



Ife Opportunity Hour of Code Guide for Guides and Hosts

Note: This document is a transcript of a video of the same name but can also be used alone. Links to the video, this guide, and other resources can be found at <https://ifeopportunity.wordpress.com>.

Hello! And welcome to the ***Ife Opportunity Hour of Code Guide for Guides and Hosts***. This video will show you how to **guide students** through an Hour of Code and how to **host your own** Hour of Code event.

My name is Karama Neal and I am the founder of ***Ife Opportunity***, an initiative to expand educational opportunities for children and young adults. The **Hour of Code** is an international effort to introduce people to computer science. Their online tutorials are freely available for all to use. There are dozens of them and they're wonderful but some people may be nervous or intimidated by the idea of leading a computer science tutorial. This guide is here to help.

The Hour of Code certainly teaches computer programming, but more importantly, it develops skills in

- **Logic**
- **Problem solving**
- **Critical thinking**
- **Communication**

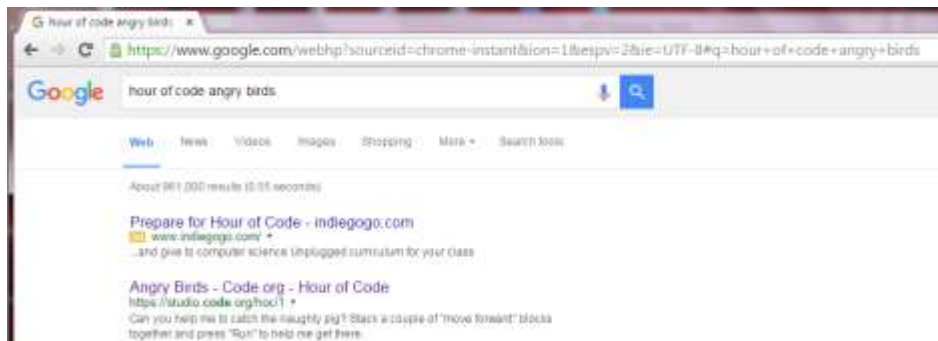
These are incredibly **transferable skills** valuable in writing, project management, research, planning, and many other fields. These are also skills that many potential Hour of Code guides and hosts have and are happy to share. That means that **you don't have to have a computer science background** in order to be a successful guide for or host of an engaging Hour of Code event.

This video is best viewed while completing an Hour of Code, so open another browser window (or tab) and let's get started. There are dozens of tutorials available for various levels of expertise and for coding languages. We're going to use a **beginner JavaScript tutorial** as our example, one with an Angry Birds video game theme.

JavaScript is the most widely used coding language in the world and the **block-based coding tool** is used by beginners and by students at leading universities. Most importantly, the

concepts emphasized in this beginner tutorial are applicable to the other tutorials and, as mentioned, to many other fields.

Visit code.org and select the Angry Birds beginner tutorial. You can also search “Hour of Code Angry Birds”.

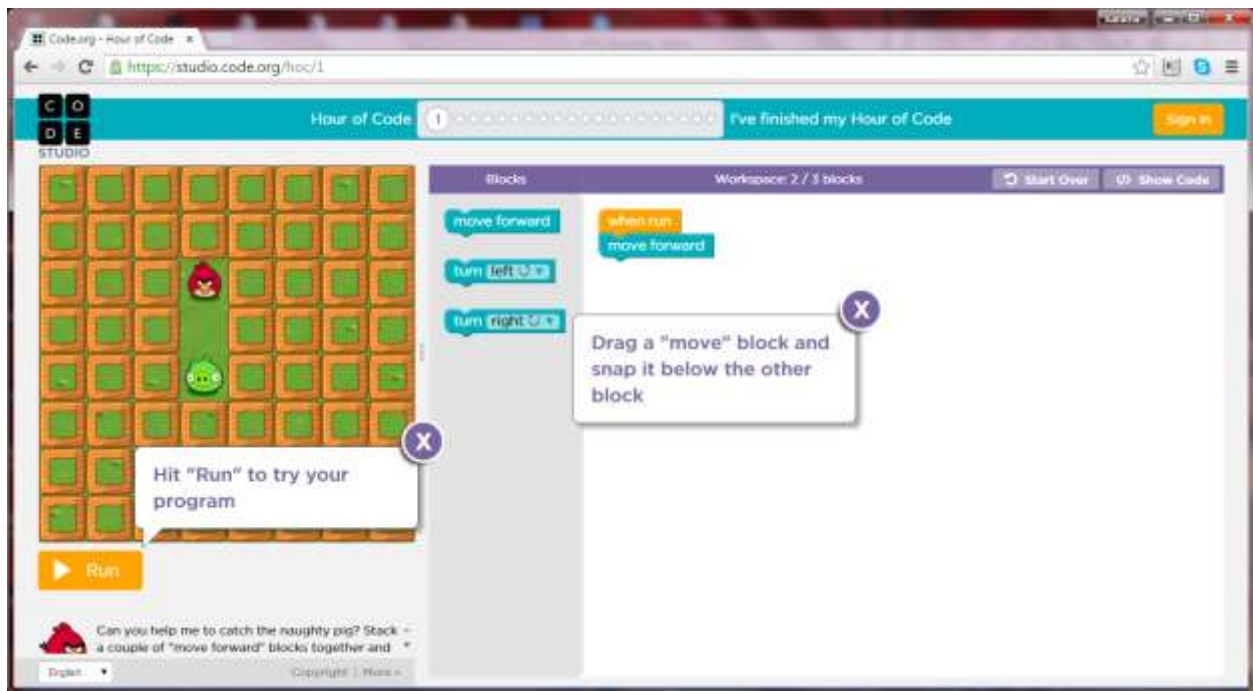


We’re not going to watch the video, so close that window, but you should feel free to watch later.

Your screen (<https://studio.code.org/hoc/1>) should look like this.



