

CHAPTER 4

MINECRAFT

WELCOME TO MINECRAFT!

Here we'll bring your creativity to the surface as we venture into the block-building game of Minecraft.

We'll learn about the importance of planning, design, and sustainability as we task you to build a futuristic eco-friendly house.

The open-world, building nature of Minecraft helps spark imagination and foster creativity – which are important skills that can be applied to exciting career paths like art, design, construction, and many other professions.



ARCHITECTURE

Building cool things in the real world is a blend of science and art - we call this architecture. The people who practice it are called architects. Imagine you're an artist, but instead of using paints or clay, you're using the size, shape, colours, materials, and the style of a building to express your ideas.

But there's a cool twist! Unlike painters or sculptors who create art just to look at, architects design buildings not just to look good but to be useful too. So, it's like creating a masterpiece that's also a fantastic place for people to live or work in.

Architects design all sorts of places from houses to castles, to hospitals, museums, airports, and even sports stadiums. Each of these places needs to be special because they're used for different things. Architects also think about what feelings the building should give to people. Some buildings want to show off and look powerful, while others just want to be friendly and welcoming to everyone.

Right, it's time to get cracking so let's load up Minecraft and think about bringing our first attempt at an architect drawing to life. We're going to be building in 'creative mode' in the game.



Some buildings want to **show off** and look **powerful...**



...Others just want to be **friendly** and **welcoming** to everyone

MAKING A BLUEPRINT

Before we jump in and start building, we're going to gather our ideas and make a rough sketch on paper first.

Designing on paper before building is important for many reasons. First of all, it helps you think and plan before you build so you're not just placing down blocks at random.

Rushing into building without a plan can lead to a messy, confusing house and your from making mistakes which could be really expensive in the real world and save you a lot of time in the virtual one.

Right, it's time to get your pencil out. Use the box on the right to start your plan. Have a think about what style of house appeals to you; where the doors and windows will be placed, whether or not to include any bespoke features. And most importantly, don't forget to think about all the cool eco-friendly features you might want to include.

More plans

Less mess

Draw in here

BIOMES

You probably know this already but some of the main biomes in Minecraft are the Plains, Swamp, Forest, Jungle, Taiga, Snowy Tundra, Mountains, Savannah, Beach and Mushroom Fields.

Let's unpack them a bit more while to you consider where you might want to build.



The plains offer easy access to sustainable building materials like wood and a flat terrain for building. You can use solar panels for renewable energy, and it's a great place to start a farm for growing food.



In contrast, deserts lack easy access to sustainable building materials, and the extreme heat makes it challenging to keep the house cool without using a lot of energy. Finding water can also be a struggle, and it's not the best place for growing food.



Forests provide an abundance of wood for eco-friendly construction. You can integrate the house with the lush surroundings and use renewable energy sources like wind turbines. Animals in the forest also offer a natural source of food and materials for sustainability.



The snowy tundra is beautiful but cold and unfriendly, which can make heating a major challenge. You would need a lot of energy to stay warm, which isn't very eco-friendly. Building materials are limited, and the ground is not suitable for agriculture, mainly because it is frozen.



Jungles are teeming with plant life and water sources. You can design a futuristic eco-house or eco-tree house with advanced water conservation systems and use solar panels hidden in the treetops for energy. The dense vegetation provides shade, helping keep the house cool naturally.



While Mushroom Islands are peaceful and unique, they don't offer many resources or materials for high-tech eco-house construction. The unusual landscape doesn't easily lend itself to a futuristic design, and it's not a great place to grow food or harness renewable energy.

MATERIALS MATTER

Choosing the right building materials is like picking ingredients for a recipe. People consider things like how they look, how strong they are, if they are easy to find, and how much they cost.

Some materials, like stone, brick, wood, and concrete, have been used for a very long time. Stone is great for big statues because it lasts a really long time and you can carve cool designs into it. But it's tricky to cut and move around.

Bricks are awesome because they can resist fire, and they're simple to make, carry, and put in place.

Wood is very easy to get hold of, carry, and work with, but it can catch fire easily, grow mold, and rot, and sometimes even bugs like termites munch on it.

Concrete is like magic building paste made by mixing cement, water, sand, and little stones. You can pour it into moulds to make all sorts of shapes, and it turns into a really tough material that can stand up to fire. But concrete isn't great for the environment. In fact, taking in all stages of production, concrete is said to be responsible for 4-8% of the world's CO2 emissions. Among materials, only coal, oil and gas are a greater source of greenhouse gases.



