UNIT 1 LESSON 3

PATTERNS AND SEQUENCES IN WRITING

3RD & 4TH GRADE

Award #1837380

Lesson created by the GMU-ODU CSforAll Team. For more information about this lesson and our CSforAll initiative, contact Dr. Amy Hutchison at achutchison1@ua.edu

SUMMARY AND STANDARDS

Summary:

In this lesson, students will identify and create patterns and sequences in writing and also code a pattern and sequence.

ELA Standards:
The student will read and demonstrate comprehension of nonfiction texts.
The student will write in a variety of forms to include narrative, descriptive, opinion, and expository.
a)Engage in writing as a process.
c) Use a variety of prewriting strategies.
d) Use organizational strategies to structure writing according to type
g)Use transition words to vary sentence structure

CS Standards:
The student will construct sets of step-by-step instructions (algorithms), both independently and collaboratively
a) using sequencing;
b) using events.

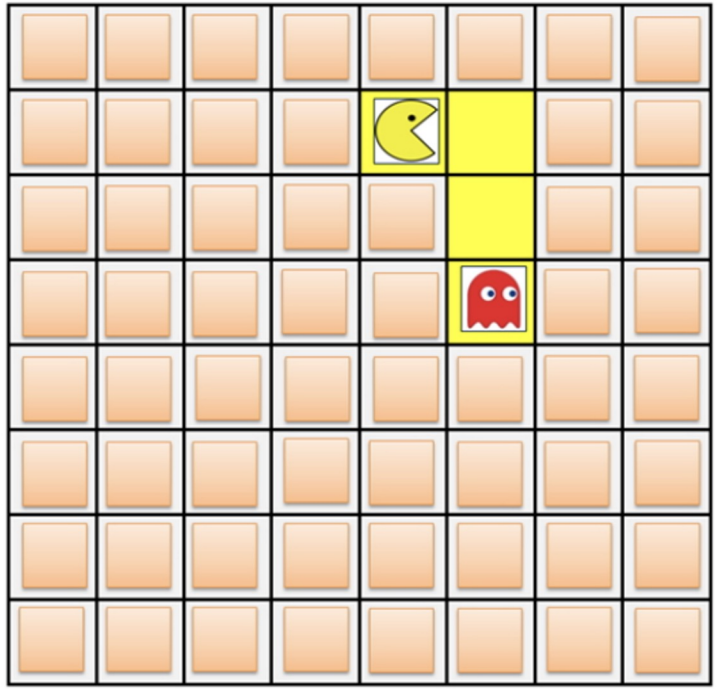
MATERIALS AND RESOURCES NEEDED FOR THIS LESSON:

- Teacher slide deck
- Student slide deck
- Chromebook/Laptop
- Internet Access
- Drink recipe graphic organizer:

WARM UP

PATTERNS & SEQUENCING REVIEW ACTIVITY

1. Open your student slides
2. Click on the link to the warm up
3. Answer each question
4. Review answers as a class!

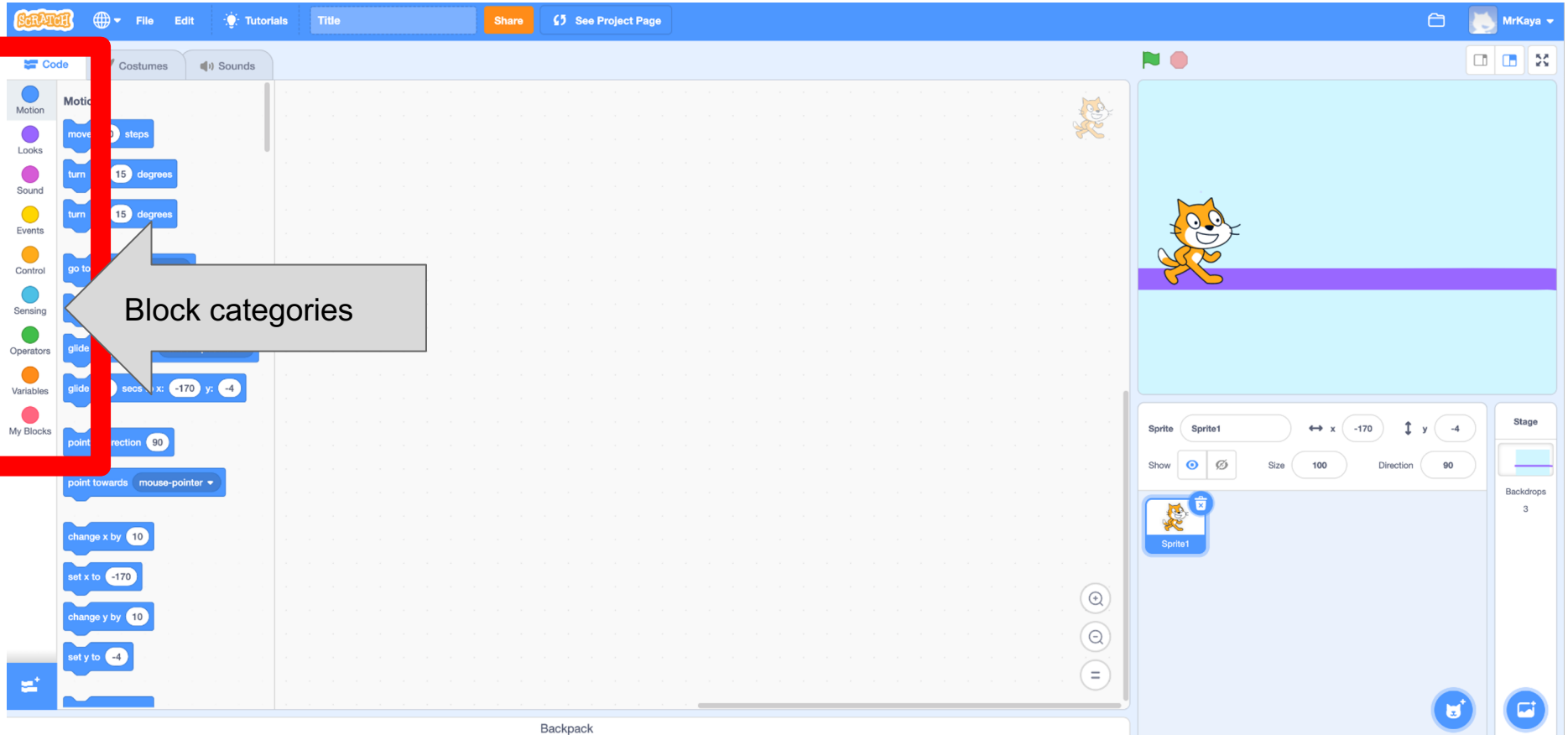


LESSON OBJECTIVES

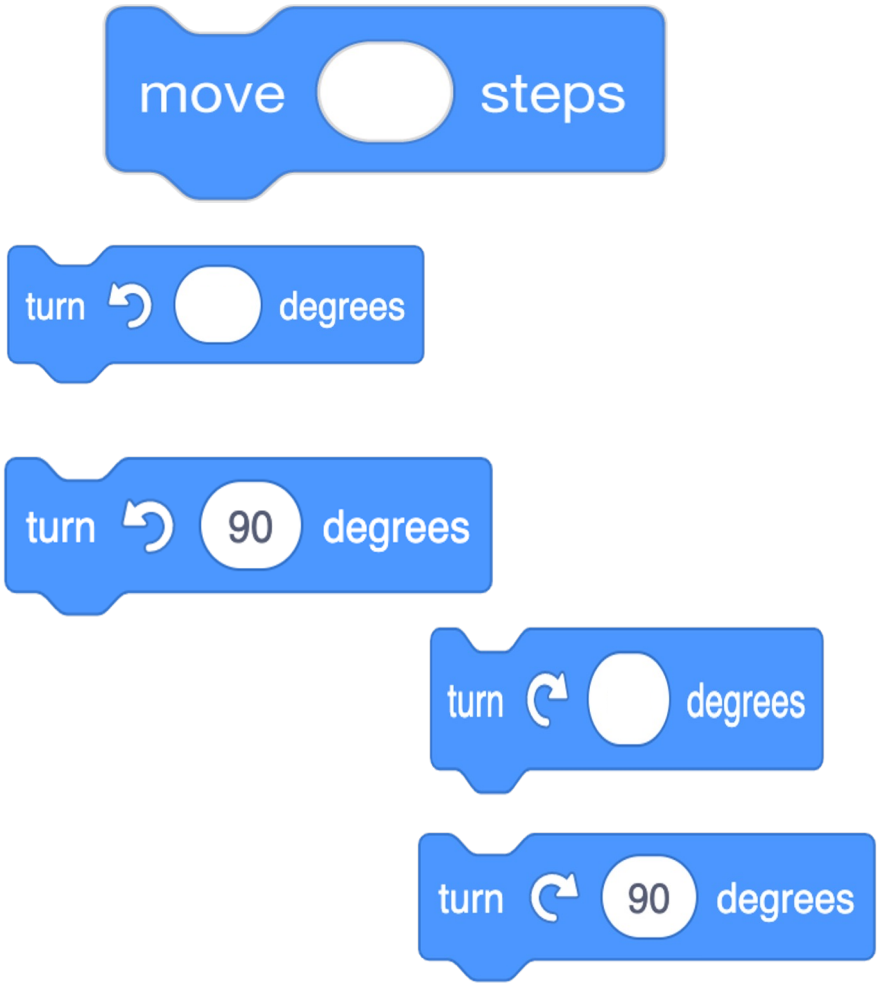
- ❏ Create a pattern and sequence a set of written instructions (Whole group)
- ❏ Identify patterns found in writing (EXPLANATORY)
- ❏ Participate in Pair Programming
- ❏ Identify and Operate Scratch blocks to create a sequence, using Move and Wait Blocks (Create a square)