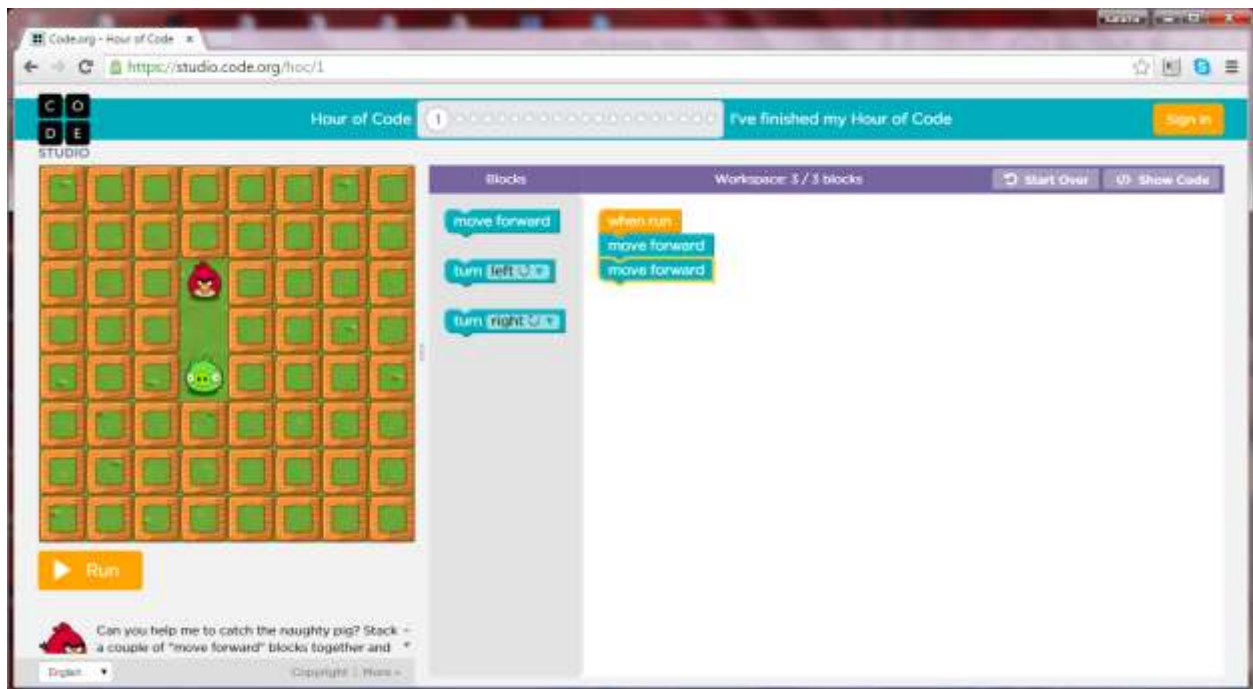
Your goal is to tell the computer how to help the bird reach its goal. Your workspace, on the right, is where you’ll write the code using code blocks. Simply drag and drop the blocks from the middle to the workspace and connects the blocks to each other. These form the directions, the code. Next click RUN to make the bird follow your directions. You can click those large Xs to close those explanatory windows.



Ready to give it a try? Pause this video and go for it.



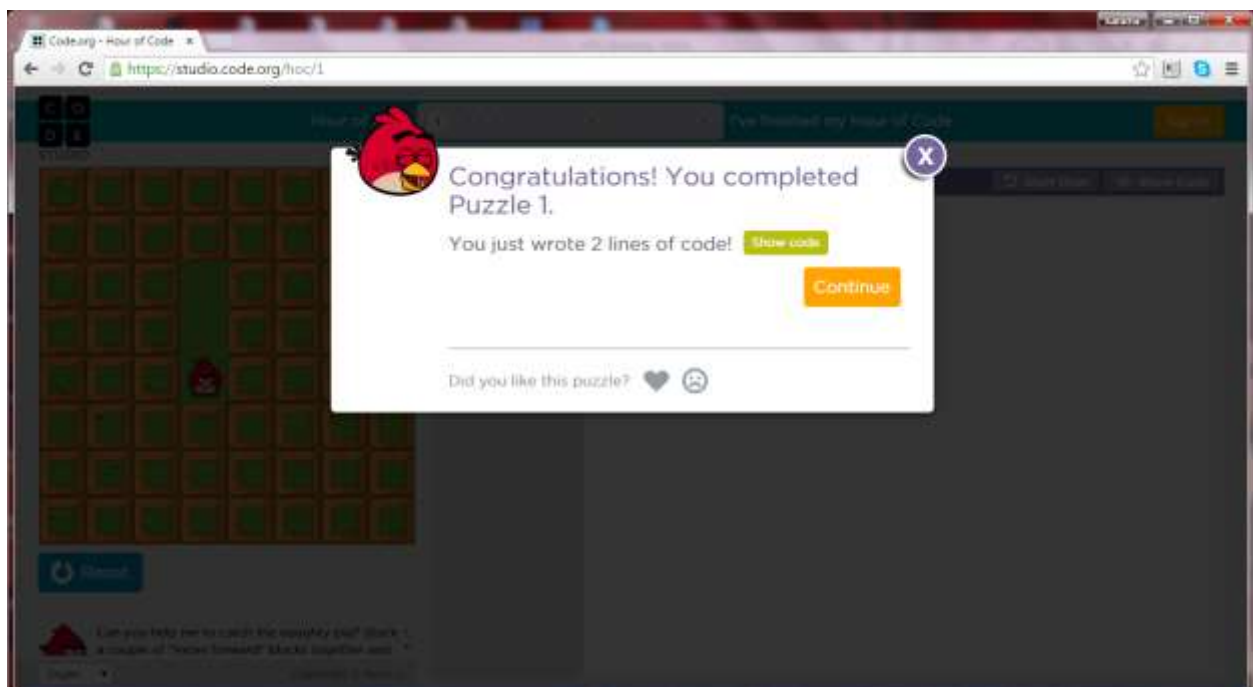
Did your bird get the pig? If so, great! If not consider the following: if you used only one MOVE FORWARD block then the bird moves forward only one square, but you need it to move two squares. That means you need *two* MOVE FORWARD blocks. Make sure they're connected.



The key is that the computer can only do what you tell it to do. If you need it to take two steps you have to tell it to take two steps. This is why programming helps people with technical writing and logic, because all steps have to be identified and articulated.

If younger coders are still having trouble at this stage, check to see if they know how to use a mouse or mousepad. Some may have only ever used a touchscreen so you'll have to show them how to use the mousepad.

So give it another try if you need to and congratulations! Your bird got the pig!

