

W.E. F.A.R.M.

Water & Environment Farm Assessment and Risk Management

WE FARM User Manual

For Water and Soil Health Games



Developed by:
Game Theory, Co.



NORTHWEST CROPS & SOILS PROGRAM



University of Vermont Extension, Northwest Crops and Soils Program

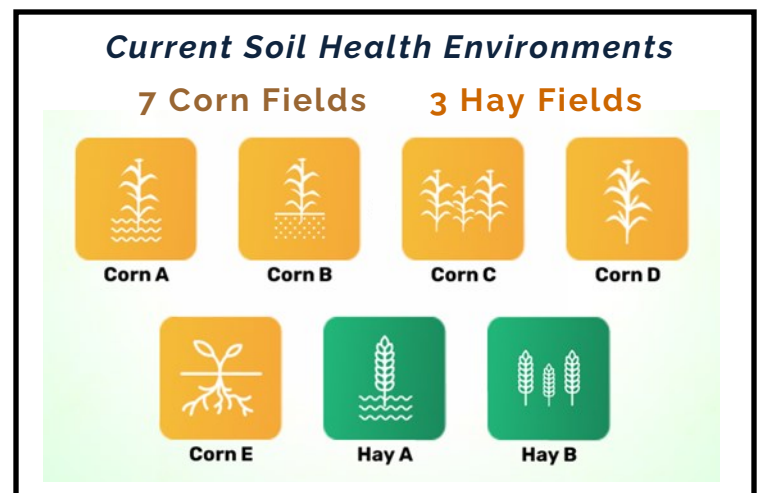
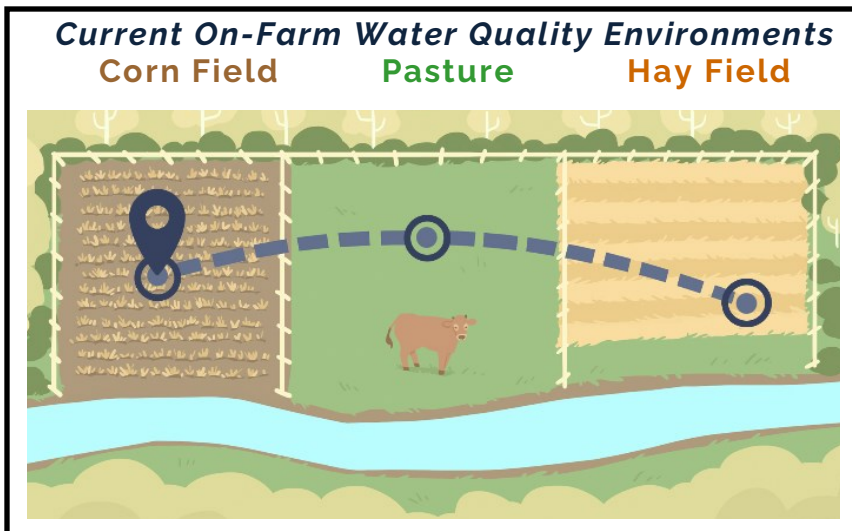
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Introduction

Water & Environment Farm Assessment and Risk Management

(referred to as 'WE FARM') transports players onto a virtual farm where their goals are to identify potential environmental risks and choose the management practice they believe will best mitigate potential issues. Players can see how their decisions impact the land and the water. This tool is a unique platform for players to identify on-farm issues without actually seeing them in real life, better preparing them for their future farming endeavors.



System Requirements

WE FARM was built using a cross-platform design, meaning it can be accessed through a computer, or with a smartphone via virtual reality.

Personal Computer (PC)

To run the game on a computer, you will need a Windows operating system on your computer or laptop. Before you download the application, make sure your operating system is up to date.

Android Smartphone

This game is designed to play on Android devices. To run the game via virtual reality (VR), make sure your operating system is up to date.

Most phone-based virtual reality headsets are compatible with the Android build, including Google Cardboard.



Picture above: <https://www.theverge.com/2015/4/16/8431303/google-works-with-cardboard-announced-virtual-reality>

Google Cardboard also requires **lenses** for the smartphone to be placed in for VR. We recommend choosing an option that has both a head strap and a hole for side button controls.