INTRODUCING MOVE, TURN, & WAIT BLOCKS

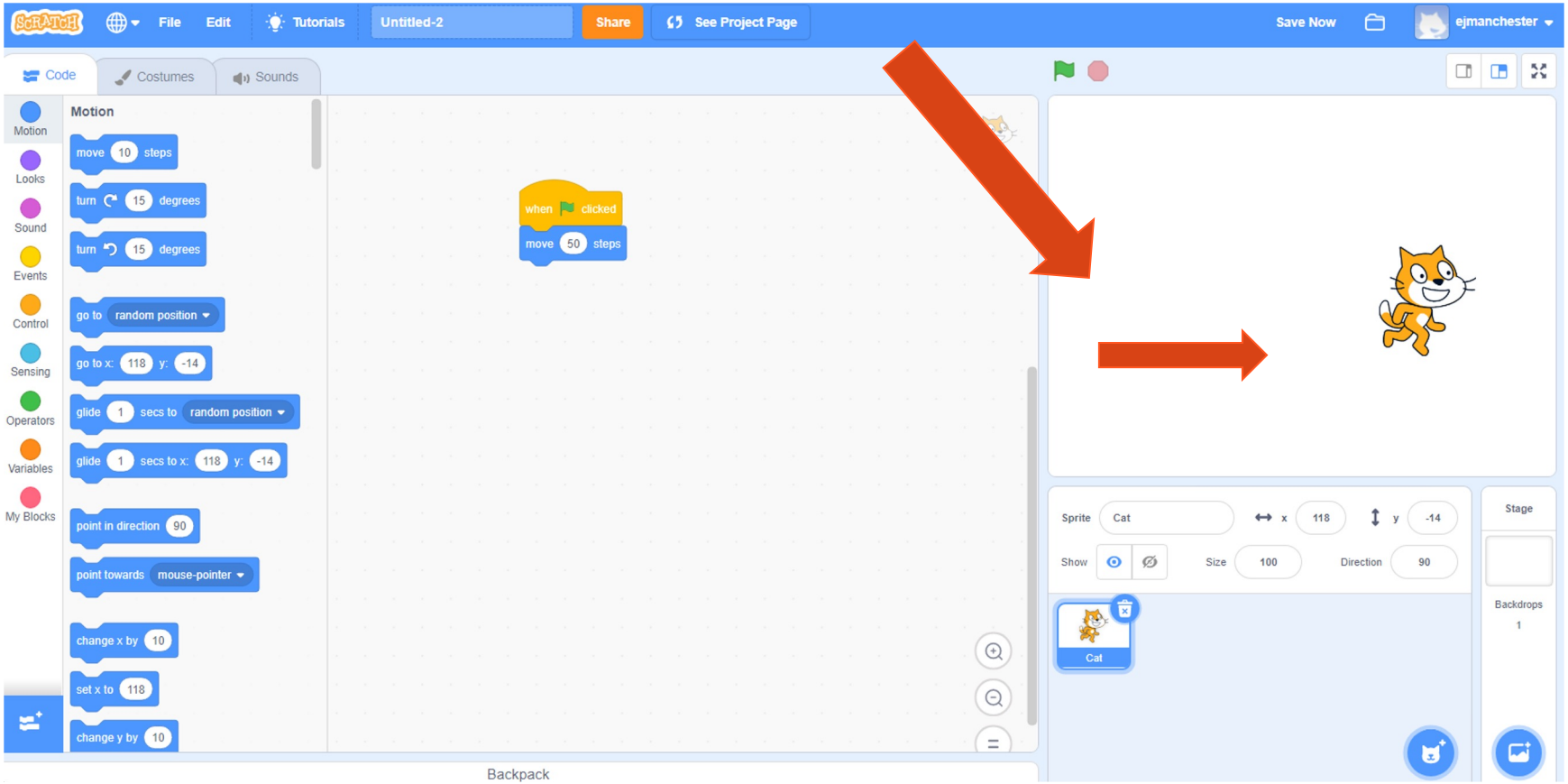
REMEMBER...


File
Edit
Tutorials
Title
Share
See Project Page
MrKaya
Code
Costumes
Sounds
Motion
Looks
Sound
Events
Control
Sensing
Operators
Variables
My Blocks
Block categories
move steps
turn 15 degrees
turn 15 degrees
point towards mouse-pointer
change x by 10
set x to -170
change y by 10
set y to -4
Sprite
Sprite1
x -170
y -4
Show
Size 100
Direction 90
Stage
Backdrops 3
Backpack

