

Art Lesson Plan

Overview

Art is a complete theme designed to be completed over eight, 45-75 minute sessions. For each lesson, students will watch a series of videos and create one coding project with opportunities to personalize their work using “Add-Ons,” which are mini-coding challenges that build on top of the core project.

Art: At-A-Glance

In Art, students create animations, interactive artwork, photograph filters, and other exciting, artistic projects. If you get stuck, review the [Art Solution Sheets](#). [Digital materials](#) are accessible online. For more details on using CS First, review the [Starter Guide](#).

Art: Theme Outline

Lesson 1: Introduction and Discovery	Students learn about the scope and procedures of the class, then explore Scratch for CS First and create their first program.
Lesson 2: Animation	Students create an animation composed of multiple frames.
Lesson 3: Interactive Art	Students build an interactive project that makes famous paintings talk when clicked.
Lesson 4: Paint with Tera	Students build an interactive art project that responds to a user's mouse-pointer, similar to a paint application.
Lesson 5: Graffiti	Students use conditionals to create an interactive graffiti application.
Lesson 6: Digital Art	Students use pixels and "if-else" statements to build a digital art project similar to a photography filter.
Lesson 7: Building Blocks of Architecture	Students create an interactive way to build their own architecture.
Lesson 8: Greeting Card	Students create a greeting card to send to a friend or family member and tell them about CS First. In this project, students are encouraged to use their creativity and imaginations.



Lesson 1: Introduction and Discovery

Introduction and Discovery: At-A-Glance

Students learn about the scope and procedures of the class, then explore *Scratch for CS First* and create their first program.

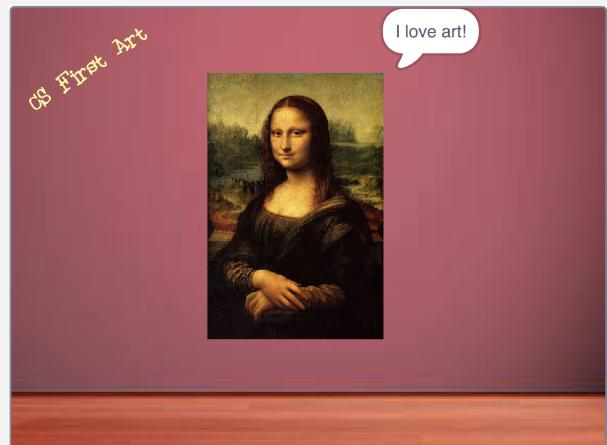
Topics introduced:

- CS First and *Scratch for CS First*
- Programming / Sequencing

Introduction and Discovery [Starter Project](#)

Introduction and Discovery [Example Project](#)

If you get stuck, review the [Introduction and Discovery Solution Sheet](#).



Introduction and Discovery: Agenda Highlights

1. Have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Introduction and Discovery" project in the *Scratch for CS First* editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Video 2:** Look for students who are designing (adding sprites, backdrops, etc.), and encourage them to experiment with code.
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - **Question 1:** *What was your favorite part of this lesson?*
 - **Question 2:** *What did you program your sprite to say?*
 - **Question 3:** *What blocks did you use during this lesson, and what did they do?*



Lesson 2: Animation

Animation: At-A-Glance

Students create an animation composed of multiple frames. By the end of the lesson, students will understand and be able to explain how stop-motion animations are created using repetition.

Topics introduced:

- Loops

Animation [Starter Project](#)

Animation [Example Project](#)

If you get stuck, review the [Animation Solution Sheet](#).

Animate



Animation: Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Animation" project in the *Scratch for CS First* editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Videos 2 and 3:** Look for students who are designing (adding sprites, backdrops, etc.), and encourage them to experiment with code.
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the survey.
6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - **Question 1:** *What was your favorite part of this lesson?*
 - **Question 2:** *How are loops used in computer science? [answer: Make something happen over and over again]*
 - **Question 3:** *How did you use loops in this lesson?*



Lesson 3: Interactive Art

Interactive Art: At-A-Glance

Students build an interactive project that makes famous paintings talk when clicked.