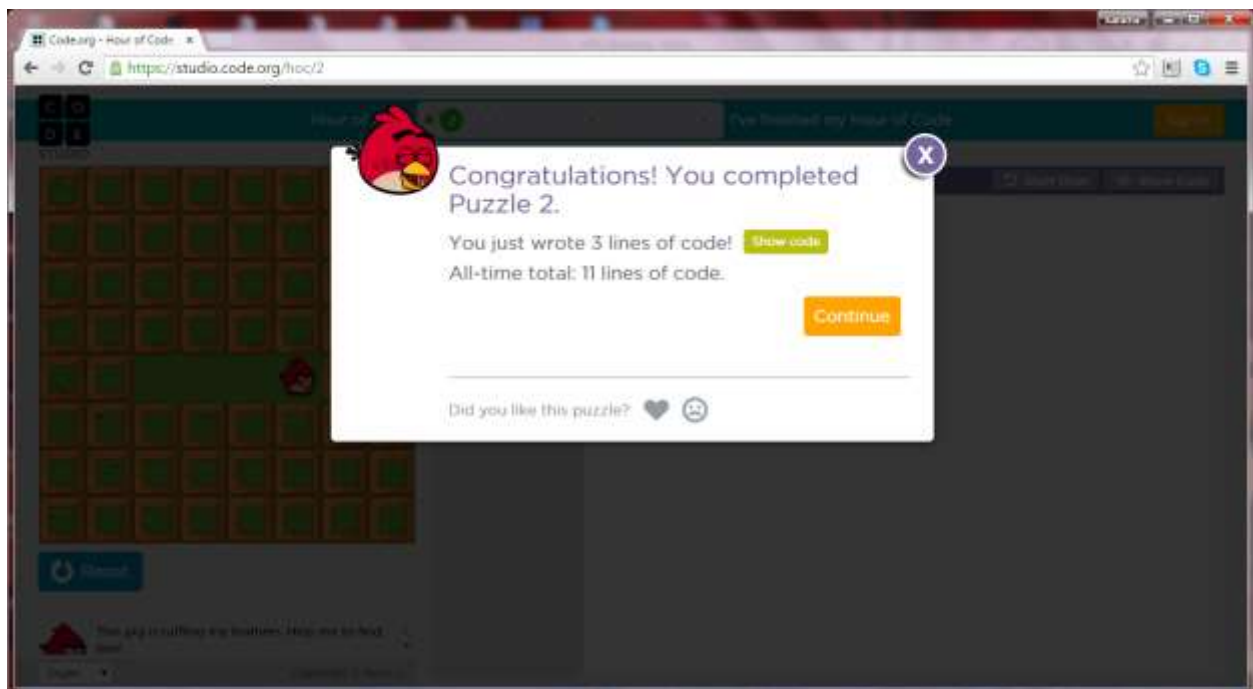


Click CONTINUE to move to level 2, then pause the video and use what you just learned to help your bird get the pig.

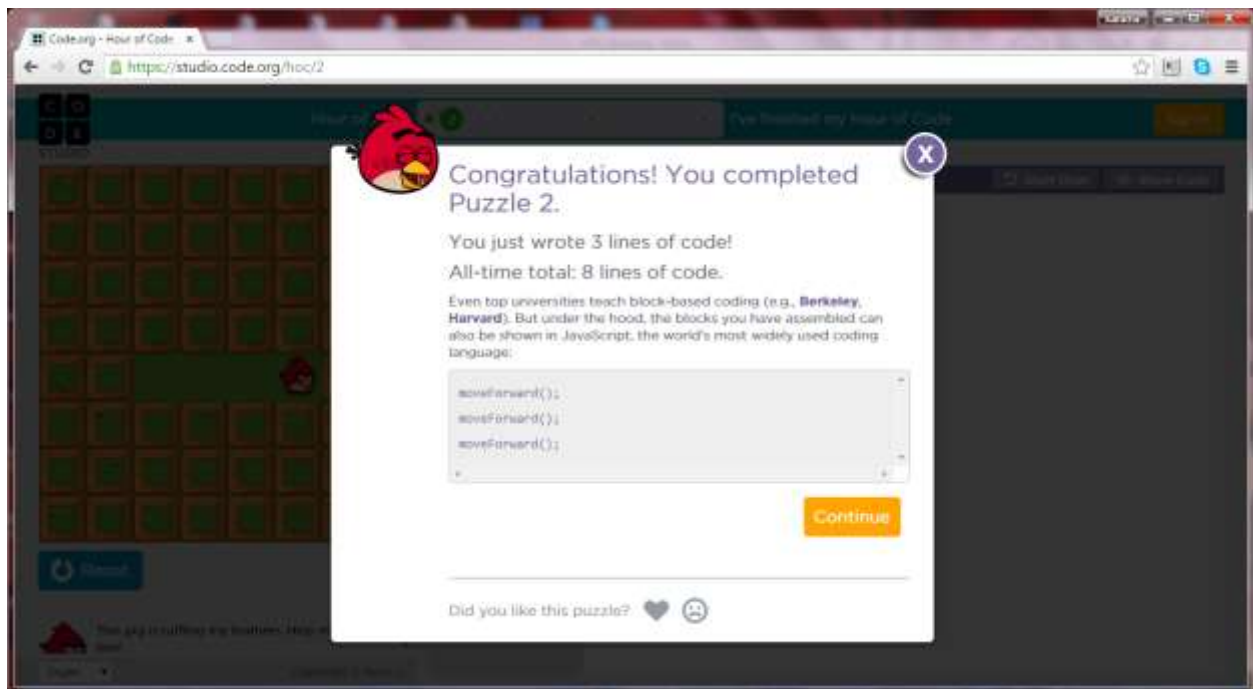


Were you successful? Did you figure out that you needed to use three MOVE FORWARD blocks? If you ever end up with extra blocks in your workspace, just drag and drop them back to the block storage area in the middle to put them in the trash.

The congratulations window shows that you just wrote three lines of code. Good work!



Click SHOW CODE to see the actual JavaScript code behind the blocks.

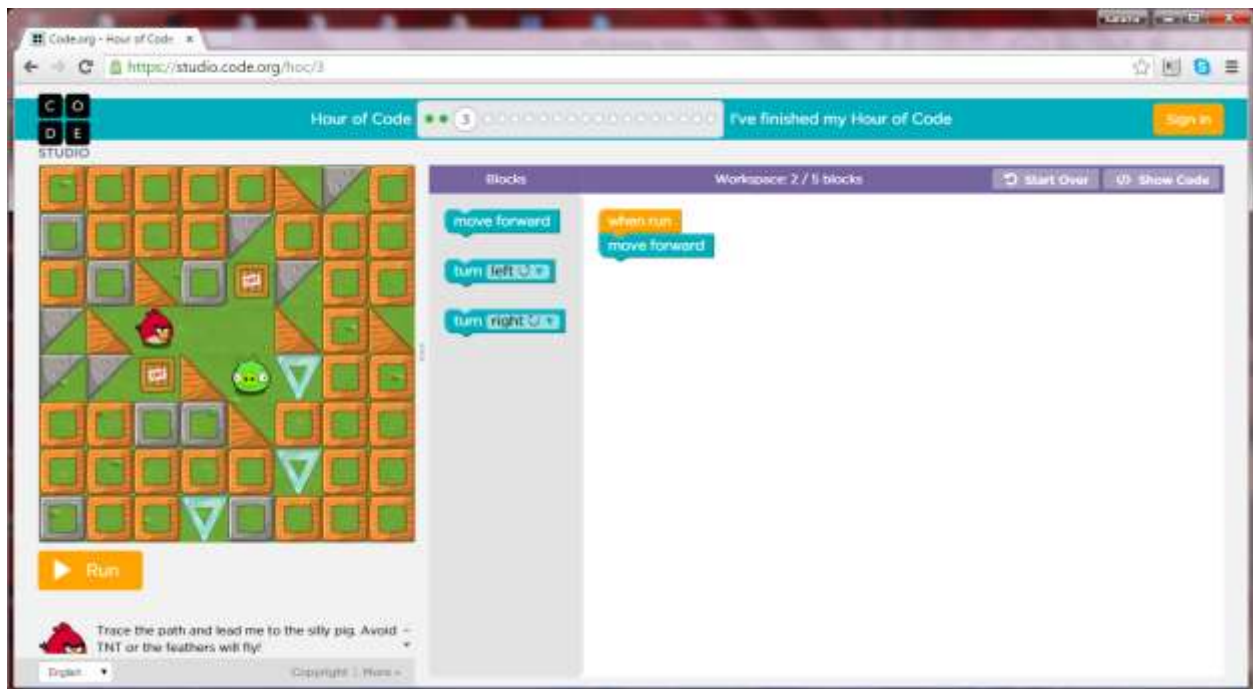


This text is what a JavaScript programmer would type.

