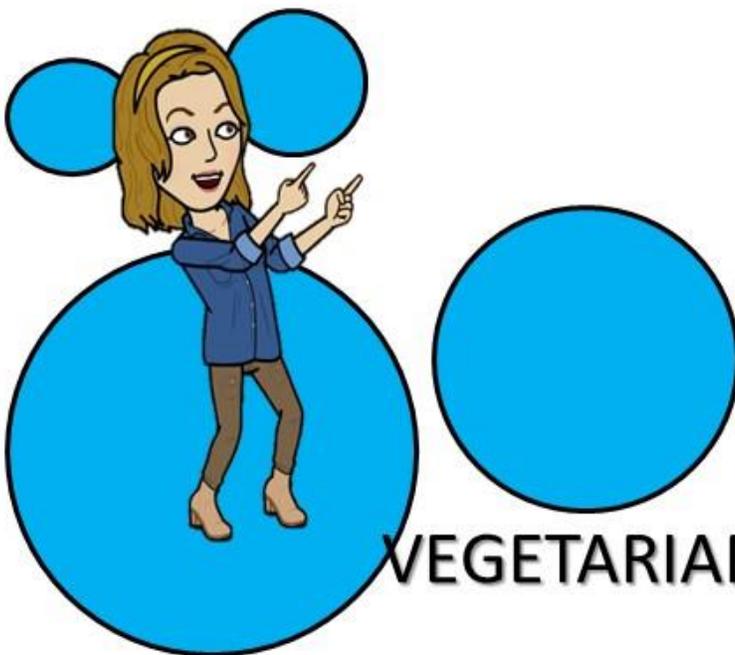


# Microsoft Office

Project Based Learning

THE  
**Dice**  
**Project**



VEGETARIAN HOMESCHOOLER

**Welcome** to the *Vegetarian Homeschooler: Dice Project*. I hope you and your student enjoy this project because it celebrates students' creativity and originality. At the same time, students learn Microsoft Office by actively engaging in a project that requires research, critical thinking, and problem-solving.

### **Solutions & Video Links**

Solutions for the Dice project can be found at <https://www.vegetarianhomeschooler.com/dice>



### **Vegetarian Homeschooler Curriculum Suggestions**

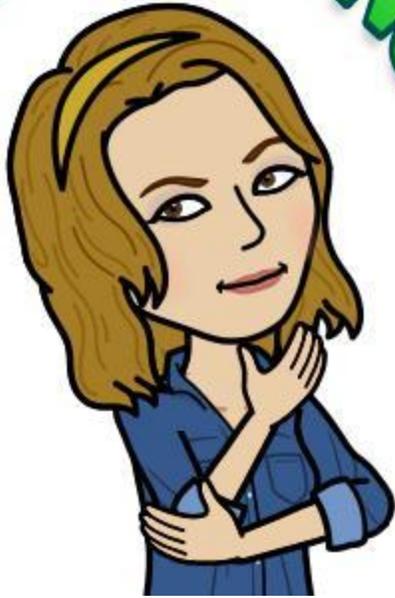
1. Take your time working on the project. Time allows students to find meaningful solutions.
2. Give students the project instructions and allow them time to review the instructions and develop a plan of action. Only view the project solution once the project is complete or the student is stuck and has exhausted all resources.
3. If possible, have students work collaboratively on the project. Students will benefit significantly from collaborative learning.
4. Allow students to use any resource except YOU. Students must learn how to problem-solve, think critically, research, and be creative within a time constraint. Students will feel a sense of satisfaction and pride if they overcome a difficult challenge and will be more likely to remember the skills just learned.
5. When the student completes the project, have the student explain the project to you. Ask him questions and be impressed that the student had the technical and creative ability to complete the project independently.

### **Want more projects?**

Please go to <https://www.vegetarianhomeschooler.com/>



# MAKES SENSE



*Ready for a little Excel challenge today? We are going to create a spreadsheet that can roll a dice and get a random number 1-6. Hold onto your hats; there's more.*

*Once we complete the first dice challenge, we will make another worksheet that can roll the dice using a macro button.*

*Then for the grand finale, we will make a third worksheet that will roll 2 dice and determine if the dice match.*

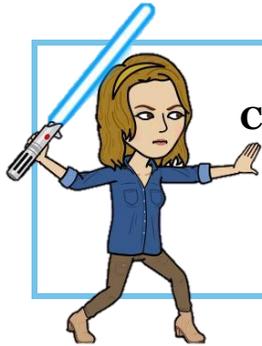
*I know, pretty awesome. Let's get started.*

*Here is a [video](#) explaining the project.*



# DICE CHALLENGE

## EXCEL SPREADSHEET



### CHALLENGE #1:

Create an Excel Spreadsheet that can roll a dice and get a random number 1 through 6.

