Innovative Outreach for Education & H2O Conservation

Minecraft Water Challenge

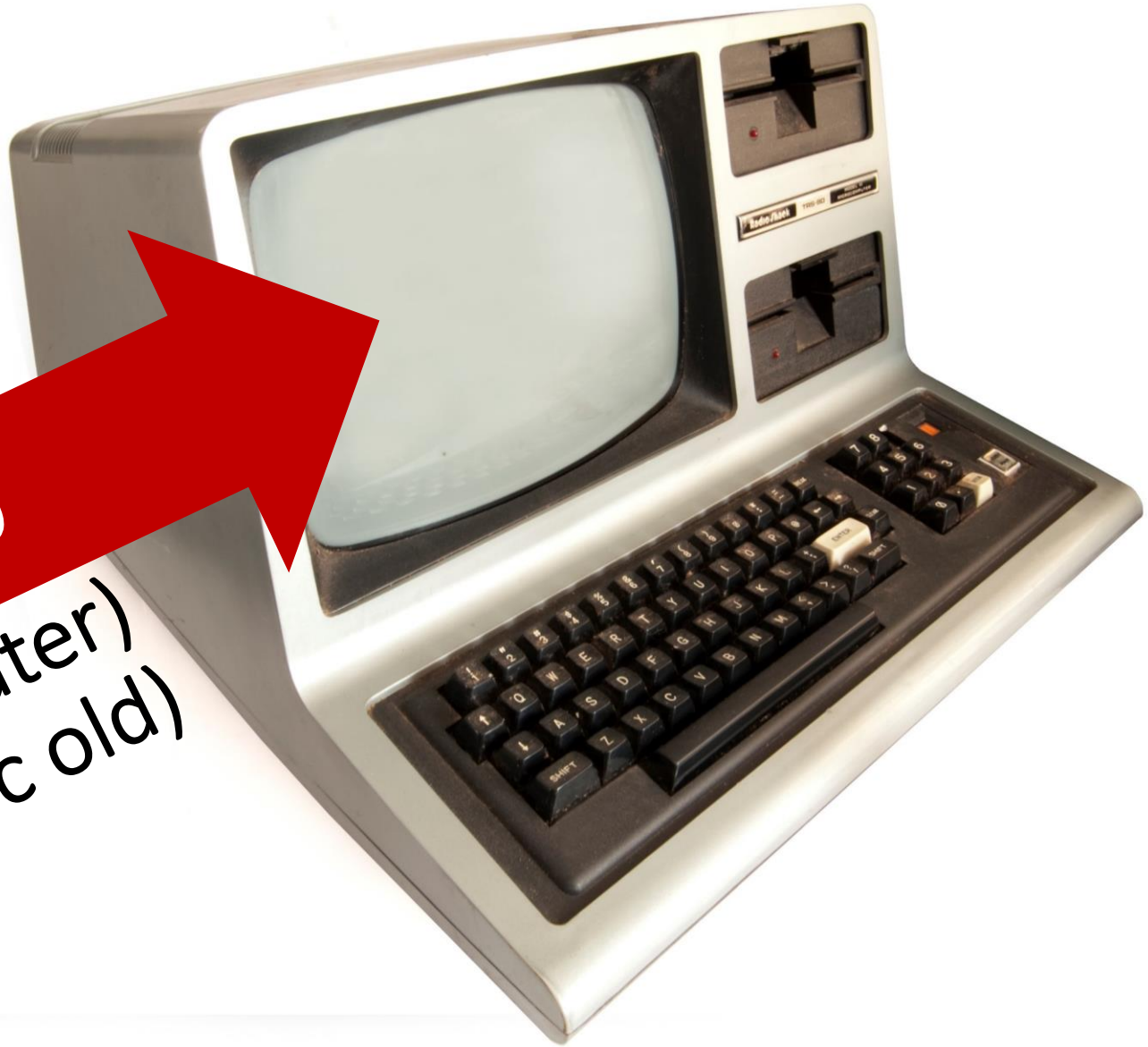
By me … James Ridgway, Jr.

Education / Public Awareness Coordinator

Lone Star Groundwater Conservation District

But first...

When I was seven years old my dad gave me this …



That's a TRS-80

(it was his old computer)

(sitting-in-attic old)

My dad was (and still is) a computer geek.

He inherited that from his dad.

My grandfather was a U.S. Marine Radio Electronics Expert. He also developed specialized integrations for NASA launch routines during early days of space race.

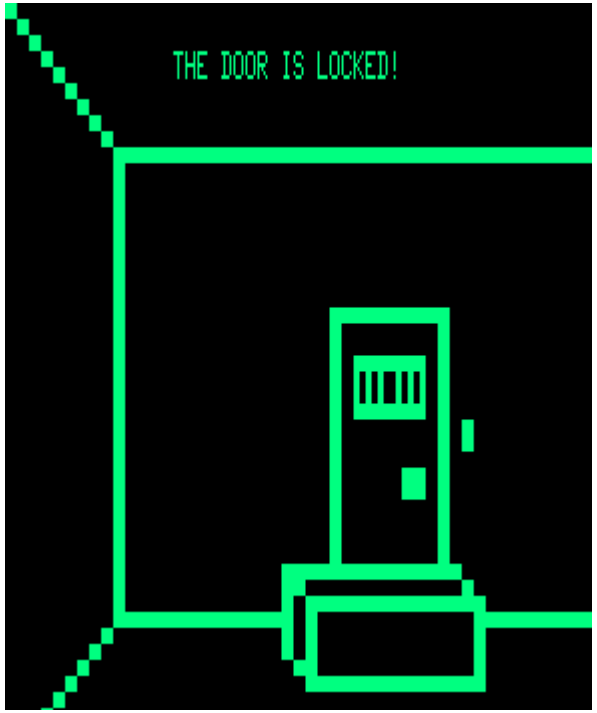
First-generation computer geek.

