

Seniors

# GRILL<sup>®</sup> Scout Introductory Patch

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.....  
*Discover, Connect, & Take Action*

Three different routes to learn computer programming!

### *Discover*

.....  
Girls will learn the basics of Java programming or how to use a 3D modeling program

### *Connect*

.....  
Girls will share and encourage each other to program or create 3D models

### *Take Action*

.....  
Girls will write a program or create a model that puts their knowledge in to practice







# Before you Start

The goals of this patch are to learn about 3D modeling or beginner Java programming and apply that knowledge to a project that can be expanded.

This program is divided in three sections—Discover, Connect, and Take Action. Each section has different types of activities based on different levels of technology. This full patch program requires the use of some kind of technology. If there is only tablet access, complete the programming activities. If there is computer access, you can choose programming or 3D Modeling.

To complete the patch, only ONE activity from each section (Discover, Connect, and Take Action) needs to be complete. The choice is yours for each section! Just be sure to complete either all programming activities or all 3D modeling activities.

*These will tell Troop Leaders what part of the supplemental materials you need for a certain activity*

	Activity with no technology needed
	Activity that requires a tablet
	Activity that requires a computer
	Activity that can be completed on a tablet or computer

# Discover - Section 1

Pick one of the following



**Read about Programming in Java**



Read the Intro to Java Programming packet.

*Troop leaders see  
Appendix B*

OR



**Learn Java at <https://www.codecademy.com/>**



1 Make an account.



2 Select "Learn Java."

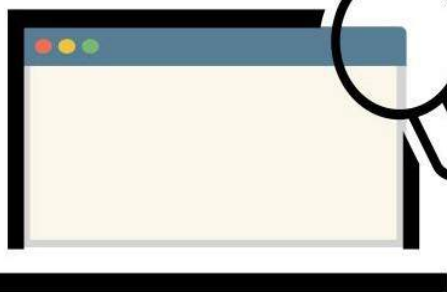


3 You can skip the quiz, only complete the lessons.



4 Complete through lesson 2.8 (If-Else-Else Statement).

*Troop leaders see  
Appendix A*

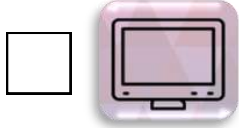


In case you didn't know: Java is a programming language. Just like there are many languages that are spoken around the world, there are many languages to write code in.



OR

# Discover Continued



## Watch Blender Basics

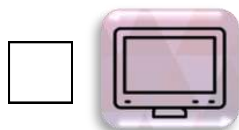
1 Go to <https://cgcookie.com/course/blender-basics/>.

2 Watch all six videos and follow along in Blender.

*Troop leaders see  
Supplemental  
Materials:  
Discover*



OR

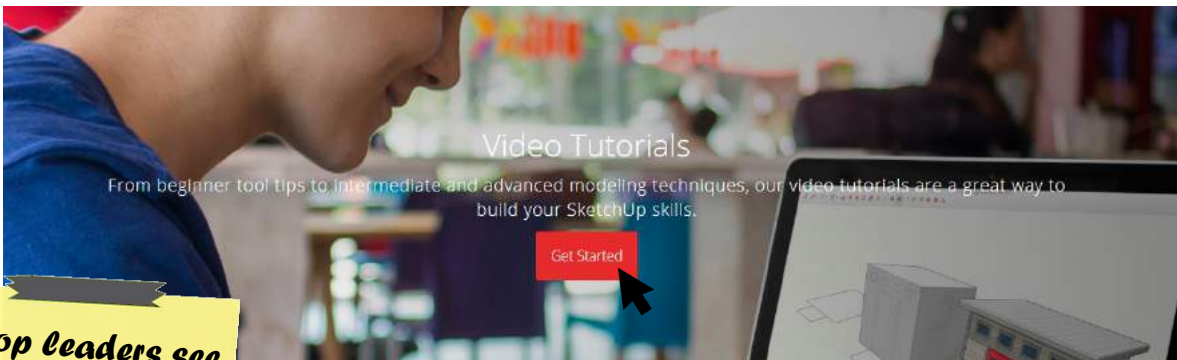


## Watch Sketchup video tutorials

1 Go to <http://www.sketchup.com/>.

2 Click "Learn" in the upper right corner.

3 Click "Get Started."



*Troop leaders see  
Supplemental  
Materials:  
Discover*

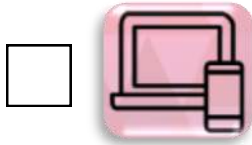
4 Watch "Getting Started with Sketchup" Part 1, 2 & 3.

