



037





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# EDITORIAL

By Mark Favreau

I f I'm not mistaken, and I am *often* mistaken, this eleven-month gap is the longest gap between issues in HispaBrick Magazine History.

It wasn't planned this way. Not that much of anything is planned at HispaBrick Magazine, and if it does get planned, that plan often goes out the door without ceremony or warning.

This issue had some aspirations to be a thing, and have a theme of “On the Road”, which, to some degree described the process of getting to the end. Content was sometimes on the road to getting from the writers to the layout, personnel was on the road to recovery from various maladies, shots that were supposed to prevent us from having maladies laid us low, and stories were on the road to ruin for being unable to get pictures with sufficient resolution or quality. The JPEG has been around for decades, and I still don't understand why people think that we can take a 72x72 pixel thumbnail off their web site and miracle its ass into a full page, high resolution, pristine photograph that is twelve times the size of the original. But that is a typical bump on the road to completion of a publication.

Elsewhere we were on the road to new jobs, on the road to new adventures, and on the road to nobody-knows-where on pandemic Earth.

This issue also marks the first issue composed almost exclusively in the Affinity suite of graphic design software. Decades of prostrating to the great Lord Adobe came to an end, and we found ourselves on the road to new ways of accomplishing old tasks. Couple that with the fact that the magazine was assembled completely on a laptop instead of the usual dual 27-inch monitors meant that completion was on the slow road almost from the start. This issue had some particularly process intensive work, needing to render (and often re-render and re-re-render)

various MILS models, get friends to create parts that we used in modules but that weren't available in Stud.io so we could create diagrams and renders, double-check MILS module parts lists, have spirited debates over which modules to include or exclude— which although often a most joyful experience is not necessarily in any way an efficient means of arriving at a resolution.

The heavy amount of “how-to” content this issue required additional time to get right. Perhaps not as much time as it took to resolve the great debate over what to call that part of the MILS module that was next to the street. We have contributors from all over the place, and each has a preferred word for the thing. . . pavement, sidewalk, footpath. . . and other things, and we couldn't come up with one common term that everybody natively understood, so all of them or many of them got used, and I don't know that anybody's preferred term got left on the road. Luckily, one MILS module used “grass” so at least that wasn't in heavy debate for seven months.

Further complicating things, but other things, was the web site. For some reason that kept blowing up every week and it took months to find the culprit, which we think was an old rewrite script buried in an .htaccess file. It conveniently rewrote the home page at random. Fun times. And something also got into the google analytics script and kept injecting code for our old Forum into that. Still haven't figured out that one. So, once we got all that resolved, the site host put us in the convenient Catch-22 of having to edit the database while denying us access to the database. One will assume that by the time you read this, that situation will be resolved, otherwise there's no way to read this.

Now that you've suffered a litany of excuses for not delivering this issue sooner, hopefully we will find ourselves on the road to a speedier route to the destination of the next issue somewhere down the road.





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SR-76. Andreas Lenander  
<https://www.flickr.com/photos/124068149@N02/>

# BRICK-BUILT WHEELS

By Carlos Méndez

The question of which came first, the wheels or the road, is of course not as philosophical as that of the chicken and the egg. And that is because wheels have accompanied us from the moment in which we first found ourselves having to transport more than our own bodies from one place to another. We can observe in nature how well logs or boulders roll down a hillside, or how dung balls are pushed by a dung beetle, so from there to the wheel we did not have to think too much. And when it comes to LEGO, the story is just as old. Already the mythical wooden duck, which could be named within the first steps of LEGO history, had wheels.

However, it was only around 1964 (sorry if I am wrong but it is difficult to find material from the time) when we were first able to build vehicle models with bricks and wheels. Until then the cars were in one piece, similar to the miniature metal and plastic vehicles you can buy from any toy store. From there, and like everything in life (except the 2x4 brick), the LEGO wheel has evolved in both its shape and its means of

connection. But I'm not going to bore you with an article on the evolution of the LEGO tire. Instead I'm going to tell you about those nonconformist geniuses who have decided that there is no impossible challenge for our favorite bricks, and

that if you have to build a wheel with parts, then you just build it! Tires are a luxury and a shortcut, and not the only way to build a vehicle.

I guess most people, myself included, have already used a round brick or plate as a wheel.



Bulb-O-US. Joeri Ridder  
<https://www.flickr.com/photos/128561206@N08/>





Sometimes this is out of necessity, such as when building alternative models with the parts of a small set and trying to impress our nephews with our technique and imagination. Other times it is a matter of pure aesthetics, as we try to give our MOCs a different look, or a futuristic and

extraterrestrial touch. In the end the reason doesn't matter, only the results. And if you are fond of the LEGO fan community's monthly online events, you will know "FebRover" to be a fantastic source of inspiration for anyone who has decided that standard tires are too boring.

So let's begin filling our brains with inspiration from the creations of these talented geniuses.

Andreas Lenander's SR-76 and Joeri Ridder's Bulb-0-US Rover are clear examples of the magnificent results that can be obtained simply by finding alternative uses for standard round parts. As Andreas Lenander puts it: "When it comes to FebRover builds in general, I love to build them and I just try to have fun creating a bunch of vehicles in different styles during that month, with the main focus of course being on the wheels. I've done a few brick-built wheels that are 'pretty legal' but most of the more fun ones are anything but! As long as you end up with a circular shape in the end, it doesn't matter how you got there".

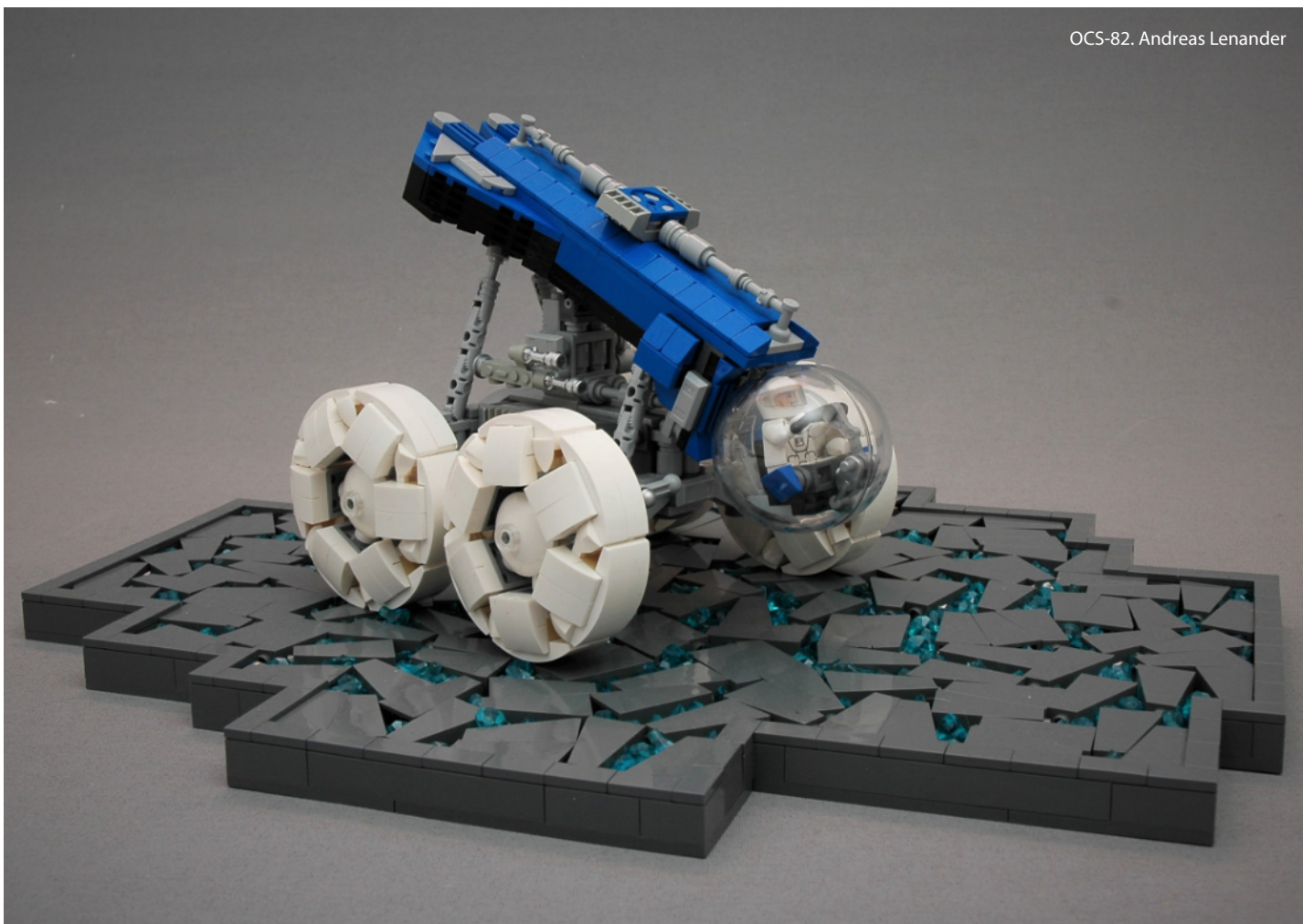
However, this concept can also be made as complicated as we want. For example, consider Legohaulic's Space School Bus. The builder himself tells us the following: "I love all the new curved elements and had been wanting to use them. Big oversized wheels seemed like the perfect place. I had a lot of fun filling the wheel hub area with fun spacy greebles. The 10x10 dishes are the same diameter as the curved pieces and the ridges created from stacking them make a fun spacy tread pattern".

Another widely-used technique is to use chain

BT-65. Andreas Lenander







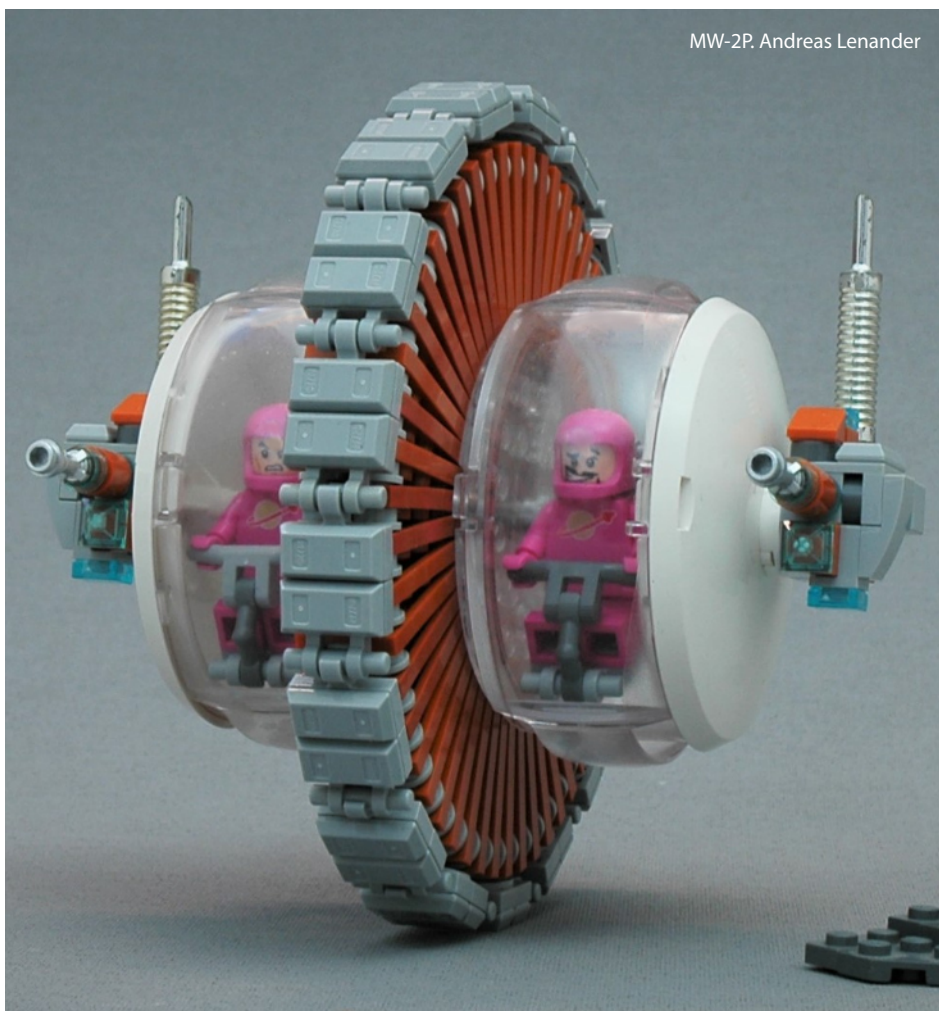
links for outlining wheels, but the particular geometry of large LEGO chain links allows for circumferences to be built without any need for an interior on which to mount them. Taking this to the extreme and giving it a science fiction touch, we can find the BT-65S of our friend Andreas. Here he has taken the concept of the center-axle-less wheel designed by Sbarro in the late 1980s to an epic extreme.