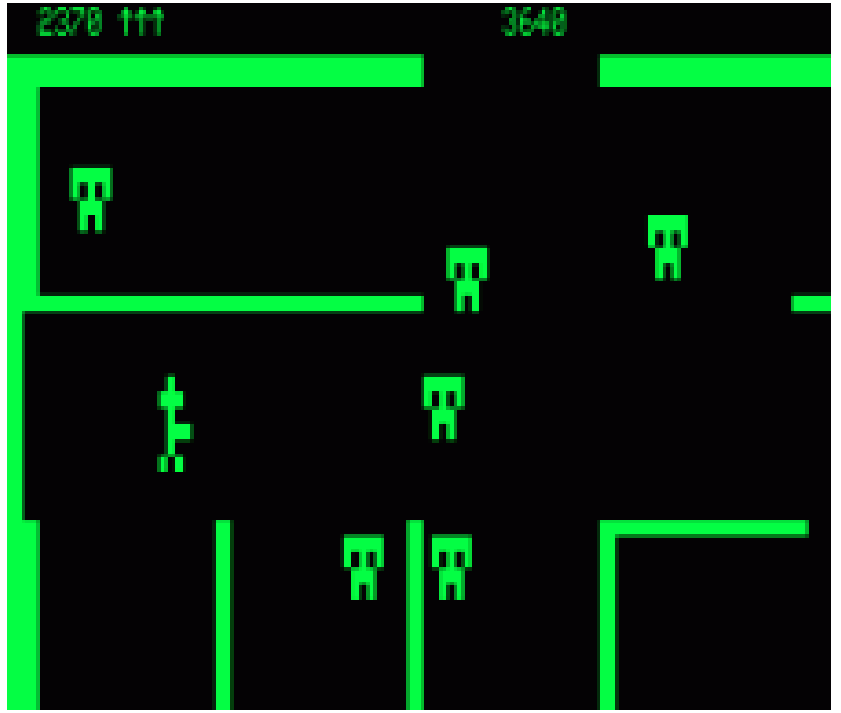
The TRS-80 was my dad’s way of passing on a family tradition / skill set.

We started with coding.

It turns out, I'd rather be punched in the face than learn how to code.

It also turns out…





…It was really, really easy—after my dad walked out of the room—to load up computer games instead of completing the coding homework he'd assigned.

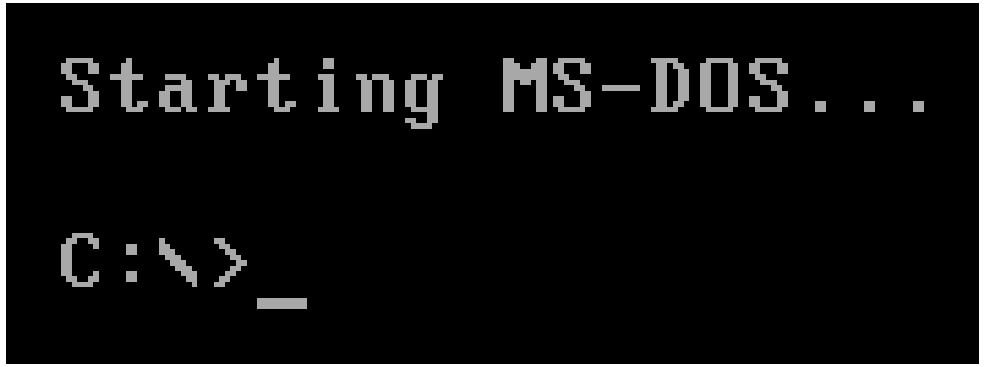
And it begins!