5 Follow along in Sketchup.

**Please note that putting large or complicated models in your scene from the 3D warehouse will slow down your computer.**

## Connect - Section 2

Do the first option for programming OR the second one for 3D modeling



### Stories

1 Go to <https://www.codecademy.com/stories>.

2 Read about one of the following people:

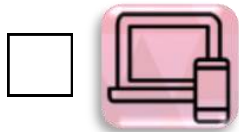
- Saadika Alard: From Retail to Front End
- Kari Tarr: One Year to Dev
- Laura Kelly: Study the human mind – with Python
- Liz Beigle-Bryant: A new career at 55
- Jennifer Ch'ng: Code composer
- Dilys Sun: Want to change careers? Learn to code.

3 In a group, discuss the following:

- What is the woman you read about like?
  - ⇒ What is her job?
  - ⇒ What is her background?
  - ⇒ Why did she learn to code?
- Once you've heard about all of the women, how are they different? How are they similar?
- What do you find interesting or exciting about what they do?
- How can knowing how to code help you in the career you want?
- What did you learn from this woman's story that you can take with you when you learn how to code?

OR

# Connect Continued



## Brainstorm about 3D modeling

1 Read the 3D modeling packet.

2 Do your own research about 3D modeling and choose one of the following:

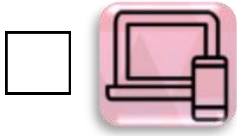
- Write about what you've learned. Give a brief description of the information that you found and include your thoughts. List any webpages you visited. Read over the questions below and answer them in your writing.
- Get into groups and discuss your research on 3D modeling. Be sure to answer the following questions.

**Troop leaders see  
Supplemental  
Materials:  
Connect and  
Appendix C**

- ◆ What are some other ways that 3D modeling could be used?
- ◆ How can you continue to improve your skills after completing this patch?
- Out of the 5 ways 3D modeling can be used, which one interests you the most? Why?
- ◆ Would you rather model, create textures, or animate? Why?



# Take Action - Section 3



## Program in Java

**1** The last page of the Intro to Java Programming packet is a cheat sheet that you can use while writing your program.

**2** Get Ready

- If you're on a computer go here: <http://code.sololearn.com/#java>.
- If you're on a tablet open the "Learn Java" app and go to Code Playground. Click the + in the bottom right corner to make a new project.

```
Java
1 public class Program
2 {
3     public static void main(String[] args) {
4         //Write Code Here
5     }
6 }
```

**3** Choose a Project

- Write a program that determines if a number is even or odd and prints out the number followed by the result.
  - ♦ For example, if you test the number 3 the program should output "3 is an odd number."
- Write a program that takes three numbers and figures out if they can be side lengths for a triangle. That is, the sum of any two of the three numbers should be greater than or equal to the third.
  - ♦ For example, if you test the numbers 1, 2, and 4 the program should print "This cannot be a triangle" because 1+2 is less than 4.

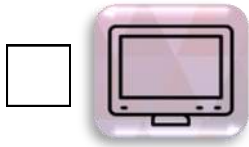
**Troop leaders see  
Supplemental  
Materials:  
Take Action**

*"To be able to code gives you the freedom to build anything and that is so empowering."  
-Karlie Kloss,  
Super Model*

OR



# Take Action Continued



## Create a 3D model using Blender

- 1 Think of an item you want to model.
- 2 Make sure it isn't too plain, you'll want details to add.
- 3 Get the item or search the internet for reference pictures.
- 4 Model that item as detailed as you can.

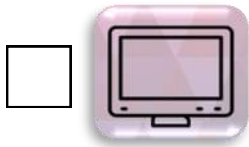


You can image search online for “Blender Cheat Sheet” and you'll find lists of the keyboard shortcuts for Blender.

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OR

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## Create a 3D model using Sketchup

For additional Sketchup help, go to:  
<https://www.youtube.com/user/SketchUpVideo>  
or search their forums at <http://forums.sketchup.com/>.

- 1 Make a model for each floor of your house and school.
- 2 Add color or texture to your walls and floors.
- 3 If you have time, model some furniture to put in the rooms.
- 4 You don't need to add a roof or stack the floors.

