Unit 1 Lesson 2

Scratch and Coco Level 1

5th & 6th Grade

CS FOR ALL

NSF
Award #1837380

SUMMARY AND STANDARDS

Summary:
In this lesson, students will learn about CoCo, a graphic organizer to help plan writing and coding and unscramble code for a Scratch project.

Content Standards:

The student will write in a variety of forms:
a) Engage in writing as a process
b) Identify audience and purpose
c) Use a variety of pre-writing strategies

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
- Independent practice: [Link to "How to Make Hot Chocolate" Scratch project](#)
- Solution video: https://scratch.mit.edu/projects/833988634
- Optional Video: Introduction to CoCo https://www.dropbox.com/s/encmn6pah86q zj9/CoCo%20Introduction.mp4?dl=0

Reminder:
In this lesson, every student should be **assigned a story in CoCo** using **Level 1.**

The story should be titled "**Unit 1, How to Make Hot Chocolate**"

Each student should save their work using this naming strategy: "**Student Name + Unit # + Descriptor**," for example, "**Johnny Unit 1, How to Make Hot Chocolate**"
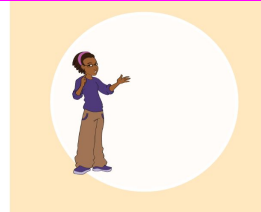
WARM UP: REVIEW SCRATCH BLOCKS!

Ok, let's start with a warm-up. We are going to review some of the scratch block we learned about last time.

REVIEW SCRATCH OBJECTS
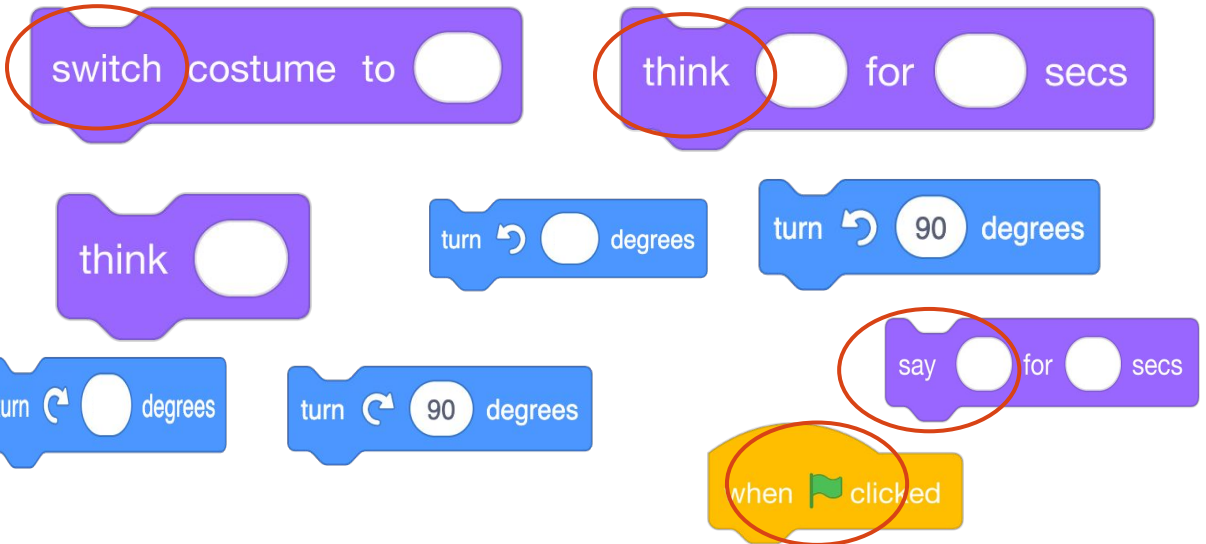
Block(s): commands in Scratch
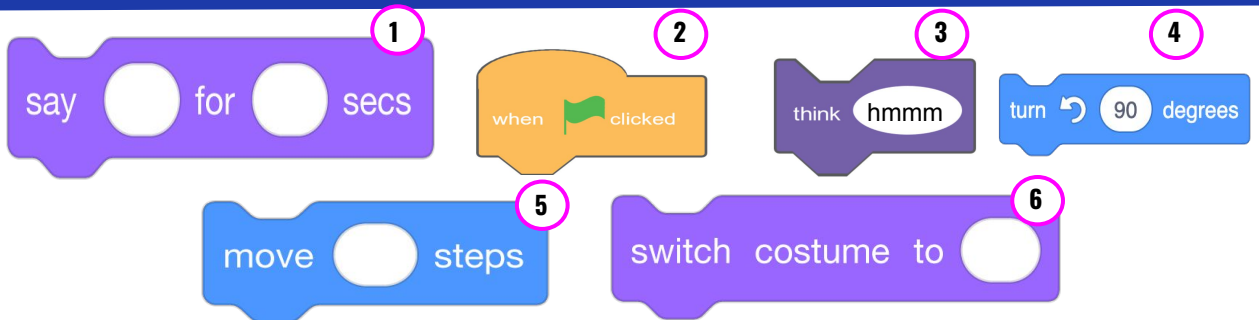
Sprite: characters in Scratch