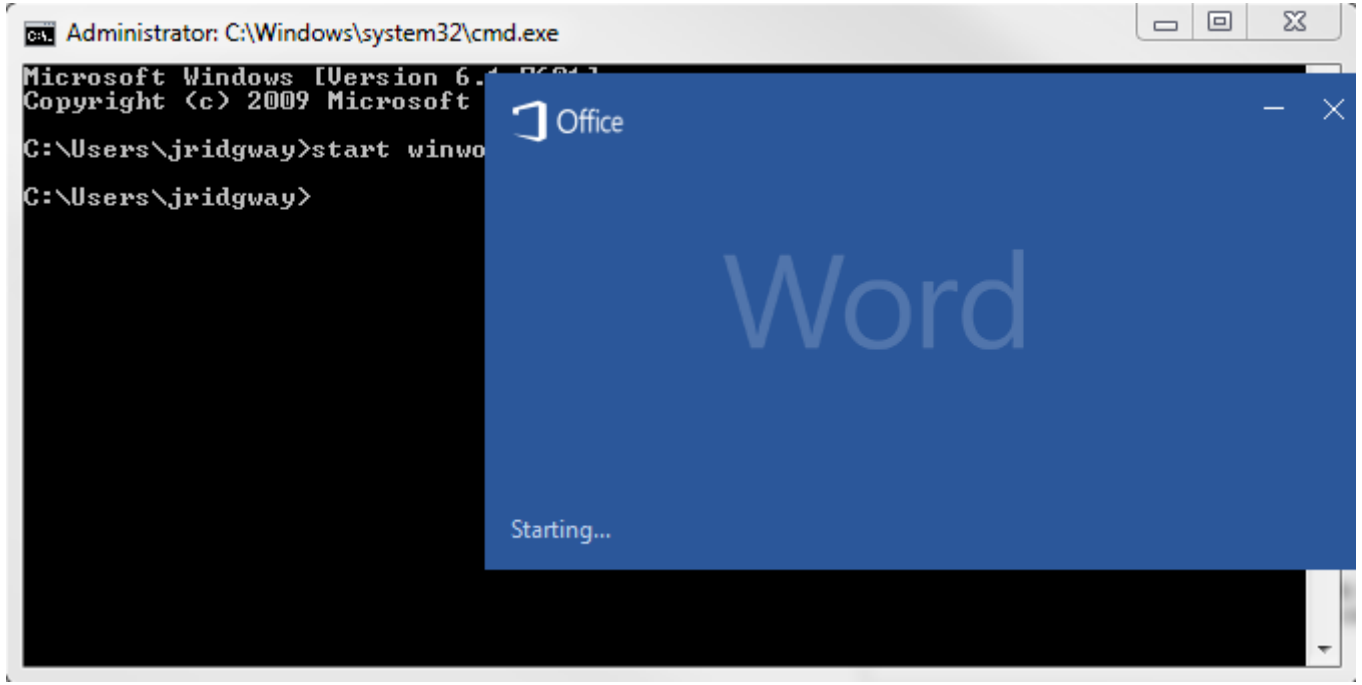
Technology = Distracted Mind

Method to dad's madness

- So, the coding thing didn't work. But Pops wasn't done yet.
- See, the TRS-80 was almost a decade old by the time he gave it to me.
- A few years ago, I asked him why bother setting it up. I already had a Nintendo and its games were more advanced (I thought). He said:
  1. The Nintendo didn't have a keyboard. *He wanted me to learn how to type.*
  2. The operating system was from the pre-Windows era, i.e. it was all non-graphical command lines. *He wanted me to learn how to read & spell better.*
  3. I wasn't as covert as I thought. He knew I was playing the games on there. But the only way to launch them was through the command lines. Which were code. *He tricked me into learning at least a little bit of code*.

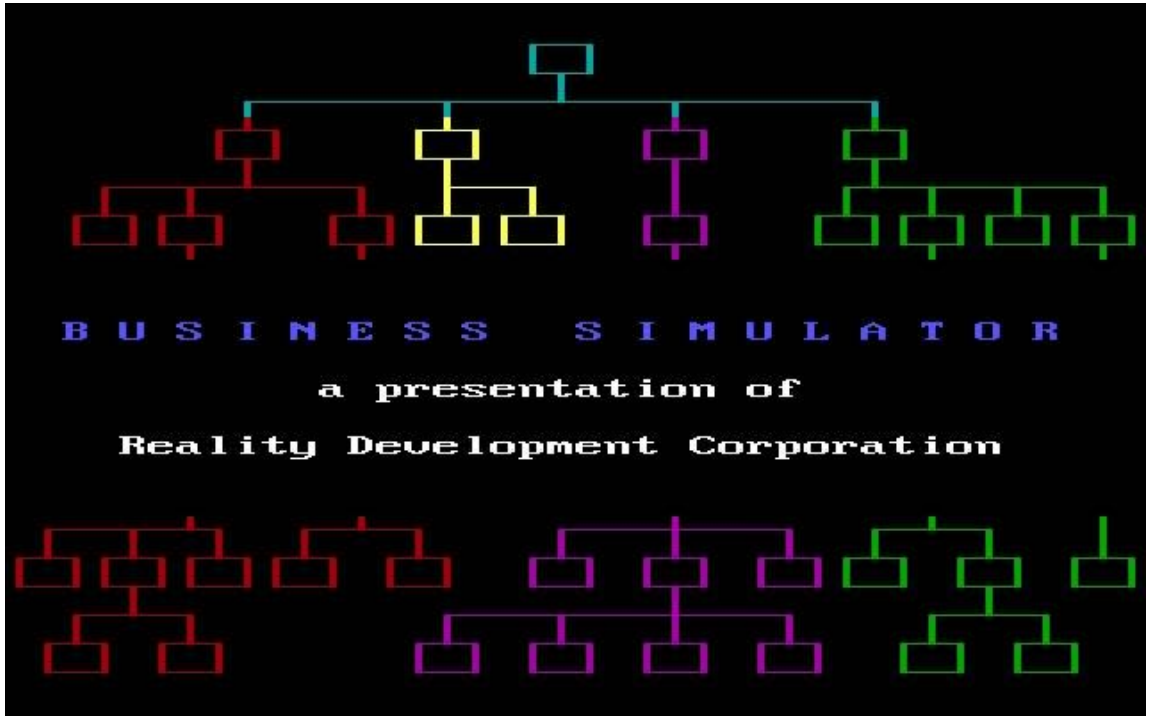
Method to dad's madness—continued





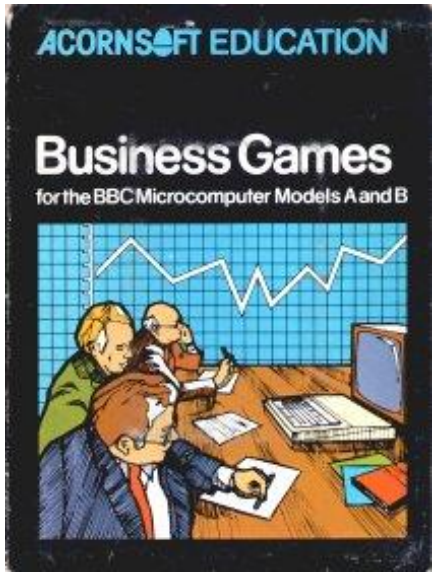
- While I never became a coder, to this day, I have this very basic—but inherent—understanding of how a computer thinks. I've been able to troubleshoot nearly all pc problems since. So … thanks Dad.

Pops wasn’t quite done yet.



He began picking the games. And he’d play them with me.