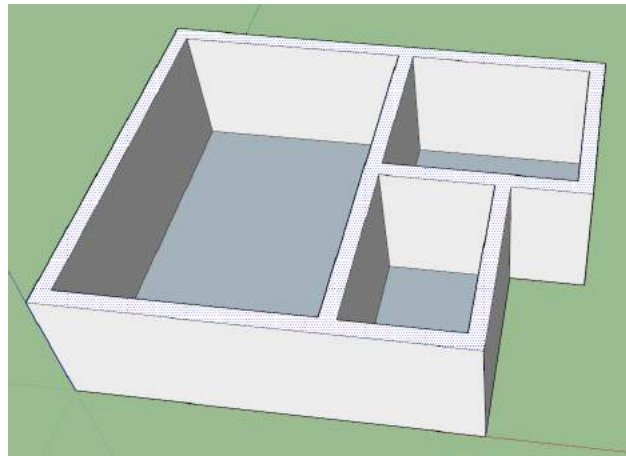
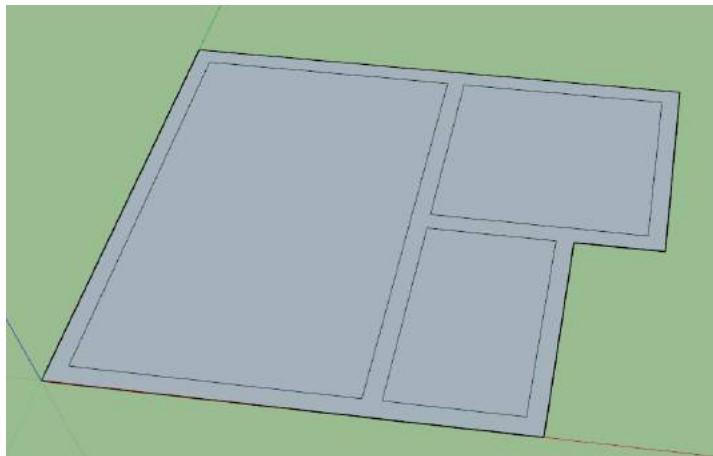


HINTS

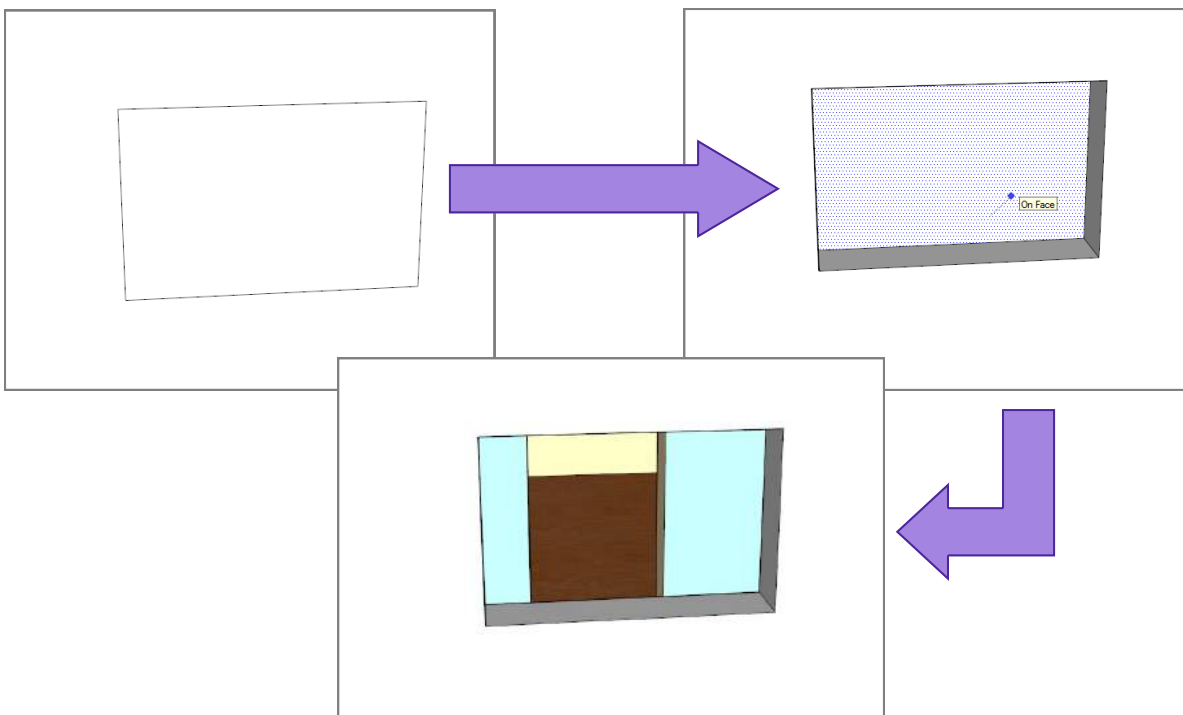
# Take Action Continued



You can draw the layout of your building and outline of the walls, then use the push/pull tool to lift the walls up.



You can make windows and doors by drawing their shape on a wall and then using the push/pull tool to push the shape until it is even with the opposite face of the wall.



# *Now that I've earned this Patch...*

I can give service by...

- 
- 
- 

I am inspired to...

- 
- 
- 



“Every girl deserves to take part in creating the technology that will change our world, and change who runs it.”

— Malala Yousafzai,  
Nobel Peace Prize winner

Anybody can learn!  
Start with an Hour of Code  
<http://code.org>