Encourage engaged participants to check out the actual code frequently, even at every level. But be sure to show them the code early, at level one or two. If participants don't look at the text until there are numerous lines of code, they may be overwhelmed by the length and complexity of coding language. Also, note that some other tutorials actually show the code in the block, making switching to text code unnecessary.

Ready for level 3? Pause the video and see if you can figure it out. Consider the perspective of the bird and all the blocks you have to choose from.



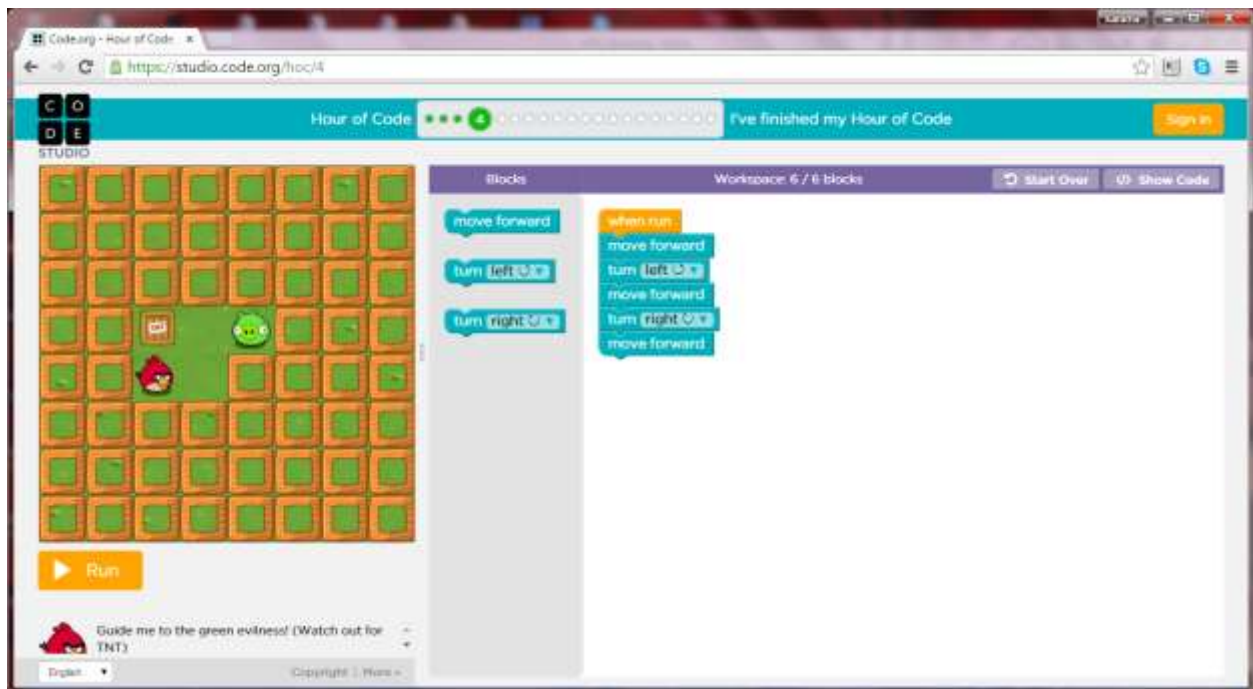


Did you figure out that you need to use two MOVE FORWARD blocks, then a TURN RIGHT, then another MOVE FORWARD? If so, give yourself a pat on the back. And be sure to praise participants who are figure it out as well. Many young people have lots of experience playing (consuming) computer games but are less familiar with creating them. So give them the praise they deserve, and give it to them frequently.

Also notice that, when you click RUN, the blocks light up when the bird is following that particular direction. This reinforces the fact that the computer can only do what you tell it to do – no more, no less.

Ready for Level 4? Pause the video and give it a try. If you get stuck, click RUN to see where the bird goes wrong and then use that information to correct your error. It is often critical to run tests, in programming and life. Remember (and remind your participants) that you have to tell the computer every little step.





Were you successful? If so, good job! When guiding participants, be sure to congratulate them when they are successful. And if they don't get it on the first try, identify what they did correctly and praise that.

For example, if the participant coded WHEN RUN, MOVE FORWARD, TURN RIGHT, praise them for realizing that the bird had to turn after making the first step. Then encourage them to put themselves in the bird's shoes so they can recognize that they have to turn left (rather than right) after the first step.

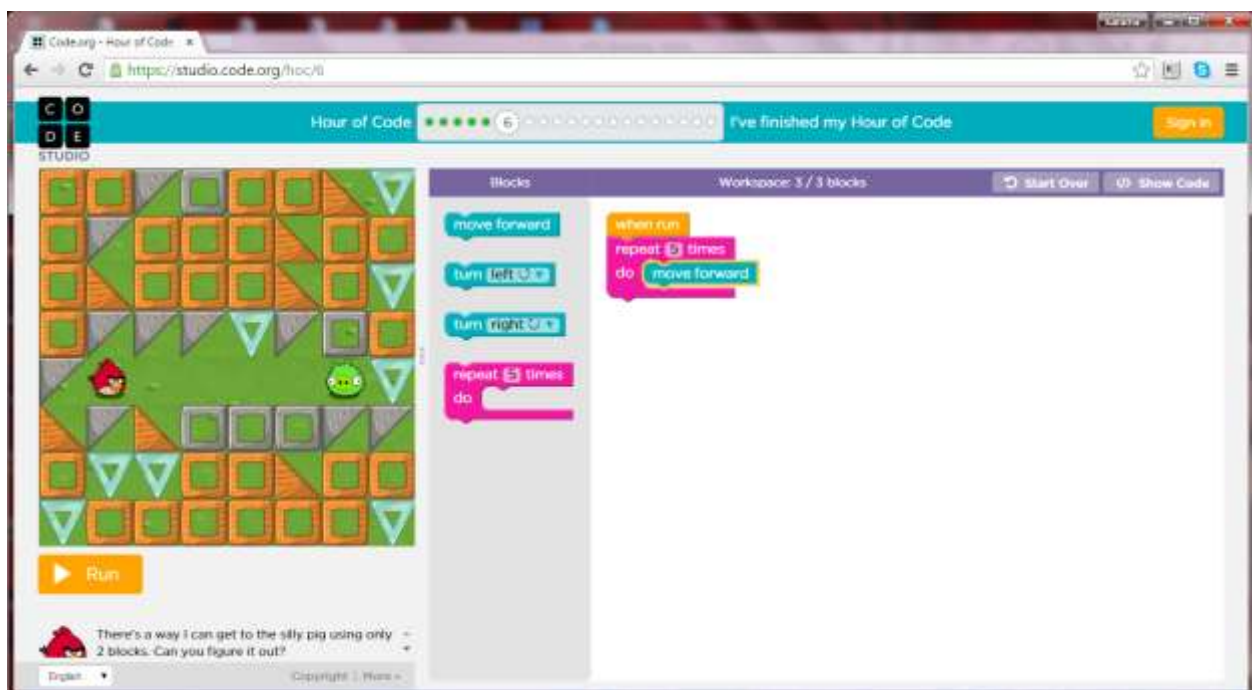
Ready for level 5? You can always find the directions in the lower left corner of the screen. Click to see the code on occasion and don't forget to run tests to help you correct any errors.