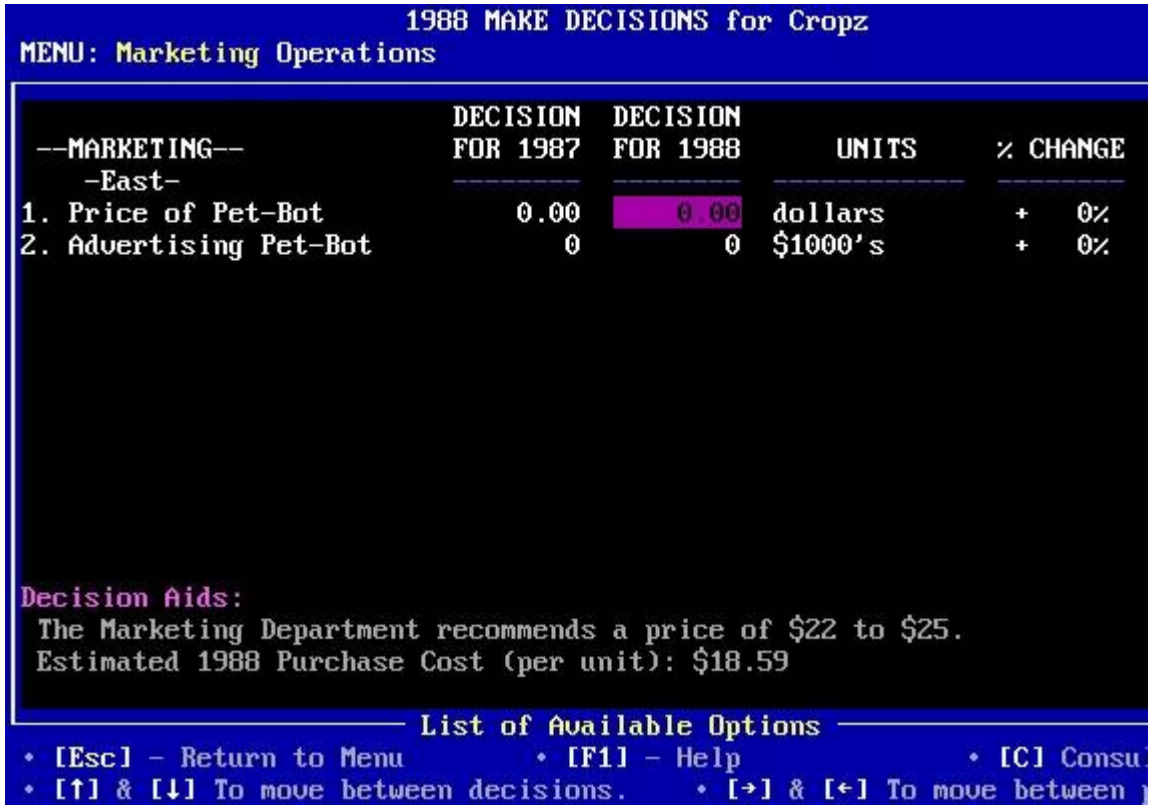
He’d often pick these business simulation games.



Then came defeat—he’d crush me every time.

Kind of like…

…this.



But I was probably one of the only kids in my elementary school who knew how to balance my advertising budget and R&D budget while maintaining necessary operational warehouse space to manufacture my Pet-Bots at a competitive market price.

How does any of this relate to today?

At a point when video gaming was in its infancy, my father helped me tap into something quite useful for a young learner…

What is Gamification?

As defined in the *Practitioner's Guide To Gamification Of Education*:

…gamification guru, Yu-kai Chou defines gamification as "the craft of deriving all the fun and addicting elements found in games and applying them to real-world or productive activities."

…Ray Wang, CEO & Principal Analyst of Constellation Research, Inc., describes it as a "series of design principles, processes and systems used to influence, engage and motivate individuals, groups and communities to drive behaviors and effect desired outcomes."

Techno-boredom

- Educators have a lot to compete with in the classroom, e.g. smartphones.
- They have even more to compete with outside of the classroom.
- Such technology can lead to a pattern of boredom or lack of engagement.

Practitioner's Guide To Gamification Of Education: Gamification has become a popular tactic to encourage specific behaviors, and **increase motivation and engagement**. Though commonly found in marketing strategies, it is now being implemented in many educational programs as well, **helping educators find the balance between achieving their objectives and catering to evolving student needs**.

