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Behind the Curtain:

Scratch's Latest Features & Vision for the Future

May 2025



in Practice



Icebreaker

Before we jump in, share in the chat:

- Where are you joining us from?
- How long have you been using Scratch?



Panelists



Maren Vernon

Learning Resource Designer
@algorithmar and
@scratchlycaterton



Tif Gagnon

Director of Product Design
@The_Quirky_Witch



Andy Forest

Senior Creative Technologist
@Rednox



Helping Us in the Chat:

Kimberly Thomas-Cain

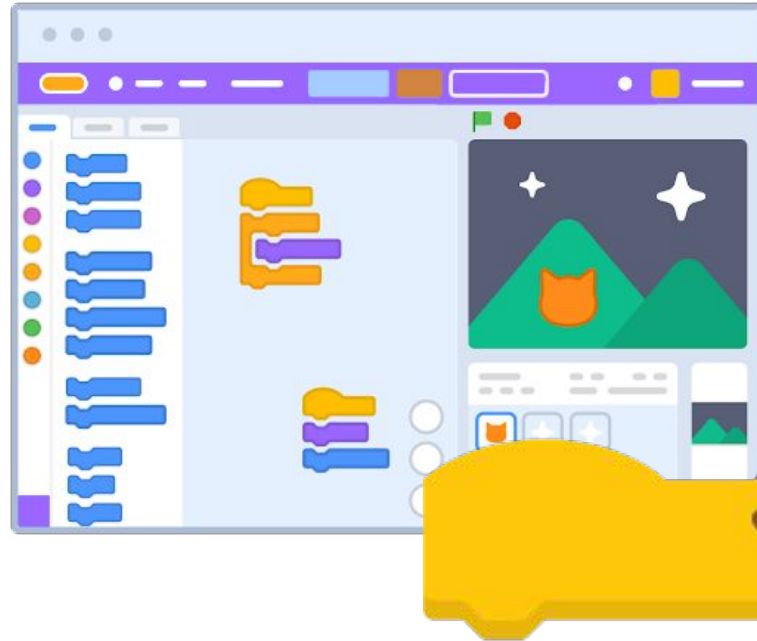
Outreach and Engagement Manager
@justaspeckintheuni

Dr. Jarvis Bailey

Senior Manager of Program Operations
@JLJBailey

Session Overview

- Scratch and our Creative Learning and Design Philosophy
- New Onboarding
- Revised Ideas Page
- Revised Starter Projects Page
- Debugging Widget
- Scratch Approach to AI and Future AI integration
- Face Sensing Coming to Scratch
- Closing Thoughts





“Helping kids everywhere, create when they imagine.” Scratch’s mission is to provide young people with digital tools and opportunities to imagine, create, share, and learn. It is a free platform where you can create your own interactive stories, animations, or games.

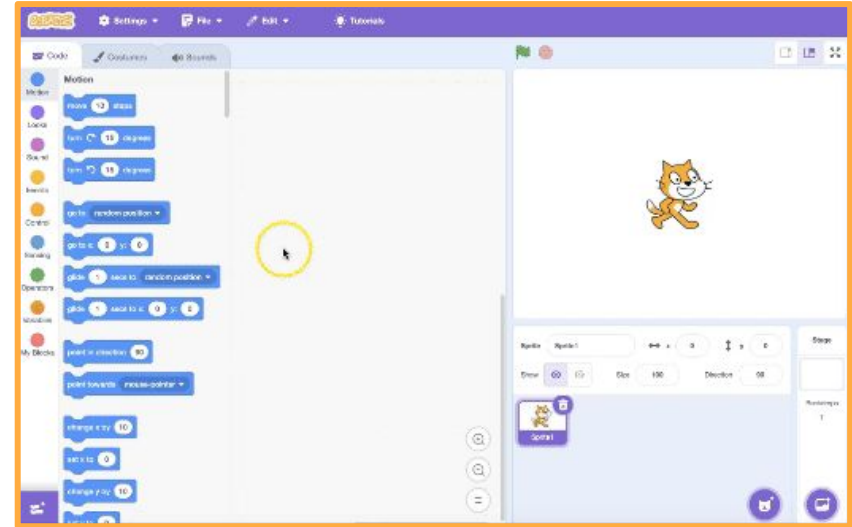
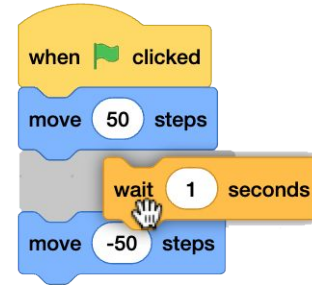
It is available to use online at scratch.mit.edu. Download the offline version at scratch.mit.edu/download.

