

## MINECRAFT MAKES YOU THINK

By Bec Oakley



Being a construction-based game, it's obviously a great way to teach science, engineering and math. But as I watch them play, I suspect it's also a gateway into areas that have previously been hard for them - social interaction, art, stories, history, community, creativity.

I ran it up the flagpole against one of the most commonly used frameworks for setting learning objectives in schools and universities. It's called Bloom's Taxonomy, and it was created by educational psychologists as a way of classifying learning behaviors.

Cognitive skills (remembering, understanding, applying, analyzing, evaluating and creating) are grouped into levels which increase in complexity as you move from the bottom of the hierarchy to the top, like this...



So how does playing Minecraft stack up as a learning exercise? Does it encourage development and expansion of thinking skills? Let's take a look, using real-life examples taken from my kids during a typical Minecraft session.

## BLOOM'S TAXONOMY APPLIED TO MINECRAFT

### Level 1: REMEMBER

- List all the items in their inventory
- Know the available actions and which keys to press
- Recall how to save and quit the game

### Level 2: UNDERSTAND

- Figure out the instructions
- Describe the story of the game to a new player
- Explain how to cut down a tree

### Level 3: APPLY

- Show other people how to play the game
- Take screenshots to show what they mean
- Make a map to find their house

#### **Level 4: ANALYZE**

- Figure out how to survive through the night
- Compare survival and creative modes
- Think ahead to possible outcomes of their decisions

#### **Level 5: EVALUATE**

- Discuss whether the new update made the game better
- Debate the changes they would make to the game
- Argue for new server rules and defend their choices

#### **Level 6: CREATE**

- Design and construct new buildings
- Develop plans for extending their worlds
- Solve problems by using materials in new ways

And here's a summary:

## Bloom's Taxonomy applied to Minecraft

### LEVEL 1: REMEMBER

List all the items in their inventory  
Know the available actions and which keys to press  
Recall how to save and quit the game

### LEVEL 2: UNDERSTAND

Figure out the instructions  
Describe the story of the game to a new player  
Explain how to cut down a tree

### LEVEL 3: APPLY

Show other people how to play the game  
Take screenshots to show what they mean  
Make a map to find their house

### LEVEL 4: ANALYZE

Figure out how to survive through the night  
Compare survival & creative modes  
Think ahead to possible outcomes of decisions

### LEVEL 5: EVALUATE

Discuss whether new update made the game better  
Debate changes they would make to the game  
Argue for new server rules and defend choices

### LEVEL 6: CREATE

Design and construct new buildings  
Develop plans for extending the world  
Solve problems by using materials in new ways

There were dozens of examples of both simple and complex thinking, at every level of the hierarchy. Not only does it train kids to acquire and retain

information, it encourages them to pull all that knowledge together and use it in new ways.

While the game can be enjoyed at any of the cognitive levels, the ultimate thrill comes not from just surviving to play another day but in creating a whole new world to play in. Kids are naturally pulled up through the thinking hierarchy by being rewarded for taking risks and stretching outside of their comfort zone.

So it's clear to me that not only is Minecraft an exciting and addicting game to play, it encourages, develops and rewards higher level thinking - which makes a compelling argument for using it as a learning tool.