This trail was blazed decades before

The Oregon Trail™
1

Matt's General Store
Independence, Missouri

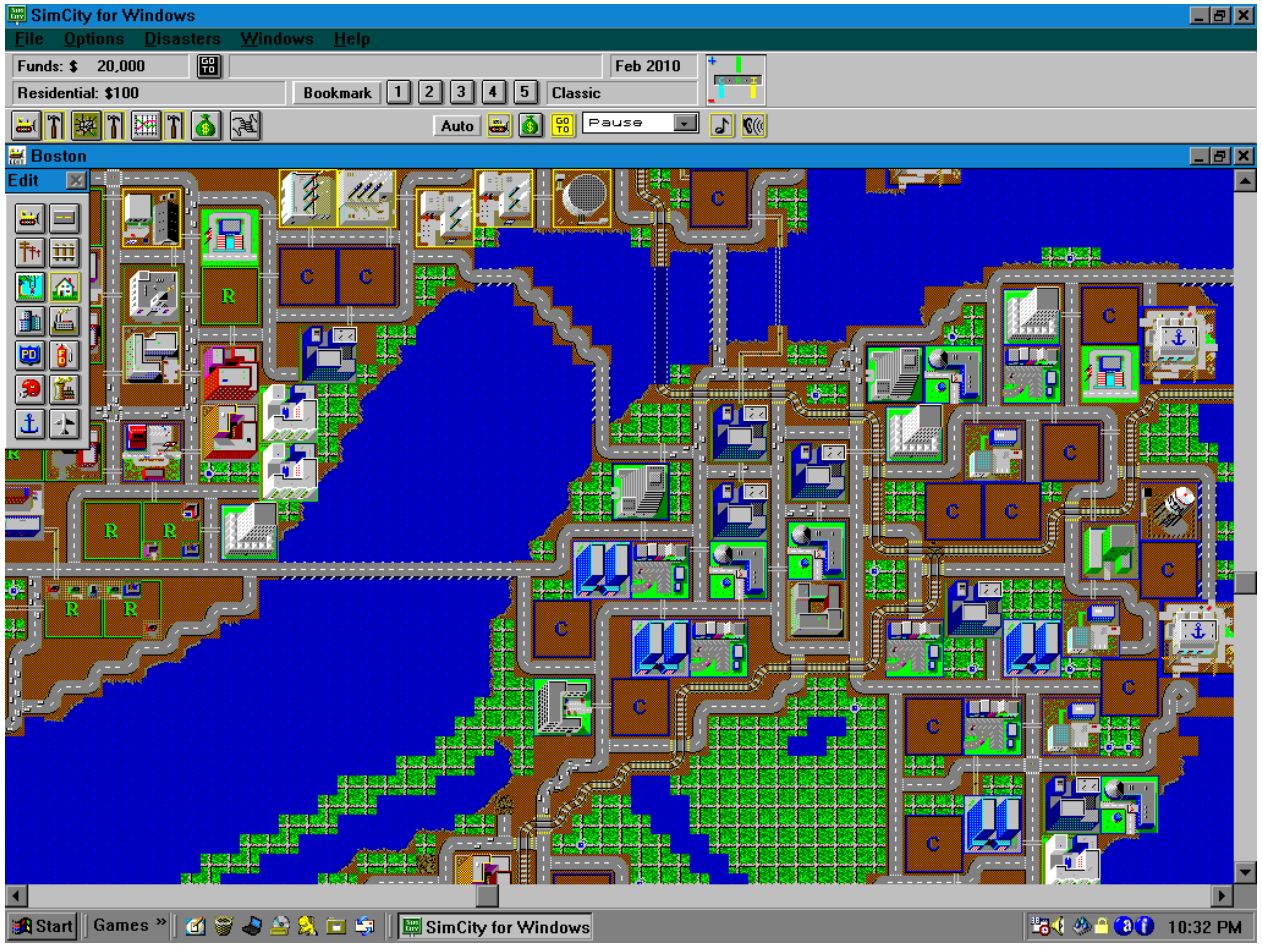
There are 2 oxen in a yoke;
I recommend at least 3 yoke.
I charge $40 a yoke.

How many yoke do you
want? 1

Bill so far: $0.00

Things just got more refined

Sandbox games are eventually born. There are no specific parameters to define winning in these. It's like playing in a sandbox—just for fun.



These, too, got much more refined

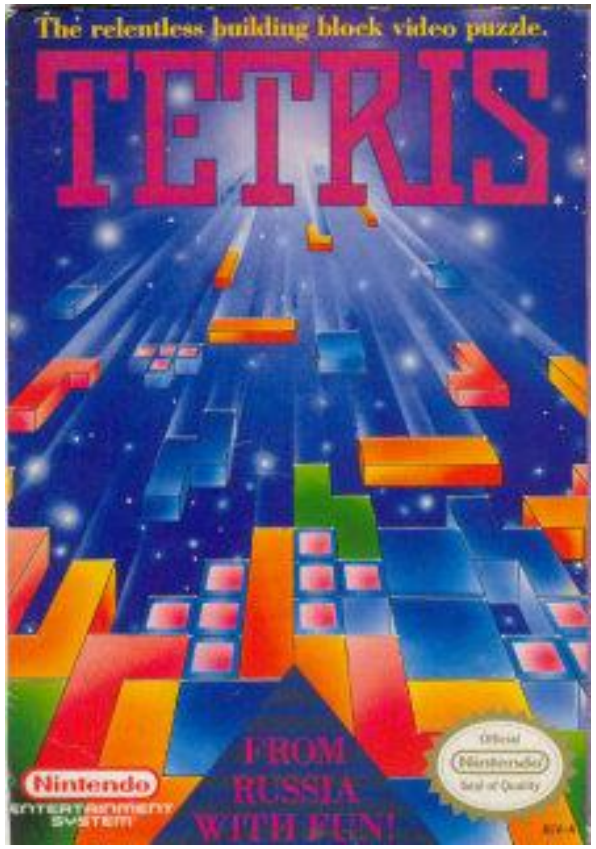
Enter Minecraft

(which, interestingly, opted for a retro graphics style)

Minecraft, a sandbox game, is released in 2009 for personal computers. It is later released on Xbox, Playstation, Nintendo Wii, iOS, Android, and more. It has millions of players from every age demographic.