Sometimes participants will get frustrated with a tutorial. If it's a beginner tutorial, encourage them to complete at least a quarter of the levels, before trying another tutorial. Often, participants who consume content, are not used to creating it and that challenge can be both unfamiliar and uncomfortable. It is important for them to push through this temporary discomfort so that they get the most out of their Hour of Code. When they do, they have a pride of accomplishment that is simply priceless.

Now pause the video and try level 5.



Level 6 is similar but allows you to use a different block that gives directions with fewer steps. Whatever you put in the REPEAT block will be repeated for the number of times you indicate. Pause the video and give it a try. Be sure to check out the code. You can see the code at any time using the `</>` SHOW CODE button at the upper right of the coding window.



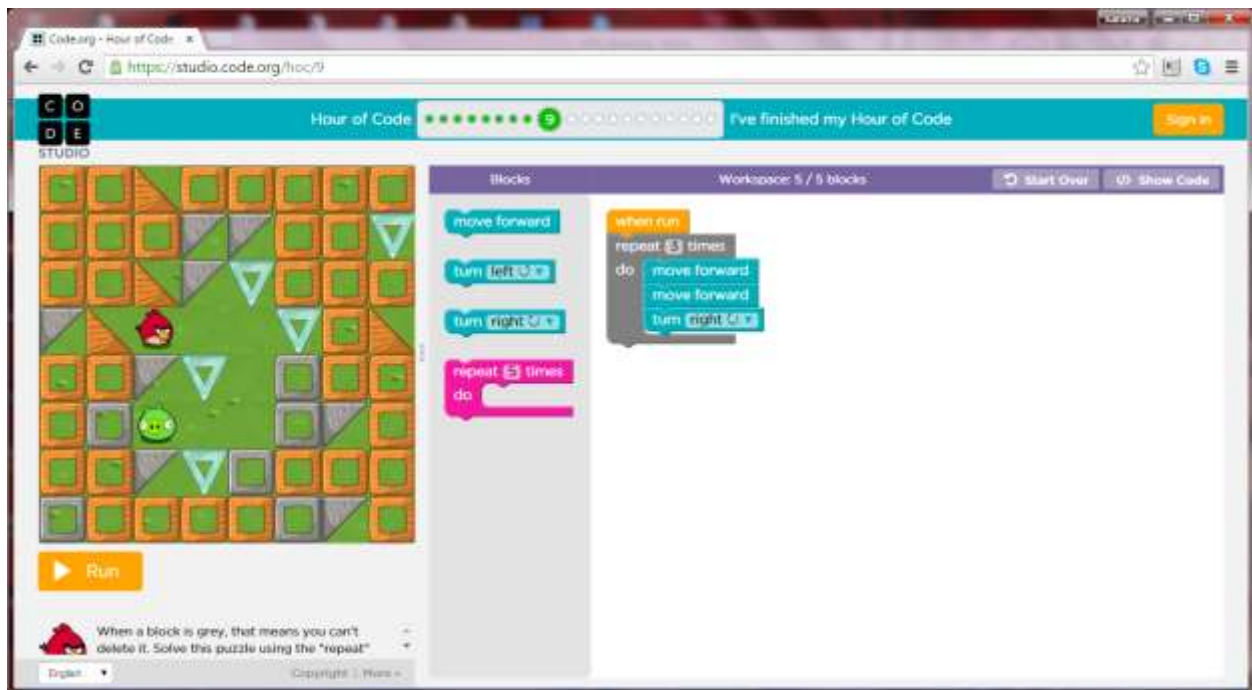
Success with level 6 will prepare you for levels 7, 8, and 9. The REPEAT block, on which the number 5 can be changed, allows the programmer to be more efficient. Efficiency - how to do something more quickly, less expensively, with fewer resources - is a key goal in business, technology, engineering, and other fields and this gets participants thinking in that way. Be sure to click SHOW CODE to see what the JavaScript looks like and don't assume the computer knows anything. Use logic to tell it every little step in the correct order. If you have a block in the workplace that you don't need, just move it to the block storage area in the middle to put

it in the trash. And remember that you can put more than one block in the repeat block. You'll need this for level 9.

So pause the video and try your hand at levels 7, 8, and 9.



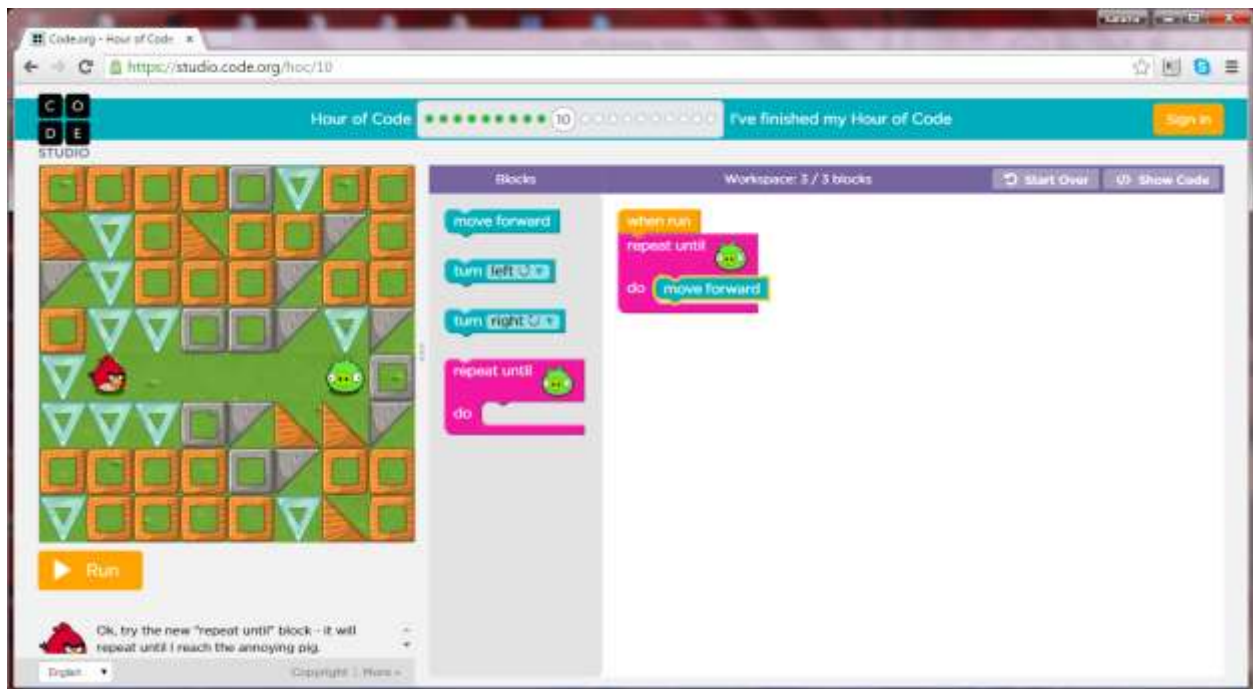
Welcome back! I hope you gave yourself and your participants lots of praise for completing these levels. Level 9 in particular is an exercise in efficiency