Backdrop: background

REVIEW SCRATCH BLOCKS

switch costume to ( )

think ( ) for ( ) secs

think ( )

turn ↶ ( ) degrees

turn ↶ 90 degrees
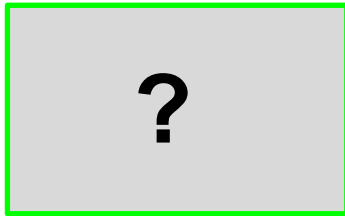
turn ↷ ( ) degrees

turn ↷ 90 degrees

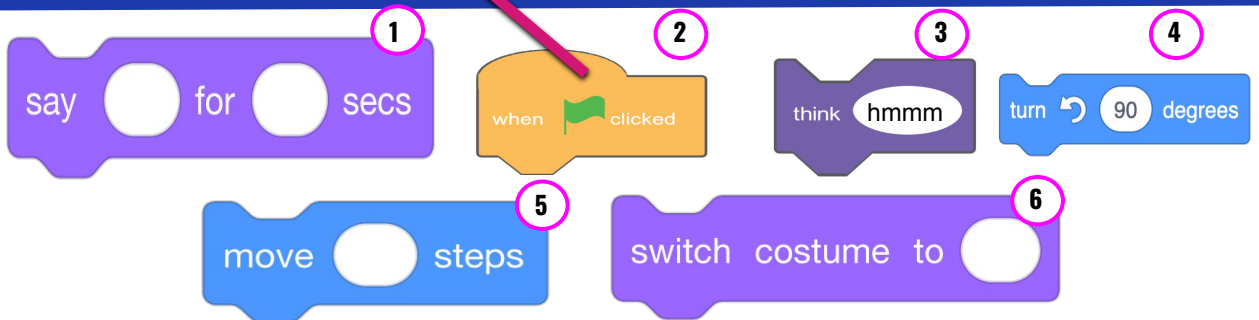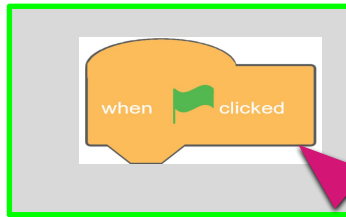say ( ) for ( ) secs

when ⚑ clicked

Lets look closely at these blocks again and what they say-
Click "switch,
Click "think,
Click "turn
"these are commands".
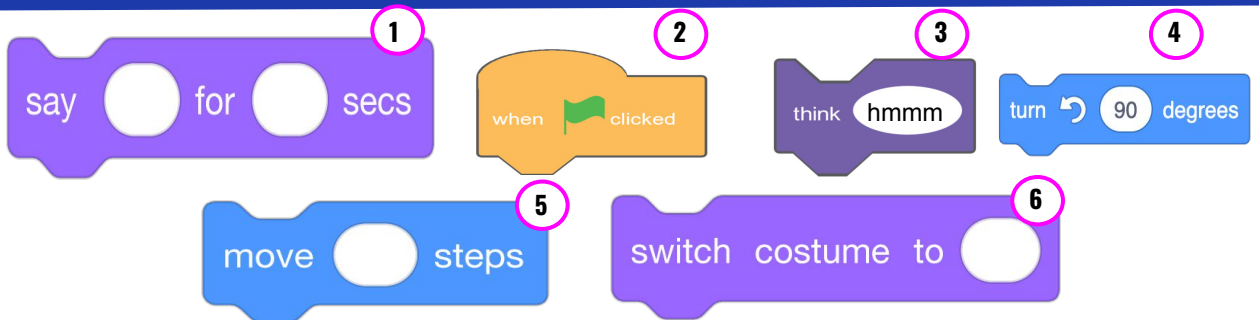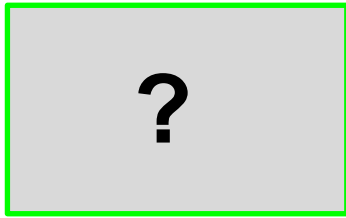
Which command means "go" or "start"?