Most popular video games of all time

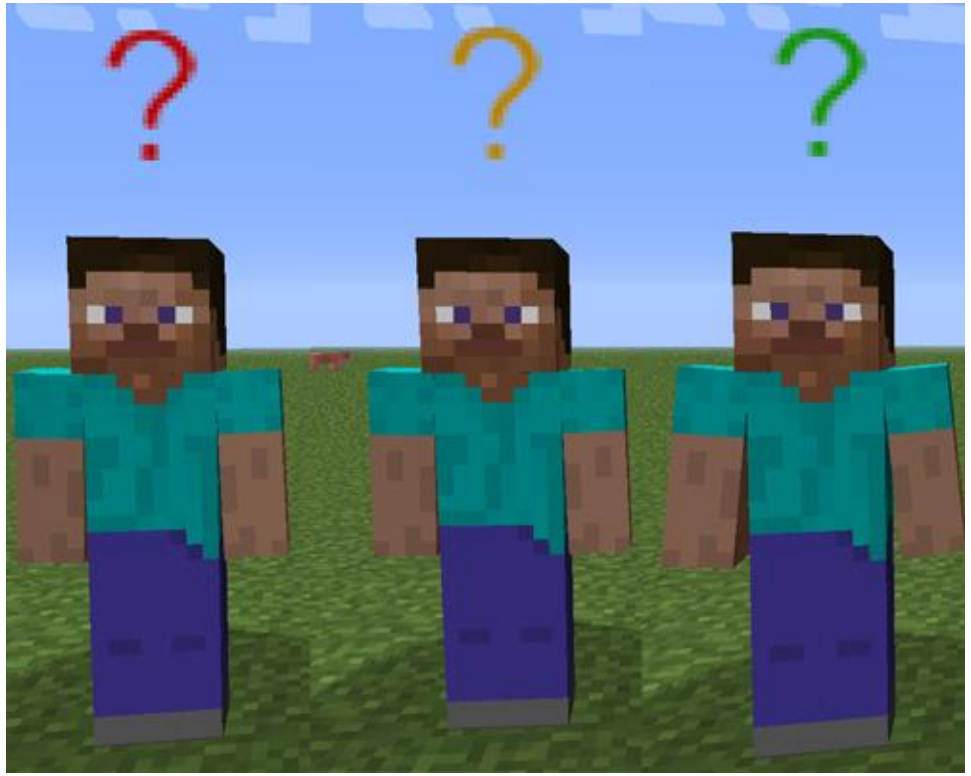
First place, 495 million copies sold since 1984



Second place, 108 million copies sold since 2011

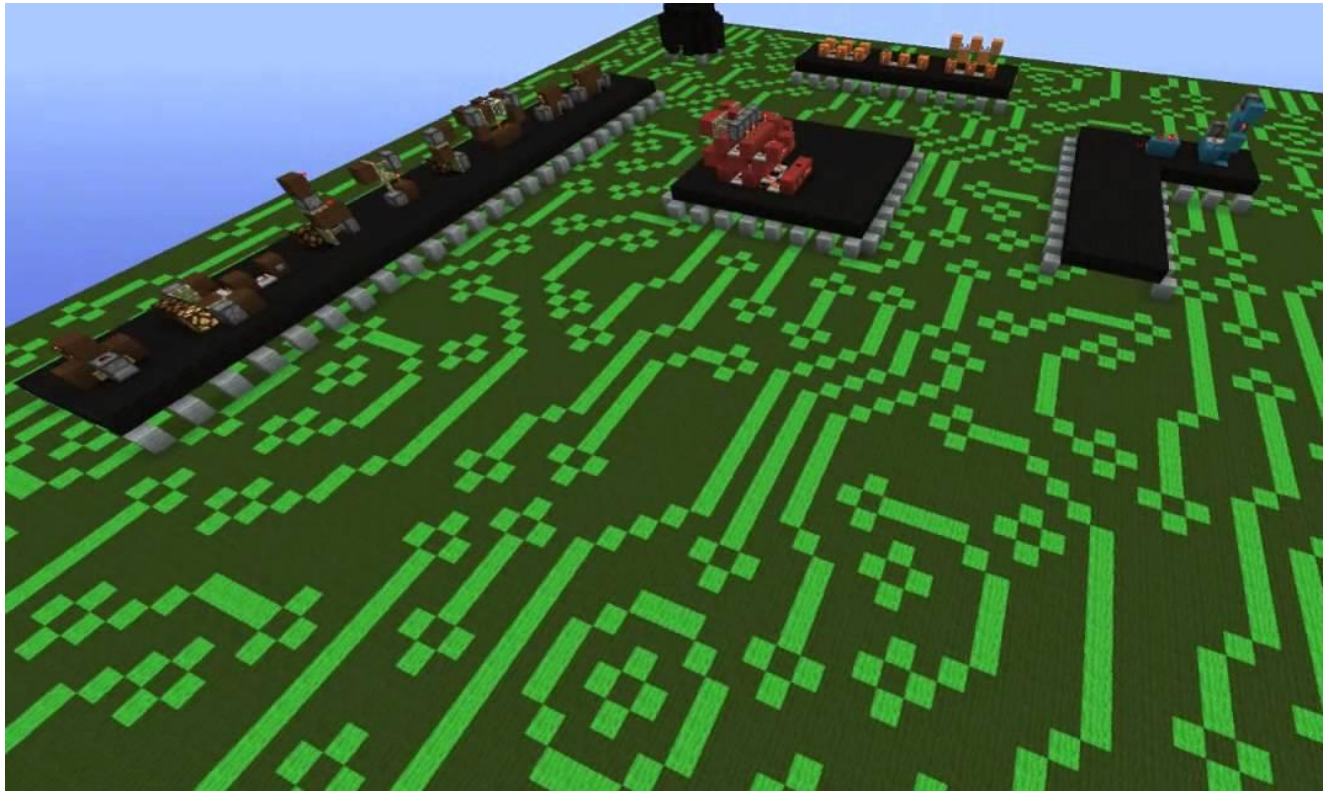
I still don't understand what Minecraft is, though

- Minecraft is a virtual land where users can create their own worlds and experiences using building blocks, discovering resources, and tapping into their own creativity.
- Minecraft has been described as a game with no rules. It doesn't come with a set of instructions, or a stated objective – players can build and explore however they want. It's often compared to virtual LEGO.



What does all this mean?

1. Accessibility & Affordability—a lot of people already own this game. Even if they don't, depending on which platform, this game can be purchased from anywhere from **$5 to $20**.
2. Education Gamification—all the parts are potentially there for nearly anything an educator can think up—like building a working (simulated) circuit board.



