Explore, Create, Survive

'Minecraft' is a versatile and fun game with broad appeal

"Can you teleport me?" "How do I fly?" "I need a sword." "What are you building?" These eclectic exclamations are the sounds of a room full of teens playing *Minecraft* (www.minecraft.net). We play every other Wednesday in Chicopee (MA) Public Library's computer lab, often filling all ten computers, and are occasionally joined by teens playing from home. My group plays freely, building whatever suits their fancies. As I've watched these teens discover skills in the game, I've been thinking about *Minecraft*'s potential for both structured and unstructured activities.

What is Minecraft?

Minecraft (sample pictured) is an open-ended, creative game where players roam a landscape made of different kinds of blocks that can be used to build just about anything. Clicking blocks breaks them and adds them to your inventory. Then you can craft items and place blocks to build structures. Animals and monsters, or mobs, also made of blocks, roam the landscape and provide resources and adversaries. The simple graphics, reminiscent of video games from 20 years ago, create an immersive environment in their blocky aesthetic. The game has a broad appeal—it's as interesting and appropriate for eight-year-olds as it is for their parents and anyone in between.

Developed by Swedish programmer Marcus Persson, also known as Notch, and his company Mojang, the full version of the game was released in November 2011 after several beta versions. The object of the game, in as much as there is a specific object, is to explore, create, and survive. An individual license for the game costs $26.95. With one license you can download the launcher as many times as you want and multiple users can play single-player games simultaneously. In order to play multiplayer games, each user must have their own license.

Survival vs. Creative

The different game play modes place more or less emphasis on the creative and survival aspects of the game. In Survival mode, you need to eat food to recharge your health points (a series of hearts) and contend with enemy monsters. In order to have access to many of the specialized

blocks that are available, you have to go out and find them hidden in the game's landscape, sometimes venturing into underground caverns and dangerous other dimensions.

In Creative mode, you can fly, literally by double tapping the space bar, but figuratively as well, because you have instant access to every kind of block and most items in the game. This allows you to focus on the design and creation of structures immediately. Hostile mobs can't damage you in Creative mode, and you don't need to eat at regular intervals to maintain your health. The satisfying challenge of Survival mode makes for a better adventure game experience, while the free-form chaos of Creative mode lends itself well to art projects and tasks where building is the priority.

Multiplayer servers

While you can experience the game on your own in a single-player world, the multi-player experience is superior because it opens up the opportunities of cooperation and community and is more fun. A world begins to take shape with common goals, or sometimes conflicting ones that require discussion and compromise to resolve.

For the technologically minded, hosting your own server is free and relatively easy. But for those of us who are still a little wary of networking specifics, there are a few other options. You may already be acquainted with students who have the networking knowledge you lack. Getting a lesson in setting up a *Minecraft* server from an experienced teen player could be a valuable learning opportunity for both parties. You can pay for hosting by a third party company, such as Minecraft Box (minecraftbox.com), Servercraft

(servercraft.co), or Redstone Host (redstonehost.com). These services usually charge between $7 and $15 a month for a basic server for 1–15 players, but may cost up to $50 per month to support up to 100 players. Or, in a school or library setting, you can purchase MinecraftEdu's (minecraftedu.com) suite of teaching tools for a one-time fee. Included in this bundle is a point-and-click interface for hosting your own server. Be aware, however, that only MinecraftEdu users can connect to a server hosted with MinecraftEdu's server tool.

Minecraft and Education

MinecraftEdu is a group of teachers working to make *Minecraft* more accessible for learning environments by providing discounts and institutional orders, as well as tools to make it easier to use the game in the classroom. In addition to the server tool, MinecraftEdu comes with a tutorial world that teaches players how to navigate the game's controls and introduces many features of the world. The power to write notes and determine student privileges, including where they can and cannot build, are ideal for introducing specific learning goals in the game. The ability to save and access various maps would be helpful for anyone running multiple *Minecraft* groups. MinecraftEdu is still in beta, but it promises to make playing *Minecraft* in classrooms and libraries easier and more conducive to learning.

The breadth of things educators are doing with *Minecraft* is staggering and the potential is there to do even more. Some things you might do with it in classrooms include:

Computing basics: Use *Minecraft* to introduce basic computing skills such as logging in, creating a password, using a keyboard and mouse, following directions and typing.

Models: *Minecraft* allows educators to create structures for students to interact with. From a three-dimensional model of a cell to a replica of an historic building, anything is possible. A history class might recreate an ancient civilization and enact what it would have been like to live there. Students could interact with an instructor-built model, or they could work collaboratively to build one.

Economy: Many servers operate on a city planning model, where a village is laid out and users take different jobs. There are game models that introduce an economy into play.

Mapping: *Minecraft* maps exist on a Cartesian coordinate plane. You can access your coordinates by pressing the F3 key (or Function F3 on some computers). By collecting and charting coordinates from a variety of locations in the game, students could map their *Minecraft* landscape.

Mechanisms: Redstone circuits and mechanisms introduce technology into the game landscape and might attract students interested in engineering and teachers working with STEM curricula. Work with circuits and pistons to create a trap to keep zombies out of your house, or a train to carry you across the game's landscape.

Machinima: In conjunction with screencasting software, *Minecraft* lends itself to machinima storytelling. You can change the point of view of the game from first person to third person with the F5 key. If you toggle your display so you can see your avatar from the front, you could act out a scene.

Inspiration from books: Create a replica of a favorite fictional building or town in *Minecraft*, or better yet, a whole map. Imagine Hogwarts or Middle Earth made of blocks.

Playing Around

In the largely unstructured setting of my public library *Minecraft* group, teens have discovered the game's potential at their own pace. We had a few weeks where several people tried their hands at making pixel art, representing 8 bit characters using colored wool blocks. We now have a landscape full of video game characters.

Claiming territory and creating personal structures has been another popular activity. In our server world, we have a variety of buildings. From the complexities of redstone circuits to the peculiarities of hanging vines on stone walls, the teens have learned a lot about the game's mechanics in building on their own.

Minecraft is versatile and fun. Played simply as an adventure game it is a satisfying activity for kids of all ages. When it comes to using it for educational or other structured activities, it has a growing number of possibilities to explore. Try it for yourself at www.minecraft.net.

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How Educators & Authors Use *Minecraft*

Joel Levin, The *Minecraft* Teacher: www.minecraftteacher.net.

Andre Chercka, Digital Game Based Learning: www.gamebased.tumblr.com.

Massively Minecraft Network: a community for educators, parents, researchers, and volunteers: www.minecraft.jokaydia.com (requires sign up).