MOTION BLOCKS

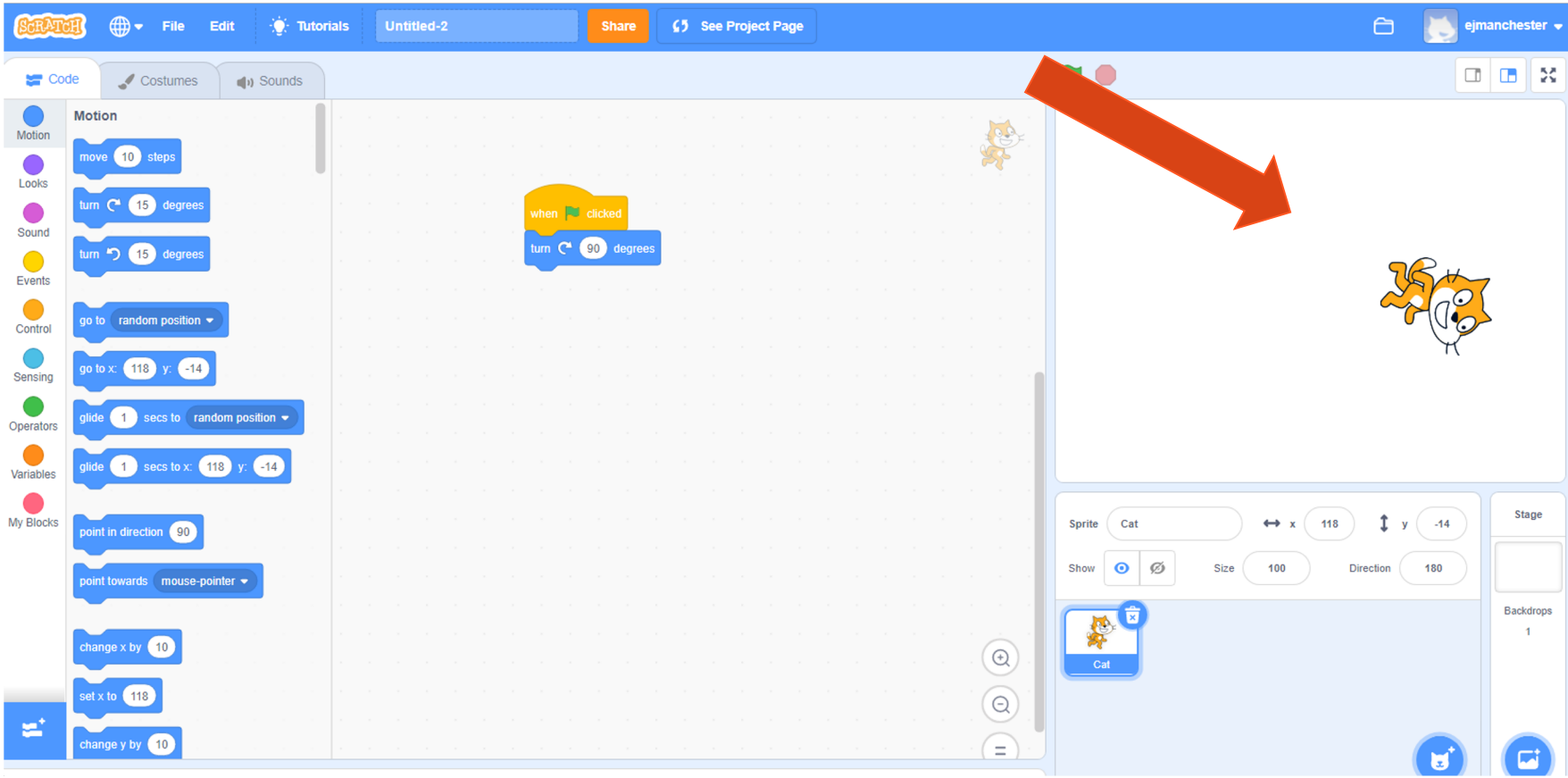


MOVE BLOCK (EXPLAINER VIDEO)



Moves your sprite a certain number of steps.

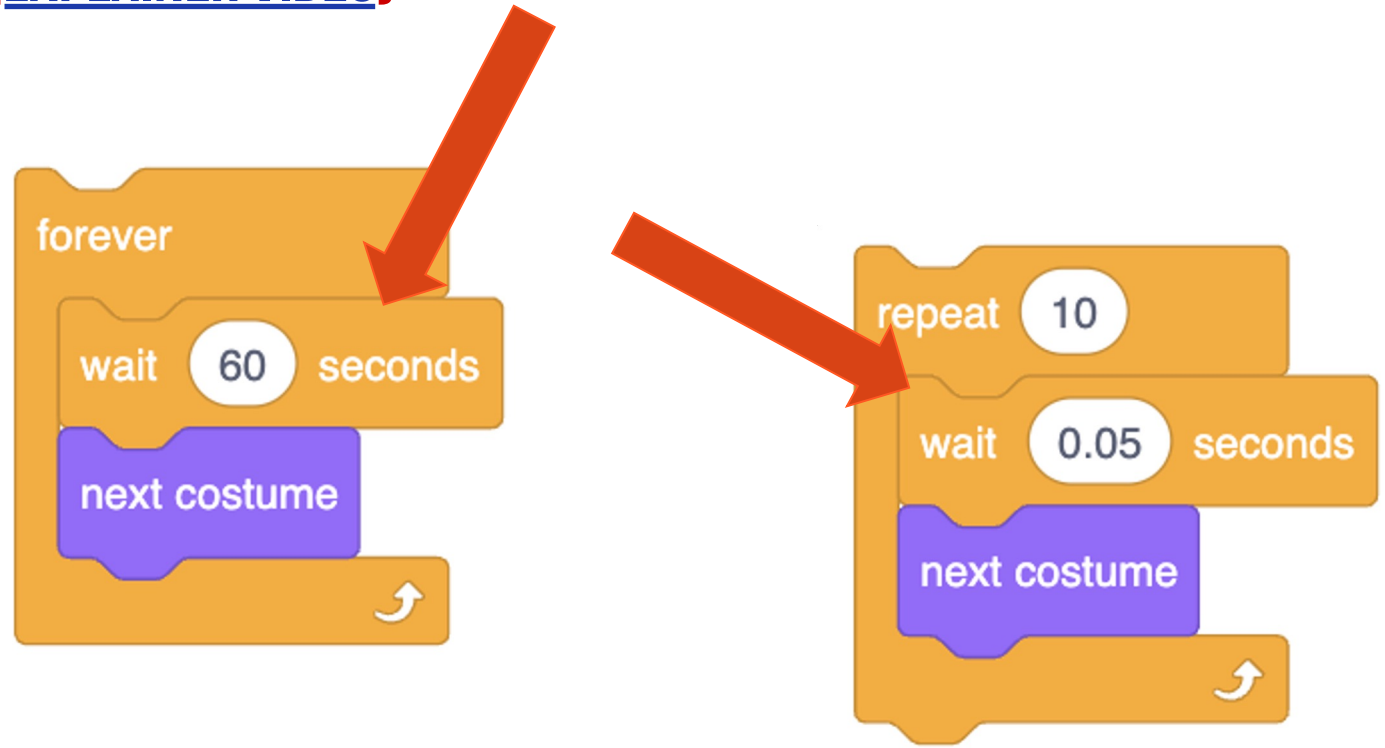
TURN BLOCK (EXPLAINER VIDEO)