Minecraft Water Challenge

Objective One—Build something that shows viewers where **your** water comes from (Hint: faucet isn't going to cut it. **This objective requires you to identify the local water source(s) that connects to your actual home … then depict that source within the game**). This may require a little research. It may require a parent/student call to the local water supplier (parental involvement, especially for the youngest youngsters is certainly encouraged). The answer varies depending on where a given resident resides. Some are exclusively on public water systems supplied solely by groundwater. Some have private wells. Some have a blend of surface water and groundwater. Also, when it comes to groundwater, it's worth trying to find out what aquifer or aquifers that water is originating from. As far as visually depicting this first objective—have fun. That's what I mean by open-ended objectives. You don't need to actually pump water out of your virtual Minecraft ground—just build something that depicts where your water is coming from. Creating an in-game sign or two with the relevant information on it might be helpful, too.

Minecraft Water Challenge

Objective Two—Depict how water can be delivered. This is also worth researching. Pipes?—probably. But what about all those water towers out there. Ever wonder what those giants are doing? This task is less restrictive than the first and I'm certain there's a lot of room for some really creative ideas. Objective one specifically asks you to show where *your* water comes from. With objective two, you don't have to go dig up any local water infrastructure schematics—just **have fun finding a way to visualize how that water is delivered.** You can achieve this with rigorous, real-world detail or take a more fantastic approach—there's no right or wrong approach here—you just have to ask yourself whether you've visually depicted the transportation of water.

Minecraft Water Challenge

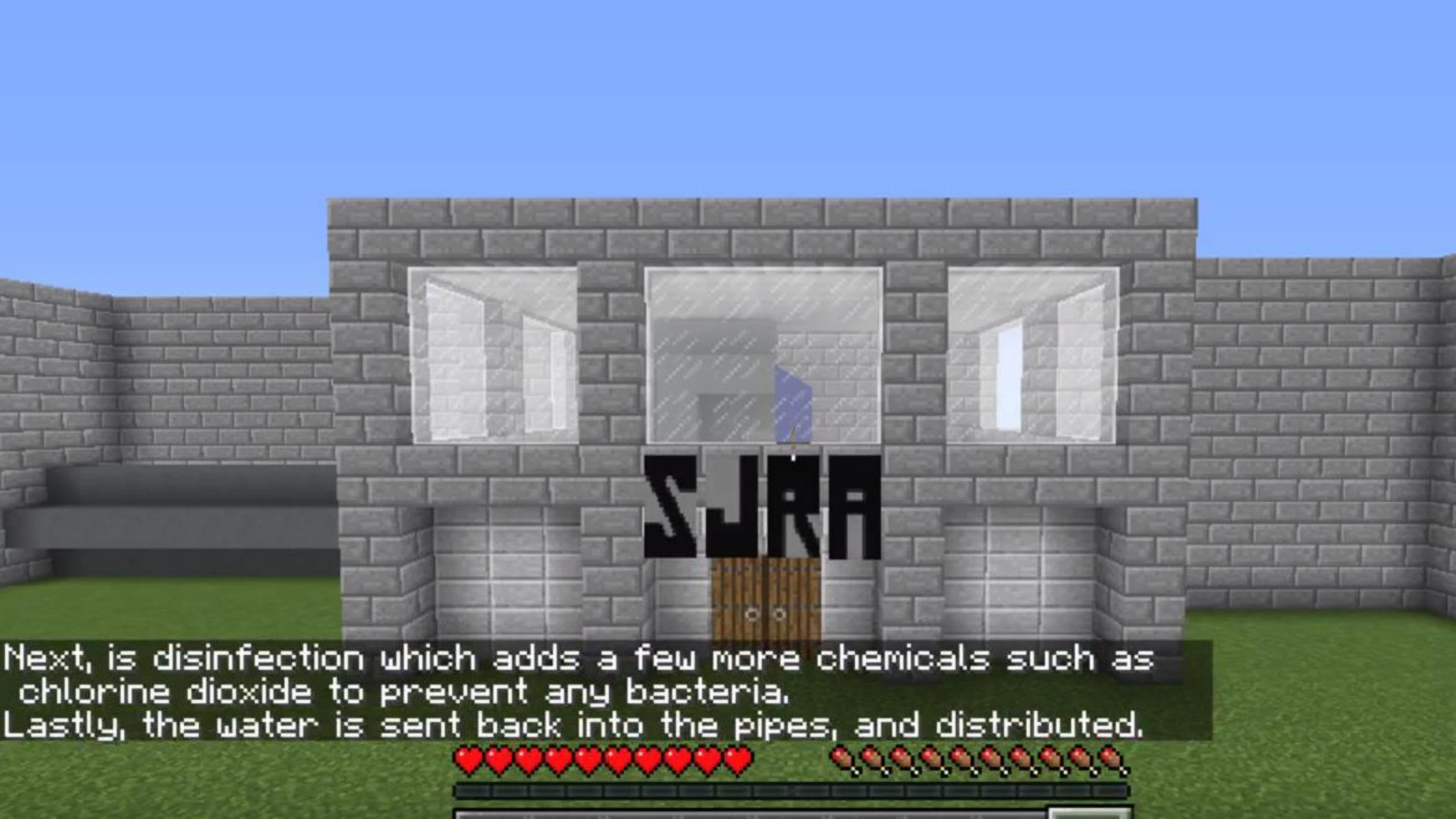
Objective Three—This one requires you to **show where the water is being delivered.** It could be your home. But it doesn't have to be. It could be a business. It could be a farm or ranch. It could be anything really—anything which requires fresh water. The sky's the limit—literally (that's my one allotted Minecraft pun).