?

1 say ( ) for ( ) secs

2 when 🚩 clicked

3 think (hmmm)

4 turn ↺ (90) degrees

5 move ( ) steps

6 switch costume to ( )

Look at the blocks on the bottom of the screen, which block is the command that means GO or start in Scratch?

Which command means "go" or "start"?

1 say ( ) for ( ) secs

2 when 🏳 clicked

3 think (hmmm)

4 turn ↺ 90 degrees

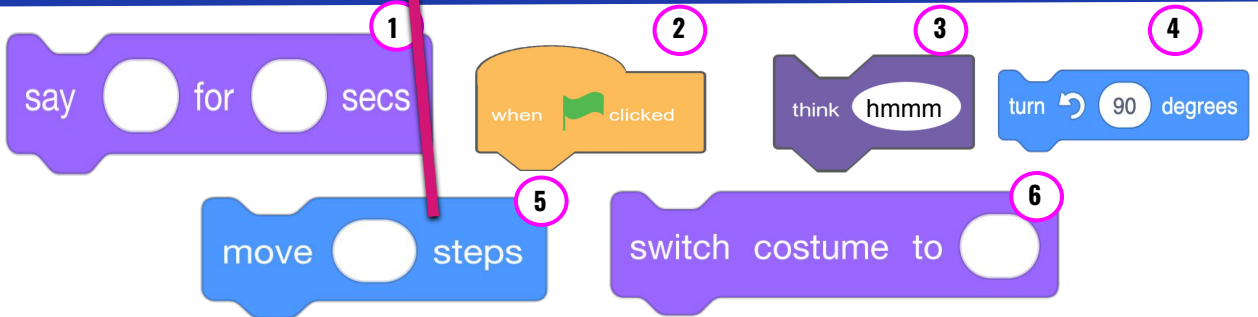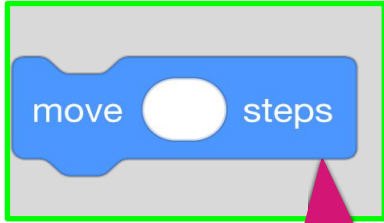**5** move ( ) steps

6 switch costume to ( )

Right! The orange block that has a green flag and says "when 'green flag' clicked."
This will start or run our code!

Which command would make our sprite 🐱 move?

?

1 say ( ) for ( ) secs	**2** when 🚩 clicked	**3** think (hmmm)	**4** turn ↺ (90) degrees

5 move ( ) steps
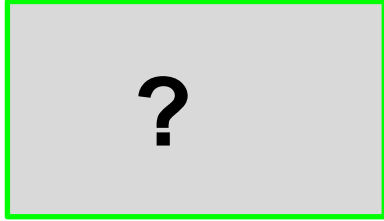
6 switch costume to ( )

Which command will make our sprite MOVE?

Which command would make our sprite 🐱 move?

Correct, the blue block that says, "move ___ Steps" You would enter a number in the blank white oval to tell the sprite how many steps to move!

Which command would make our sprite 🐱 talk or make noise?

?

1 say ⬭ for ⬭ secs

2 when 🚩 clicked

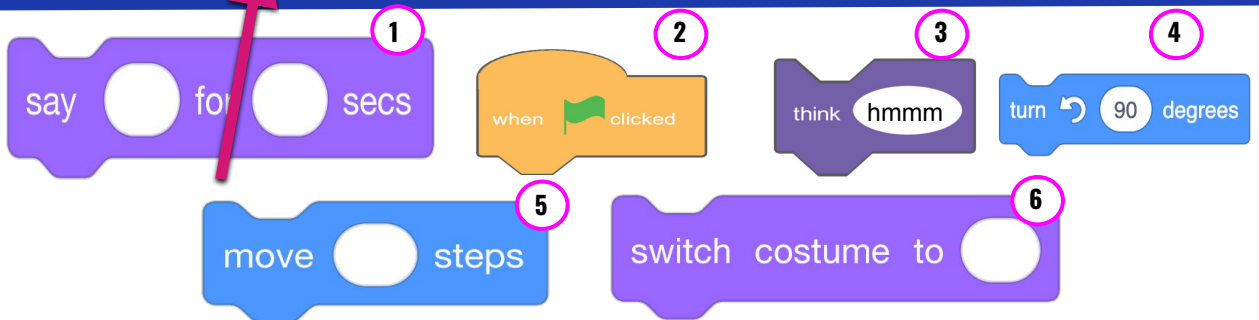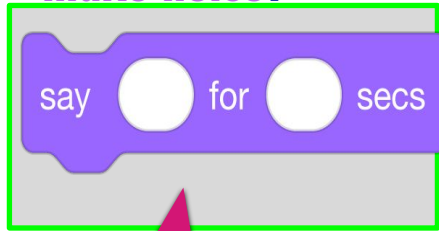**3** think hmmm