Turns your sprite right or left by a matter of degrees.

CONTROL BLOCKS

WAIT BLOCK (EXPLAINER VIDEO)

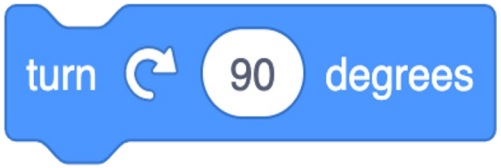


Your Sprite will PAUSE or wait for a specified amount of time.

ACTIVITY: WALK IN A SQUARE

IN SCRATCH, PROGRAM YOUR SPRITE TO WALK IN A SQUARE

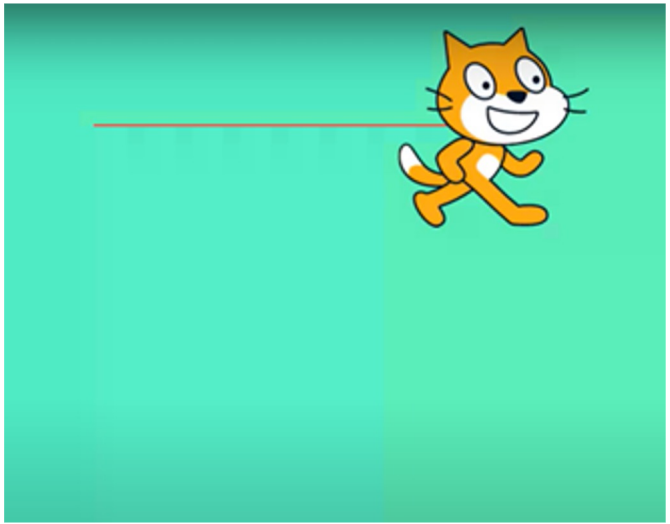
Use the new move, turn, and wait blocks we just learned to program your sprite to walk in a square.

