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# PARENT LETTER

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## MINECRAFT AND ARCHITECTURAL DESIGN

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Thank you for signing your child up for our Minecraft and Architectural Design camp! We would like to fill you in on what your child will be learning this week at camp.

The purpose of this camp is to use a fun, interactive, and creative game (Minecraft) in conjunction with the Architecture Studio LEGOs (and a bit of science) to help students learn the basic concepts of architectural design and engineering.

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### DAY 1

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On our first day, we will explore the differences between architects, architectural engineers, and structural engineers, and why each profession is important in creating the buildings we see every day. We will try Tom Wujec's Marshmallow Challenge and explore the many challenges faced in building super-tall buildings, while we discuss the 5 tallest buildings in the world.

Then, we will learn about building circular designs in Minecraft (a very square world), and follow layer-by-layer instructions, similar to LEGO instructions, to build our own domes in Minecraft! Finally, we will use an animal as inspiration for a building of our choice, building it first with the Architecture Studio LEGOs, then in Minecraft.

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### DAY 2

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On the second day, we will discuss 7 major architectural styles: Chinese, Greek, Roman, Gothic, Victorian, Tudor, and Modern. We will learn about flying buttresses and discuss the changes in architectural styles that occurred as our building materials evolved and changed.

Our big project for the day will be designing our own house, inspired by one of the architectural styles discussed. The students will start with a sketch of their design using graph paper, and then they will build that design using the Architecture Studio LEGOs. Once that design is complete, the students will build their house in Minecraft!

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### DAY 3

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Day three will start by focusing on the principles of structure. We will do a few science activities in which we learn about the forces acting on our structures, such as tension, compression, and torsion (just to name a few). We'll play Jenga, which is an awesome game that reinforces these concepts, as well as center of gravity and the importance of a strong foundation! Who knew this simple game was so educational? Did you know that every single block in a Jenga set is very slightly different from the others? This is what makes the game so fun and challenging!

After that we will learn about cantilevers and balconies, then design a building with a cantilever using the Architecture Studio LEGOs.

Lastly, we will learn about making blueprints! We will start by drawing a blueprint of our kitchens at home, then expanding that to a blueprint of our entire first floor. Best to start with what you know, but it is a surprisingly difficult challenge! Then the students will use our architect's scales to make their own conversion scale from cm to Minecraft blocks, and attempt to build their first floor to scale in Minecraft.

Finally, we will discuss the importance of interior design, and how it is different from interior decorating.

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#### DAY 4

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Our fourth day is focused around interior design and blueprints. First, the students will design their own dream house for their family. We'll start by making a list of all of the rooms desired, and then they will draw detailed blueprints (to their Minecraft scale!) of each floor of their dream house. Once those are complete, they will design the outside of the house using the Architecture Studio LEGOs. Finally, they will build the entire thing in Minecraft.

Next, we will learn all about the new rave, Tiny Houses! Building a tiny house forces one to really think about dimensions and interior design. After looking at some example floor plans and pictures, the students will decide what their absolute necessities are in a permanent living space. They will then make their own blueprints of their tiny houses, then build them in Minecraft.

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#### DAY 5

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Our last day is the challenge the students have been begging for since Monday: The Epic Build! We will challenge our students to work with a team to design and build something on a HUGE scale in Minecraft. It is required to have lots of detail and to be (at least mostly) realistic. The students will start with a planning period with their group, during which they must make sketches of their design and describe the purpose of their building. They will "pitch" their ideas to the instructor, and upon approval, will be cleared to spend the rest of the day building their designs in Minecraft.

If you can, please take a moment at pick up to look at your child's designs that day! We will keep our LEGO designs built until the end of the day so that you can see how they are learning, but you'll need the tour in Minecraft too! We encourage students to take all of their blueprints home to show you.

We hope your child enjoyed this camp and will come back again soon! And remember, we always love to hear your feedback!