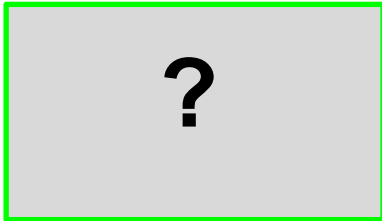**4** turn ↺ 90 degrees

5 move ⬭ steps

6 switch costume to ⬭

Which command would make our sprite talk or make noise?

Which command would make our sprite 🐱 talk or make noise?

say ( ) for ( ) secs — (1)

when 🚩 clicked — (2)

think (hmmm) — (3)

turn ↺ (90) degrees — (4)

move ( ) steps — (5)

switch costume to ( ) — (6)

Right! The purple "Say _____ for _____ secs" will tell your sprite to "say something. You would need to type in the text you want your sprite to say in the first space and the amount of "seconds" you want the sprite to speak in the next space.

Which command would make our sprite think?

?

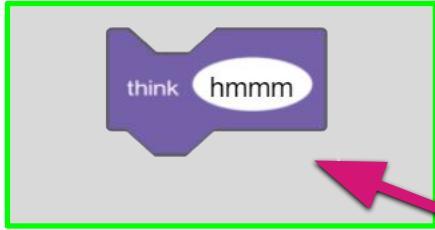**1** say ( ) for ( ) secs

2 when 🏳 clicked

3 think (hmmm)

4 turn ↺ (90) degrees

5 move ( ) steps

6 switch costume to ( )

Which command would make our sprite think?

Which command would make our sprite 🐱 think?

think hmmm

1	2	3	4
say ( ) for ( ) secs	when 🚩 clicked	think hmmm	turn ↺ 90 degrees

5	6
move ( ) steps	switch costume to ( )

Right! The purple "Say _____ for _____ secs" will tell your sprite to "say something. You would need to type in the text you want your sprite to say in the first space and the amount of "seconds" you want the sprite to speak in the next space.

WARM UP: REVIEW CS VOCABULARY

Code: The instructions that computer scientists create and use to tell a computer what to do.

Commands: tell a person or computer what to do

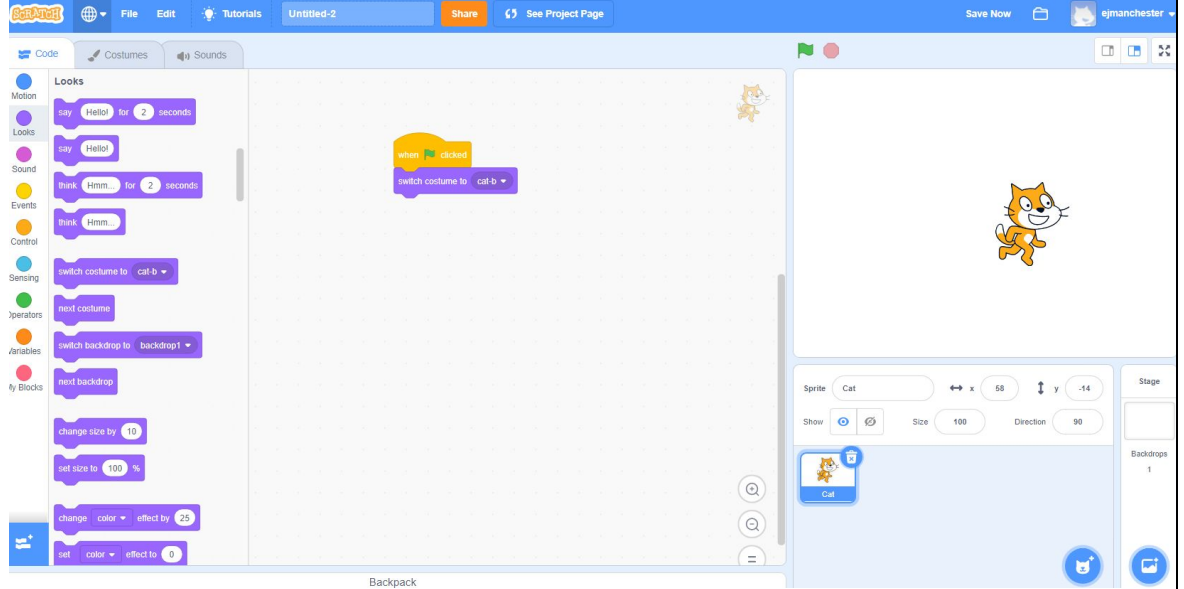**Sequence**: an ordered set of instructions

Algorithm: A list of steps to finish a task

Read slide

LESSON OBJECTIVES: I CAN...