Block-Based Programming

Scratch pioneered block-based programming, enabling young people to learn to code creatively and interactively.

With Scratch, young people **make animations, games, and digital stories** by dragging and dropping code blocks.

Creating Scratch projects **fosters the development of computational and creative thinking skills that are critical for future success**: learners identify problems, break them into smaller parts, debug them, and iterate on solutions.



Platforms



Scratch

scratch.mit.edu

Scratch is the world's largest coding community for young people and a coding language that allows them to create digital stories, games, and animations.



ScratchJr

scratchjr.org

With ScratchJr, young children (ages 5-7) learn important new skills as they program their own interactive stories and games. Designed for iPad.



Scratch Lab

lab.scratch.mit.edu

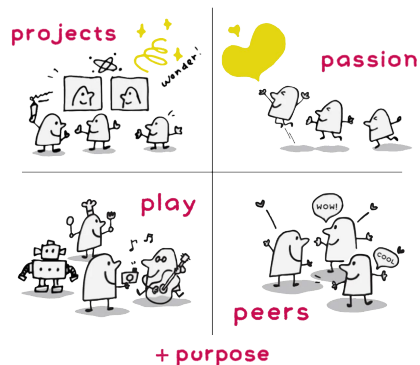
Scratch Lab is our innovation playground where the Scratch Team shares our experiments with new coding blocks for everyone to try out and give us feedback.

Designing for Creative Learning

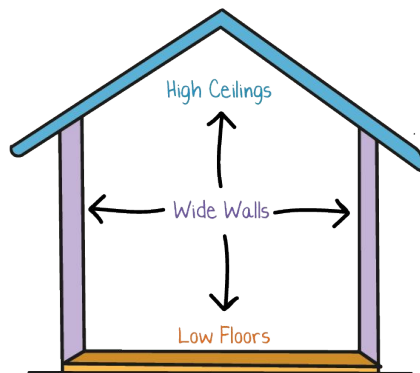
When we adapt/remix or develop a creative coding activity/lesson we look to:

- Design for tinkering and learning through play
- Design spaces for learners to bring themselves and see themselves in the lesson
- Allow multiple pathways to foster a wide diversity of projects support different experience levels
- Create opportunities that naturally guide learners through the creative learning spiral