While one could certainly write the code with many more blocks indicating each step separately, the REPEAT block allows for more elegant code.

Level 10 introduces a new way to write efficient and elegant code – the REPEAT UNTIL block. Pause the video and give levels 10, 11, 12, and 13 a try. Starting with level 12, you'll see some new characters but the coding principles are the same. Have fun!



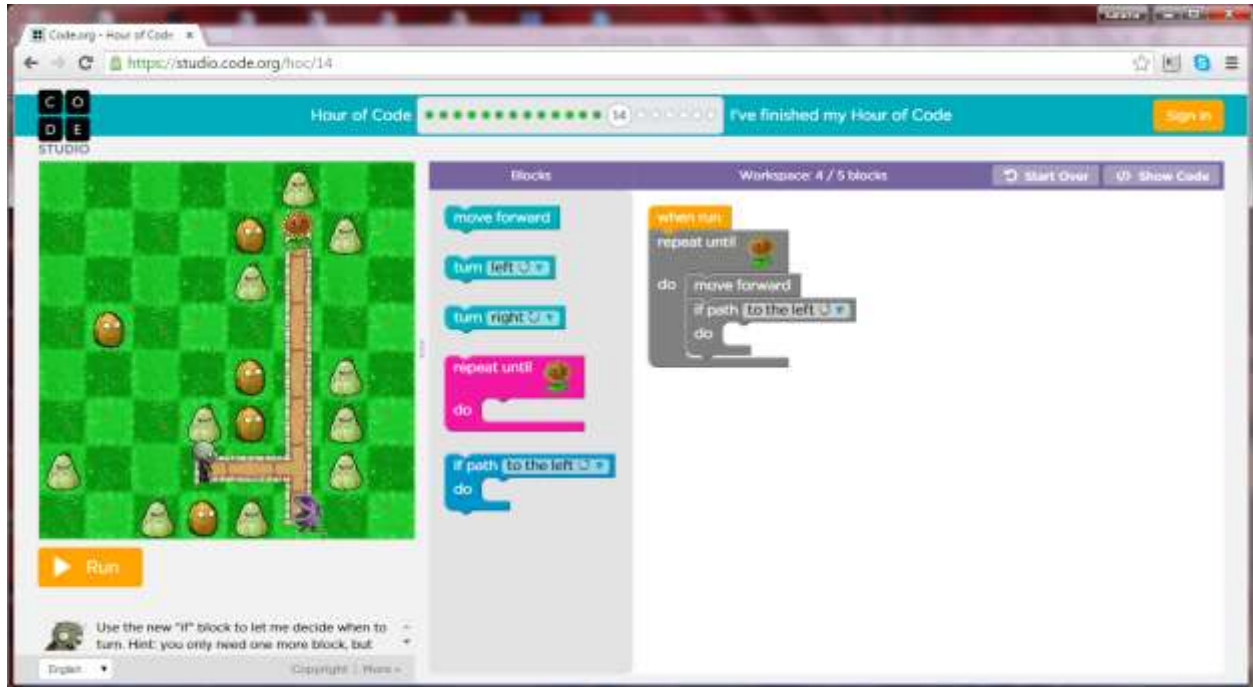


Did you enjoy meeting the zombie? Think back to levels 1 and 2 and how impressive it is now that you can get the zombie to walk in a zig zag path with only five blocks. Congratulations on your progress! Be sure to pass on this praise to your participants.



Puzzle 14 introduces you to the IF/DO block which helps the zombie (your computer) make a decision. Remember you only need one more block. Be sure to pay attention to the logic of

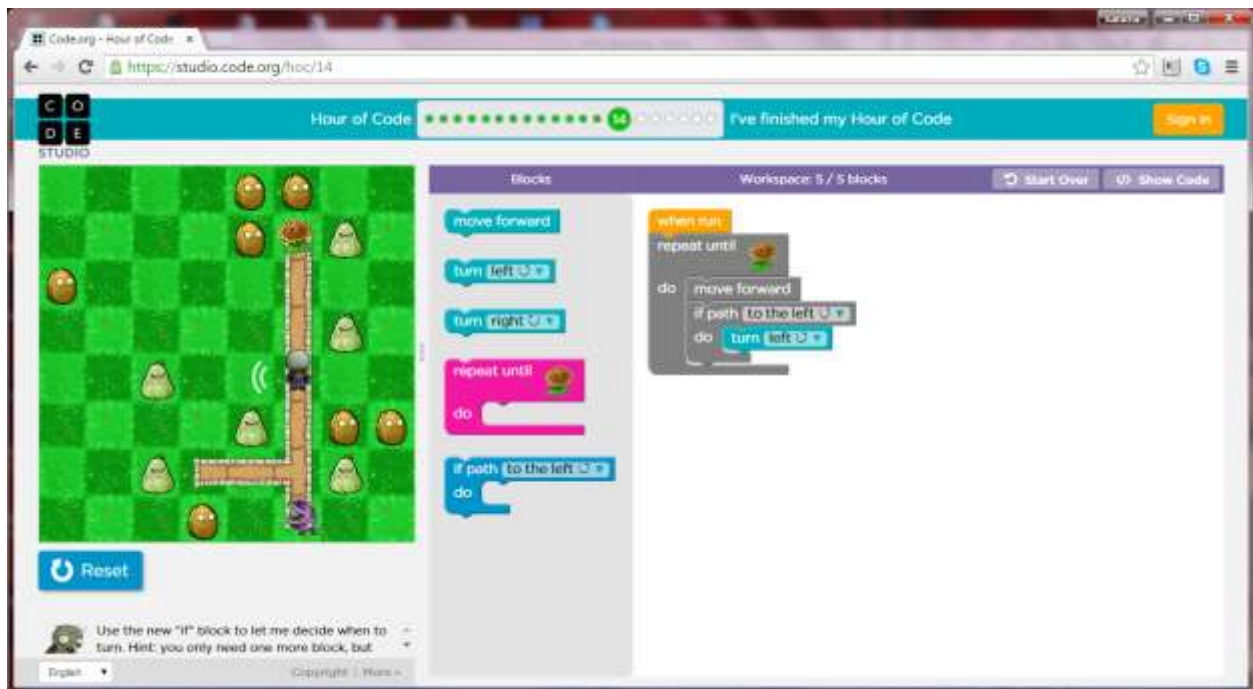
the set up so you'll be ready for the higher levels. And remember the IF/DO block is just like the more familiar if/then statements seen in writing and mathematics.