Nor can we forget one of the most-used techniques for making studs disappear in our MOCs where we want a smooth surface, or for taking advantage of certain angles that are impossible to achieve in other ways. I am referring to the SNOT technique that surely you all already know. Yes, it can also be used to build wheels. Andreas' OCS-82 and MW-2P are clear examples.

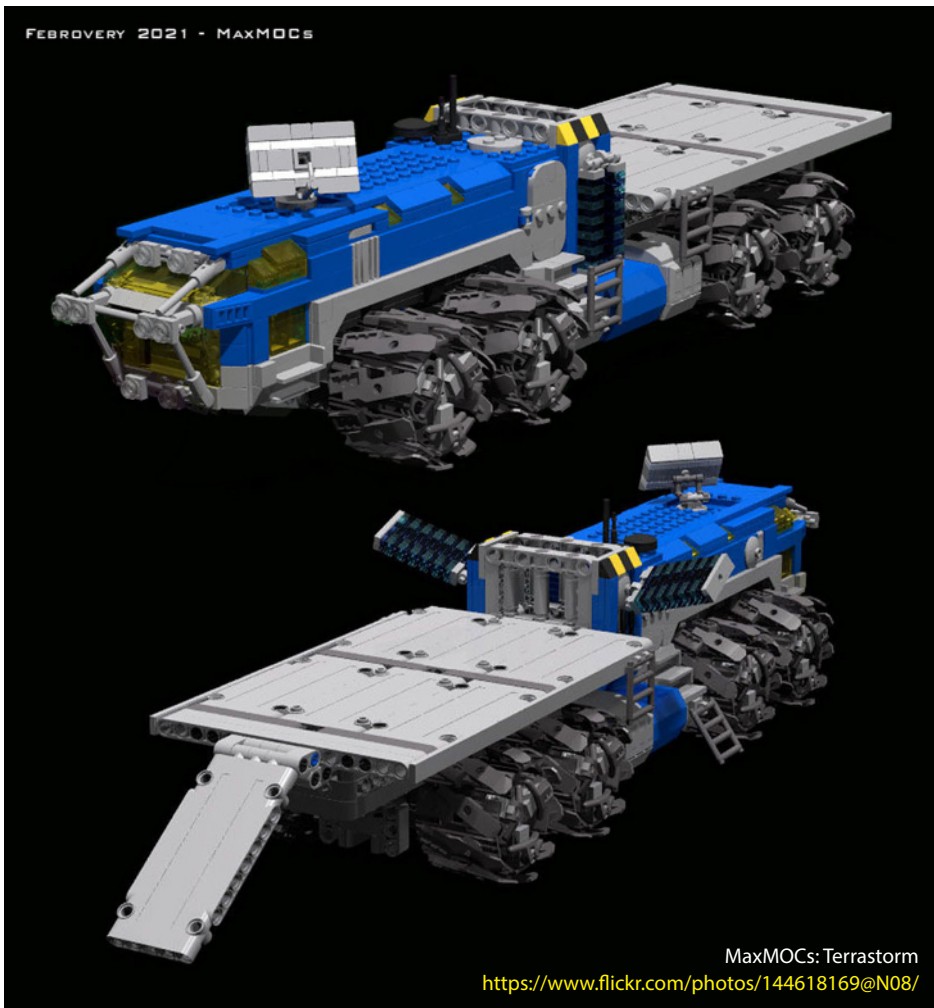
But why not seek inspiration from other objects with a similar shape? That's what MaxMOCs did for his Terrastorm. He found in a spaceship engine design, by the builder Noblebun <https://www.flickr.com/photos/noblebun/48752491998/in/feed-3625-1613070585-3-72157718249909026/>, the perfect solution for the wheels of his creation.

He adapted the technique and the result is impressive. MaxMOCs gives us their take on brick-built wheels: "I love to build vehicles that are

MW-2P. Andreas Lenander







MaxMOCs: Terrastorm

<https://www.flickr.com/photos/144618169@N08/>



Littlepixel™

<https://www.flickr.com/photos/96081007@N00/>

fictional and sci-fi like in nature, but also evoke believable qualities of real world vehicles. Experimenting with brick-built wheel designs is a fun way to build a plausible wheel design without constraining yourself to Lego tires, and also helpful in that they will teach you some clever techniques."

And after all this you might ask yourself, what have you saved for last? One word: bananas. Well, do I have your attention? It's hard to imagine their relationship with wheels, right? I'll let the creator speak first—Huw Gwilliam, aka Littlepixel™:

"What to say about it? It was very much formed in a strange moment near the end of Febrovery's creative push and it just sort of popped in there to my head as an idea. I'd previously built a Fabuland "Land Cruiser" buggy with meteorite bricks for wheels a few days earlier and got a great reaction, so I was browsing through the available Fabuland animals looking for inspiration. The monkey seemed fun and in no time I had hatched a plan to build something with it—and bananas seemed the only choice for some fun parts use.

Brick-built wheels have become quite a thing in Febrovery and I guess I wanted to make an impression with something interesting and silly in equal amounts. Once monkeys and bananas were the keystone ideas it came together really quickly—helped by the fact it's digital and I didn't have to wait for a crazy banana Bricklink order.

Yellow was the obvious colour, but a bit of Lime for the more unripe bananas helped it feel more its own thing rather than something from the Blacktron theme. The limits of my creativity meant the main chassis was based on the inimitable classic-space 883 moon buggy, but it was a lot of fun welding the crazy gyroscopic wheels to the well known body. And then I chose a helmet, which just had me giggling, and I hoped this feeling would carry through to other people when they saw it.

I love brick-built wheels because it's such a fun way to add more creativity to a build. Big tires are great and often the perfect choice for a moon-rover, but the option of choosing not to use a big prefabricated tyre/wheel part and instead build something intricate, silly, and unexpected is something I wholeheartedly encourage."

Well, I hope you have been entertained. I know there are also many more very interesting models out there, and I encourage you to look for them and also to experiment for yourself.

Many thanks to those who have given us their photos for this article.

See you on the road...





# MIXELS ROADS

By Jetro de Château



HispaBrick Magazine started developing MILS modules back in 2011. The concept was born out of the desire to make large-scale dioramas and the need to transport and store them without taking up too much space. After doing tests internally, we started our first MILS project and built Basic Terrain Modules (BTM) as well as Compatible Terrain Modules (CTM) with river, path and track elements. Our first MILS dioramas centered on Castle scenes, for which these modules are the perfect base.

At the same time, some of our members worked on a MILS standard for their Star Wars display, based on the battle of Hoth.

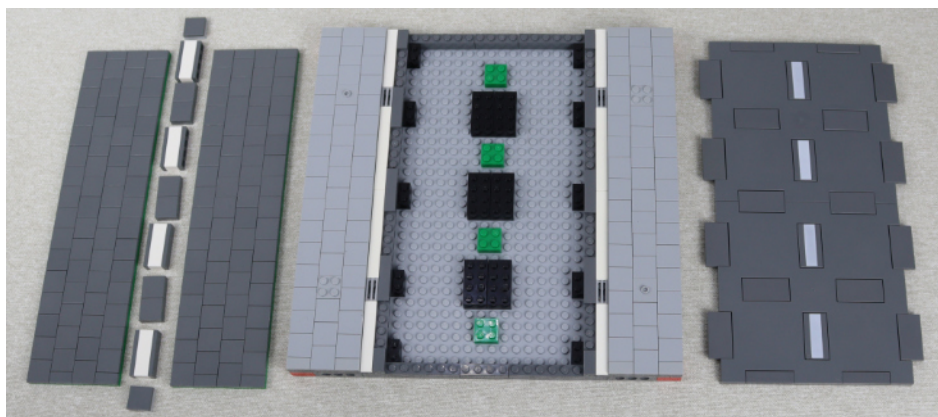


The key to all of these modules is that the additional elements (rivers, tracks, paths, etc.) are always centered on the side of the module and follow a standard width and height. Paths and tracks have a standard width of 4 and 8 studs respectively and their height is the same as a BTM. Rivers have a standard width of 8 studs and a height of one plate plus one tile above the baseplate the module is built on. In addition, the river banks slope up at a rate of one plate per stud. All of this ensures compatibility between all modules with similar elements, even if they are from different builders.

The same is true for modules with hills or mountains, although the configuration of these modules can be much more complex.



The original design of the MILS Basic Terrain Modules (BTM) included 1x4 arch bricks attached to the baseplate in the centre of each of the four sides. This arch brick is the perfect example of making the most of what you have on hand. It was simply a piece that one of our members had



Serendipitously, LEGO's new road plates are an exact height match for the road sections of our modules. The two road assemblies are basically interchangeable with no adjustments to our MILS base.

a lot of and it looked good placed in the centre of the module. Once we saw it we started to speculate about the possibility of using this hole for possible wiring, either for lights or motors for some modules. In the end we have never used this option in any of our HispaBrick Magazine modules and many of our later modules do not even include the arch brick. You can include it, simply replace it with some other brick, or possibly leave it out altogether; the choice is entirely up to you or the needs of your community.

We really enjoy seeing how other communities use the MILS standard for their dioramas. Some have followed our internal guidelines to the letter, while others have made additions and adaptations. A lot depends on the particular interests of a group. Building up a collection of modules takes time and effort. It also requires a *significant* investment in LEGO elements.

### Adapting the MILS concept to roads

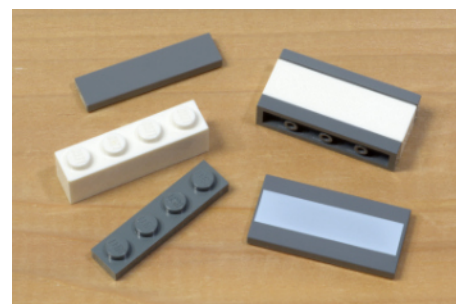
This time around, we have turned our attention to our City layout. Instead of reinventing the wheel, we looked at what other communities have done to adapt their cities to MILS, and to adapt MILS to their cities. We soon realised that the most practical height for our road modules was baseplate + brick + plate + tile. Since we wanted the road-adjacent areas (sidewalk, footpath, pavement, trottoir, green area, etc.) to be one plate above the road level this meant we also needed to elevate our preexisting building modules. Where our typical building module base height was baseplate + brick + plate + tile, we needed to make it baseplate + brick + plate + plate + tile, to match the height of the road-adjacent area of our road modules.

Shortly after building our road modules, LEGO presented their new 'thick' road plates (available in set number 60304 and several of the latest LEGO City sets). It is possible and actually quite

easy to use these new road plates within our MILS road modules. The new road plates are two plates thick and the road surface of our MILS road modules consists of a plate and a tile—a perfect match. Which of the two versions you favour will depend on two factors. The tile + plate version requires more elements and is a bit more expensive. The version using the new road plates uses fewer elements but might be considered by some to be less aesthetically pleasing.