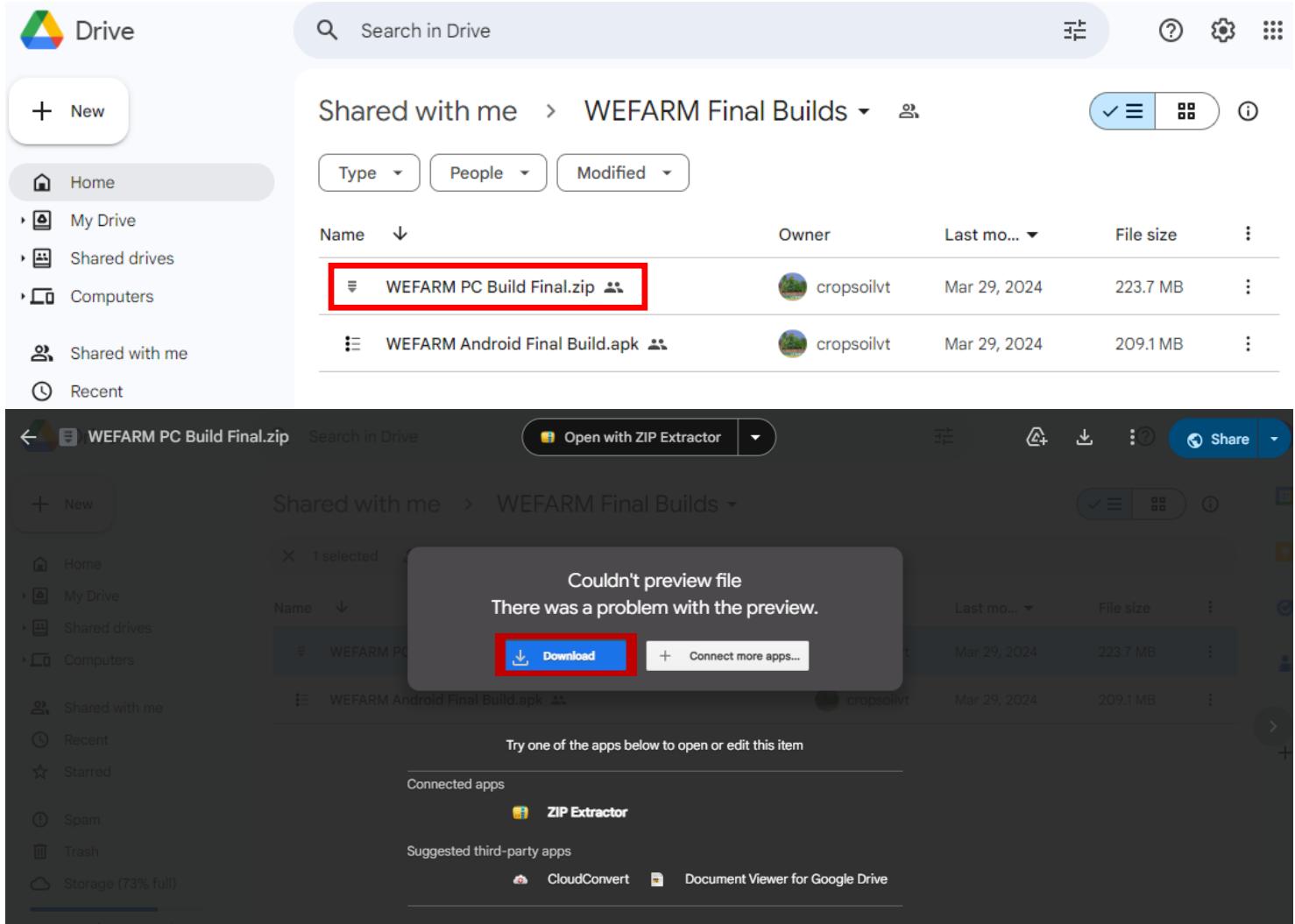
Below are two links to sites offering goggles:

- ⇒ <https://arvr.google.com/cardboard/get-cardboard/>
- ⇒ <https://www.amazon.com/s?k=virtual+reality+goggles+for+android>

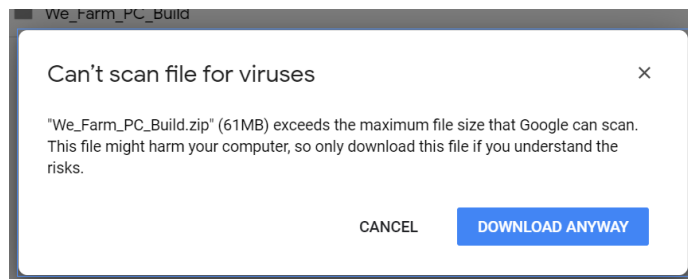
Install Instructions

Computer (PC) Installation:

1. On your computer, navigate to the following link: <https://drive.google.com/drive/folders/1giCeq7qkZ-NIFoa3kVD8Aezc1F5lZEPc>
2. Double click *WEFARM PC Build Final.zip*.

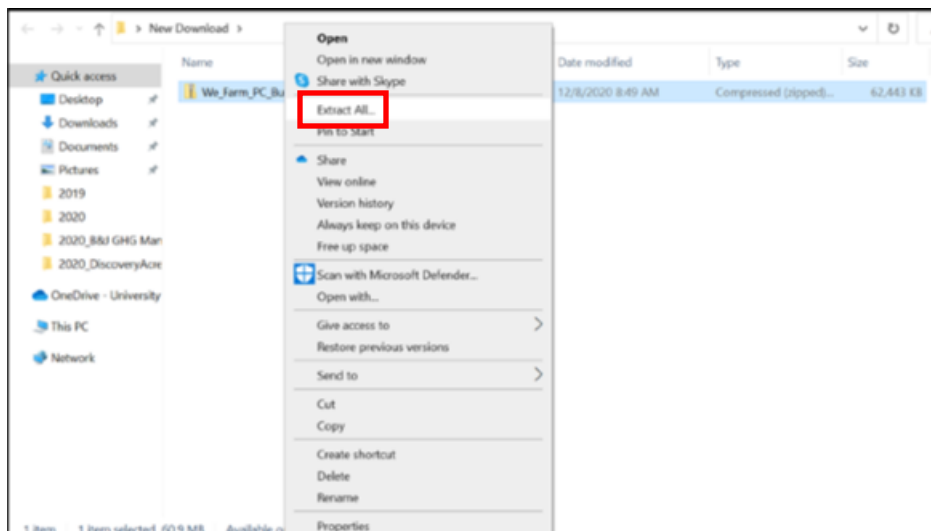


3. Click download to your desktop (not open with zip extractor).
4. You will get a pop-up stating that the file size is too large to scan for viruses. Click *Download Anyway*.