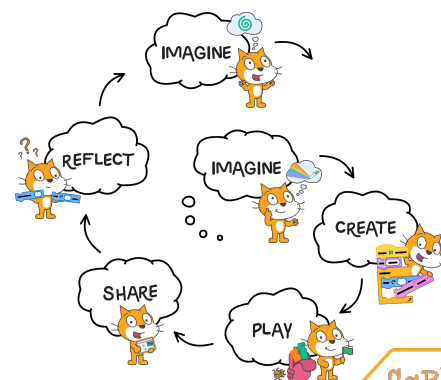
Theory of Practice



Learning Design



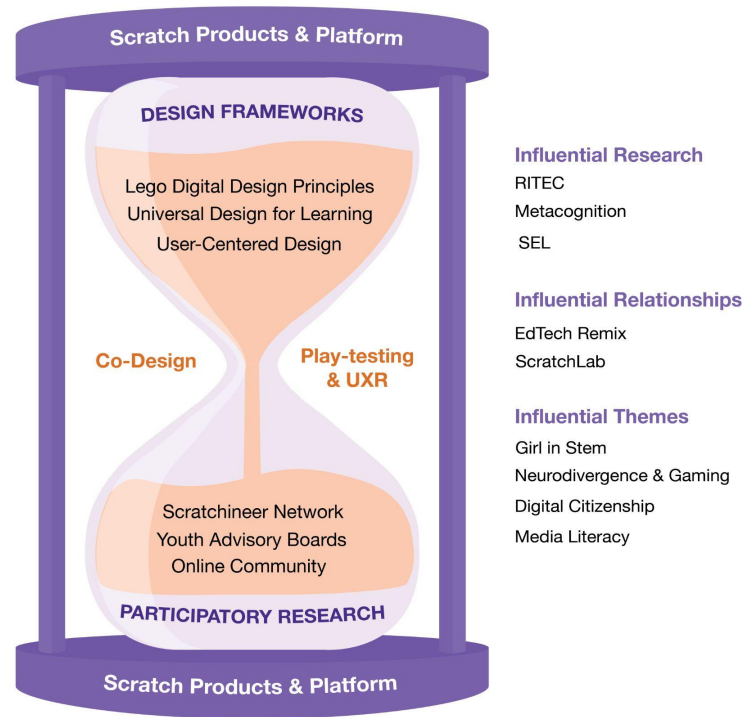
Learner Path



Scratch Product Design Philosophy

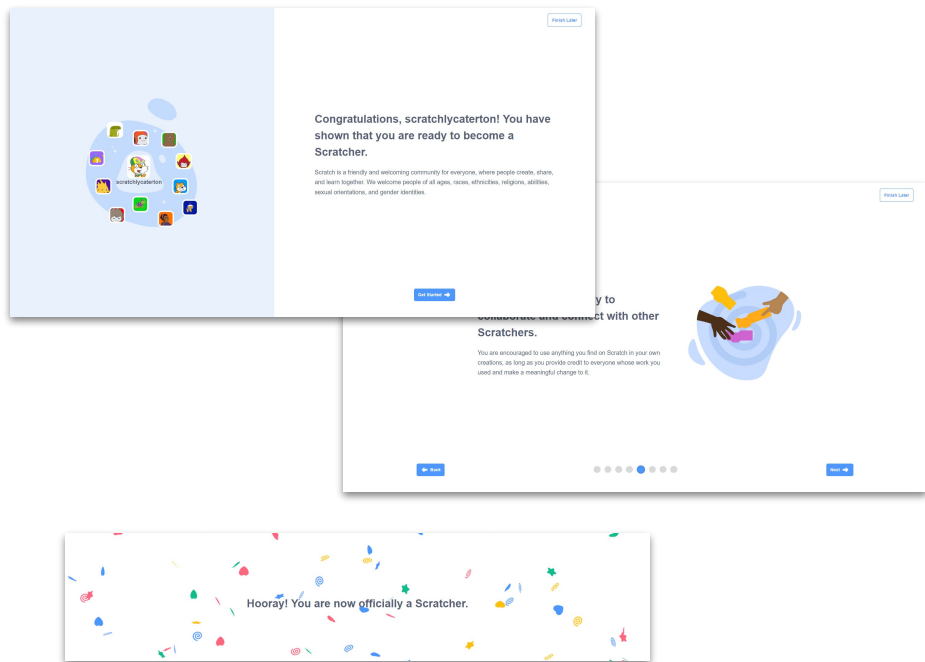
Throughout the 2024 R&D year, we created this Design Philosophy and incorporated it with all new onboarding features.

“The Scratch Product Team designs creative learning experiences for young people, with young people, and in the best interests of young people.”

