littleBits education

INVENTION LOG FOR CODE KIT

BUILD GAMES. LEARN TO CODE.

Name:

What challenge are you working on?

In a sentence or two, describe the challenge you will be working on.

CREATE

Explore new ideas and bring them to life. You can start by brainstorming, tinkering with Bits and code, or just start building!

What ideas do you have for solving the challenge?

Write down or draw as many ideas as you can think of. It doesn't matter how "good" the ideas are. The goal is to explore as many possibilities as you can. Feel free to use more sheets of paper to record your ideas.

Which idea seems best?

Look through your brainstorming list and choose which of your ideas you'd like to work on. Maybe it's the one you think will be the most fun to make, or it could be the one that will make the biggest difference in someone's life.

I will invent a...

What will it be?

that...

What will it do?

because...

Why did you choose that idea?

CREATE

What are your constraints?

Constraints are your limits and requirements. For example, you might have limits on the amount of time you can spend on this challenge, the types of materials you can use, or how much your final invention can weigh. In the space below, create a list of any constraints you might need to keep in mind as you work.

What are your goals?

What do you want your invention to accomplish? Achieving these goals will help you know your invention was a success.

What are the important qualities for your invention to have?

These should all be things that will help it do its job better. For example, is it important that your invention can be used multiple times, or by more than one person at a time?

CREATE

What happens in your game?

Now that you've chosen an idea to work on, it's time to start designing your game. Use this page to brainstorm as many game ideas as you can. Feel free to use more paper as you get more ideas.

IDEA # _____

GAME NAME:

NUMBER OF PLAYERS:

HOW DO THEY WIN?

GAME RULES:

IDEA # _____

GAME NAME:

NUMBER OF PLAYERS:

HOW DO THEY WIN?

GAME RULES:

CREATE

What Bits and materials will you need?

In this next step, you'll start to figure out how to build your game. Use the space below to draw or write down what happens during your game, and what Bits and materials could be used. Circle the ideas you want to prototype.

AT THE START OF THE GAME

DURING THE GAME

AT THE END OF THE GAME

CODE PROTOTYPE #1

What does your first prototype look like?

Now that you have outlined your game and what Bits to use, you'll have to connect them with code. Before jumping into the Code Kit app, organize your code by writing out exactly what happens in your game, line by line, from beginning to end. Write as many versions as you need. For example, the start of Hot Potato...OF DOOM! would look like this:

"START
Show a smiley face on the LED matrix.
If the button is pressed, start the game timer
Show a beating heart ..."

CIRCUIT PROTOTYPE #1

What does your first circuit prototype look like?

Create a drawing of your prototype. Be sure to label which Bits you're using and what they do.

Playing is a test run. It's a chance to see how well your invention works and look for ways that you can make it better.

How did your testing go?

Describe how your test run went. What happened when you used your prototype?

Successes

What parts worked well? Did you meet any of your goals?

Still needs work

What parts didn't work well or go as planned? Are there any goals you still need to work on?

REMIX

Keep experimenting! Add new Bits, try new code, swap parts with other inventions, or take all the pieces apart and put them together in a different way.

How did your testing go?

Now that you've played with your invention, think about what you would like to improve, test, or alter. Make a list here.

What is your plan of action?

Of all the things you want to change, which will you tackle first? And second? If you're working on a team, can your teammates take on some changes, while you do others?

CODE PROTOTYPE #_____

What does your prototype look like?

Take a minute to look over your code and the changes you would like to make. Before making changes in the Code Kit app, write out the new code in words. This will help you think through which code blocks you'll need, where they should go, and what other blocks would need to change.

What's new?

Are you adding anything new or trying a different approach? Are you fixing or improving the things that didn't go well in your last test?

How do you think your changes will affect the way your prototype works?

CIRCUIT PROTOTYPE #_____

What does your prototype look like?

Create a drawing of your prototype. Be sure to label which Bits you are using and what they do.

What's new?

Are you adding anything new or trying a different approach? Are you fixing or improving the things that didn't go well in your last test?

How do you think your changes will affect the way your prototype works?

How did your testing go?

Describe how your test run went. What happened when you used your prototype?

Successes

What parts worked well? Did you meet any of your goals?

Still needs work

What parts didn't work well or go as planned? Are there any goals you still need to work on?

SHARE

Tell your story. Inspire others. Show the world what you have created.

Invention Name

Create a drawing of your invention. Be sure to label which Bits you are using and what they do.

Describe what happens in your game.

SHARE

What have you learned about being an inventor?

Part of being an inventor is thinking about how you work and how you could remix and improve your own process.

Did you learn anything about how your Bits and code work?

What makes a good game? How would you improve your game in further iterations?

What was the most exciting part of inventing?

SHARE

What did you learn from watching others go through the Invention Cycle?

What was the most challenging part of inventing? What is one thing you could do to try to get better at this?

Invention Log Checklist:

Use this checklist to make sure you have completed all of the steps of the Invention Log.

	STUDENT	TEACHER
CREATE		
While brainstorming, I came up with at least 3 ideas related to the challenge.	☐	☐
I listed my constraints and criteria for success so when I remix, I can look back and make sure my remixes are on the right track.	☐	☐
I outlined my game and listed which Bits could be used to make my game work.	☐	☐
I wrote out the code for my game line by line, from beginning to end before writing code in the Code Kit app.	☐	☐
I made a detailed drawing of my first prototype and labeled each part with how I thought it would work during the Play phase of the Invention Cycle.	☐	☐
PLAY		
I paid careful attention to my prototype while I was playing so I could learn about how it worked.	☐	☐
I recorded my observations in my Invention Log, including things that I liked about the prototype and things that weren't right yet and needed work.	☐	☐
REMIX		
For each one of my remixed prototypes, I identified what new thing I was trying.	☐	☐
Every time I created a new remixed prototype, I made a new prototype profile in my Invention Log so I can look back at all the different things I tried later.	☐	☐
After playing with and testing a prototype, I recorded what happened, what was successful, and what still needed work so I could continue to improve my invention.	☐	☐
SHARE		
I shared my invention and the story of how or why it was made with someone else.	☐	☐
I thought about everything I did during the challenge, and wrote down future improvements & new things I want to try when I create my next invention.	☐	☐