**Right
materials
=
Right
ingredients**



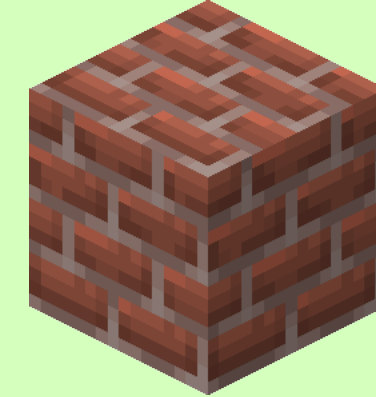
**Concrete is
responsible for
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MINECRAFT MATERIALS

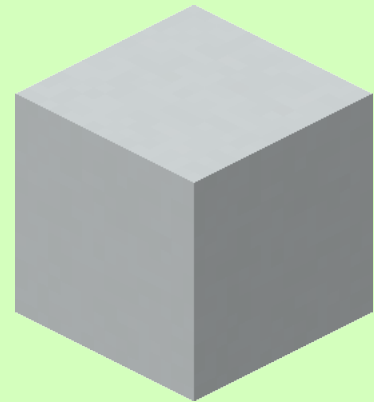
In Minecraft you have a wide choice of building materials such as Wood, Stone, Bricks, Cobblestone, Glass, Concrete, Wool, Terracotta and Nether Bricks. A bit like the choices that you have to make when choosing your site for your eco-house you also have to make choices when it comes to building materials.



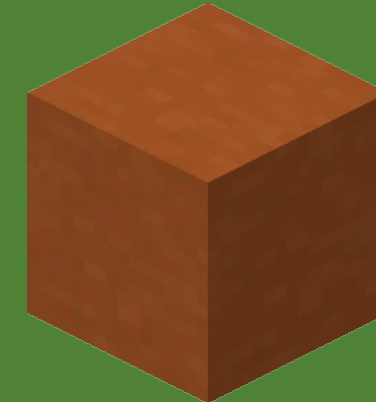
Wood, which is renewable and easily obtainable. It can be used for walls, floors, and roofs. It's also a natural insulator, helping to keep the house warm or cool.



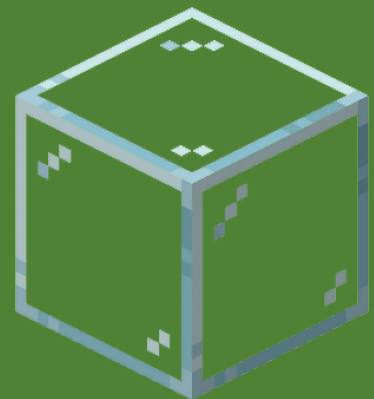
Bricks provide a polished look, but don't offer the same level of insulation as wood or wool. Using them excessively might lead to increased energy usage for heating.



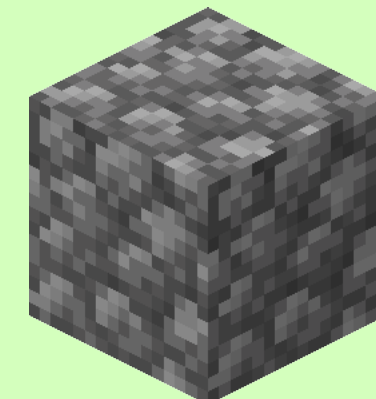
Concrete is a strong and durable material, which lasts practically forever. It's excellent for building sturdy foundations and walls but is not very environmentally friendly.



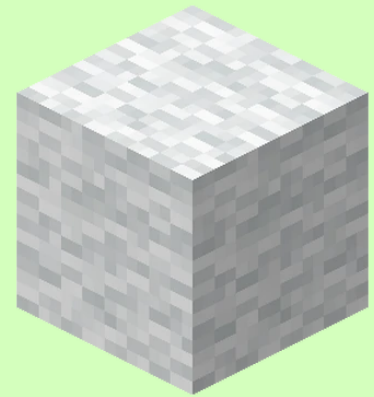
Terracotta comes in various colours and patterns which could add an artistic and decorative touch to your eco-house. It can also be used for stylish features and roofing.



Glass is transparent, allowing natural light to enter the house and reducing the need for artificial lighting during the day. It's perfect for windows, skylights, and greenhouses.



Cobblestone has a rough texture and may not fit the sleek, modern look of a futuristic eco-house. It is probably better suited for rustic or medieval-style buildings.



Wool is soft and can be used for insulation, keeping the house warm in the winter and cool in the summer. It's also versatile for creating cozy interiors and decorative elements.

When designing in Minecraft, choosing the right materials is essential for both aesthetics and functionality. Consider the advantages and disadvantages of each material carefully to create a sustainable, energy-efficient, and visually appealing eco-friendly home.

LAYING THE FOUNDATIONS

It's awesome that you have sketched your ideas. Now, think about your design and what materials you want to use. Decide on room layouts and where you'd like windows, doors, and other features.

In Minecraft, it's a great idea to start by marking out the foundation or footprint of your house. This can help you see how much space you have to work with. You can use any material for this, like dirt.

Whether you start with the outer walls or the middle of your house depends on your design. If you have a specific shape in mind, you might want to outline the outer walls first. On the other hand, if you have a central feature like a garden or a futuristic energy core, you can start from the middle and build out.

Consider how you can use renewable energy sources like solar panels or wind turbines to power your futuristic house. Plan space for them on the roof or in your garden.