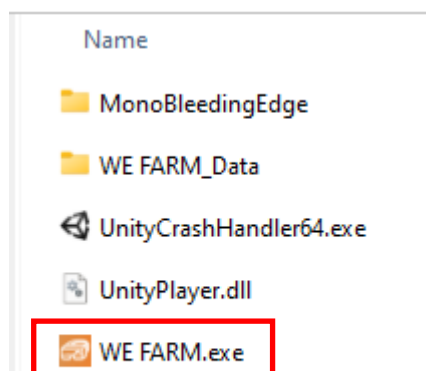


Install Instructions

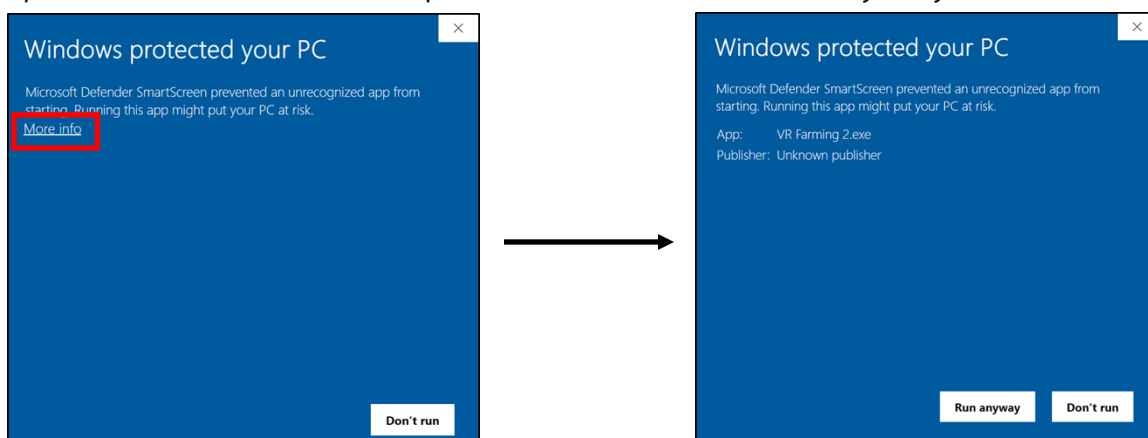
5. Save the program in the file folder of your choice.
6. Extract the file by right clicking on the file title and choosing *Extract All*.



7. Open the *PC Build* folder.
8. Double click on *WE FARM.exe*.

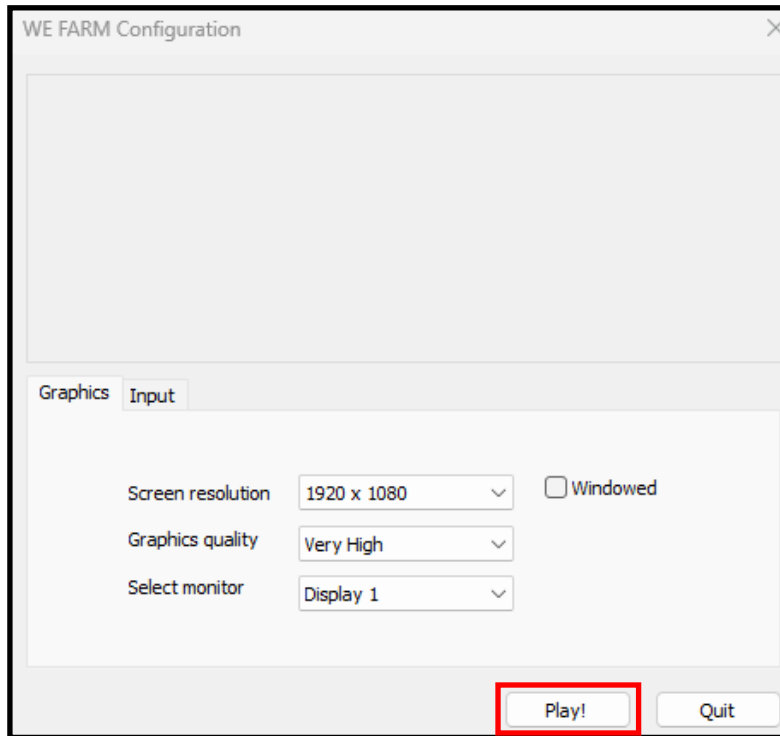


9. A blue pop-up appears indicating that WEFARM is an unrecognized app. Click *More info* to access the run option. Then click *Run anyway*.