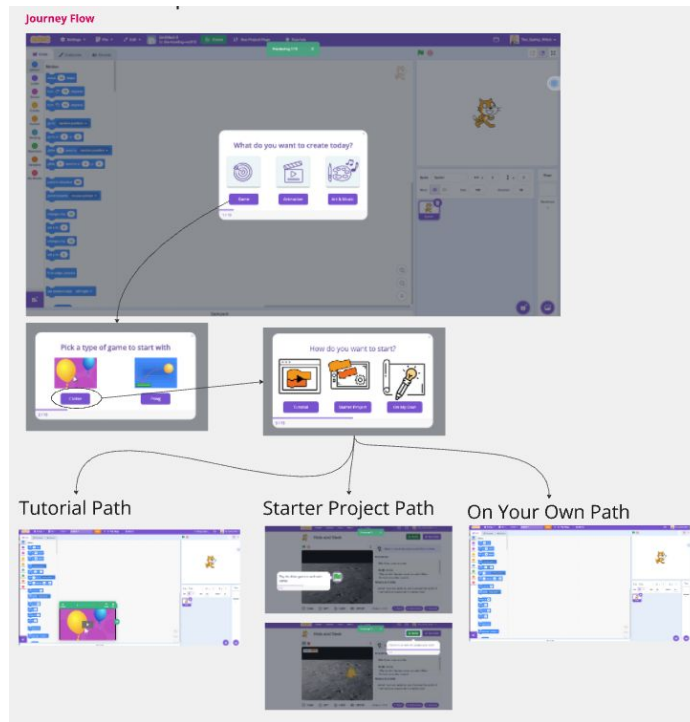


New Onboarding

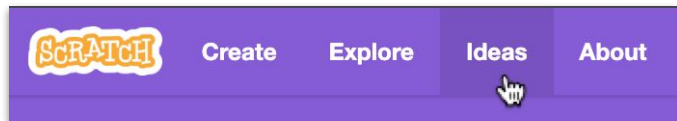
Moved Community Guidelines



A/B Testing for Editor Flow



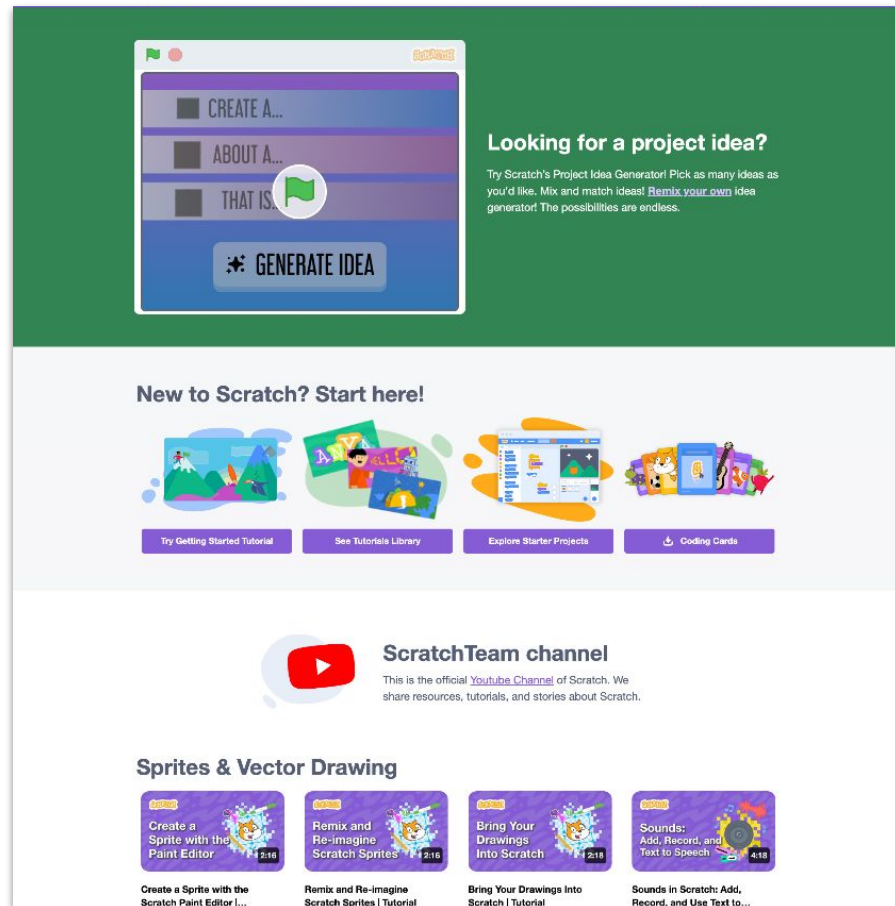
Revised Ideas Page



scratch.mit.edu/ideas

Product Design created a Scratch account and hosted a studio for the first time. We received hundreds of projects with ideas for redesigning the Ideas Page.

- Ideas Generator was most desired feature
- Scratchers wanted more advanced tutorials