### Our standard

The configuration of the road modules we settled on for our HispaBrick Magazine dioramas was the result of many conversations with other AFOLs in Spain. We would specifically like to thank "Ostman" for providing the digital model for these roads that served as the basis for the instructions we created. For our standard road modules we settled on a six-stud-wide sidewalk pavement, consistent with the latest version of the thin LEGO road plates (available in LEGO sets 7280 and



7281). Since the modules are 32 studs wide, getting the lane divider in the centre of the road requires either a printed part or, in our case, the ingenious use of a 1x4 plate, brick, and tile placed sideways. This takes up the same horizontal space as a 2x4 tile and when you support this assembly with a stack of two plates, the top is perfectly level with the tiles that make up the road surface. The same technique can be used to create a zebra



crossing on the T-junction. In that case the stripes are built with a stack of 14 1x4 bricks, alternating dark bluish gray (DBG) and white colours, topped off with two plates and a tile to span the 18-stud-wide gap for the crossing.

## Instructions

In order to make things easy for all participants in our community, we created a set of step-by-step instructions as well as a parts list for each module. A general goal was to use the fewest number of elements possible to create the modules. You will find simplified versions of those instructions on the following pages. Whether or not those instructions specifically suit your wants or needs depends on the elements that are readily available for you at any given time. You may want to use plates of different sizes because those are easier or cheaper to get, and adapt the location and number of filler bricks to support the plates you use. The same goes for colour. Unless you have a particular preference for a certain colour, the elements hidden inside the module can be just about any colour you like. The baseplate, the bricks used to build the outer edge (including the 1x4 Technic bricks), the filler bricks used to support the plates the road is built on, etc. — none of those really need to be any specific colour. One element where colour does matter is the 2x2 corner, as this is used to identify who the module belongs to. Internally, each participant in the greater MILS layout uses a different colour/configuration of that corner marker. This is especially helpful when you take the diorama apart, allowing each participant to quickly locate their own contributed modules.

There are different options for sourcing the elements needed to build these modules. LEGO's Pick a Brick may help you on your way, but unless you have a considerable stash of parts you will likely need to use additional sources... such as BrickLink, BrickOwl, Facebook, Ebay, etc. vendors... to acquire the necessary elements. If you are part of a recognised LEGO User Group—either a physical group (LUG) or an online group (LOC)—you may also have access to one of the bulk buy options LEGO provides to these groups. A substantial portion of the bricks and plates used in our modules was obtained in this way.

## Pins or no pins

We haven't included any pins in the instructions, even though each module has eight technic brick 1x4 elements with a total of 24 pin holes. The reason is simple: the amount of pins



you actually need is quite small compared to the number of MILS modules, and depends on the kind of layout you are setting up.

Suppose you want to place a row of 10 street modules in front of a row of 10 (modular) buildings. You will want to first connect the matching modules together into two rows, which can be done with just two pins between each module, so 18 pins per row will suffice. Once you have the two rows of modules ready, connecting them to each other can then be done with just four additional pins by connecting them only at the corner modules. This brings the total up to 40 pins for the 20 modules.

For larger dioramas the proportion of pins per module will be even lower. Our largest diorama to date was 6 modules (about 1.5m) wide by 25 modules long (about 6.4m). In order to make sure all the modules stayed in place we linked all the external modules together with pins (front, back and sides). In addition we also linked one line of modules together about halfway down the length of the module, connecting the front and back rows. These modules acted as a frame, keeping the interior modules in place without any further need for pins.

## Same instructions, different results

Even though we all used the same instructions as the basis for our modules, that doesn't mean our modules all look the same. Just like with our CTM modules for rivers and paths, the important thing is to ensure that all the road modules are compatible with each other, but there is plenty of

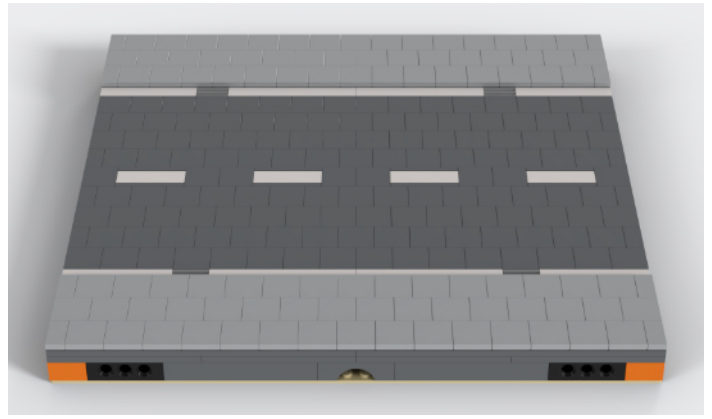
room for creativity within each module. Take the cobblestone modules for example. A few DBG tiles mixed in with the LBG ones can simulate an oil spill on the road. You can add a few trans-blue tiles to create a puddle, or any other original ideas you can come up with to personalise your modules. The sides of the road can be designed as green areas, sidewalk pavement, or even parking space. In each case there are many ways of filling in the space: flowers and shrubs, lamp posts or street benches, a bus stop or an information panel. It all depends on your creativity.

## Plan ahead

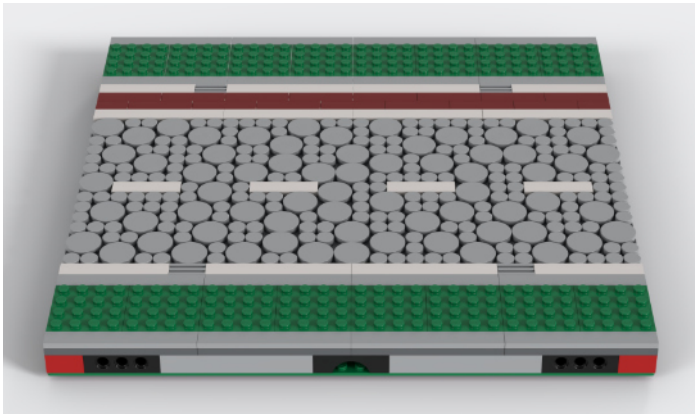
If you are going to do a community build, some preplanning should take place to ensure that your overall design is cohesive. Given the handful of disparate possibilities we present, attaching them one to another in a straight line will be perceived as something more than chaotic. Consider transitioning from straight flat road to cobblestone at a corner or creating a module that has that transition as part of the design. Our cobblestone road module doesn't mate well with the other designs because the cobblestone street has a center offset and a bike path, and the road surface color is light bluish gray while some of the others are dark bluish gray. This is to say that if you intend for there to be some variety in the road surfaces, colors, and widths it will likely behoove you to map things out before commencing building the modules. Modules for corners and intersections will no doubt offer additional opportunities and challenges for creativity.

# The Modules

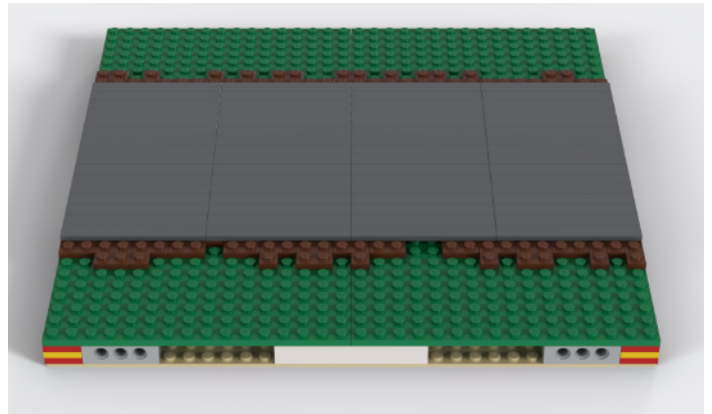
Over the next several pages we present step-by-step instructions for some of the modules we have built. Parts lists are provided, but colors are provided only for the surface pieces as filler bricks can be of any color. Color abbreviations are used for Light Bluish Gray/Medium Stone Grey (lbg) and Dark Bluish Grey/Medium Stone Gray (dbg).



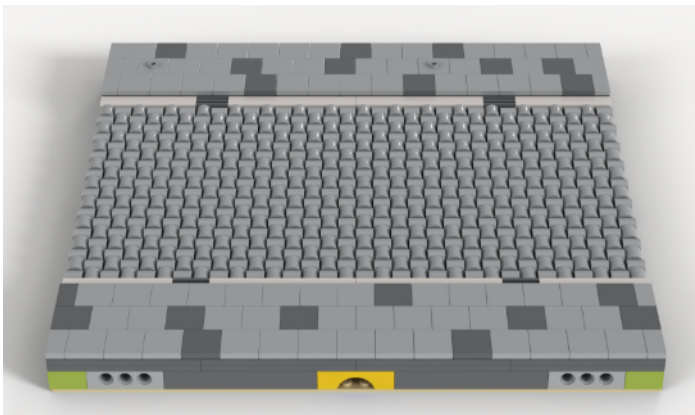
**12** Typical Asphalt Street



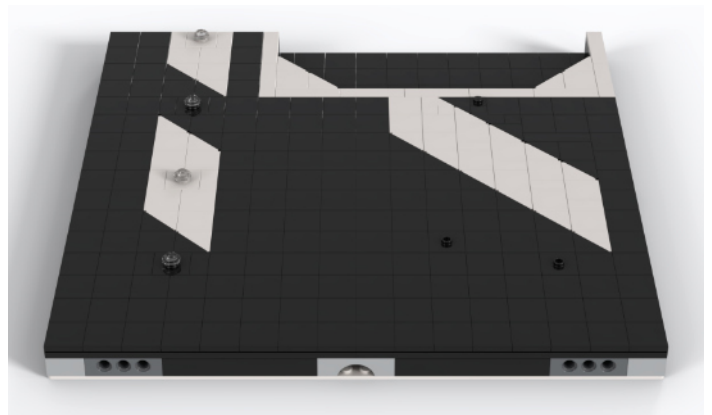
**19** Cobblestone Road



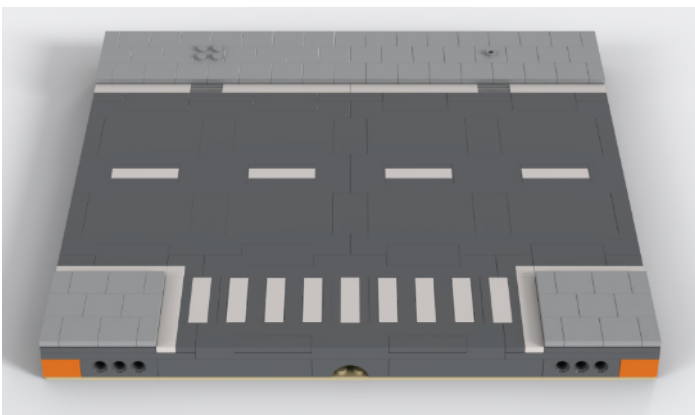
**26** Country Road



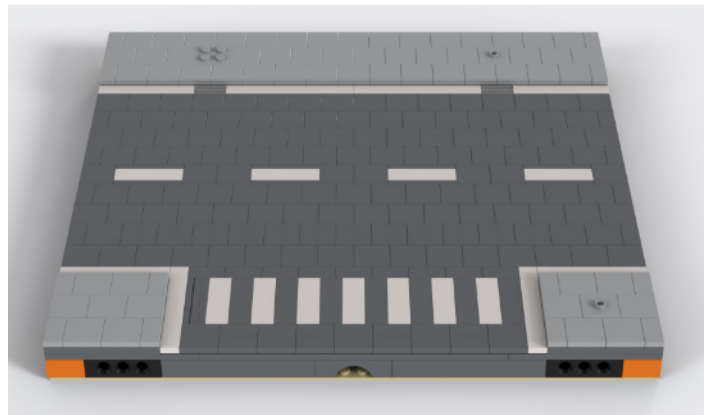
**31** Bricked Street



**38** Flight Deck



**45** T-Junction (Road Plates)



**52** T-Junction (Standard Plates)





## Typical Asphalt Street

Plain old straight roads can get pretty boring. While the build diagram we present here is just that, with a few simple modifications an additional degree of visual interest can be built into a model.