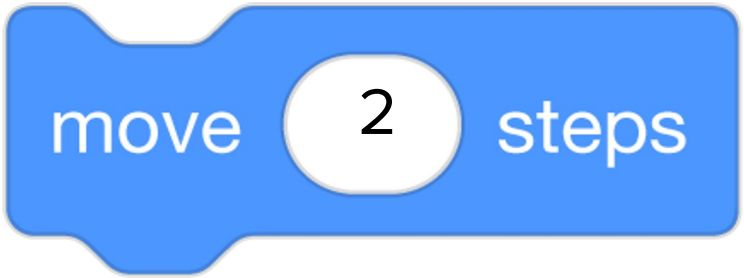


SOLUTION

COMMANDS FOR WALKING IN A SQUARE

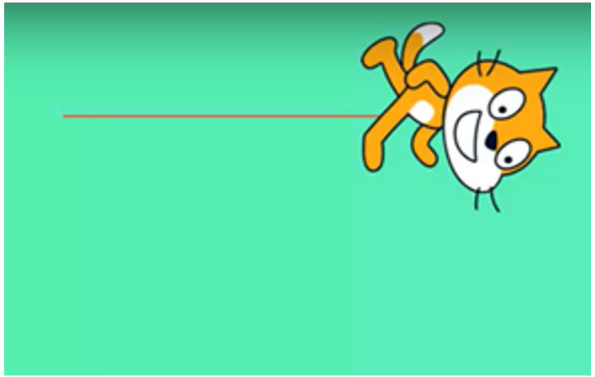
Step 1 (First): Walk forward 2 steps

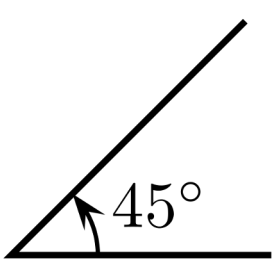


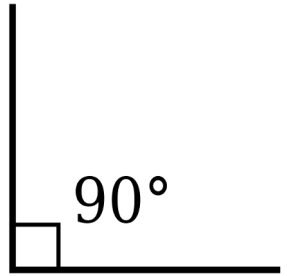


COMMANDS FOR WALKING IN A SQUARE

Step 2 (Then): Turn right

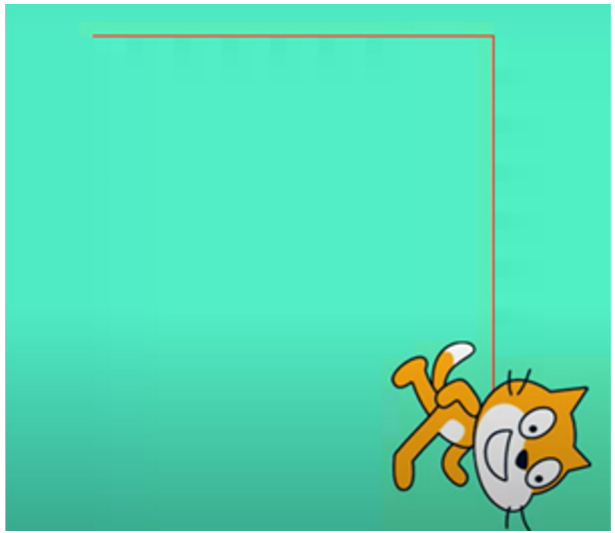






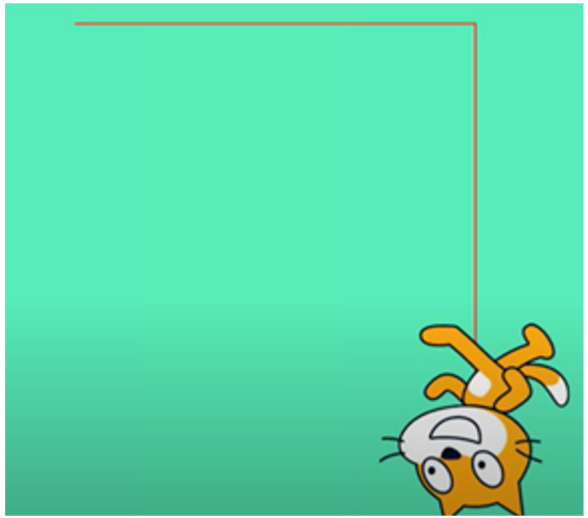
COMMANDS FOR WALKING IN A SQUARE

Step 3 (Next): Walk 2 steps



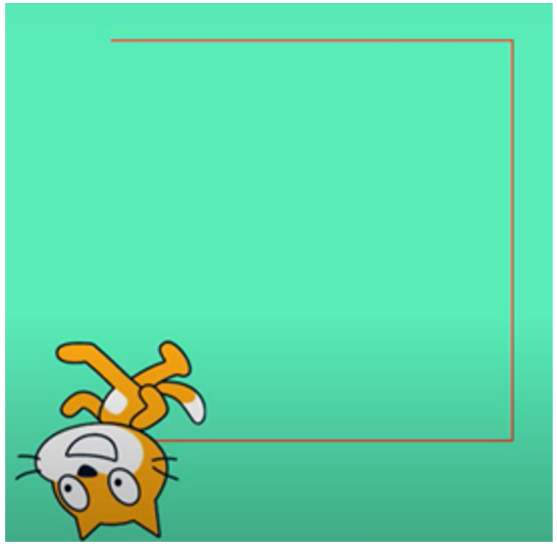
COMMANDS FOR WALKING IN A SQUARE

Step 4 (Then): Turn right



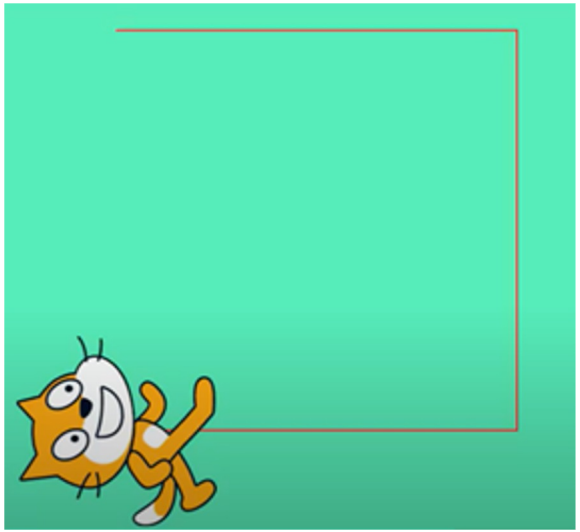
COMMANDS FOR WALKING IN A SQUARE

Step 5 (Next): Walk 2 steps



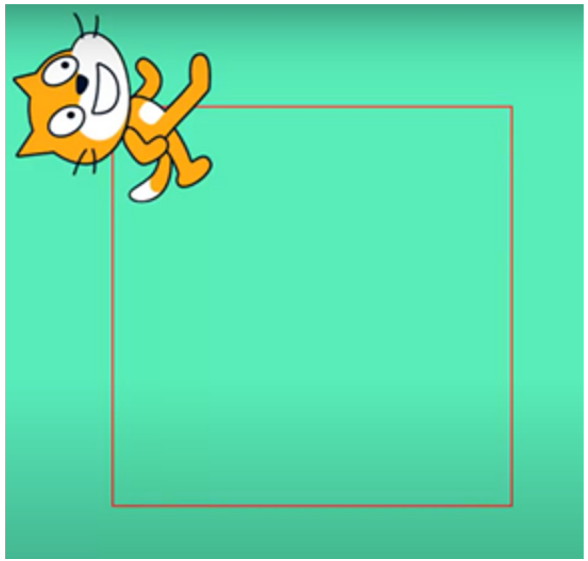
COMMANDS FOR WALKING IN A SQUARE

Step 6 (Last): Turn right



COMMANDS FOR WALKING IN A SQUARE

Step 7 (Finally): Walk 2 steps



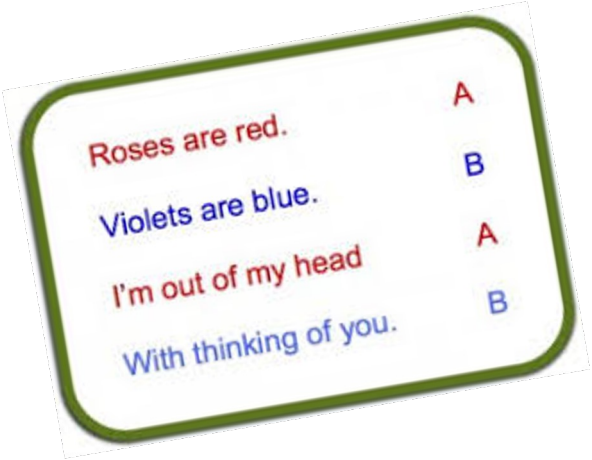
COMMANDS FOR WALKING IN A SQUARE

Written commands	Computer commands (code)
Walk forward 2 steps	move 2 steps
Turn right	turn ↻ 90 degrees
Walk 2 steps	move 2 steps
Turn right	turn ↻ 90 degrees
Walk 2 steps	move 2 steps
Turn right	turn ↻ 90 degrees
Walk 2 steps	move 2 steps

Patterns

PATTERNS IN WRITING

EXAMPLES OF PATTERNS IN OUR WRITING



GUIDED PRACTICE: EXAMPLE A

Daquan was watching TV and saw a commercial for pizza and that gave him a great idea! “I’ll just make my own pizza here at the house!,” he thought. He found his mom’s recipe, which said:

“First, roll out the squishy pizza dough with the rolling pin. **Then**, use a spoon to spread on the red pizza sauce on top of the dough. **Next,** add shredded cheese all over the top. **Last**, top it with pepperoni slices, covering the whole pizza. **Finally**, put the pizza in the oven at 425 degrees.”

After about 15 minutes in the oven, his homemade pizza was ready to eat!

DO YOU NOTICE A PATTERN?

WHAT IS EXPLANATORY WRITING?

Explanatory writing:

- **Explains** something to someone or helps them understand how to do something. So it is important to provide many details!
- Is written in a specific order or **sequence**
  - A sequence is a set of things that follow each other in a particular order, where order matters!
- Often uses sequencing words such as **first, next, then** and **last** to communicate the correct order of steps, also known as their sequence