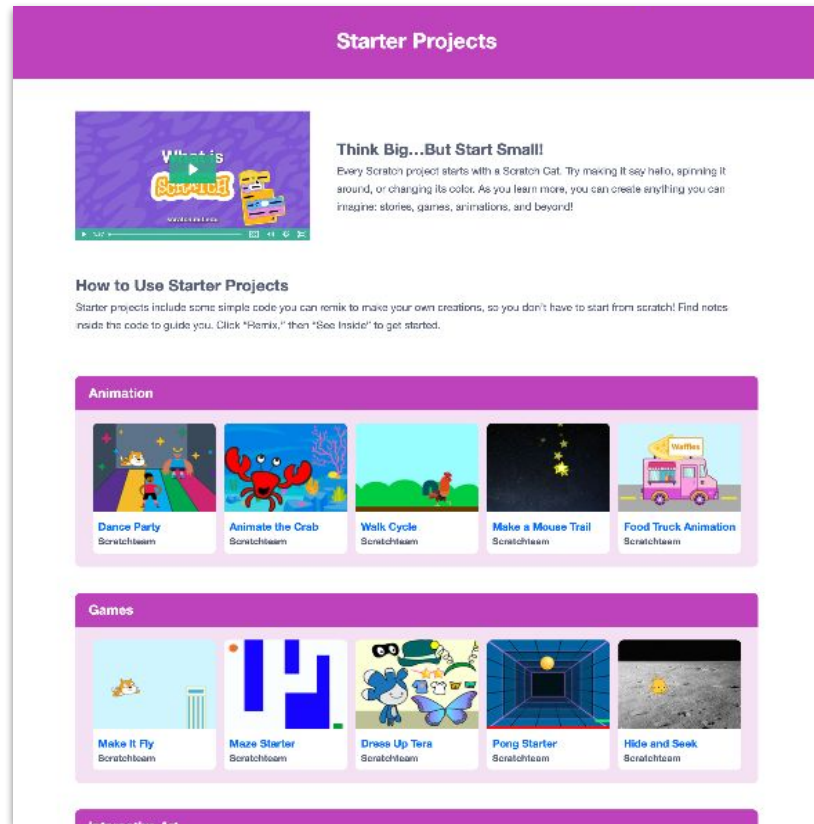
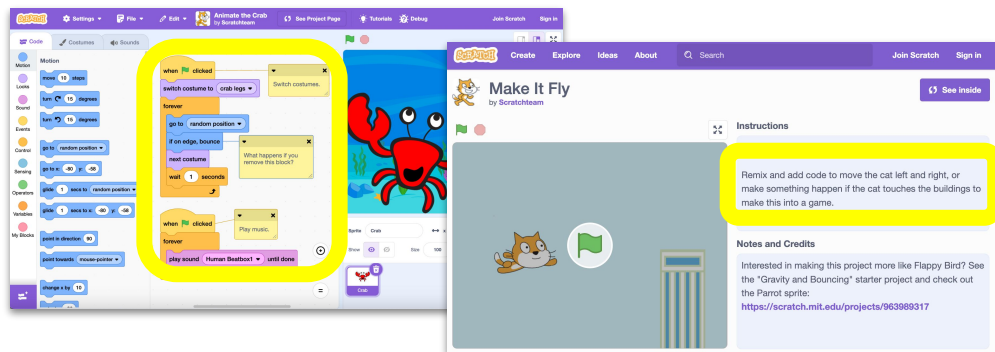


Revised Starter Projects Page

Starter projects include some simple code you can **remix** to make your own creations.

New page:

- Show what is possible on Scratch
- Intro how to use them
- Set expectations
- Update the library



scratch.mit.edu/starter-projects

Debugging Widget

Debugging is finding the errors in your code. Click on the bug in the Scratch Project Editor to **find helpful tips on how to find and fix issues.**



Debugging | Getting Unstuck

Read Aloud

Break It Down

Slow It Down

Add Sound Checkpoints

Tinker with Block Order

To Loop or Not to Loop

Timing & Parallelism

Think About Block Options

Check the Values

Check Code Sequence

Comment Your Code

Take a Break, Step Away

Ask for Help

Read Aloud

As you read your code aloud, think from the computer's perspective.

- Are you including steps that the computer can understand?
- Are your instructions clear and in the right order?
- If something needs to be repeated, are you using loops correctly?

Debugging | Getting Unstuck

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Think About Timing & Parallelism

Do you have multiple events trying to run at the same time? If two sequences are programmed to start at the same time, you can get unpredictable behavior.

Add small waits, broadcasts, or user interaction (like clicking or pressing a key) to see if this affects the result.

Debugging | Getting Unstuck

Read Aloud

Break It Down

Slow It Down

Check the Values

If you are using variables or reporter blocks, check the value at the moment the code sequence is run.

Do all the sprites control a variable, or should only one sprite have control?

When is the value reset? Where is it changed?

Scratch Approach to AI

Guiding Stars

- Creativity: Empower kids' self-expression
- Agency: Keep power and choice in kids' hands
- Equity: Make it free, fair, inclusive, and accessible
- Community: Emphasize human connection and collaboration

Lines in the Sand

- Safe: Prevent harmful content
- Ethical: Protect children's data
- Transparent: Share information about how it works
- Human-Centered: Never undermine human agency or relationships

Read more here:

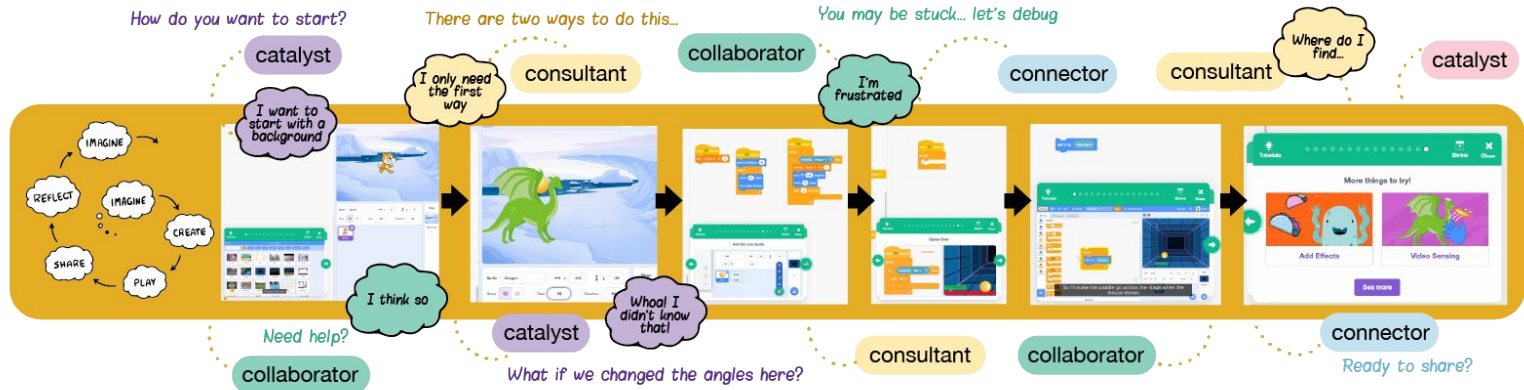
<https://medium.com/scratchteam-blog/introducing-creative-ai-at-scratch-bcd6d6c3efc9>



Future AI integration

Example of a potential AI Creative Learning Assistant, with the goal to:

- **Help learners** debug, iterate, and learn more about the Scratch platform and using the Scratch editor
- Base application and responses on our **creative learning philosophy**
- **Act as a facilitator** with prompts and thought-provoking questions (vs providing complete scripts)
- Provide **different kinds of help at different stages** of the spiral
- Use editor context, history, and learning resources to provide **in-context suggestions and tips**



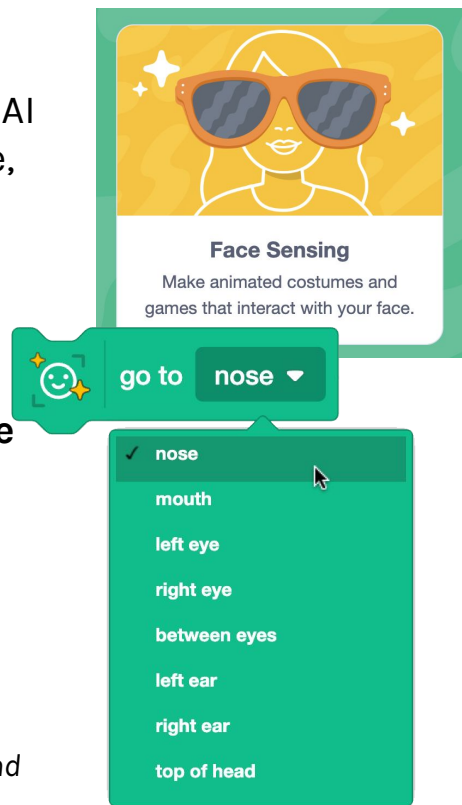
Read more here: <https://medium.com/scratchteam-blog/introducing-creative-ai-at-scratch-bcd6d6c3efc9>

Face Sensing Coming to Scratch!

This new extension adds blocks that use your computer's webcam to use AI to detect faces and track the location of facial features such as eyes, nose, mouth. **Unlocks many new project ideas that interact with your face!**

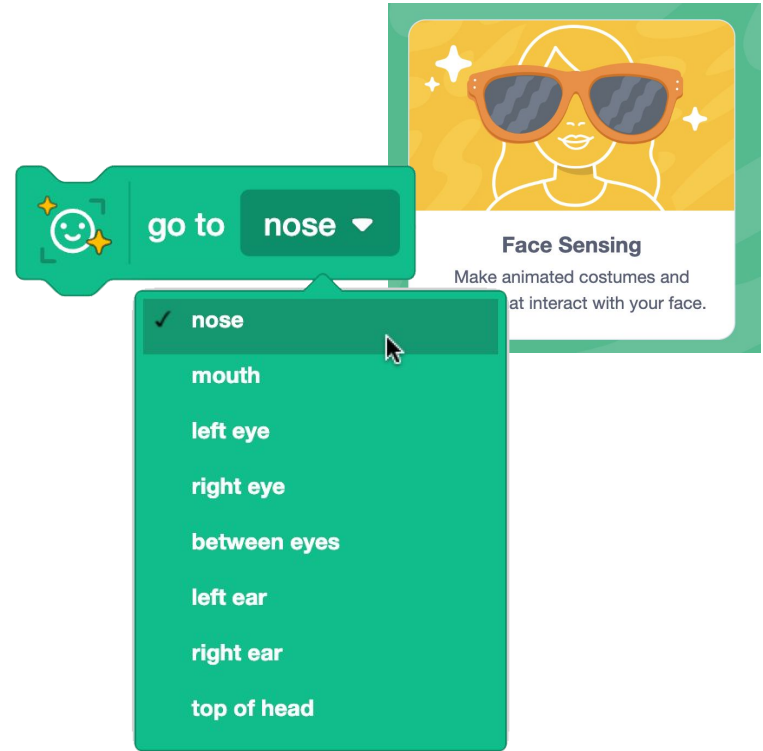
- Face Sensing blocks **run securely in your browser**. Images and data are not stored or shared anywhere. **No personal data is collected** or stored when using these blocks.
- The extension can **detect that a face exists, but cannot identify the person**.
- Per Scratch's Terms of Service, **students of any age may directly interact with/code projects using the Face Sensing Blocks**.
- **Follows Scratch's AI Values:** Fairness, Safety, Responsibility, Transparency, and Accountability.