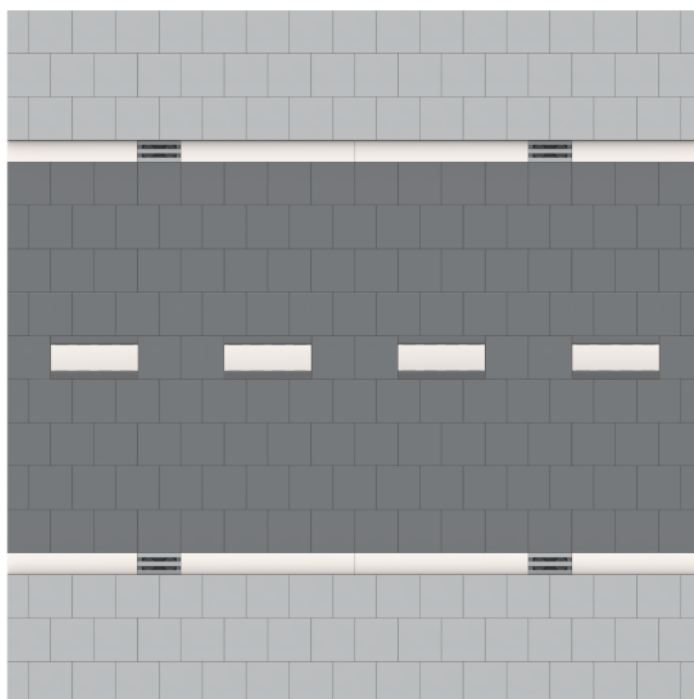
Swap out some gray for a few 1x2 trans blue tiles and you can create a small puddle. Add some children splashing in the puddle, a car driving over it and splashing pedestrians, or a cleaning brigade draining the puddle.

Another typical encounter is road works. Using the 99563 ingot piece as a subsurface, the road crew can be lifting the asphalt to reveal... surprise!... it used to be a cobblestone road.

And, show of hands please, who doesn't love potholes and roadkill?

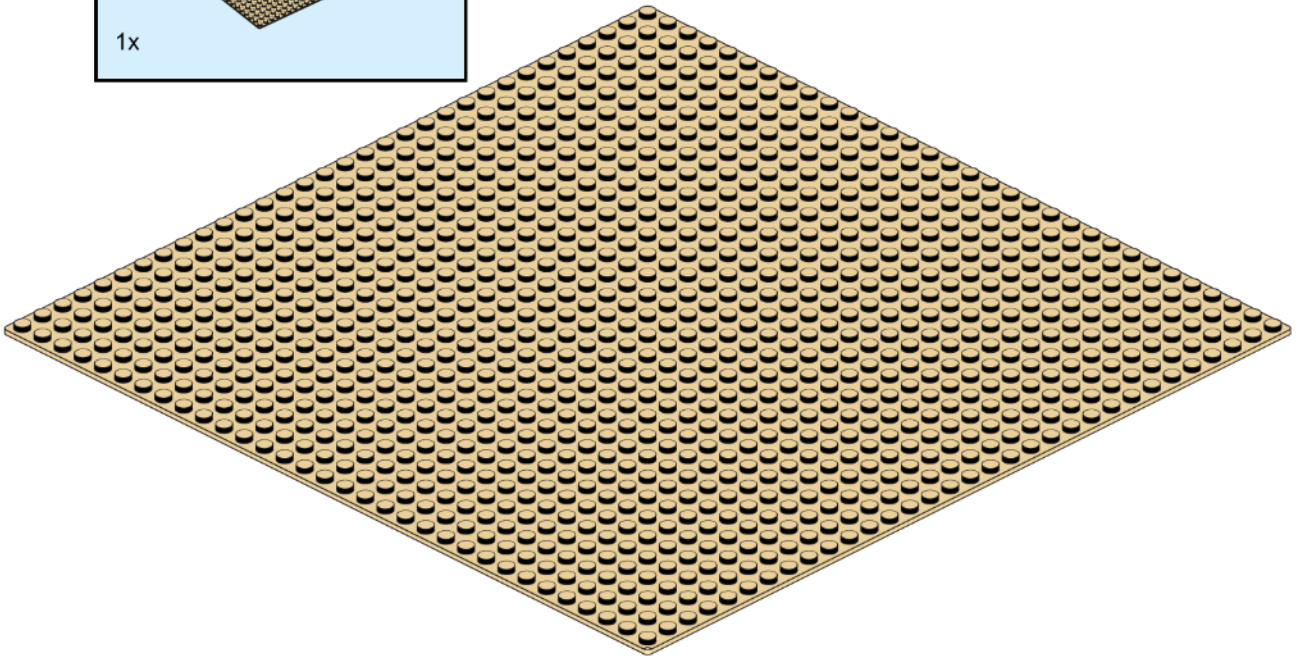
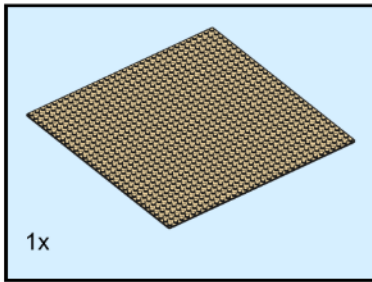
### Parts List

1 32x32 baseplate	4 1x4 plate, dbg	8 6x8 plate, dbg
4 1x4 arch brick	4 1x8 plate, dbg	8 1x2 tile, dbg
4 1x4 brick, white	10 2x2 plate, dbg	8 1x2 tile, lbg
8 1x8 brick	2 2x2 plate, lbg	4 1x4 tile, dbg
16 2x4 brick	3 2x4 plate, dbg	132 2x2 tile, dbg
4 2x2 brick	4 2x6 plate, dbg	88 2x2 tile, lbg
8 1 x 4 technic brick	4 2x14 plate, dbg	4 1x6 tile, white
2 2x2 jumper, lbg	2 2x16 plate, dbg	4 1x8 tile, white
	4 8x16 plate, dbg	4 1x2 grille tile, flat silver

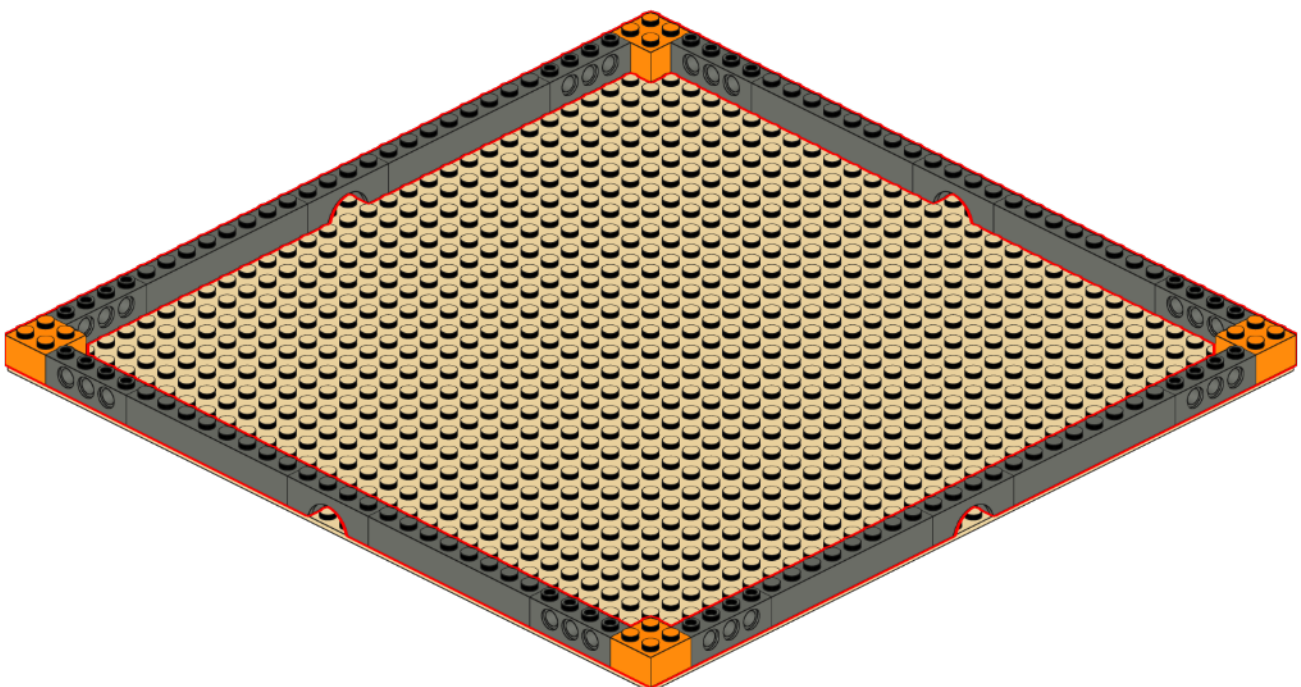
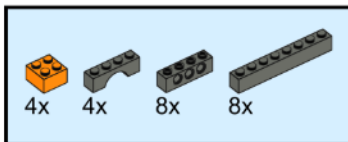