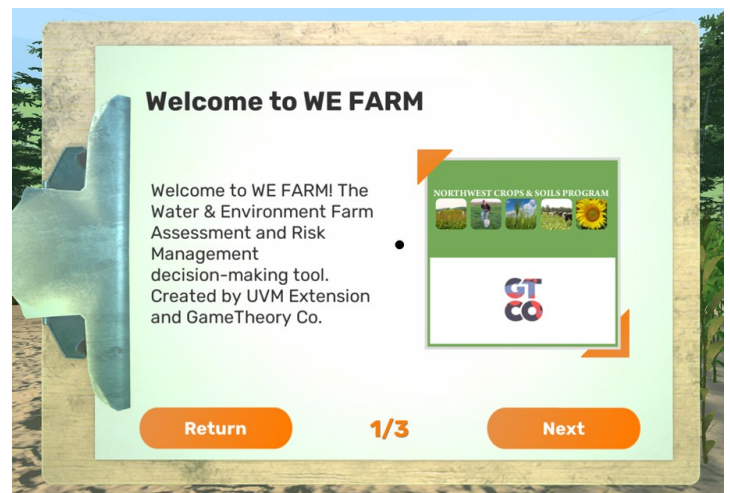


Install Instructions

10. The VR Farming 2 Configuration pop-up will appear. Click *Play!*



11. That's it! You're in.



Install Instructions

Android Smartphone Installation for VR:

Before you begin... Check that you're able to install apps from your browser on your device by going to your settings. On non-Samsung phones go to **Security & privacy** and click **More settings**. Then tap on **Install apps from external sources**.

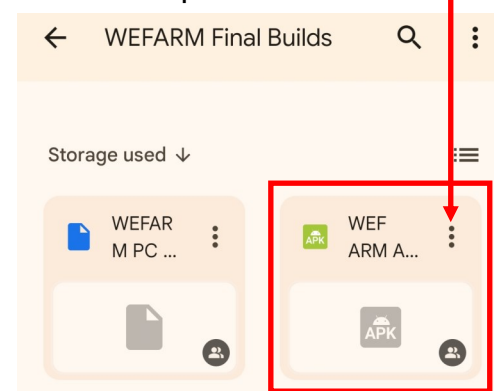
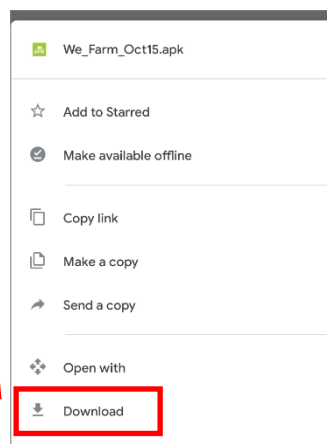
On Samsung phones go to your phone's settings. Then go to **Biometrics and security** and click **Install unknown apps**. Select the browser (e.g., Chrome or Firefox) you want to download the file from. Toggle **Allow app installs** ON.

1. On your phone, navigate to the following link:

<https://drive.google.com/drive/folders/19iCeq7qkZ-NiF0a3kVD8Aezc1F5LZEPc>

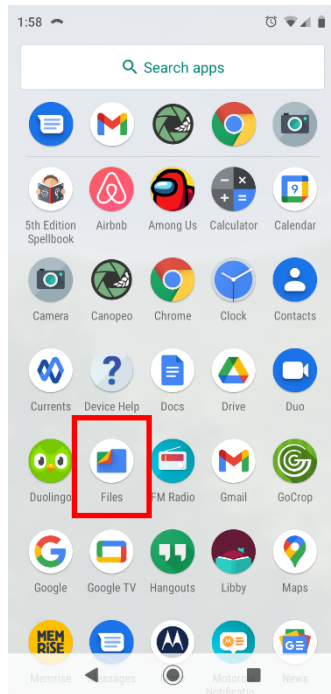
2. Tap the three dots next to WEFARM Android Final Build.apk.

3. Choose *Download*.

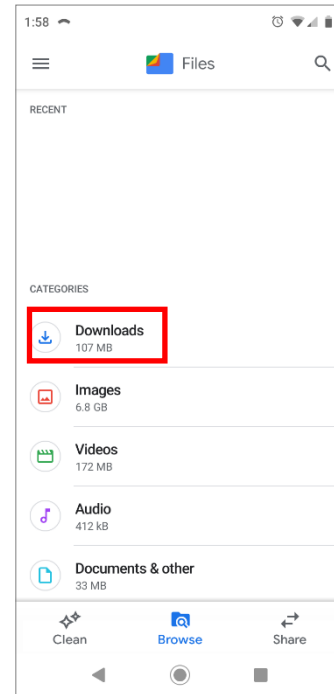


Install Instructions

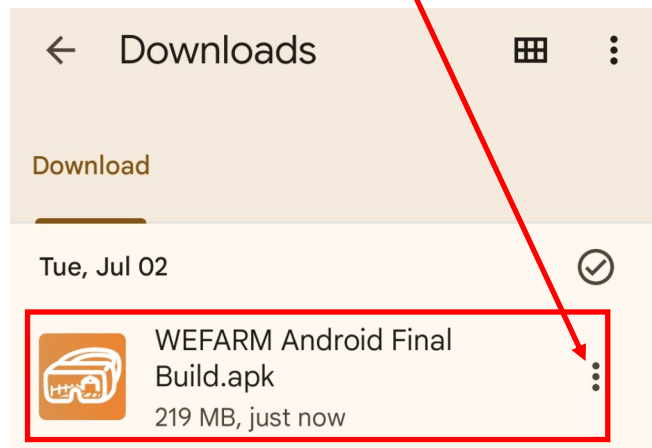
4. Open *Files*.