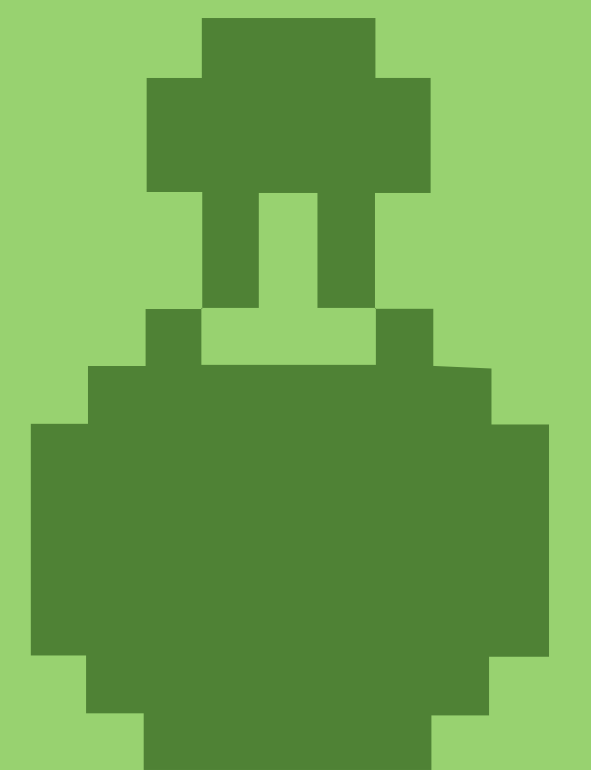
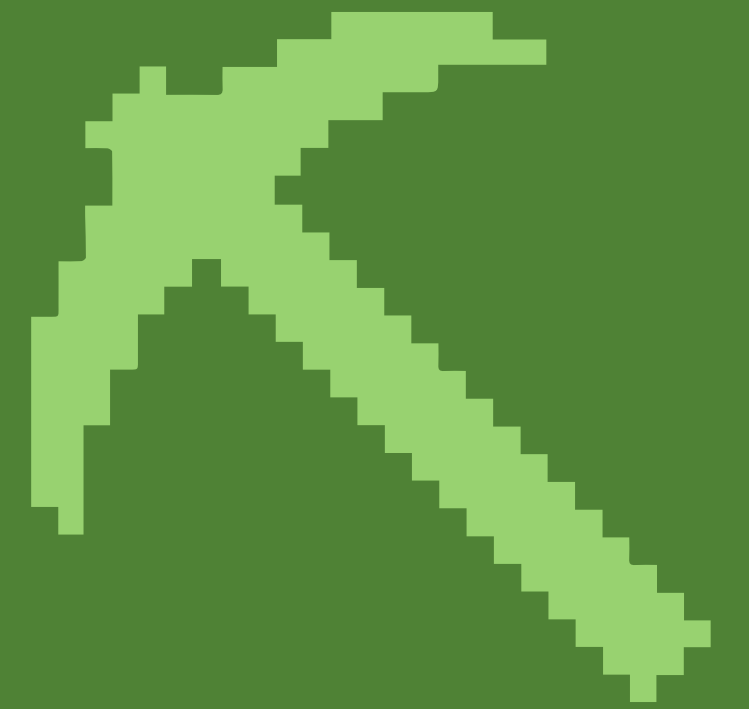
Talking of gardens if you want a garden or green space, think about where it should go. Greenery not only looks amazing but can also help with the eco-friendly vibe.

Draw in here

TIP: Remember these are just ideas. It is your design so the only thing holding you back is your imagination

FIRE MINECRAFT UP!

Grab your pickaxes, gather your materials, and let's start building a sustainable, 21st-century masterpiece together!



FINISHING TOUCHES

1

How about starting with a lush eco-garden surrounding your house? Plant a colourful array of flowers to attract bees and butterflies, making your outdoor space a pollinator paradise.

Now you have put your finishing touches on your incredible futuristic eco-house in Minecraft, it's time to turn your attention to the wonderful world outside. The immediate surroundings can be just as exciting and eco-friendly, so let's get started on this next phase of your green adventure!

Flowers
=
bees and butterflies plus pollinator paradise

2

Create a vegetable patch to grow your own delicious, homegrown veggies. This not only reduces food miles but also connects you with nature.

Vegetable patch
=
Delicious, homegrown veg minus food miles

3

Illuminate your outdoor space with solar-powered lights. They charge during the day and light up your garden at night, saving energy and creating a magical atmosphere.

4

Why not consider installing rain barrels to collect rainwater. Harvested rainwater can be used to water your garden, reducing the need for tap water and conserving resources.

Rain barrels
=
Harvest rainwater for gardening plus conserve resources

5

Although saving the planet is fun there are lots of fun things to build. How about a Trampoline? A great way to stay active, exercise and enjoy the fresh air. Or if you don't like trampolines how about a track for your BMX, a tennis court, or even a skate park.



SHARING IS CARING

Now, here's the fun part! Take a series of screenshots of your eco-house from various angles. Capture both the interior and exterior, showcasing all the incredible details you've worked so hard to create. These screenshots are not just a way to share your masterpiece but also a chance to document your progress and creative journey.

And who knows, you might even start an eco-friendly building trend in your Minecraft community!

Happy building and keep inspiring others on this sustainable adventure!