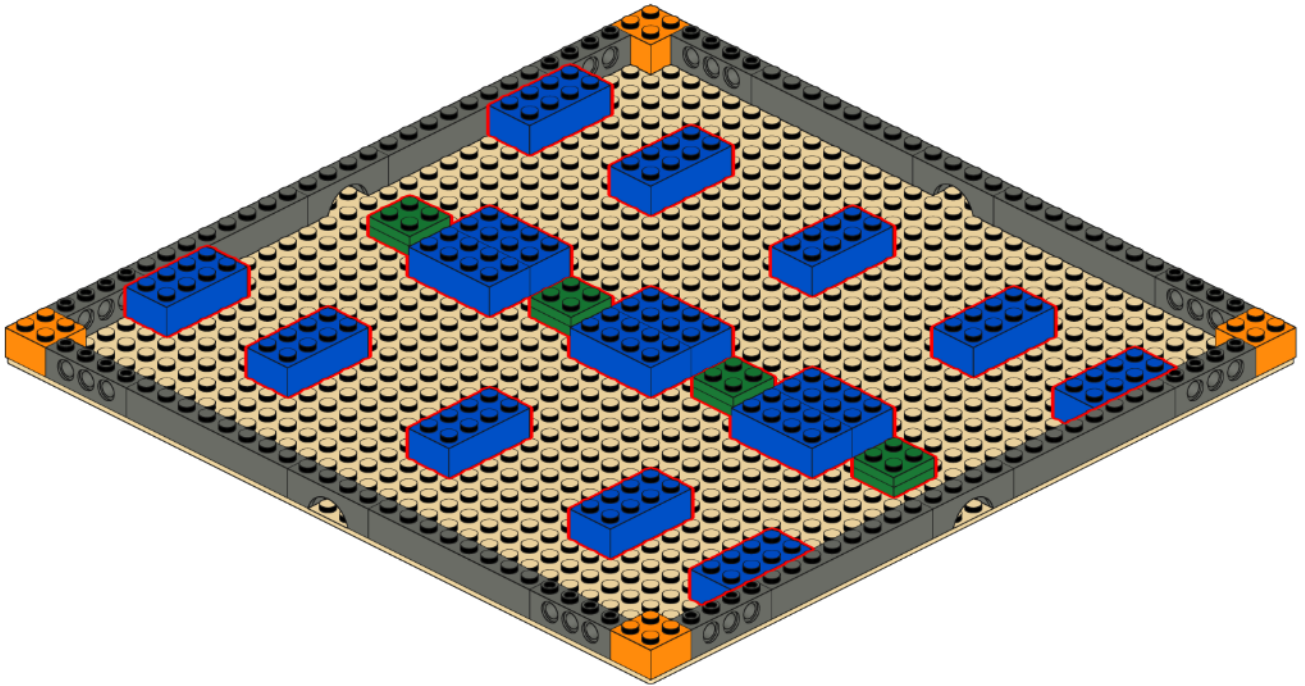
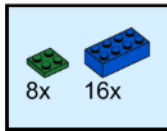
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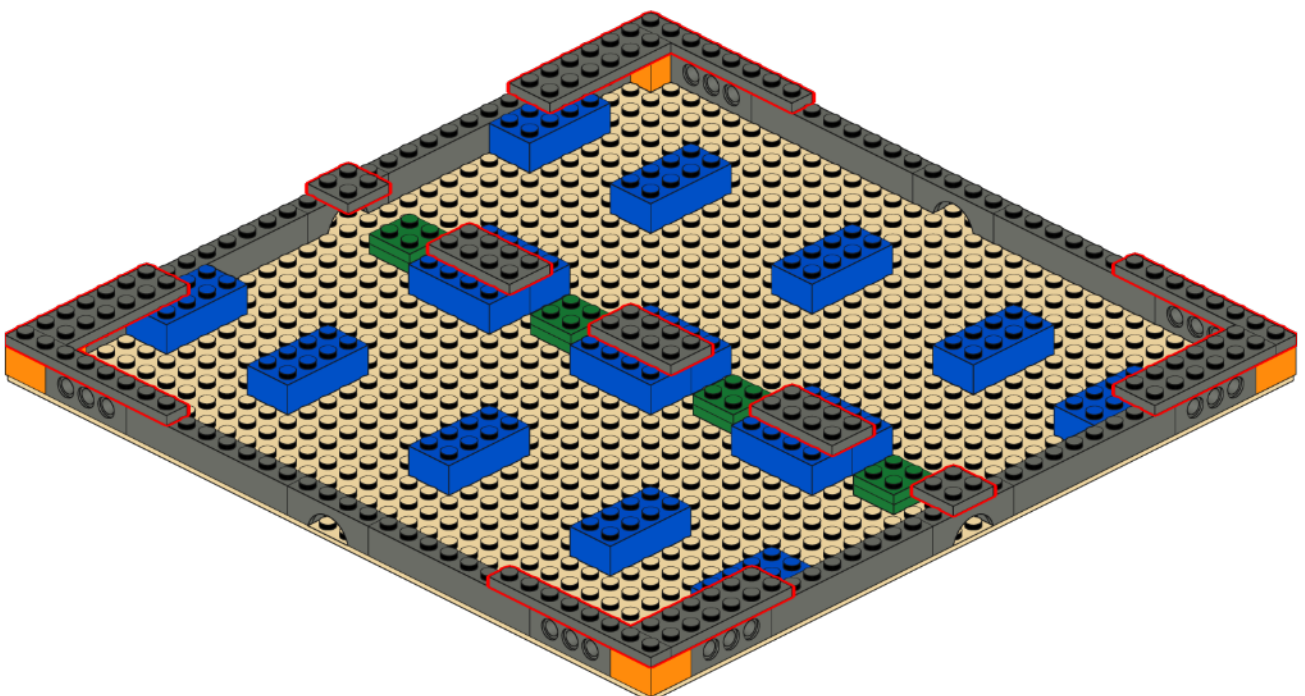
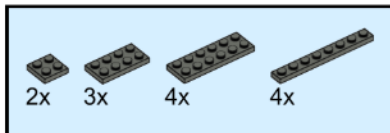
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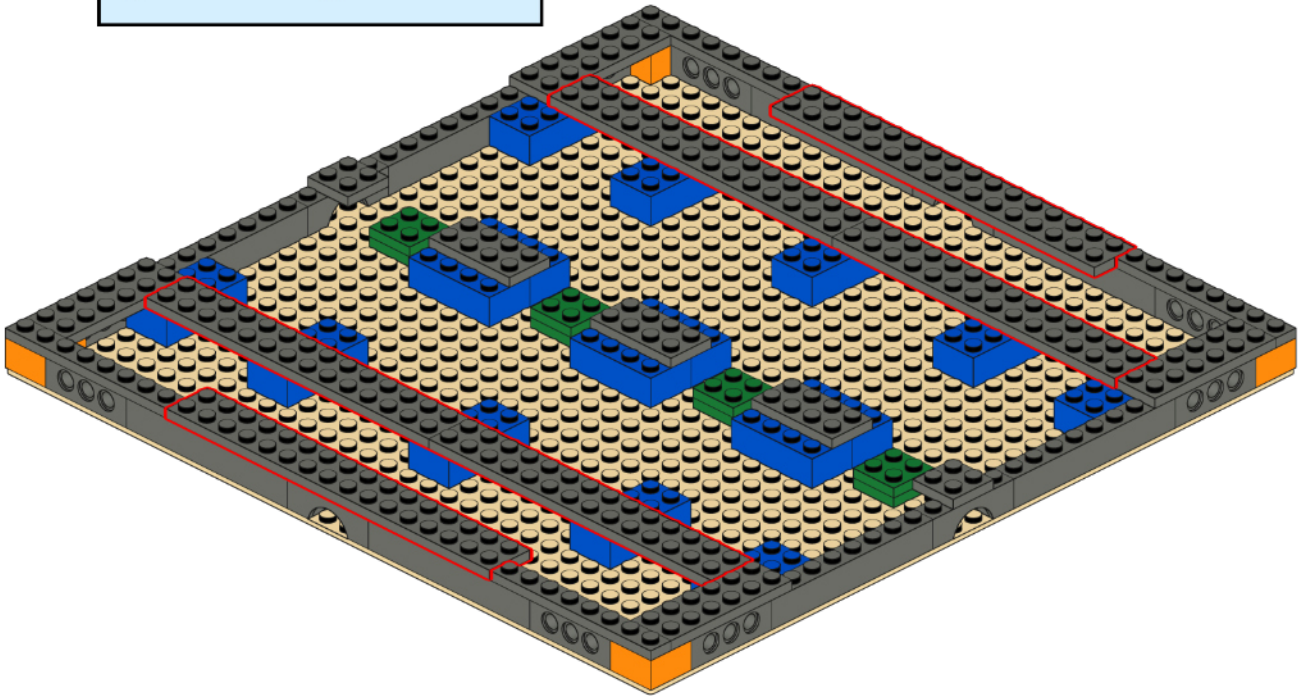
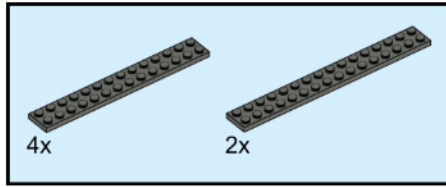


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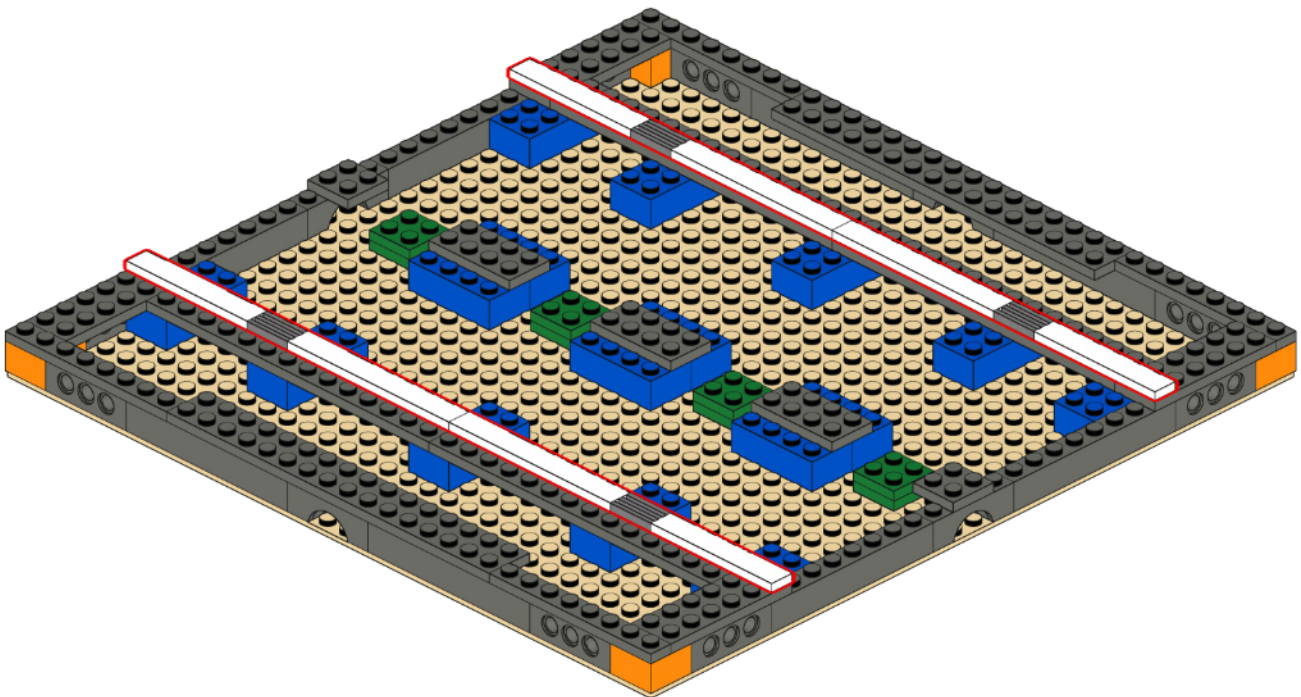
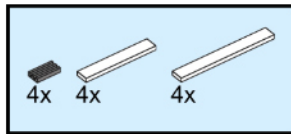




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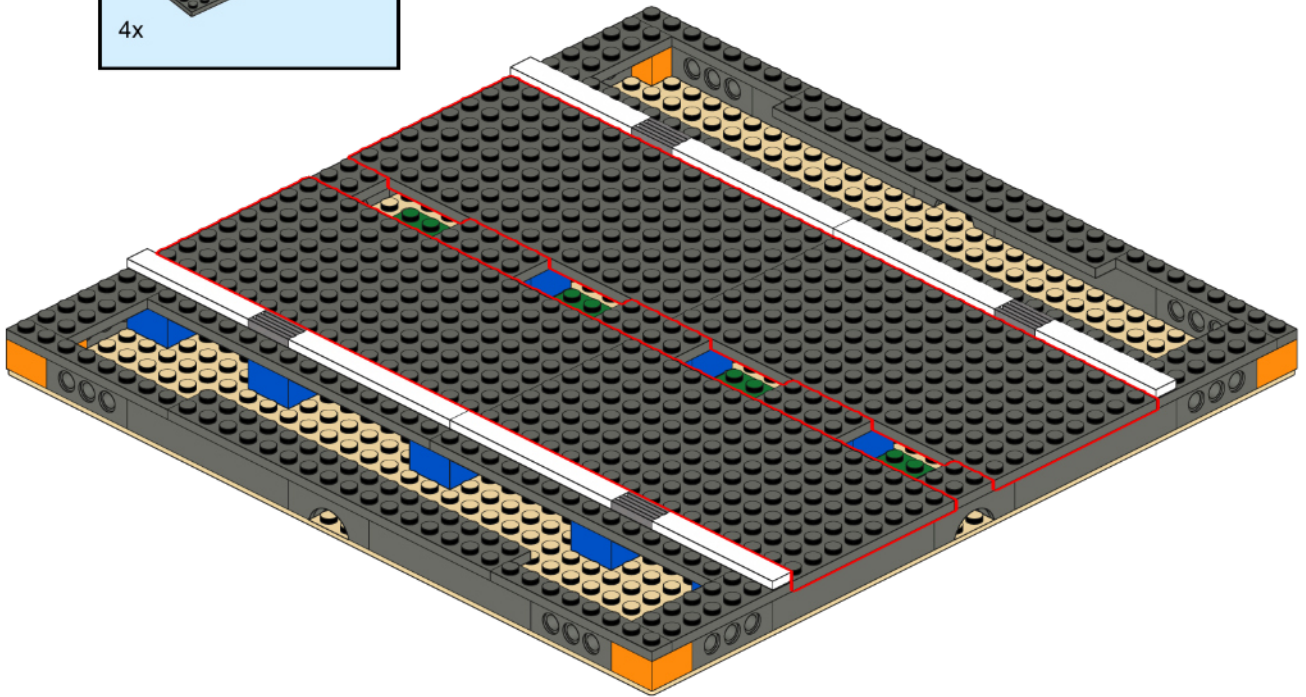
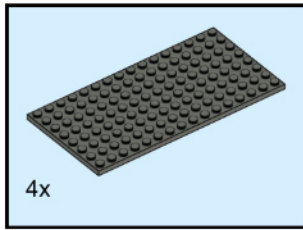


