

# UNIT 1

## OVERVIEW

### THE “BIG IDEA”

Many of the educators that we have worked with over the years wrestle with two questions when getting started with creative computing: “What’s the best way of helping learners get started?” and “What do I, as teacher, need to know?” The writings of Seymour Papert (a renowned mathematician, educator, and major influence on the development of Scratch through the Logo programming language) serve as inspiration for thinking about these questions.

With respect to the first question, two extreme positions tend to be taken up. Either learners need to be told what to do and should have highly structured experiences – or learners need to be left totally alone to explore under their own direction. Papert, a proponent of the notion that young learners should act as advocates for and explorers of their own thinking and learning, encouraged teachers to seek a balance between teaching and learning. Throughout the guide, we vary the amount of structure in the activities in an effort to provide balance.

With respect to the second question, educators sometimes worry that they don’t “know” enough about Scratch to be able to help others. We encourage you to take a broad view of what it means to “know” Scratch. You don’t need to know everything about the Scratch interface or how to solve every problem that a learner encounters. But, as Papert noted, educators can serve as cognitive guides, asking questions and helping break down problems into manageable pieces.

### LEARNING OBJECTIVES

Students will:

- + build on initial explorations of the Scratch environment by creating an interactive Scratch project
- + be introduced to a wider range of Scratch blocks
- + become familiar with the concept of sequence
- + practice experimenting and iterating while creating projects

As they puzzled together the child had a revelation: “Do you mean,” he said, “that you really don’t know how to fix it?” The child did not yet know how to say it, but what had been revealed to him was that he and the teacher had been engaged together in a research project. The incident is poignant. It speaks of all the times this child entered into teachers’ games of “let’s do that together” all the while knowing that the collaboration was a fiction. Discovery cannot be a setup; invention cannot be scheduled.  
(Papert, 1980, p. 115)

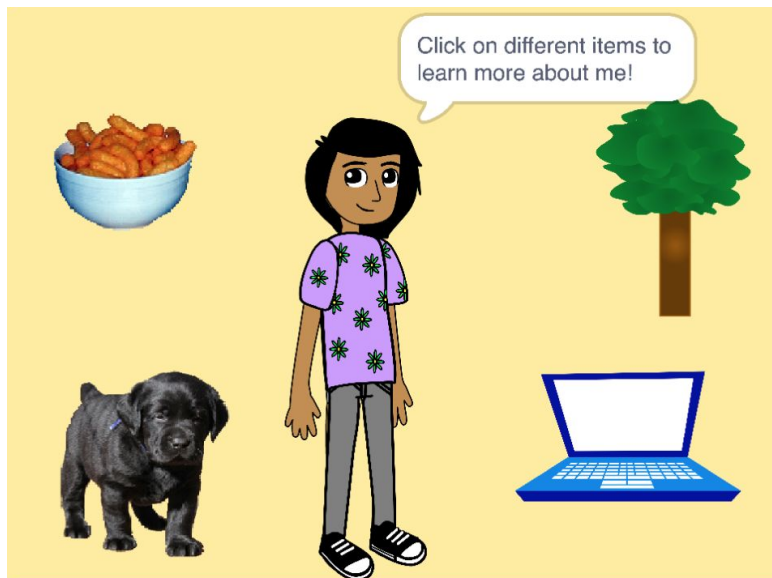
### KEY WORDS, CONCEPTS, & PRACTICES

- |                               |            |                       |
|-------------------------------|------------|-----------------------|
| + experimenting and iterating | + motion   | + tips window         |
| + testing and debugging       | + looks    | + remix               |
| + sequence                    | + sound    | + interactive collage |
| + sprite                      | + costume  |                       |
|                               | + backdrop | + pair-share          |

### NOTES

- + Make sure students already have a Scratch account for saving and sharing their projects online.
- + Think about how you plan to access your students’ work. For example, you can create class studios to collect projects, have students email you project links, or start a class blog.

# CHOOSE YOUR OWN ADVENTURE



This unit includes a mix of structured and open-ended activities that engage students in exploration of the key concept of sequence – identifying and specifying an ordered series of instructions. This is often a powerful moment for students: they're telling the computer what to do, by translating their ideas into blocks of computer code.

From a step-by-step tutorial, to playing with a constrained number of blocks, to a debugging challenge, each activity helps learners build the skills needed to create an About Me project. In the culminating project, learners will explore and experiment with sprites, costumes, looks, backdrops, and sounds to create a personalized, interactive collage in Scratch.

Take advantage of all the activities or pick a few that cater to your students' specific needs and interests; the choice is up to you. If you're not sure where to start, a possible order for the activities is suggested below.

## POSSIBLE PATH