- ❏ Review Scratch and CS Vocabulary

- ❏ Identify the purpose of Coco (planning tool for coding & writing)

- ❏ Locate features within Coco Level 1

- ❏ Identify and operate change costume block

- ❏ Select and drag blocks to unscramble a code in Scratch (plugged)

Changes the appearance of your sprite.

Play Video, and explain: It may not be obvious but this cat looks different from the one automatically in scratch. This one looks like it's running. The "change costume" block in Scratch changes the appearance of your sprite. You can use it to change the appearance of your sprite. This block makes things simpler because we want have to use as many sprites in our project.

Video link:

https://www.dropbox.com/s/jdt70o0l0neyk8c/SwitchCostumeCoCo_Nov16.mp4?dl=0
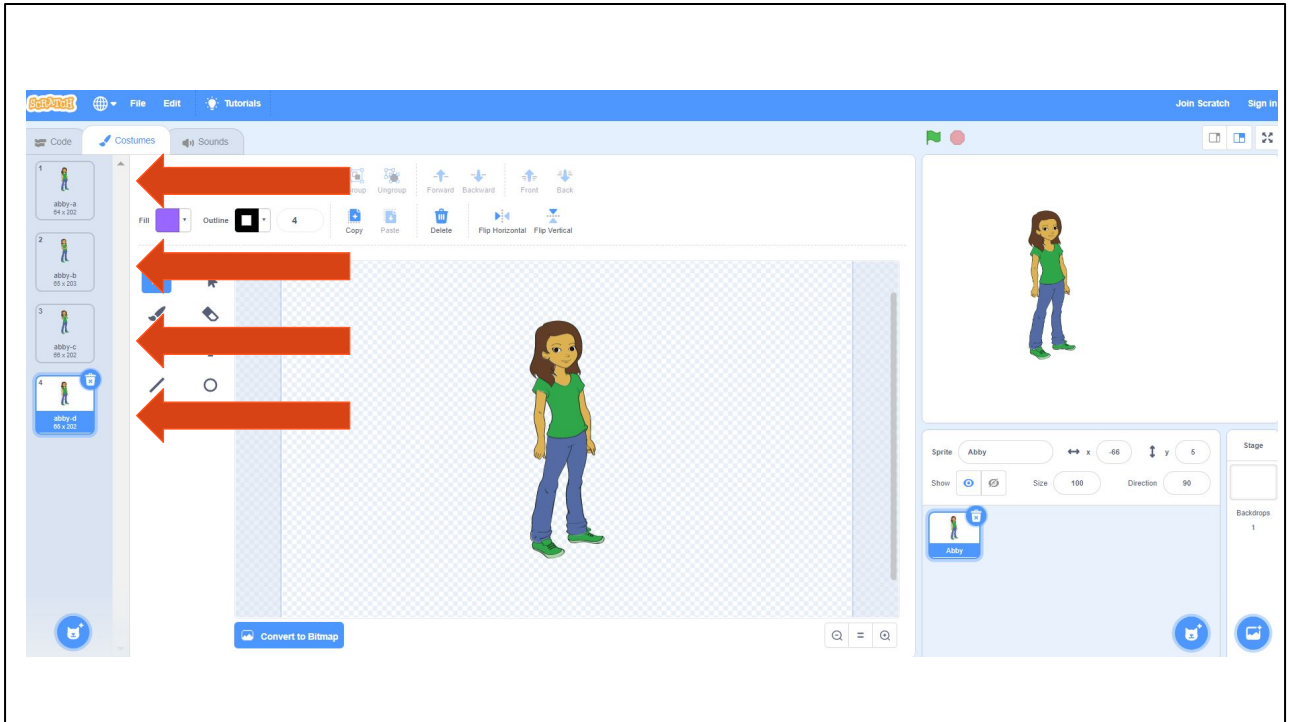
Lots of sprites in Scratch come pre-loaded with multiple costumes. So changing the costume is as easy and choosing one of these four looks.

OTHER WAYS OF CHANGING COSTUME

➜ **Upload:** a file saved on your computer

➜ **"Surprise"** : the computer chooses a random costume for you

➜ **Paint:** draw your own sprite!