Topics introduced

- Events

Interactive Art [Starter Project](#)

Interactive Art [Example Project](#)

If you get stuck, review the [Interactive Art Solution Sheet](#).



Interactive Art: Agenda Highlights

- Recap the last lesson and have students log in to the CS First website using their student accounts.
- Students watch videos and create a "Interactive Art" project in the *Scratch for CS First* editor.
- Check in with students as they watch the videos and complete their projects.
 - Video 2:** Students may be confused about which loop to use. Show them that a forever loop never stops, but a repeat loop stops after it runs a specific number of times.
- Students choose Add-ons to enhance their project.
- When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
- Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
- Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - Question 1:** *What was your favorite part of this lesson?*
 - Question 2:** *What is an event in computer science? [answer: Something that makes something else happen]*
 - Question 3:** *What is an example of an event you used in this lesson? [answer: When this sprite clicked]*



Lesson 4: Paint with Tera

Paint with Tera: At-A-Glance

Students build a Digital Art project that responds to a user's mouse-pointer, similar to a paint application.

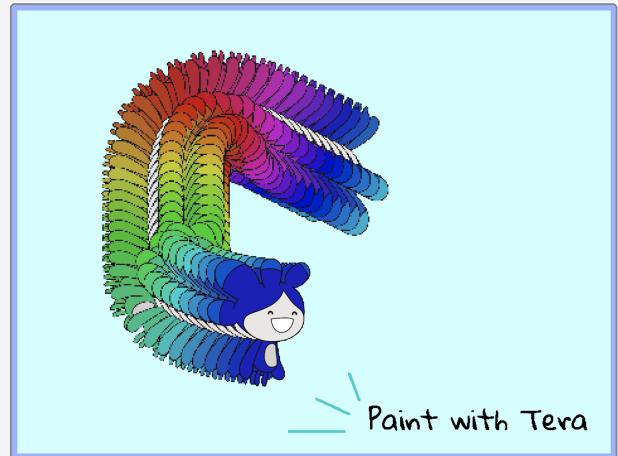
Topics introduced

- Variables

[Paint with Tera Starter Project](#)

[Paint with Tera Example Project](#)

If you get stuck, review the [Paint with Tera Solution Sheet](#).



Paint with Tera: Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Paint with Tera" project in the *Scratch for CS First* editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Video 4:** Students often have problems changing the variable into a slider control. Remind them to double click on the variable to make the slider.
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - **Question 1:** *What was your favorite part of this lesson?*
 - **Question 2:** *How did you use variables in this lesson? [Example answer: We used a variable to change Tera's speed.]*



Lesson 5: Graffiti

Graffiti: At-A-Glance

Students use conditionals to create an interactive graffiti application. By the end of the lesson, students will understand how computers use "if-then" blocks to make decisions.

Topics introduced

- Conditionals

[Graffiti Starter Project](#)

[Graffiti Example Project](#)

If you get stuck, review the [Graffiti Solution Sheet](#).



Graffiti : Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Graffiti" project in the Scratch for CS First editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Video 2:** Students may have a problem placing the if-then block. You can explain that “the action you want the sprite to do if the condition is true needs to go INSIDE the “if” block [i.e. stamping].
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
6. Your students’ projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - **Question 1:** What was your favorite part of this lesson?
 - **Question 2:** What is an "if-then" statement? [answer: A way for the computer to make a decision]
 - **Question 3:** How did you use an "if-then" block in your project? [Example answer: To make the paint sprite stamp when someone clicks the mouse]



Lesson 6: Digital Art

Digital Art: At-A-Glance

Students use pixels and "if-else" statements to build a digital art project similar to a photography filter. By the end of the lesson, students will understand how to use conditionals in their own projects to change a sprite's costume.