### CHALLENGE #1

A screenshot of an Excel spreadsheet titled "Solution Dice Challenge.xlsm". The ribbon shows the "Home" tab with various formatting options. The spreadsheet grid shows columns A through P and rows 1 through 10. In cell D2, there is a drawing of a die face with three black dots. To the right of the die, in cell E2, is a button labeled "Roll Dice". In cell E3, the number "3" is displayed in red. A text box with a blue border is positioned in the lower right area of the spreadsheet, containing the text: "All the cells in the dice (except E2 and E4) are formulas. The 3 is also a formula." The formula bar at the top shows "D22" and a formula icon.

# PROJECT REQUIREMENTS

## Create a Spreadsheet that can roll a dice

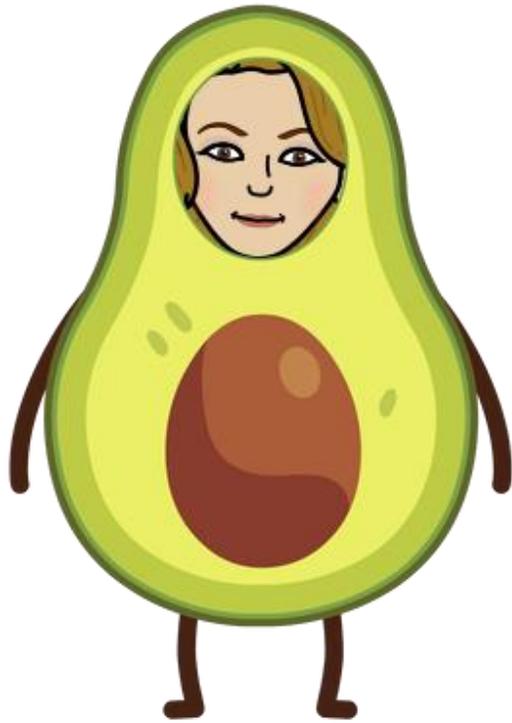
Create a new spreadsheet in Excel. Name the spreadsheet **Dice Challenge**.

- In cell **J3**, create a formula that chooses a random number 1 – 6
  - Not sure about the formula? No big deal. The first thing I do when I am not sure about something is to try a few ideas in Excel and see what happens. You can't break anything.
  - Don't forget; you can click in the formula bar and get help with the formula. Remember you want a random number 1 through 6.
  - Google is another option. Try Googling "Formula to get a random number in Excel"
- Create a Dice in cells D2:F4
  - The circles on the dots are made by using font Wingdings and the lower case L
  - Set font size = 28
- Write a formula for the cells in the dice. A dot should appear depending on the random number in J3.

Dice Rules	
Cell	Rule
D2	Dot appears <b>IF</b> the random number = 2,3,4,5, or 6 (Hint Dot appears <b>IF</b> the random number is >1)
D3	Dot appears <b>IF</b> the random number = 6
D4	Dot appears <b>IF</b> the random number = 4,5, or 6
E2	No dot appears
E3	Dot appears <b>IF</b> the random number = 1,3, or 5 (You have several formula options here. Take your time and decide which you would like to try)
E4	No dot appears
F2	Dot appears <b>IF</b> the random number = 4,5, or 6
F3	Dot appears <b>IF</b> the random number = 6
F4	Dot appears <b>IF</b> the number = 2,3,4,5, or 6

- Put a border around the dice
- Change the background color of the worksheet
- Name the worksheet **Challenge #1**

[Need Help? Video Tutorial Links are posted below.](#)

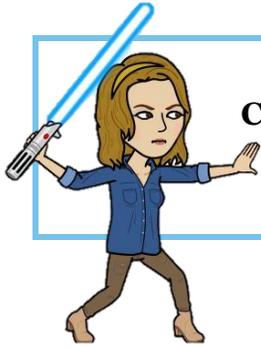


*How did **Challenge #1** go? Don't get discouraged if the project challenged you. It is always important to try challenging things, and it is OK to make mistakes. How can you get better if everything is easy?*

*There are video links at the bottom of this project. Try to research solutions first, and then use the videos if you are stuck.*