However, it is also possible to upload your OWN costume by using a photo you already have saved on your computer.

TRY IT OUT!

❏ Navigate to Scratch at `scratch.mit.edu`
❏ Make a sprite
❏ Change the sprite's **costume at least twice**

Your turn to try out the change costume block!

GUIDED PRACTICE: INTRODUCE COCO (LEVEL 1)

GRAPHIC ORGANIZERS FOR WRITING

Explain that when you are planning to code or to write, there are certain pattern of steps that we may follow each time.
We can use a graphic organizer to help us.

The graphic organizers you have used before helped you brainstorm and eventually write. But now you are going to use a graphic organizer to help take your writing one step further to the final step of the writing process: to present and publish your writing with Scratch! Using Scratch to animate your writing is one way to publish, or share, your work.

MEET COCO

COCO
COMPOSE & CODE
DEPICT-CS

1. *Today you are going to learn how to use Coco, a new graphic organizer to organize your thoughts, write instructions, and present your ideas in a coding project/*

My Ideas:	What I Want to Do:	Blocks & Icons I will need:	Self-monitoring:
🔊 First	select level		
🔊 Then	select level		
🔊 Next	select level		
🔊 Last	select level		
🔊 Finally	select level		

Coco looks a lot like the graphic organizer we used earlier. Before Coco is filled in with your writing and ideas, it will look like this.

My Ideas:	What I Want to Do:		Blocks & Icons I will need:	Self-monitoring:
First First, get all of your materials. You will need a mug, hot chocolate mix, milk, and a spoon.	Do I need to add a start block? Do I need to add a character or object? Do I need to add or change a background? Do I need to make my character talk?	No ⬤ Yes No ⬤ Yes No ⬤ Yes No ⬤ Yes	when 🏴 clicked say Hello! for 2 seconds	☐ I found the start block. ☐ I created a character (sprite). ☐ I added a background. ☐ I made my character talk.
Then Then, pour the milk into the mug and warm it in the microwave.	Do I need to create a costume? Do I need to switch a costume? Do I need to make my character think something?	No ⬤ Yes No ⬤ Yes No ⬤ Yes	Costumes switch costume to costume2 ▾ think Hmm... for 2 seconds	☐ I created a new costume. ☐ I changed a costume. ☐ I made my character (sprite) think something.
Next Next, pour the hot chocolate mix into the mug.	Do I need to switch a costume? Do I need to make my character talk?	No ⬤ Yes No ⬤ Yes	switch costume to costume2 ▾ say Hello! for 2 seconds	☐ I switched a costume. ☐ I made my character (sprite) say something.
Last Last, stir the ingredients with a spoon until everything is well-mixed and enjoy your hot chocolate!	Do I need to make my character talk?	No ⬤ Yes	say Hello! for 2 seconds	☐ I made my character (sprite) say something.
Finally Great job!	Do I need to create a costume? Do I need to switch a costume? Do I need to make my character think something?	No ⬤ Yes No ⬤ Yes No ⬤ Yes	Costumes switch costume to costume2 ▾ think Hmm... for 2 seconds	☐ I created a costume. ☐ I changed a costume. ☐ I made my sprite think something.

Now let's look at Coco with writing from the paragraph we just read. Do you see that the far left column already has words in it? These are instructions for making hot chocolate.

This is what level 1 of Coco looks like. It is completely filled out. As you become more familiar with Coco, you may move onto other levels that will allow you to change more and make more decisions.

My Ideas:

🔊 First

First, get all of your materials. You will need a mug, hot chocolate mix, milk, and a spoon.

🔊 Then

Then, pour the milk into the mug and warm it in the microwave.

🔊 Next

Next, pour the hot chocolate mix into the mug.

🔊 Last

Last, stir the ingredients with a spoon until everything is well-mixed and enjoy your hot chocolate!

🔊 Finally

Great job!

My ideas is where your writing will go. Let's read the recipe for hot chocolate aloud. [have students take turns or you can read aloud or you can ask students to put on their headsets and listen to CoCo read the text to them.]

What I Want to Do:

Do I need to add a start block? No ⬤ Yes
Do I need to add a character or object? No ⬤ Yes
Do I need to add or change a background? No ⬤ Yes
Do I need to make my character talk? No ⬤ Yes

Do I need to create a costume? No ⬤ Yes
Do I need to switch a costume? No ⬤ Yes
Do I need to make my character think something? No ⬤ Yes

Do I need to switch a costume? No ⬤ Yes
Do I need to make my character talk? No ⬤ Yes

Do I need to make my character talk? No ⬤ Yes

Do I need to create a costume? No ⬤ Yes
Do I need to switch a costume? No ⬤ Yes
Do I need to make my character think something? No ⬤ Yes

In the column, "What i want to do" You will be asked a number of questions about what you want to do in scratch based on your writing. Again for level one you will not have to decide these things!