FIRST

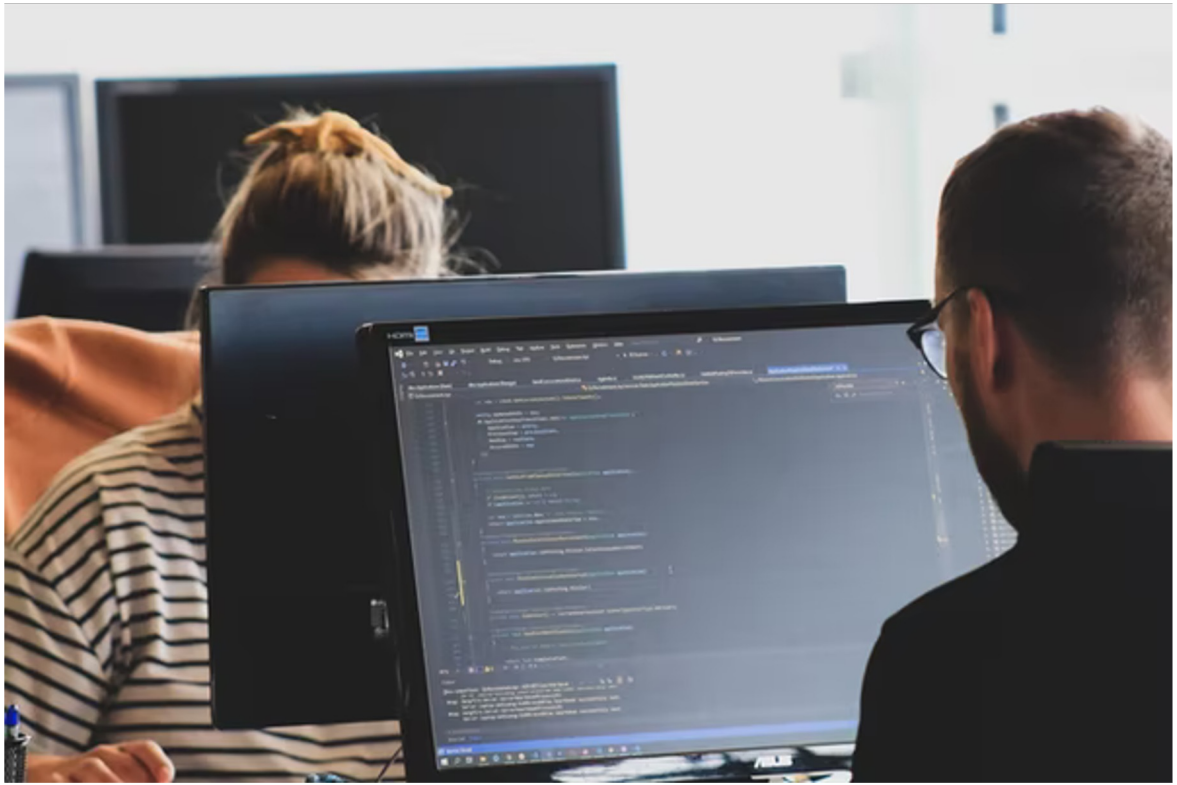
THEN

NEXT

LAST

FINALLY

FOR BOTH WRITING & COMPUTER SCIENCE, SEQUENCE IS VERY IMPORTANT!



INDEPENDENT PRACTICE

INDEPENDENT PRACTICE

Open your student slides.

Write a recipe for making a drink.

You may choose to write about lemonade, Koolaid, or another drink of your choice!

https://www.dropbox.com/scl/fi/qf1j67ajoq6tu0gacc460/Lemonade-or-Koolaid-recipe.docx.docx?dl=0&rlkey=4vm66w2jppnter0oqmgmw8i2t

WRAP UP

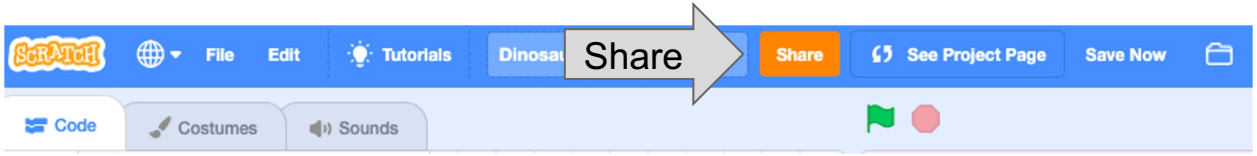
Can anyone share at least one “tip” for finding and using patterns in our writing or our code?

And remember: anyone can be a computer scientist!

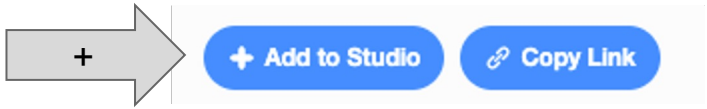
OPTIONAL

SHARING YOUR SCRATCH CREATION TO YOUR TEACHER'S STUDIO

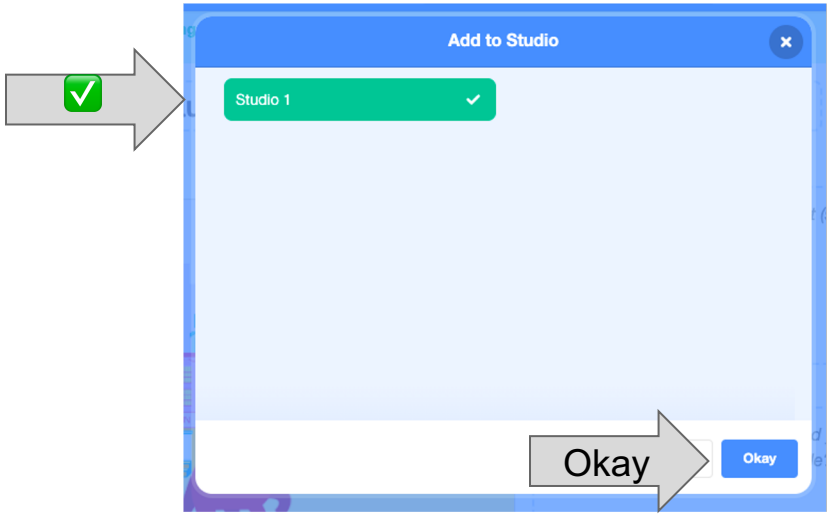
1. Click "Share" when you are done with your project.



1. Choose "+ Add to Studio".



1. Pick the designated Studio for the Unit.



1. Click "Okay".

HERE IS AN OPTIONAL VIDEO TO LEARN HOW TO SHARE YOUR PROJECT IN SCRATCH.

Pause here.

SCRATCH CHECKLIST

- I LOGGED INTO SCRATCH
- I SHARED MY PROJECT
- I ADDED MY PROJECT TO MY TEACHER'S STUDIO