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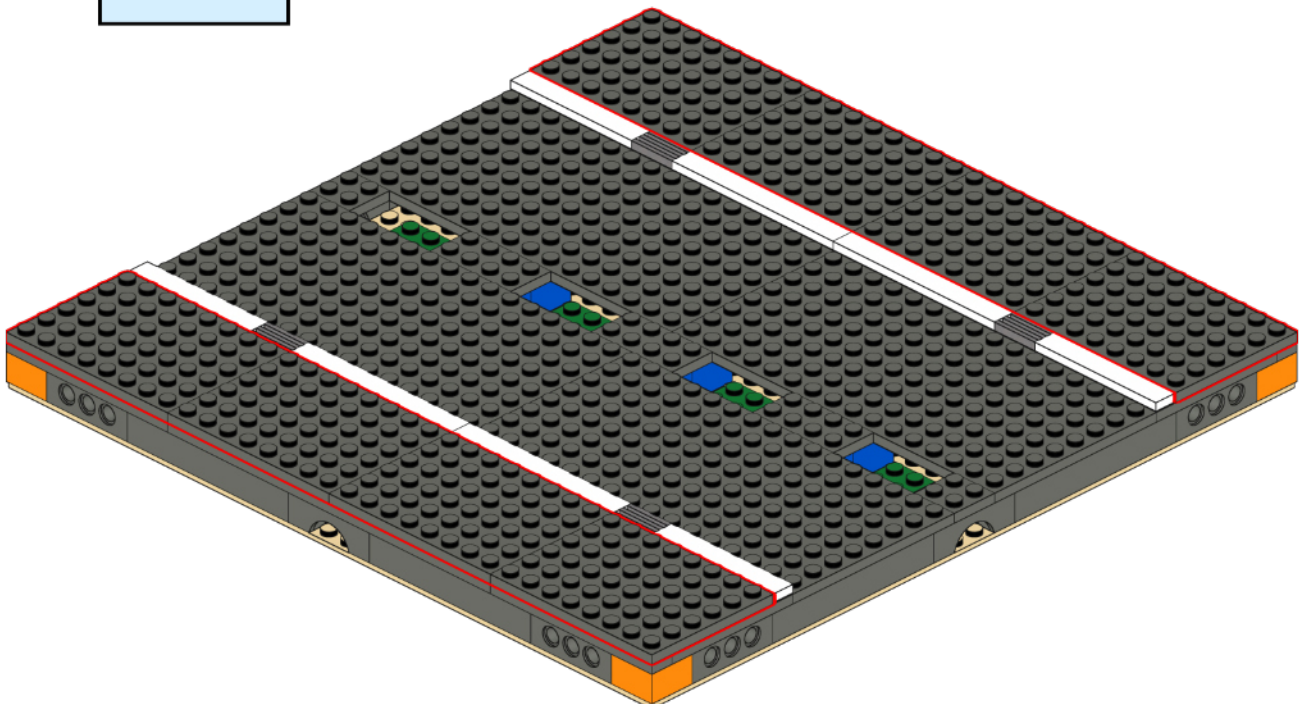
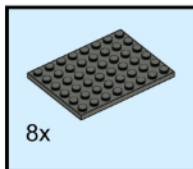




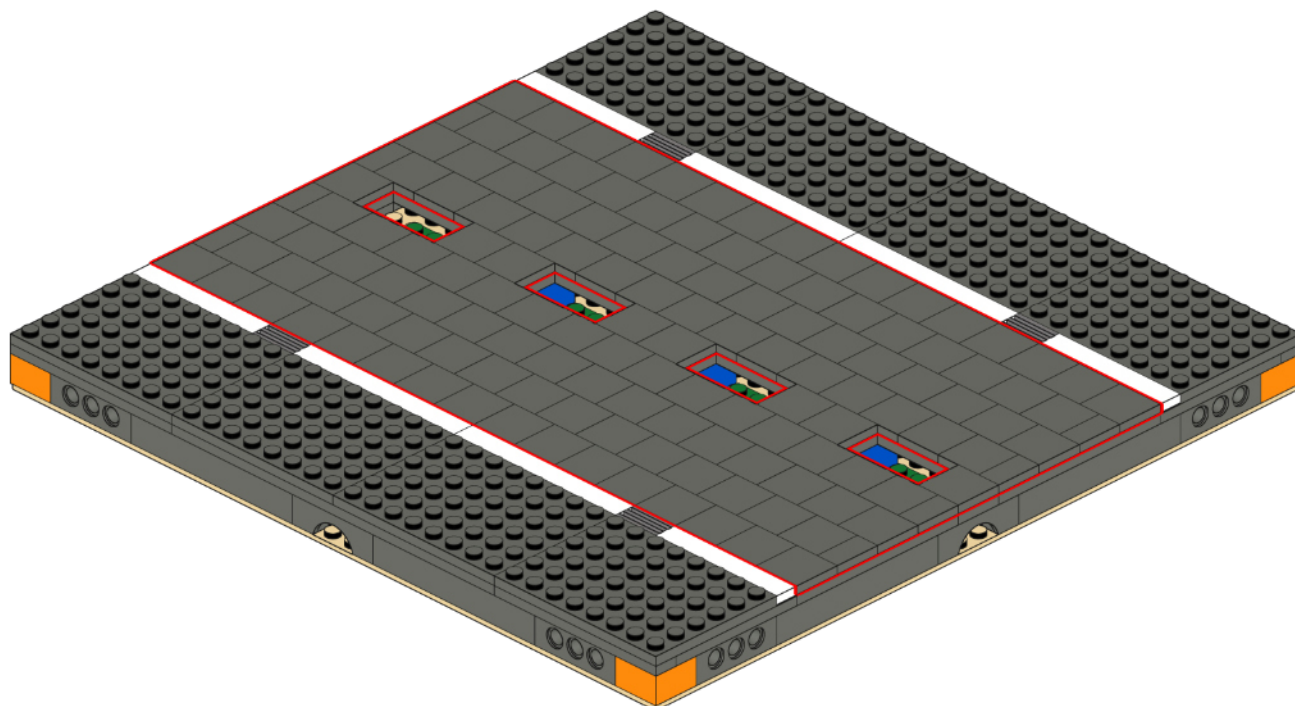
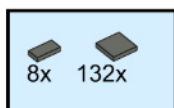
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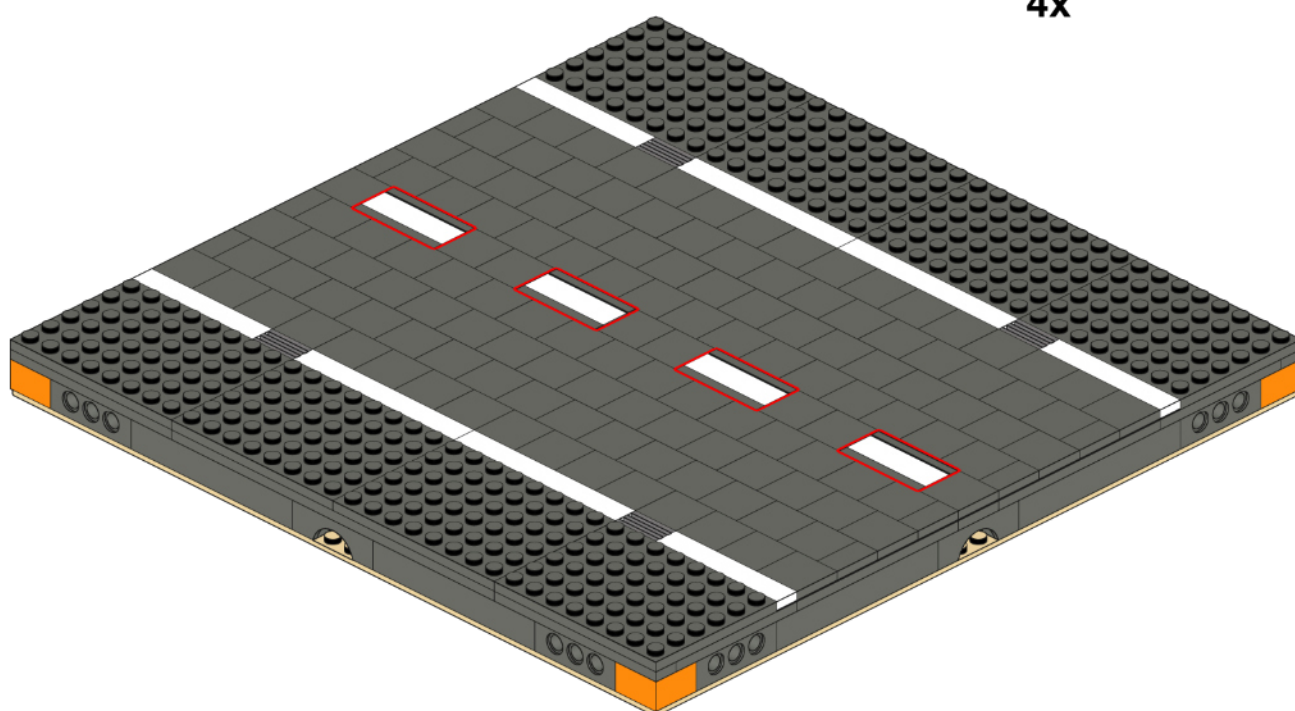
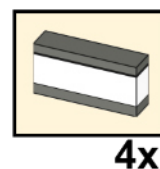
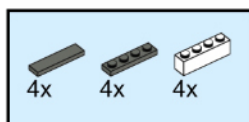
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9

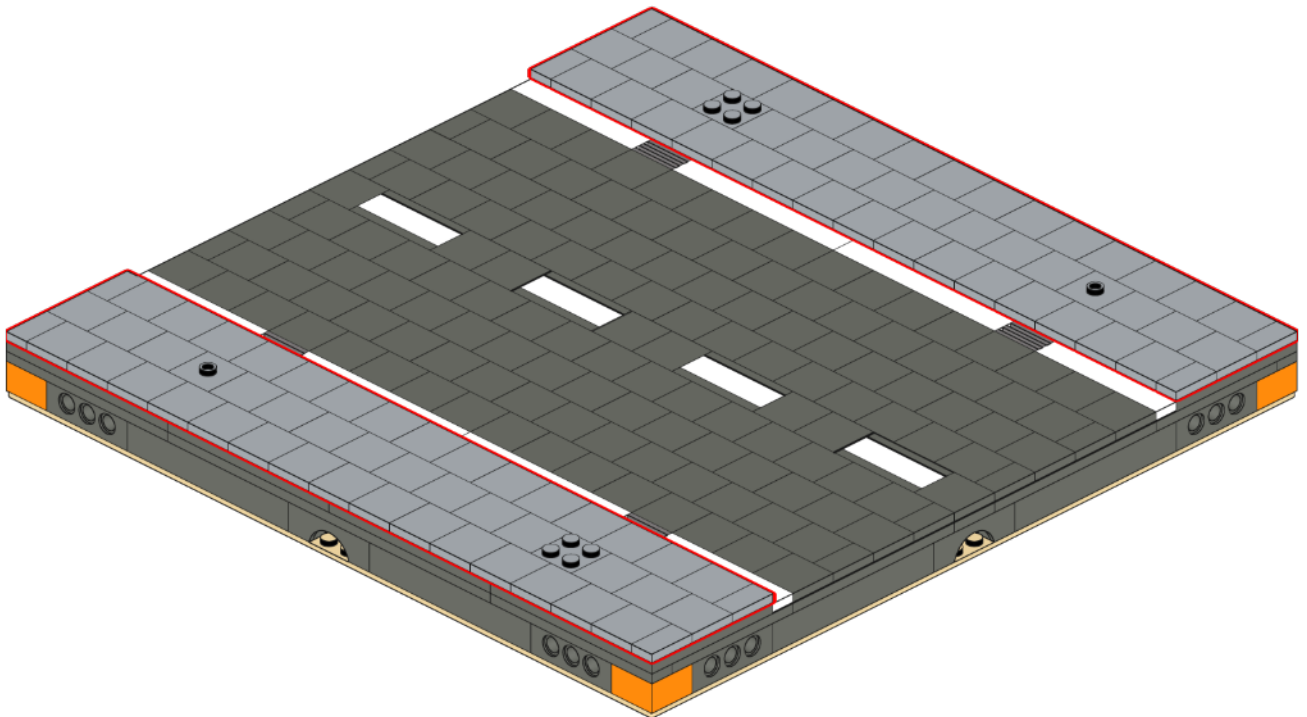
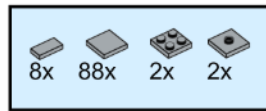