See our ["Exploring Scratch & AI: Possibilities & Pitfalls" lesson plan](#). The lesson plan, coding cards, and tutorial video will be updated when Face Sensing becomes part of the main Scratch application.



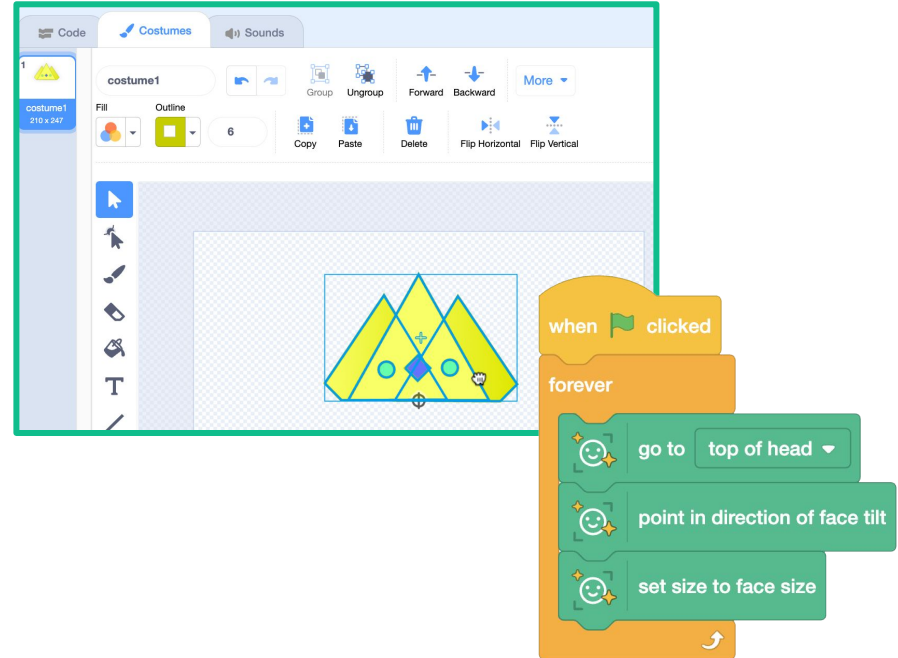
Experiment #1: Try out the Face Sensing blocks

1. Go to <https://lab.scratch.mit.edu>.
2. Click “Face Sensing” and “Try it out.”
3. Can you create a script where the sprite sticks to your nose and follows it around as you move?
4. What happens if you add an additional block like “turn clockwise 15 degrees” from the Motion category?



Experiment #2: Create a face filter

1. In the costume Paint Editor, try drawing a funny hat using the brush or shape tools.
2. Add code, or adjust the code you already have, so it sticks to the top of your head.
3. Add another sprite from the sprite menu or draw another sprite and stick it to your ear, or between your eyes... What else can you try?
4. Do you see any blocks you could use so it scales to match the size of your face? Or tilts in the same direction as your face?

