to create sprites and
backgrounds?

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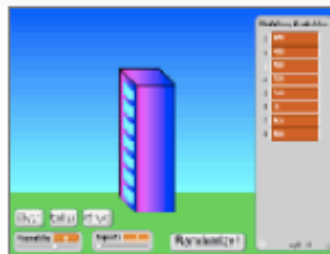
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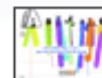


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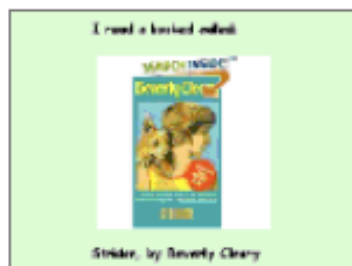
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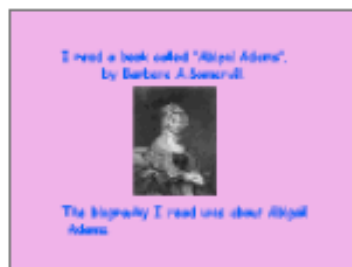
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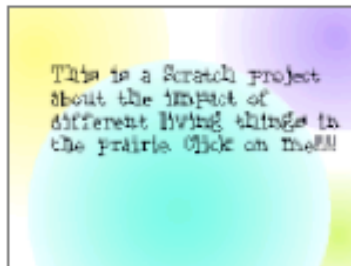
Gallery description

This space is for Scratch projects connected to books.

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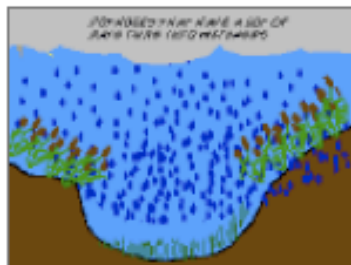
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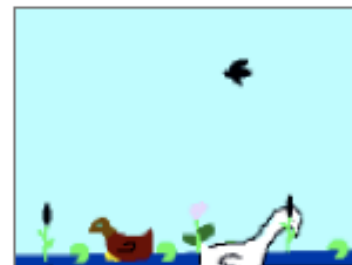
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Gallery description

Our class went camping and talked about ecosystems. The kids made a Scratch project to show a connection in a forest, prairie, or wetland ecosystem.

Computational Thinking

Computational Creativity

Learning through Designing

Building on Personal Interests

Collaborating Creatively