10





# 11





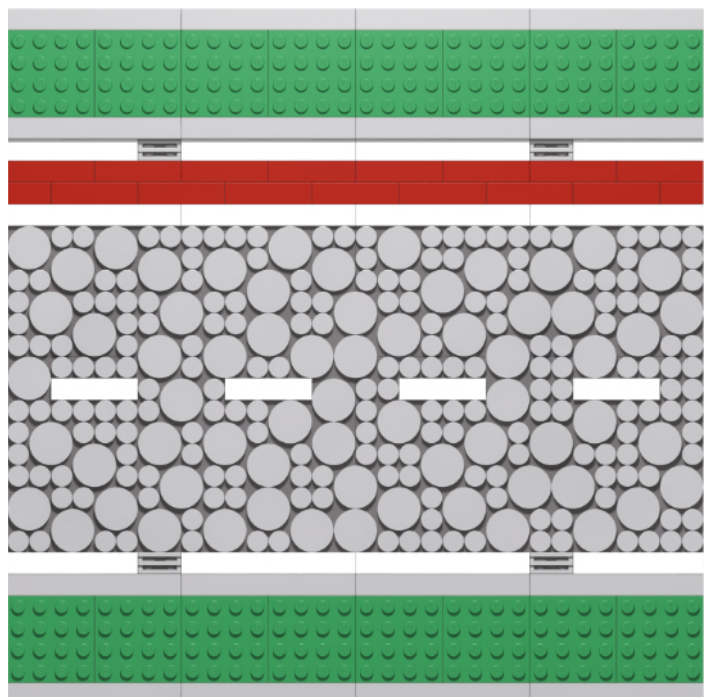


## Cobblestone Road

The cobblestone road, using 1x1 and 2x2 round tiles for the road surface, shows the underlying layer of plates. The sample module uses dark bluish gray (dbg) as a base and light bluish gray (lbg) tiles on top of that. You can of course experiment with other combinations, such as using lbg as a base or using dbg tiles. Using white 1x4 tiles as lane dividers means the centre of the road (as marked by those lane dividers) cannot be perfectly centered in the module. To circumvent this issue there is a bike lane on one side of the road. Instead of sidewalk pavement, the area next to the road is covered in green plates. The green areas allow for the addition of some plants.

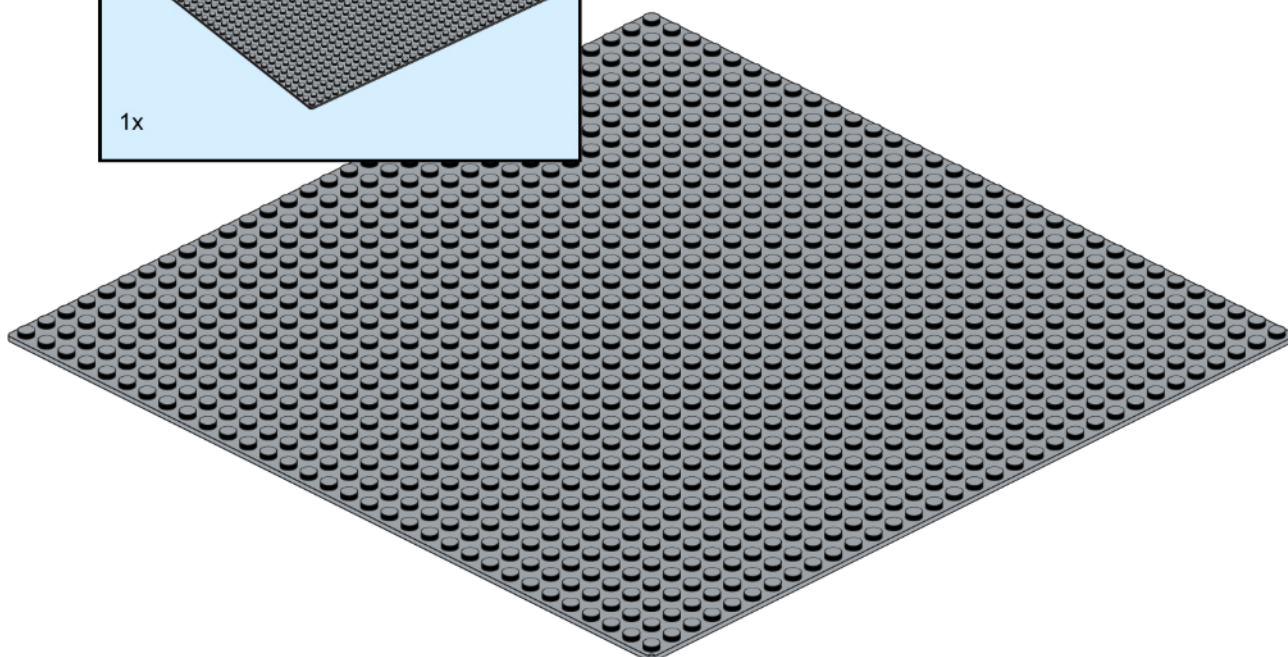
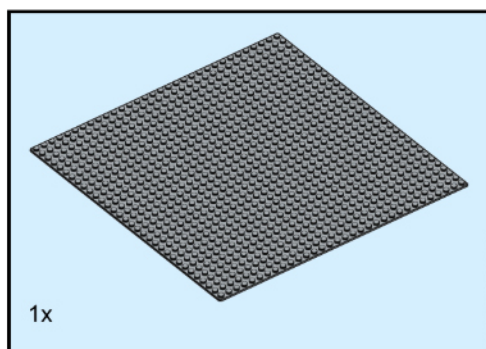
### Parts List

1 32x32 baseplate	200 1x1 tile, round, lbg
4 1x4 arch brick	2 1x2 tile, dark red
8 1x8 brick	15 1x4 tile, dark red
4 2x2 brick	4 1x4 tile, white
9 2x4 brick	4 1x6 tile, white
8 1x4 technic brick	16 1x8 tile, lbg
16 4x4 plate, green	8 1x8 tile, white
8 6x8 plate, dbg	66 2x2 tile, round, lbg
4 16x16 plate, dbg	4 1x2 grille tile, flat silver

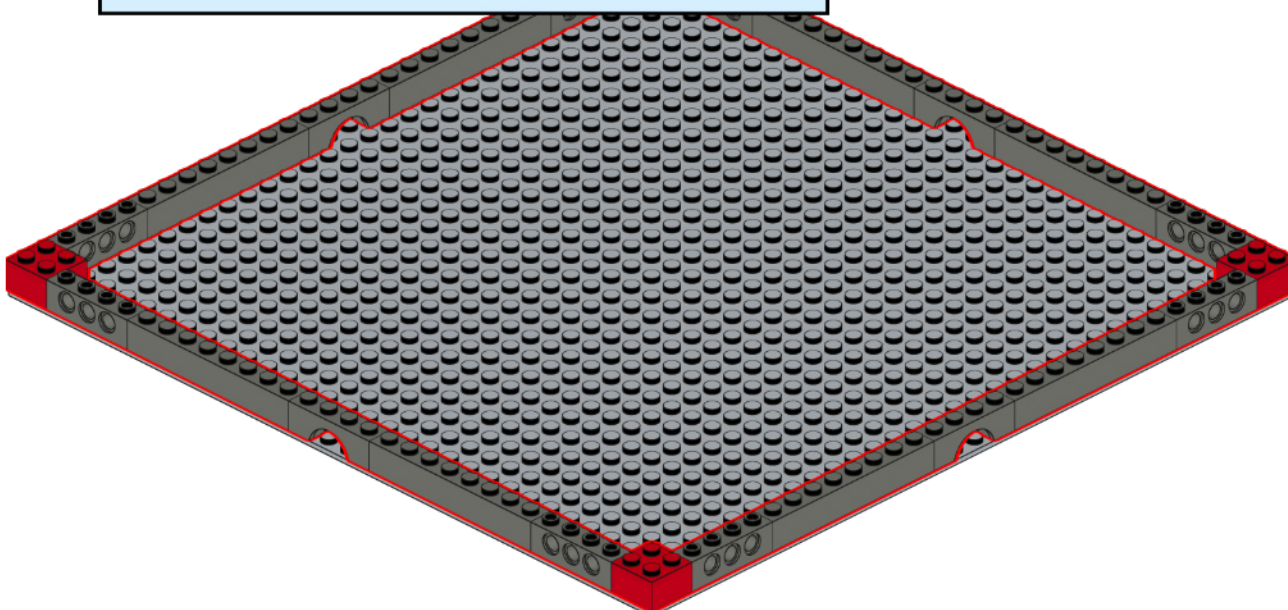
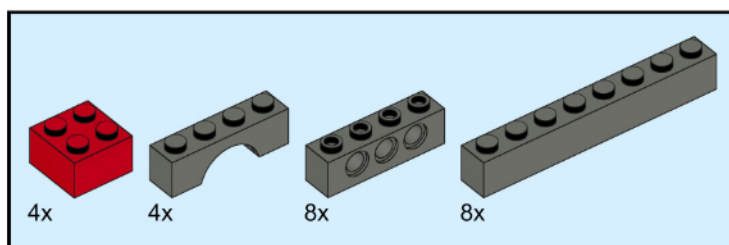