Submission Process

To submit your entry, make a 30-second video (at least 30 seconds—try not to go longer than three minutes, please) and upload it to YouTube. The video simply needs to show that each objective was met. It doesn't have to look like J.J. Abrams directed it. Shoot it with a smartphone if you like. If you made yours on a smartphone, see if you can use another smartphone to record it. And remember, parental involvement is encouraged.

Here’s what happened next

WOODLANDS

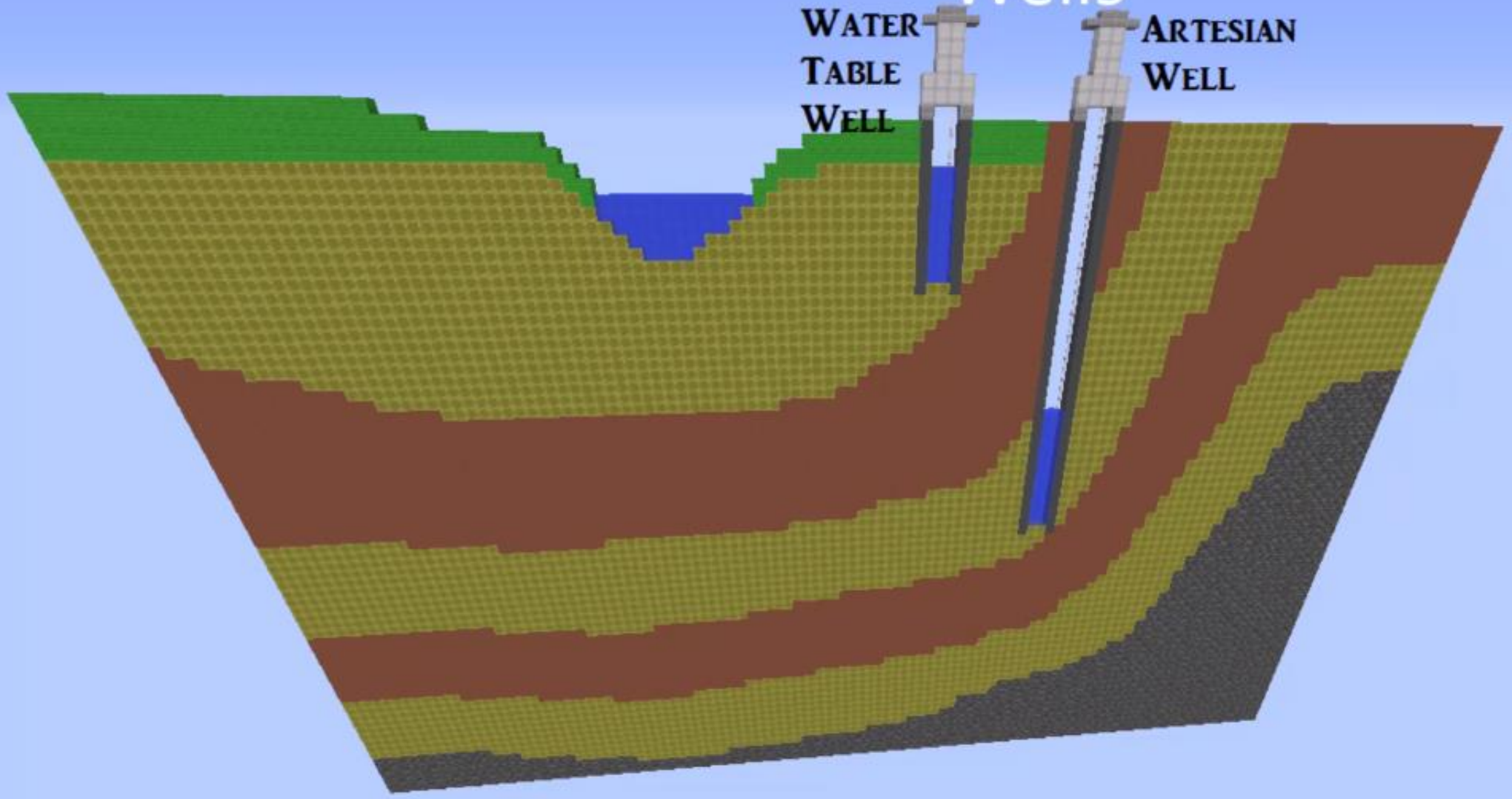

SJRA
Next, is disinfection which adds a few more chemicals such as
chlorine dioxide to prevent any bacteria.
Lastly, the water is sent back into the pipes, and distributed.

SEDIMENTATION
Sedimentation Basin

Inventory

Evangeline Aquifer

Wells



We also had a winner announcement event

Accessories

Gaming
MINECRAFT

HIGH SCHOOL
SECOND PLACE!
ALEX BRADSHAW
MINECRAFT
2016
WATER CHALLENGE

HIGH SCHOOL
FIRST PLACE!
JORDAN SCHMID
MINECRAFT
2016
WATER CHALLENGE

ELEMENTARY SCHOOL
SECOND PLACE!
MINECRAFT
2016
WATER CHALLENGE

JR. HIGH SCHOOL
THIRD PLACE!
COLE RIGSBY
MINECRAFT
2016
WATER CHALLENGE

JR. HIGH SCHOOL
SECOND PLACE!
ISABELLA WOODHEAD
MINECRAFT
2016
WATER CHALLENGE

JR. HIGH SCHOOL
FIRST PLACE!
DANIEL STONECIPHER
MINECRAFT
2016
WATER CHALLENGE

2016 Minecraft Water Challenge reached diverse cross-section of Montgomery County

- Conroe ISD
- Magnolia ISD
- Montgomery ISD
- New Caney ISD
- Splendora ISD
- Tomball ISD
- Willis ISD

- Legacy Preparatory Christian Academy
- 11 entries from local home schools

63 Total Student Entries

- **24** from Elementary School
- **27** from Jr. High School
- **12** from High School

The End