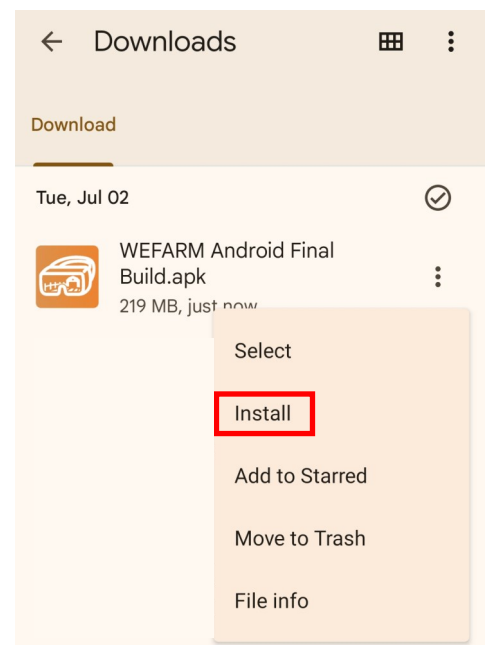
5. Open *Downloads*.



6. Tap the three dots next to WEFARM Android Final Build.apk.

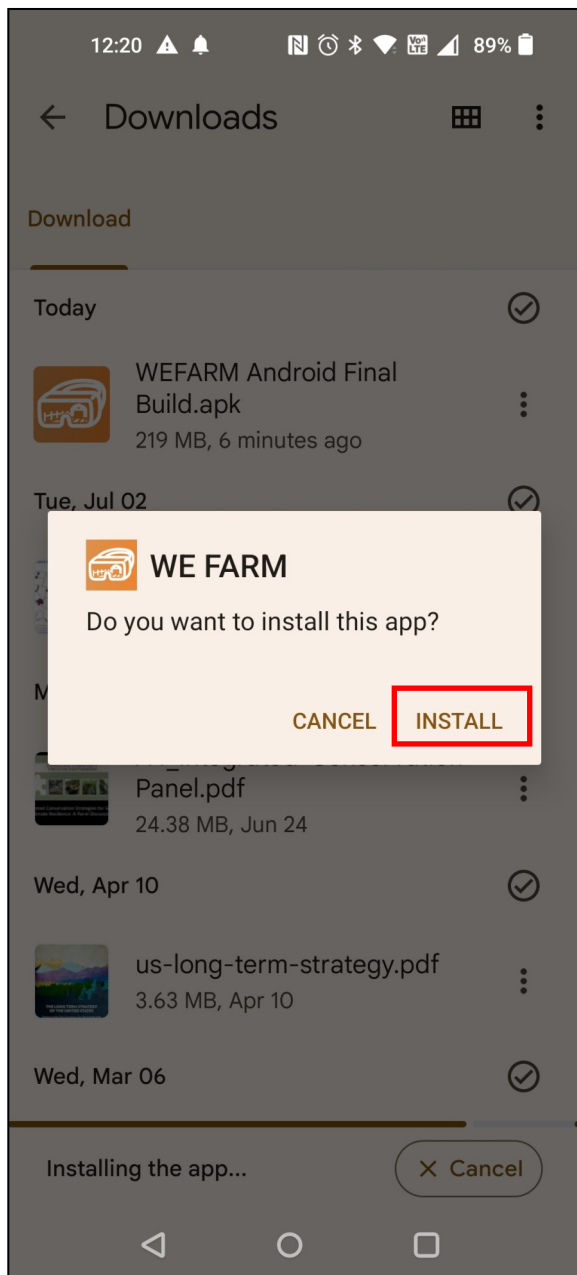


7. Choose *Install*.

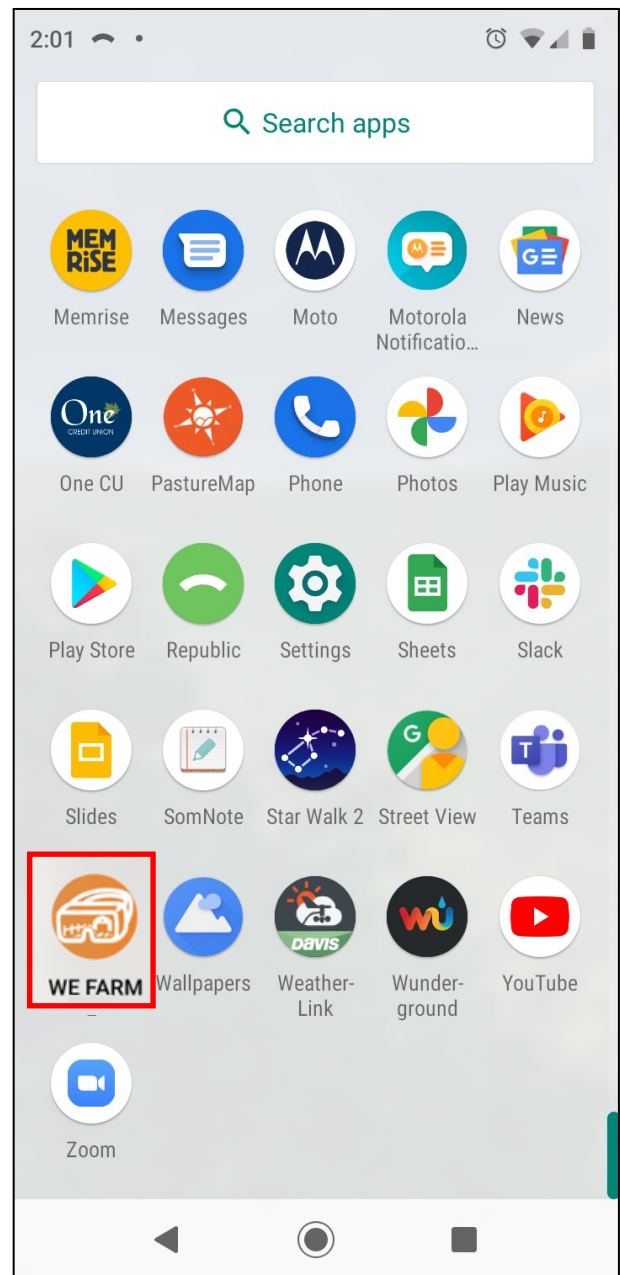


Install Instructions

8. Tap *Install*.



9. Go to your apps page and tap *WE FARM* to open the game.



Install Instructions

Setting Up the Headset:

The game starts outside of the headset so that you can read the in game setup instructions. After the tutorial, you can place your phone in the headset to experience the game in VR.

1. Loosen the strap on the headset.
2. Press the button on top of the view to open up the phone container. This is a slot where you can place your phone.
3. Place your phone on the inner shelf, with your phone screen facing towards you (towards the strap). Nothing should be touching your phone screen at this point, make sure that your screen isn't pushed against anything, or else it may interfere with the game.
4. Center the phone on the shelf so that it doesn't look crooked or offset.
5. Gently close your phone into the goggles.
6. Place the headset on your head and tighten the strap until it's comfortable and feels secure. Use the buttons on the bottom of the headset to adjust the focus of the viewer until it looks clear to you.



How to Play: Water Quality

Computer (PC) Controls:

- Move the mouse to look around.
- To move around, hover your mouse over the blue markers across the map. Aim at the marker until the timer fills up, and you'll be transported to that spot on the map.
- When text is on screen, click your mouse to move ahead.
- When making a decision in the game, hover over the option you want using your mouse, and click the option.

Android Smartphone VR Controls:

- To move around, turn your head to look at the blue markers across the map. Stare and aim at the marker until the timer fills up, and you're transported to that spot on the map.
- When text is on screen, click the button on headset to move on.
- When making a decision in the game, stare at the option you want using the headset, and click the button to select the option.
- You can leave the level at any time by holding down the button on the headset for 3 seconds.

How to Play

Game Flow:

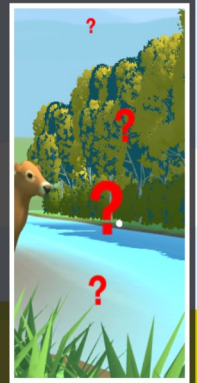
ENTER GAME

Whether playing on a computer or smartphone, you will begin with a set of instructions explaining your goals as a responsible land steward and farmer in WE FARM. You are shown action indicators, scoring mechanisms, and a map of the fields.

Welcome to your farm! A number of farm situations have been identified that could harm the quality of water. Your job is to figure out how to protect water quality through good farm management. Let's get going!

Let's Go! >

Follow the Action Indicators to view a potential issue that might harm water quality.



Let's Go! >



The water quality meter shows the impact your actions have on each field. Don't let the water quality meter drop too low!

Let's Go! >



After you've taken actions on all three fields, you will be given a final score. To get the best possible score, improve the farm while acting as a good steward to the environment!

Let's Go! >

Note: If you are playing in VR, you will be prompted at the end of these instructional slides to begin using your headset.

How to Play

Game Flow:

ENTER CORN FIELD

In the corn field, you will make management decisions regarding planting cover crops and soil erosion.



ENTER PASTURE

In the pasture, you will make management decisions regarding livestock water access and rotational grazing.



How to Play

Game Flow:

ENTER HAY FIELD

In the hay field, you will make management decisions regarding manure application in substandard weather conditions.



FINAL SCORE

This is when you receive a final score based off all decisions made across the farm. From here you can exit the game, or play again.

Note: If in VR, remove your headset to see your final score.



How to Play: Soil Health

Computer (PC) Controls:

- Move the mouse to look around.
- To move around, hover your mouse over the orange markers across the map. Aim at the marker until the timer fills up, and you'll be taken to your clipboard with information about a measurement you took from the field.
- When making a decision in the game, or selecting a button, hover over the option you want using your mouse until the bar loads and the choice is selected.

Android Smartphone VR Controls:

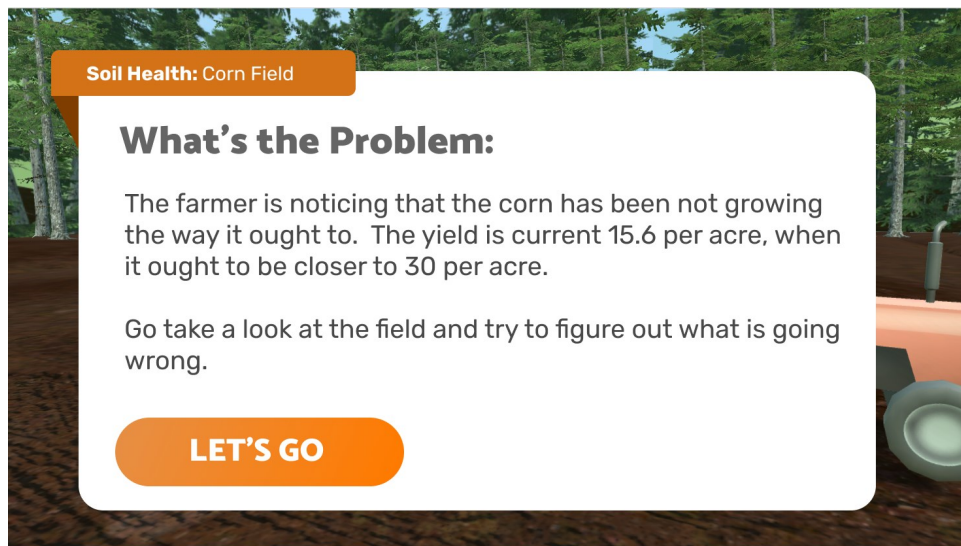
- To move around, turn your head to look at the orange markers across the map. Stare and aim at the marker until the timer fills up, you'll be taken to your clipboard with information about a measurement you took from the field.
- When making a decision in the game, or selecting a button, Stare directly at the choice you want until the bar loads and the choice is selected.