Blocks & Icons I will need:
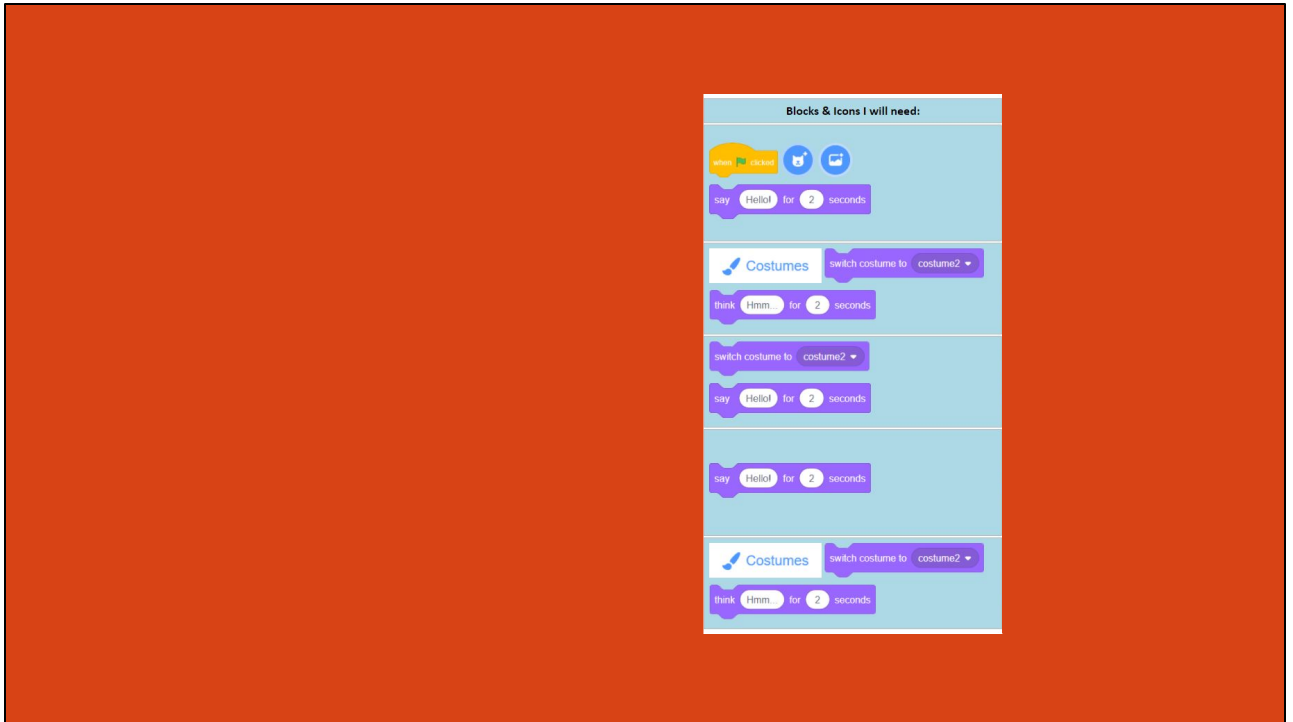
In column 3, called blocks and icons I will need, you will see the blocks you need in scratch based on the decisions you made in column 2.

Self-monitoring:

- [ ] I found the start block.
- [ ] I created a character (sprite).
- [ ] I added a background.
- [ ] I made my character talk.

- [ ] I created a new costume.
- [ ] I changed a costume.
- [ ] I made my character (sprite) think something.

- [ ] I switched a costume.
- [ ] I made my character (sprite) say something.

- [ ] I made my character (sprite) say something.

- [ ] I created a costume.
- [ ] I changed a costume.
- [ ] I made my sprite think something.

In the final column called self-monitoring, you will see a list of statements that you need to check before you move on. These statements will help you check and make sure that you have found everything you need to code in scratch.