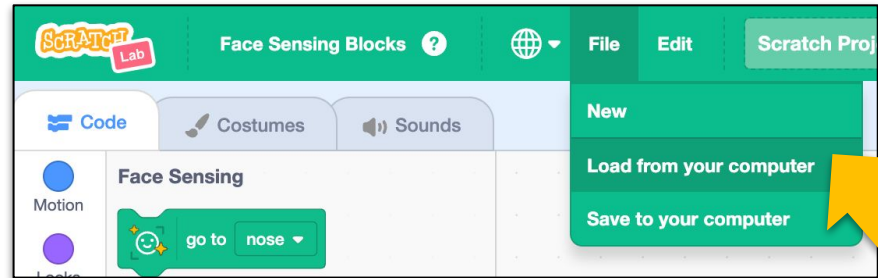
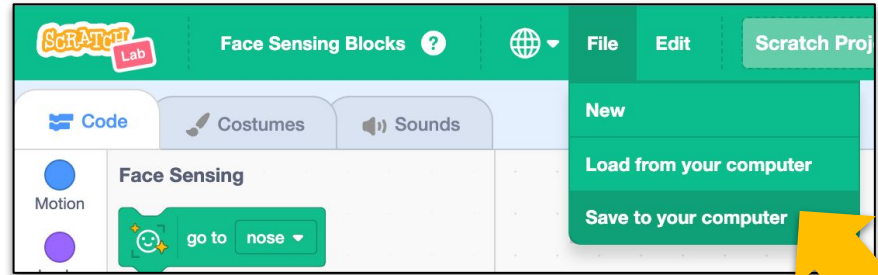


Saving

Projects created on Scratch Lab cannot be saved to an account on scratch.mit.edu. They can be saved locally and uploaded to the Scratch Lab project page anytime if users want to continue iterating on their work or share their creations.

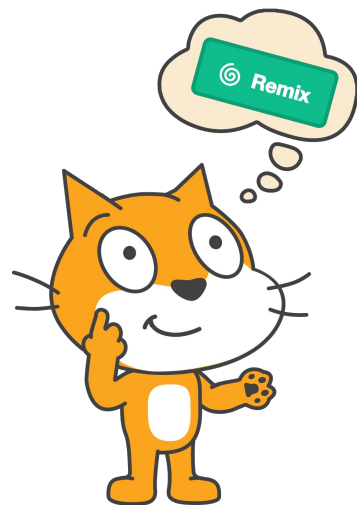
Click “**File**,” then choose “**Save to your computer**.”

Next time you want to work on your project, go to lab.scratch.mit.edu/face and click “**File**,” choose “**Load from your computer**,” and upload your project.



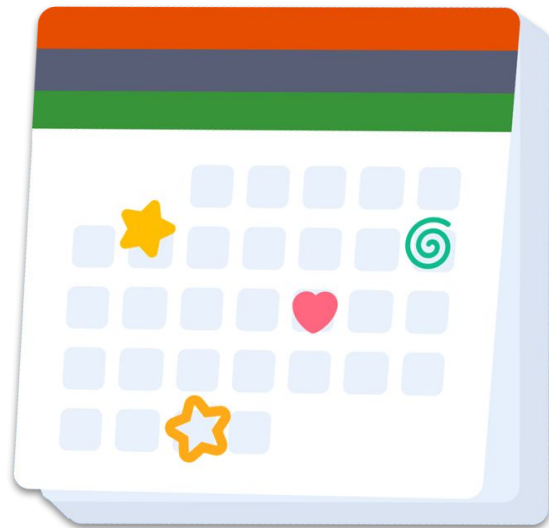
How Might You Use What You've Heard Today in Your Practice?

- When introducing your learners to Scratch, based on what you heard about our new onboarding process, is there anything you might include/change when you introduce learners to Scratch?
- Have you created starter projects for your classes, or used design journal or other methods to spark project ideas? After what you heard about our starter project and ideas page design process, how do/would you incorporate scaffolding and open-ended exploration in your lessons?
- How do you approach debugging in your classrooms? If you envision a future interaction on the debugging tool, what might you include?
- Where do you see opportunities to fold creative learning into exploration of AI?



Look out for...

- **Scratch Conference on July 24th!** Registration is free and the event is virtual.
events.ringcentral.com/events/scratch-conference-2025/registration
- **Our new Scratch Foundation website**, which will include a learning library where we'll share our wealth of creative learning materials, coming in August
- Updated **Scratch Store** with new products coming this summer with the launch of the new website
- **Follow our social channels and newsletter** to learn about future updates and events!



Please, Take a Moment for Feedback

The work of the Scratch Foundation is guided by four core values, including progressive improvement. Your feedback will support us developing future events.

Please take our survey here:

<https://www.surveymonkey.com/r/sipworkshops>



Thank you!

Upcoming Events:

- **Scratch Conference on July 24th!**
Registration is free and the event is virtual.
events.ringcentral.com/events/scratch-conference-2025/registration

Keep an eye on our Event page for additional opportunities:

scratchfoundation.org/events-calendar

Helpful Links:

- Scratch Application: scratch.mit.edu
- Scratch Website: scratchfoundation.org
- Email Signup: scratch.mit.edu/connect
- Follow us on Instagram and Facebook @ScratchTeam