Pause the video and give Puzzle 14 a try.

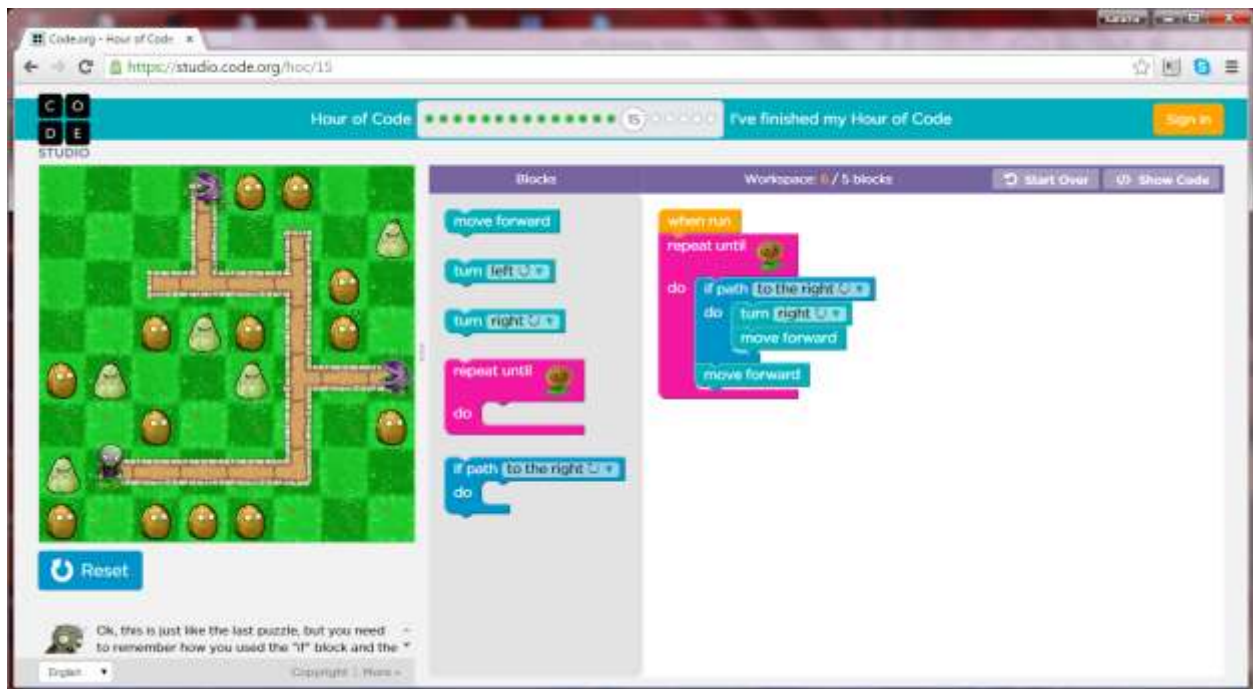


Notice how the zombie “looks” to the left to see if there is a path there so it can turn left. It’s following your directions exactly.



Use what you've learned to complete levels 15-17. Along the way, you'll continue to use the REPEAT and IF/DO blocks and you'll use the same critical thinking, logic, and communication skills. You'll also meet some characters from the Ice Age movies.



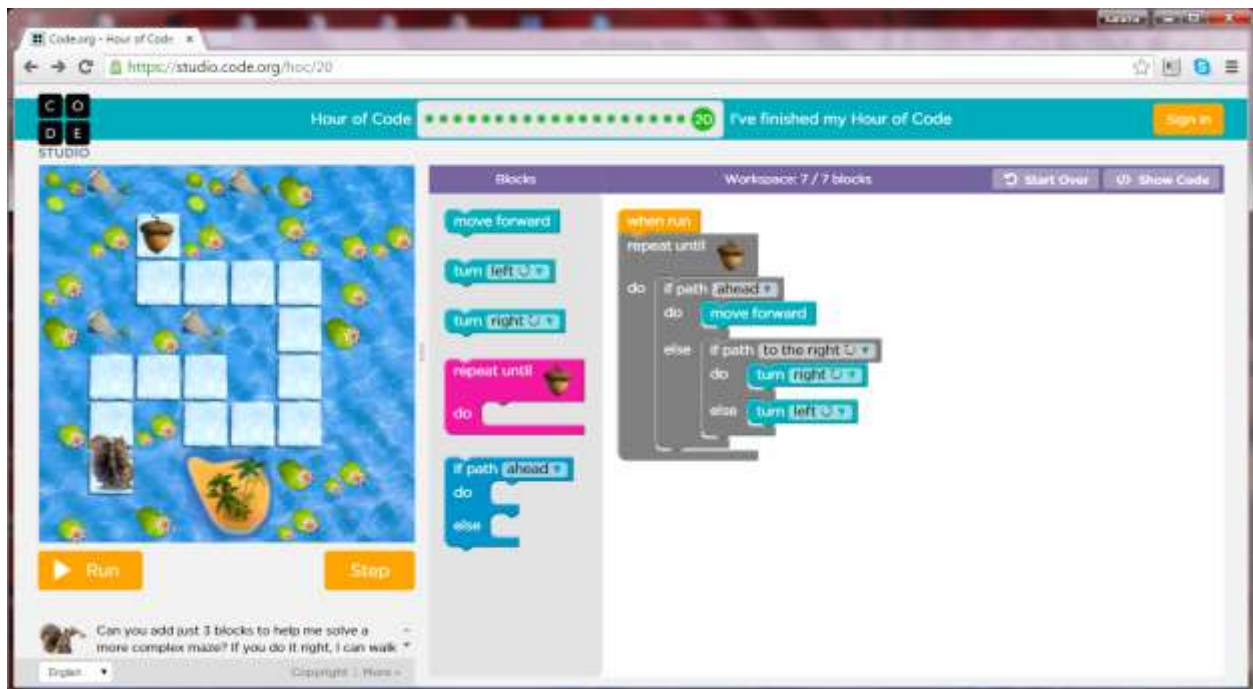


Review your code (blocks and JavaScript) to see the zombie follow each step to reach the goal. If you get stuck, use the Puzzle 15 solution to get some ideas on how to proceed.