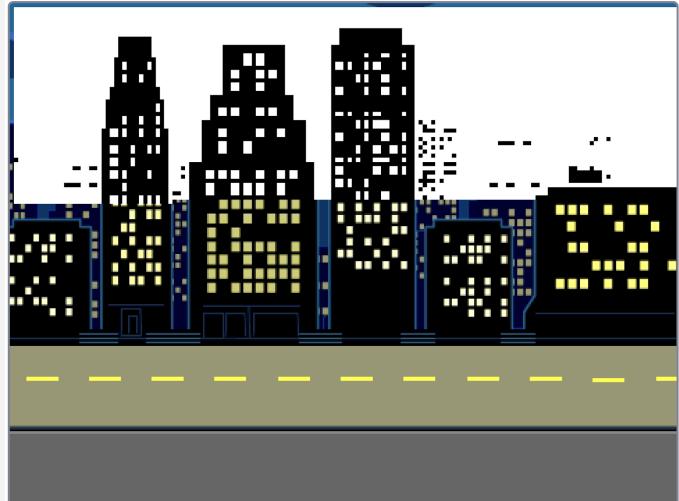
Topics introduced

- Conditionals

Digital Art [Starter Project](#)

Digital Art [Example Project](#)

If you get stuck, review the [Digital Art Solution Sheet](#).



Digital Art: Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Digital Art" project in the *Scratch for CS First* editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Video 2:** Common problem: This is the only time students have seen Turbo Mode. If you notice that their program takes too long to run, show them how to turn on "turbo mode" by selecting the edit menu, then turbo mode. The words "Turbo Mode" will show next to the green flag when it is selected.
 - **Video 3:** Placement of the "if/else" block is very important. Double check that the order of students' code is the same as what is in your solution sheet. If it isn't, talk them through what the code is doing, reading what the blocks do.
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - **Question 1:** *What was your favorite part of this lesson?*
 - **Question 2:** *How did you use conditionals in this lesson?*
[answer: To make the sprite switch colors for stamping.]
 - **Question 3:** *What was the most difficult part about this lesson?*



Lesson 7: Building Blocks of Architecture

Building Blocks of Architecture: At-A-Glance

Students create an interactive way to build their own architecture. By the end of the lesson, students will understand the difference between the "forever" and "repeat until" blocks.

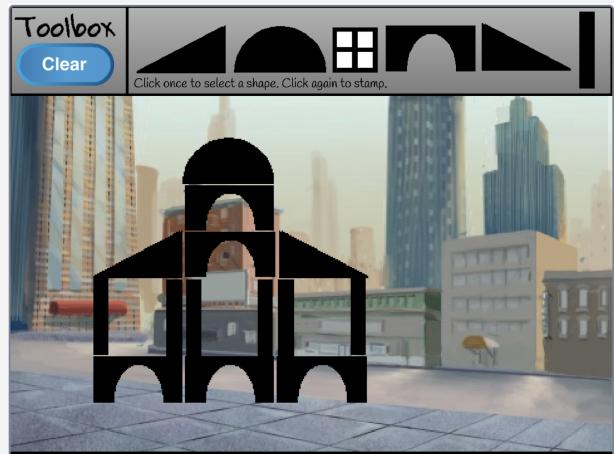
Topics introduced

- Cloning

Building Blocks of Architecture [Starter Project](#)

Building Blocks of Architecture [Example Project](#)

If you get stuck, review the [Building Blocks of Architecture Solution Sheet](#).