How to Play

Game Flow:

ENTER GAME

Whether playing on a computer or smartphone, you will begin with a pop up setting the scene, that you are visiting a corn field with problems with the soil.



OPEN CLIPBOARD

Look down, or point down with your mouse and you will see a clipboard. Open it and on the "instructions" tab you will see information about how to play. By looking at the other tabs you will see your report which is where measurements from the soil in the field will be collected, and notes where observations about the field will fill in.

How to Play

Game Flow:

CLOSE CLIPBOARD

Aim at the X in the top left corner of the clipboard to close it and return to the level.

TAKE MEASUREMENTS

Around you, you will see different orange rings, each highlighting a symptom in the environment. Focus on these to take a measurement from the field, and learn more about the problem. This will pull up the Result Screen that gives you hints on what the problem is or isn't. Hit "Okay" to exit this screen and see the measurement added to your report.

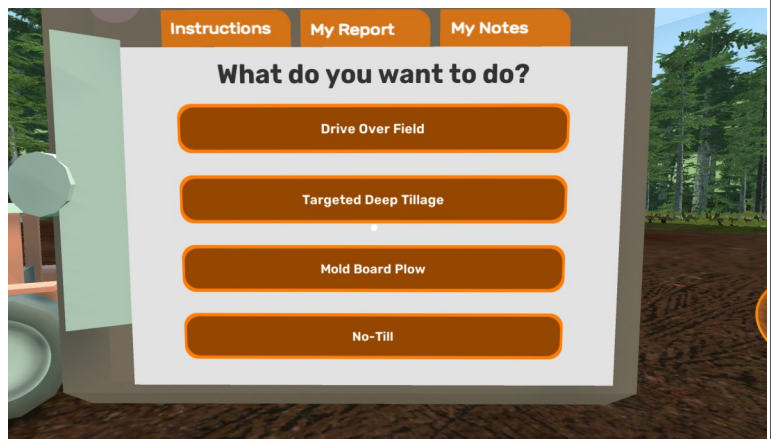


How to Play

Game Flow:

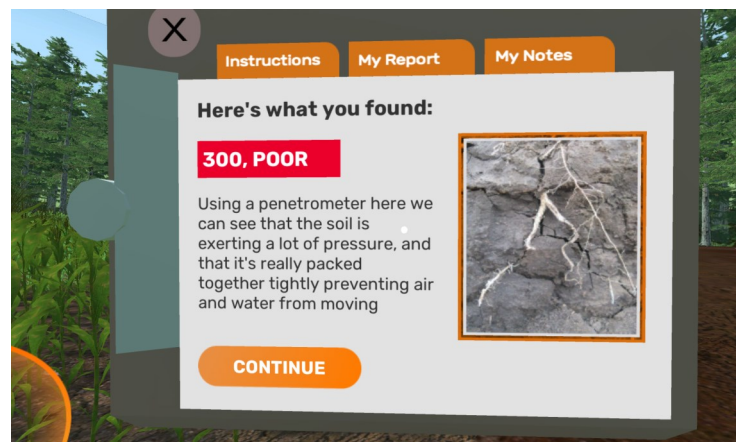
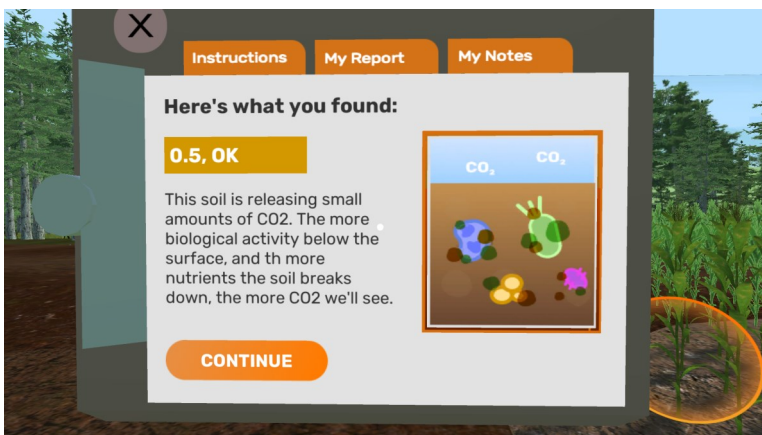
DECIDE

When you have taken enough measurements to recognize the issue and formulate a plan, aim at "DECIDE" which will open a screen with 4 possible treatments. Select the treatment you think will work best by aiming at it.