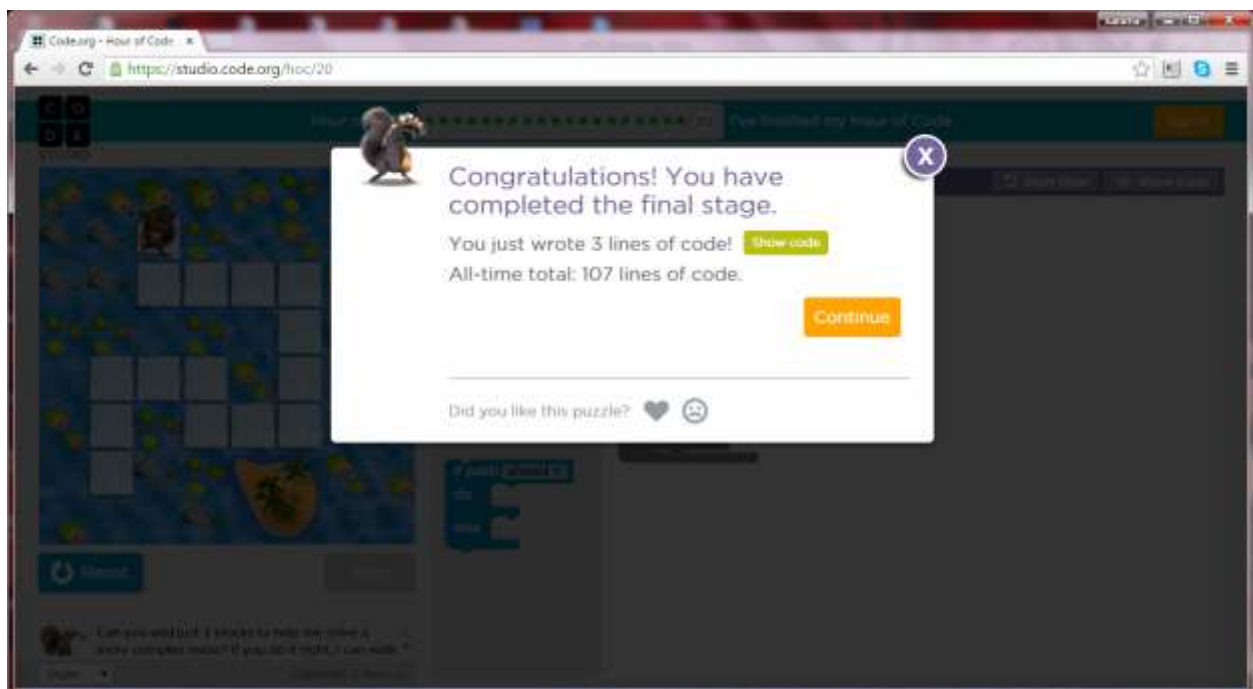
Now that you've mastered IF/DO blocks try levels 17-20 and use IF/ELSE blocks. The IF/ELSE block allow the squirrel (computer) to choose from two options based on a particular state. Be sure to check out the JavaScript code as you proceed. Pause the video to complete the last levels.



Congratulations! You've just completed an Hour of Code!



Great work!



Feel free to print and share your certificate of accomplishment! As you think back over your hour consider the skills you used and how you can share those skills with other Hour of Code participants. And consider using what you learned to try another of the many free tutorials.

I hope you're excited to share your experience with others. With that in mind, I offer the following top ten tips for those who want to host their own Hour of Code event:

1. Solicit registrations before the event.

This will allow you to plan so that you have enough space and computers. Advertise widely (considering how much space you have) and focus on places where parents, educators, and young people are – schools, libraries, scout troops, youth groups, etc. Don't forget to remind participants about the event to enhance your attendance rate. If you have space, let others walk in. My first Hour of Code event was aimed at elementary and middle school students, and when their parents came to drop them off, several of them asked to stay. It was amazing to see parents and children coding together and it increased the likelihood that they would continue coding after the event.

2. Allot at least 1.5 hours for the Hour of Code.

You may have taken more than an hour to get through this tutorial. In part, that's because of the video and narration, but it's important to note that most people who are unfamiliar with coding or the Hour of Code take more than an hour to complete a tutorial, even the beginner level ones.

3. Print certificates beforehand

This will make logistics much easier on the day of your event and is another reason to register participants beforehand. And print certificates for all participants, even though some may not finish their tutorial. If possible, retain the ability to print certificates so any walk-ins can also get personalized certificates.

4. Choose 2-3 tutorials for the participants to start with.

Choosing a few tutorials ahead of time will allow your volunteers to prepare well in advance. I suggest starting with the tutorials aimed at beginners and having more advanced options available for later. Several of the tutorials allow participants to create their own video games and then share them online so their friends (and the world!) can play them. A participant in one of my Hour of Code events created an excellent basketball-themed Pong game. He had never coded before and had a ball doing so.

5. Don't assume mousepad or mouse skills.

These days, younger participants may assume all screens are touch screens. If that's the case, make sure they know how to use a mouse or mousepad so they don't get frustrated. You may have to help them out, particularly at the beginning.

6. Train guides beforehand.

It makes a real difference in the comfort and skill of your guides, and they may end up really liking coding! Well-trained guides also mean that participants can spend more time coding rather than watching videos. And that means you won't need headphones. This tutorial is designed for training purposes and a written transcript is available at ifeopportunity.wordpress.com.

7. Create a dedicated time and space for coding.

For many participants, creating content (rather than consuming it) is an unfamiliar or less practiced way of thinking. If there are distractions – outdoor activities, indoor games, food, etc. – they may be unable to focus and unwilling to code.

8. Aim for one participant per computer.

Giving participants room and space to think on their own is ideal. Of course, they can still talk with a neighbor as they work through the tutorials.

9. Aim for no more than five participants per guide.

Encourage guides to rotate through the room and check in with the participants to see how they're doing. If one guide works only with one participant, then the other guides have more participants to attend to and some participants may not get the attention they need.

10. Provide a way for participants to follow up on their coding interest.

There are so many free coding resources, classes, and opportunities available. Consider sharing those opportunities with your participants. At my events, I give all participants a bookmark (because low-tech is important too!) that lists resources for learning coding and getting access to low-cost computers and broadband. A list of these resources is available at ifeopportunity.wordpress.com.

Thank you so much for participating in the *Ife* Opportunity Hour of Code Guide for Guides and Hosts. Please spread the word and have fun sharing the Hour of Code with others.

Contact *Ife* Opportunity for more information on these and other opportunities to expand educational opportunity.

Enjoy!

CREDITS

Narration by
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Thanks to HourOfCode.com and Code.org

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