Building Blocks of Architecture: Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Building Blocks of Architecture" project in the *Scratch for CS First* editor.
 3. Check in with students as they watch the videos and complete their projects.
 - **Video 1:** Circulate around the room and ensure that students are moving on from the survey. Remind students that there are no right or wrong answers.
 - **Video 3:** Common problem: Students may not notice that they created a clone. Move the sprite to show that there is another sprite under it.
 - Common problem: Too many clones will cause the computer to crash. Press the stop sign to remove all clones. Refresh the page and or restart the computer if necessary.
 - **Video 4:** Students should place blocks in the correct order. Double check that the order of students' code is the same as what is in your solution sheet.
 4. Students choose Add-ons to enhance their project.
 5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
 6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
 7. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
 - **Question 1:** *What did you program your story to do?*
 - **Question 2:** *What is the difference between a "forever" loop and a "repeat until" loop? [answer: A forever loop never stops. A "repeat until" loop stops when something specific happens.]*
 - **Question 3:** *How did you use a "repeat until" block in your project? [answer: The sprite followed the mouse until someone clicked the mouse.]*



Lesson 8: Greeting Card

Greeting Card: At-A-Glance

Students create a greeting card to send to a friend or family member and tell them about CS First. In this project, students are encouraged to use their creativity and imagination.

Topics introduced

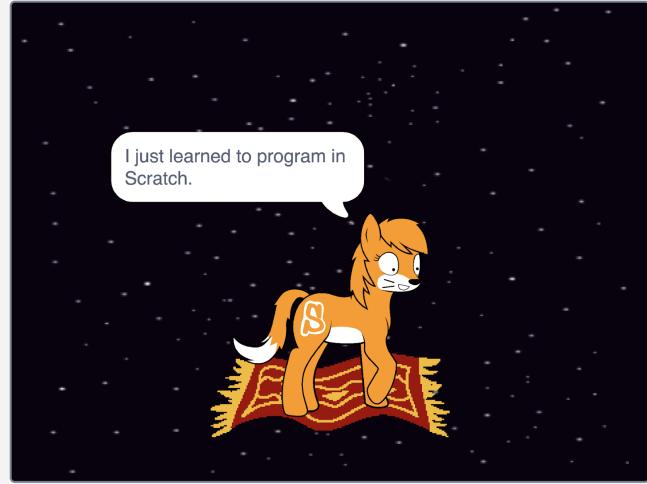
- Reflection

Topics reinforced

- Creativity

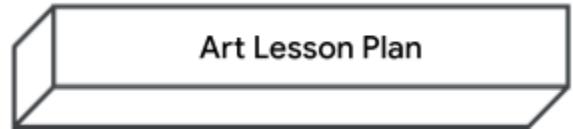
Greeting Card [Example Project](#)

If you get stuck, review the [Greeting Card Solution Sheet](#).



Greeting Card: Agenda Highlights

1. Recap the last lesson and have students log in to the CS First website using their student accounts.
2. Students watch videos and create a "Greeting Card" project in the *Scratch for CS First* editor.
3. Check in with students as they watch the videos and complete their projects.
 - **Video 1:** The video leaves this project very open. If students are out of ideas, encourage them to check out the add-ons.
4. Students choose Add-ons to enhance their project.
5. When there are five minutes left in class, instruct students to find the Wrap Up page and complete the short survey.
6. Your students' projects are automatically shared with your teacher account. Encourage students to also show their projects to a neighbor/classmate.
7. Walk around the room to sign and date the certificate page in each students' passport, and acknowledge their completion of this CS First unit.
8. Discuss the lesson and facilitate a brief discussion about what students learned and experienced.
 - *Question 1: What was your favorite program that you made in this class and why?*
 - *Question 2: What was the most surprising thing that you were able to do?*
 - *Question 3: What was the most important thing that you learned about computer science?*
 - *Question 4: What do computer scientists do?*
 - *Question 5: Does anyone have any questions for me about what we've worked on in this class or about computer science in general?*



CS First projects are coded using Scratch, a block-based coding tool developed by the Scratch Foundation in collaboration with the Lifelong Kindergarten group at the MIT Media Lab. Learn more about Scratch at scratch.mit.edu.

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Scratch is developed by the Lifelong Kindergarten Group at the MIT Media Lab. See <http://scratch.mit.edu>