UPDATE MEASUREMENTS

After you select a treatment, you'll be taken back to the field to see what happened. Look for changes in the field, and take new measurements to compare against your previous measurements. You'll see how the new

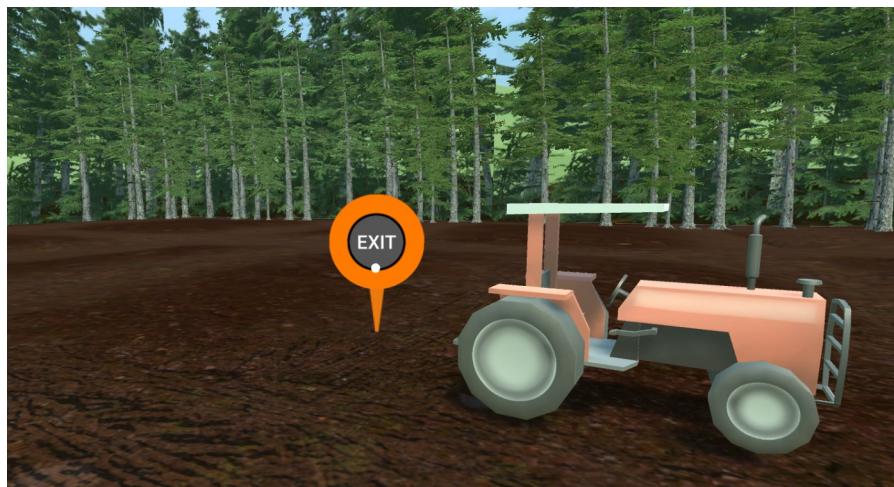
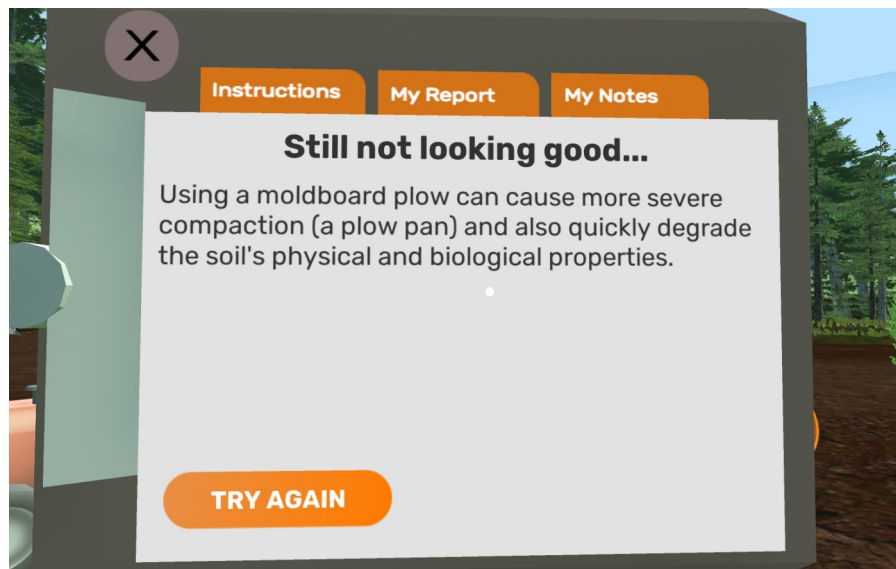


How to Play

Game Flow:

RESULTS

Aim at “RESULTS” to find out how you did. If you picked a treatment which is not ideal, select “Try again” to start over and to look for a better treatment. If you found the correct treatment, congrats! You have beat the level. You may “Exit”, or continue on to the next level.



Note: If you are play- ing in VR, you will be prompted at the end of these instructional slides to begin using your headset.

Troubleshooting Common Issues

My game downloaded but it won't open to let me play it?

Check your security settings and make sure the app is allowed through, and that apps from the internet can be installed on your device.

My VR headset look blurry?

Use a dry tissue to clean off the glass inside the lenses. Make sure the strap is tight enough, and that you've used the sliders on the headset to adjust the focus. If you need glasses, loosen the strap and carefully fit the VR headset over your glasses.

My game keeps resetting when I put it in the headset.

This happens when something is pressed against the screen. Restart the game, and put it back in your headset while making sure nothing comes in contact with the screen.

Something went wrong with the game and I'm stuck.

Completely exit the game and close the application. Restart the game and try again. If you're still stuck, uninstall the game and start with a fresh download.

I can't get the game to download.

Check for updates on your device and make sure you're on the most up to date version of your phone or computer's operating system. If that doesn't work, try downloading the game using a different browser.

Technical Support

Contact UVM Extension Northwest Crops and Soils:

Phone: 802-524-6501

Physical Address:

UVM Extension Northwest Crops and Soils Program
278 South Main Street, Suite 2
St. Albans, VT 05478-1866

Email Address: cropsoil@uvm.edu

Website: <https://www.uvm.edu/extension/nwcrops>



Credits

WE FARM was developed in collaboration between [Game Theory, Co.](#) and the [University of Vermont Extension Northwest Crops and Soils Program](#), with input from the [Vermont Agriculture Teachers Association](#) and [Cold Hollow Career Center](#).



This work is supported by the United States Environmental Protection Agency (EPA), [Environmental Education \(EE\) Grants](#), Local Grant Program for Region 1. Project number: NE-00A00485-0. Project title: From Virtual to Reality: Innovative Environmental Education for Future Farmers.



Notes

[illegible]