My Ideas:	What I Want to Do:	Blocks & Icons I will need:	Self-monitoring:
First First, get all of your materials. You will need a mug, hot chocolate mix, milk, and a spoon.	Do I need to add a start block? No/Yes Do I need to add a character or object? No/Yes Do I need to add or change a background? No/Yes Do I need to make my character talk? No/Yes	when clicked say Hello! for 2 seconds	☐ I found the start block. ☐ I created a character (sprite). ☐ I added a background. ☐ I made my character talk.
Then Then, pour the milk into the mug and warm it in the microwave.	Do I need to create a costume? No/Yes Do I need to switch a costume? No/Yes Do I need to make my character think something? No/Yes	Costumes switch costume to costume2 think Hmm... for 2 seconds	☐ I created a new costume. ☐ I changed a costume. ☐ I made my character (sprite) think something.
Next Next, pour the hot chocolate mix into the mug.	Do I need to switch a costume? No/Yes Do I need to make my character talk? No/Yes	switch costume to costume2 say Hello! for 2 seconds	☐ I switched a costume. ☐ I made my character (sprite) say something.
Last Last, stir the ingredients with a spoon until everything is well-mixed and enjoy your hot chocolate!	Do I need to make my character talk? No/Yes	say Hello! for 2 seconds	☐ I made my character (sprite) say something.
Finally Great job!	Do I need to create a costume? No/Yes Do I need to switch a costume? No/Yes Do I need to make my character think something? No/Yes	Costumes switch costume to costume2 think Hmm... for 2 seconds	☐ I created a costume. ☐ I changed a costume. ☐ I made my sprite think something.

For now, you won't have to plan and write a new set of instructions--we're going to use what is already here in CoCo to show us how we would publish our writing as an animation. We're all going to code a Scratch program about "How to Make Hot Chocolate."

VIDEO OF HOW TO TOGGLE AND UNSCRAMBLE

Video link:
https://www.dropbox.com/s/qatn0edg0mctsiz/How%20to%20Toggle%20.webm?dl=0
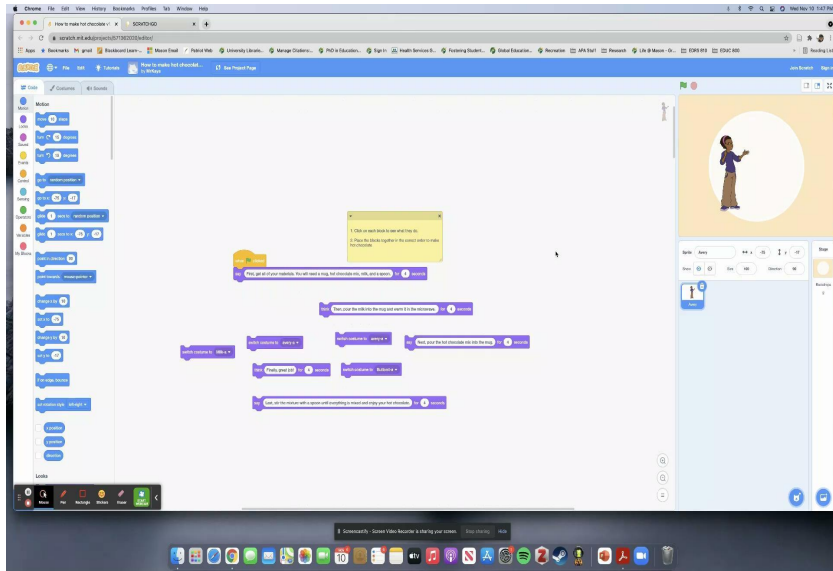
INDEPENDENT PRACTICE

INDEPENDENT PRACTICE:

1. First, open a new window in your browser.
2. Then, open the [link to the Scratch project](#) and the [Coco link](#) that was shared with you by your teacher
3. Next, put the code into the correct sequence using the sequence in Column 1 of **CoCo**
4. Last, play your animation by pressing the green flag
5. Finally, correct any mistakes you made by fixing your code!

PAUSE HERE. (10-15 MINUTES)

Ok, here is the sequence of steps to complete you independent practice. Your teacher is going to share two links with you that you will need to open on your computer.

Pause here.

TIPS

- When you open Scratch, your code will not be in the correct sequence, look carefully!
- You will need to fix your code by putting it in the same order as the instructions in Column 1.
- Use CoCo and your transition words to help you!

Using blocks recommended in Coco level 1 to unscramble the code in Scratch

SOLUTION VIDEO

HTTPS://SCRATCH.MIT.EDU/PROJECTS/833988634

How did you do? Were you able to make your animation work? Did you run into any problems?

If you finish early, try changing the costumes in a different way!

WRAP UP: PARTNER UP, REVIEW CODE, AND FIX ANY ERRORS

Students should work with a partner to check their code for errors and fix were necessary. Bonus challenge: Can students change a costume again?