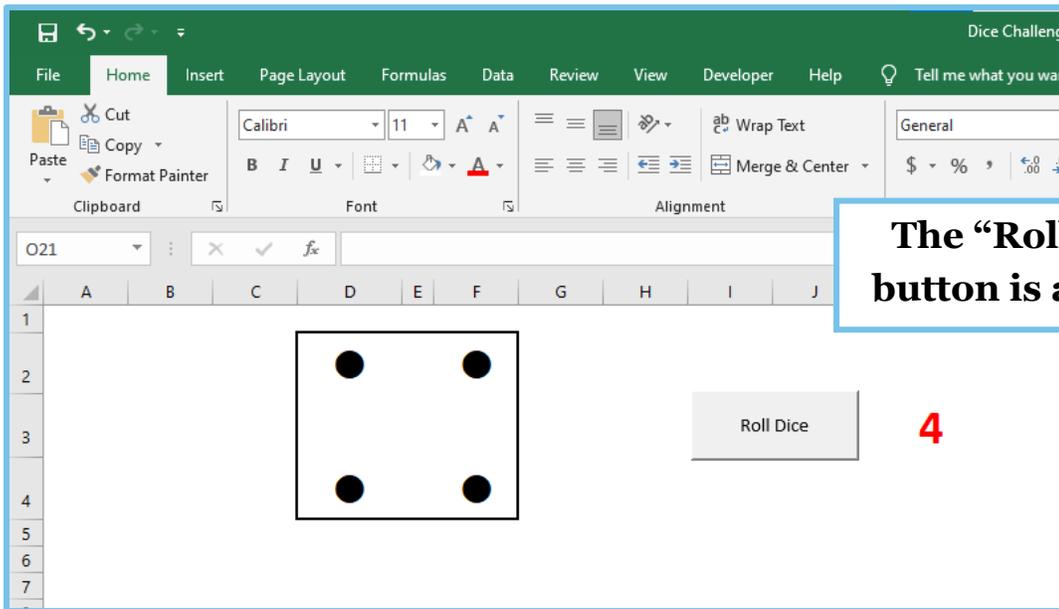
*Let's move on to **Challenge #2**.*

# CHALLENGE #2



## CHALLENGE #2:

*Add a macro button to the worksheet so it will roll the dice for you.*



The “Roll Dice”  
button is a macro

## Add a macro button

In the Dice Challenge Spreadsheet, create a copy of the **Challenge #1** worksheet and name the new worksheet **Challenge #2**.

- In **Challenge #2** worksheet, create a macro button that will change the number in cell **L3**

[Need Help? Video Tutorial Links are posted below.](#)

# CHALLENGE #3



## CHALLENGE #3:

Add a second dice so the macro will roll both dice. Have a message pop up **IF** both numbers match.

Excel spreadsheet showing two dice faces, each with two dots, representing a roll of 2. The text "WINNER!!!" is displayed in red. A button labeled "Let's Play" is visible. A callout box states: "Winner only appears if the 2 numbers match".

# PROJECT REQUIREMENTS

## Create a Spreadsheet that can roll two dice

In the Dice Challenge Spreadsheet, create a copy of the **Challenge #2** worksheet and name the new worksheet **Challenge #3**.

- In **Challenge #3** worksheet, create a second formula that chooses a random number 1 – 6
  - I had to move things around. I did this with a copy (ctrl+c) and paste (ctrl+v)
- Add a second dice to the worksheet
  - I made a copy of my first dice and then pasted it. I had to go back and update the formula to reference my new number derived from the previous step
- Test your worksheet and notice the macro will control both dice!
- Add a message that will only appear **IF** the 2 numbers match.
  - I suggest using an IF formula
  - **HINT**: I added "" for the FALSE statement in my IF formula. "" means Excel will not put a value if the formula's test is FALSE.
- Add something extra to your project that is not in the project requirements.
  - How can you personalize the project?
  - What would make the project even better?

# Let's DISCUSS



## LET'S RECAP

*Well, that's it, friends. I think we did a lot of good work.*

### ***Let's recap what we practiced:***

- 1. IF Formula*
- 2. RANDBETWEEN Formula*
- 3. OR Formula*
- 4. Macro button*
- 5. Created new worksheets*

## DON'T FORGET

It's good to do things that challenge you. When faced with a challenge, first break the challenge into small steps and then find the resources you need to accomplish each step. Don't worry about making mistakes or having failures; that is how we learn and get better.

# ASSISTANCE

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*The following page will help step you through some of the tasks from above.*

*Don't be too quick to use the tutorial videos provided to you. Make sure you take time using your critical thinking and problem-solving skills.*

*When you don't know what to do on this project, my best advice is to make a copy of the worksheet you are working on and then try your ideas on the copied worksheet. The worst thing that can happen is you ruin a worksheet—no big deal. You go back to the original and make a new copy and try again. We learn best from our mistakes.*



## YOUTUBE TUTORIALS

TASK	LINK	QR
Project Overview	<a href="#">Video</a>	
Excel Tutorial Playlist	<a href="#">Excel Tutorial Playlist</a>	
How to write an IF Formula	<a href="#">YouTube Tutorial</a>	
How to write an OR Formula	<a href="#">YouTube Tutorial</a>	
How to create a Macro Button	<a href="#">YouTube Tutorial</a>	
Solutions	<a href="#">Solutions</a>	

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