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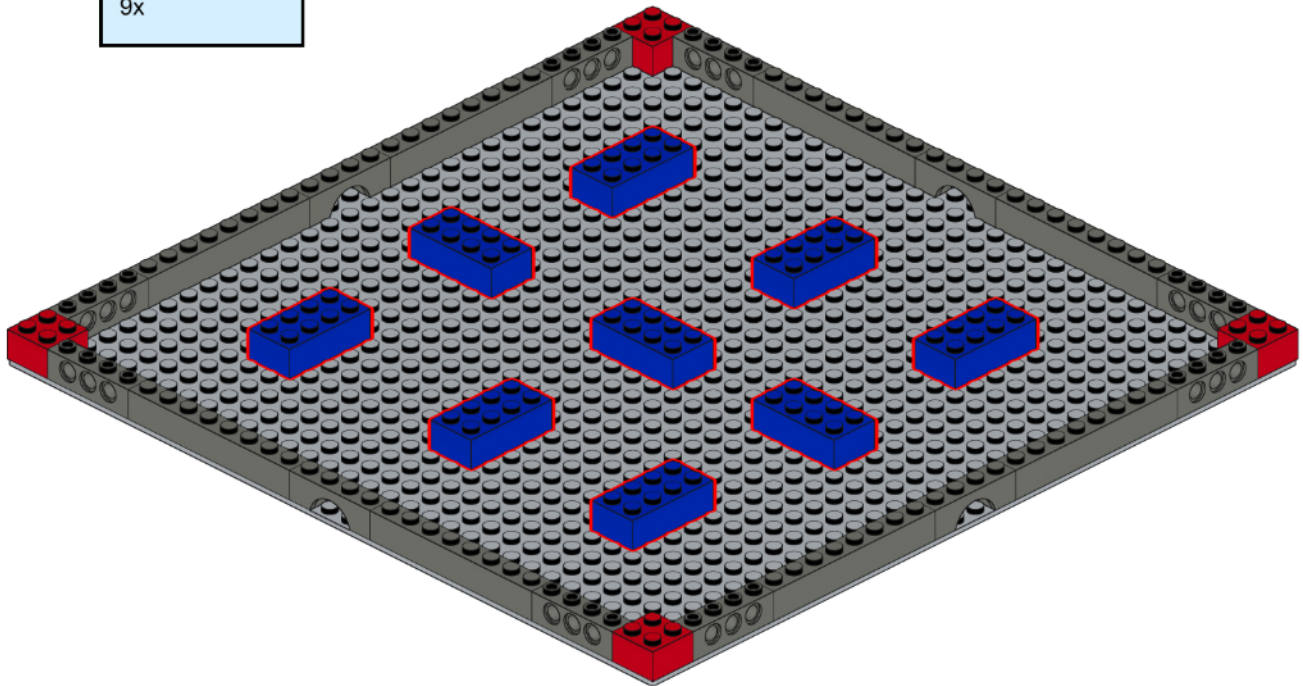
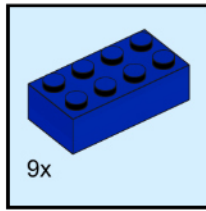


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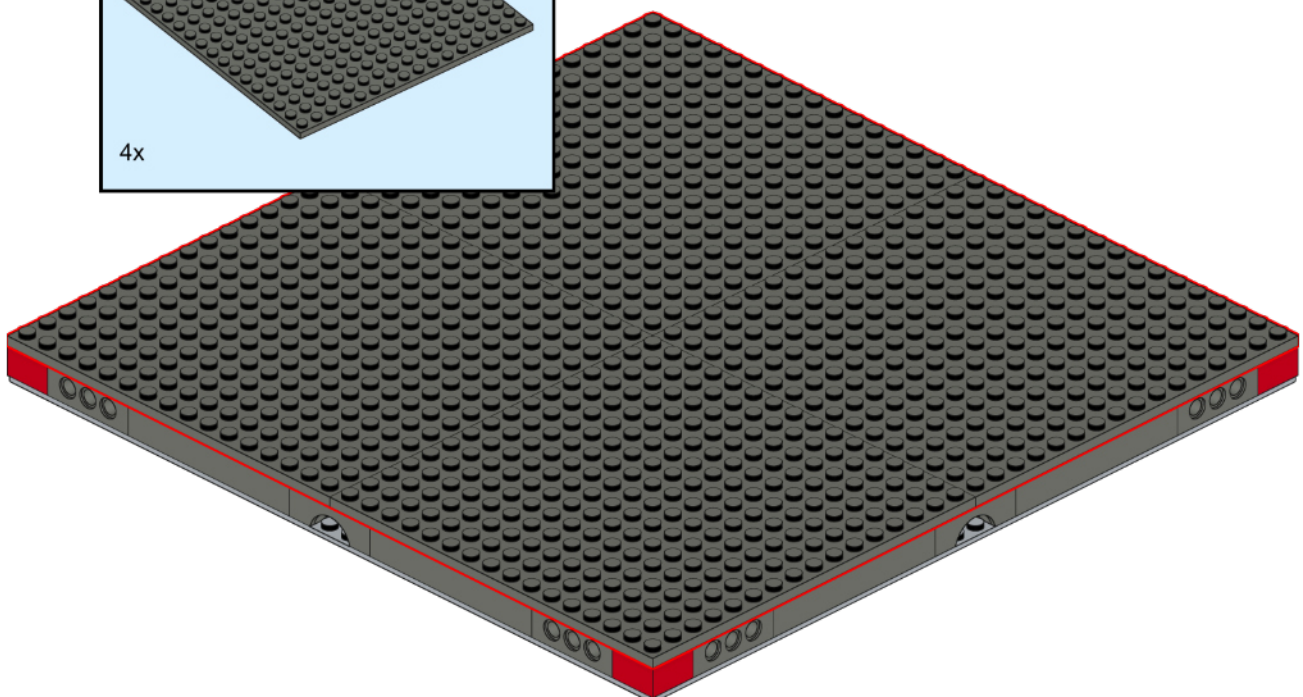
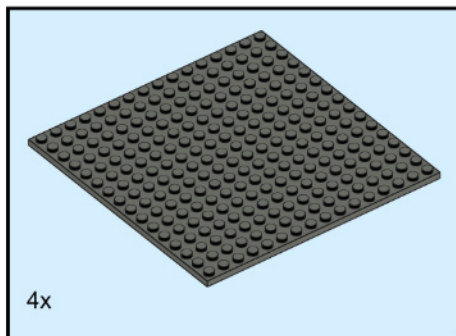




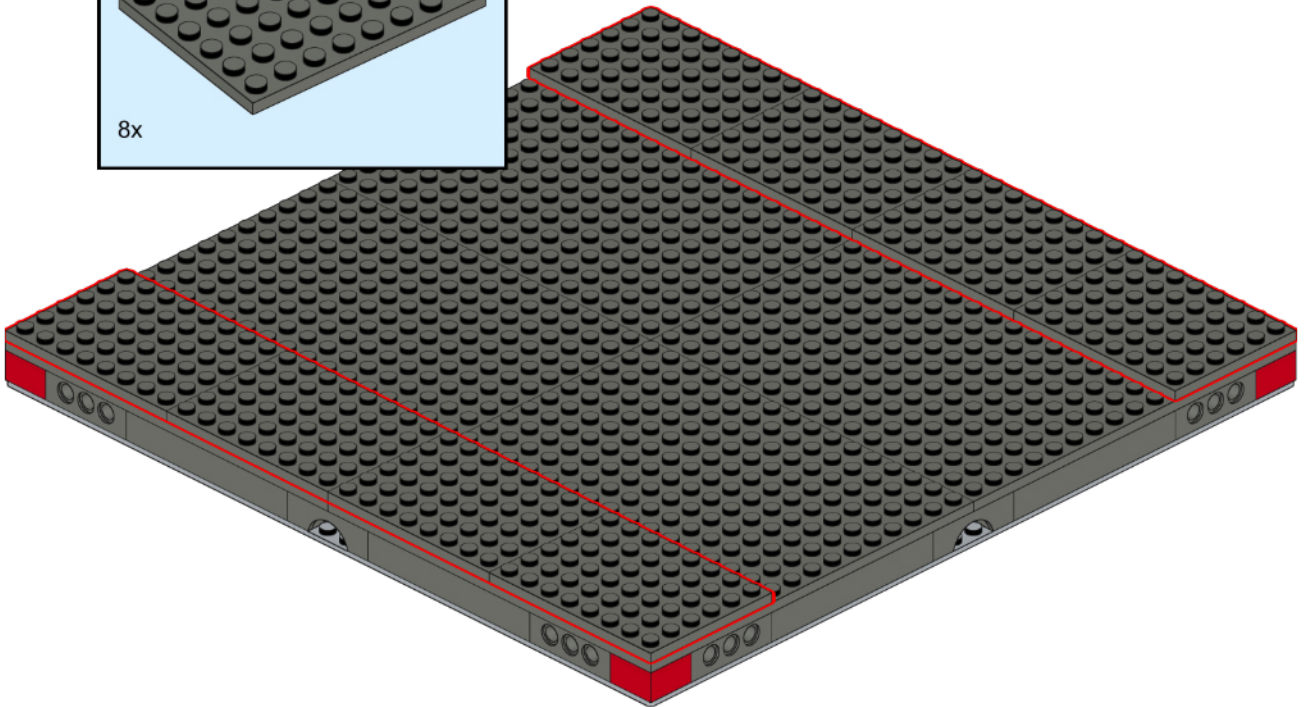
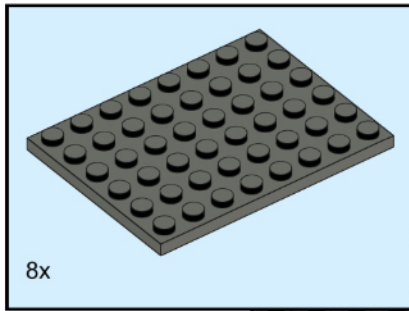
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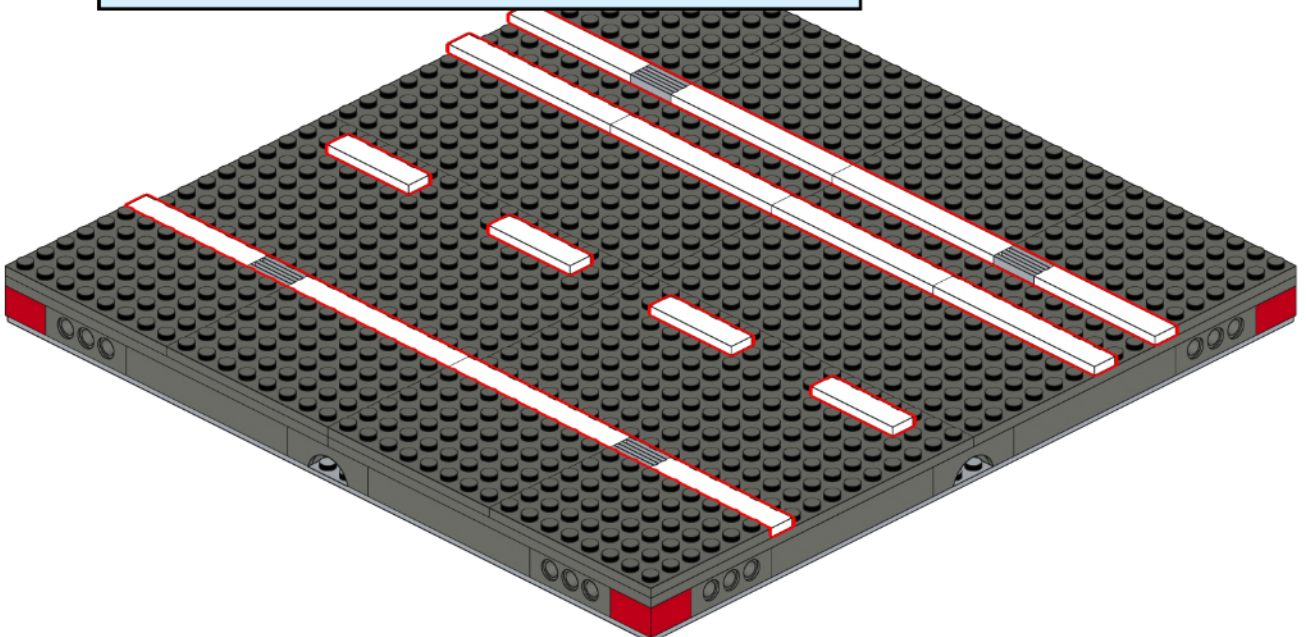
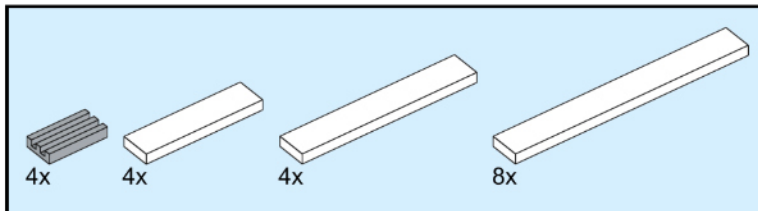
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5

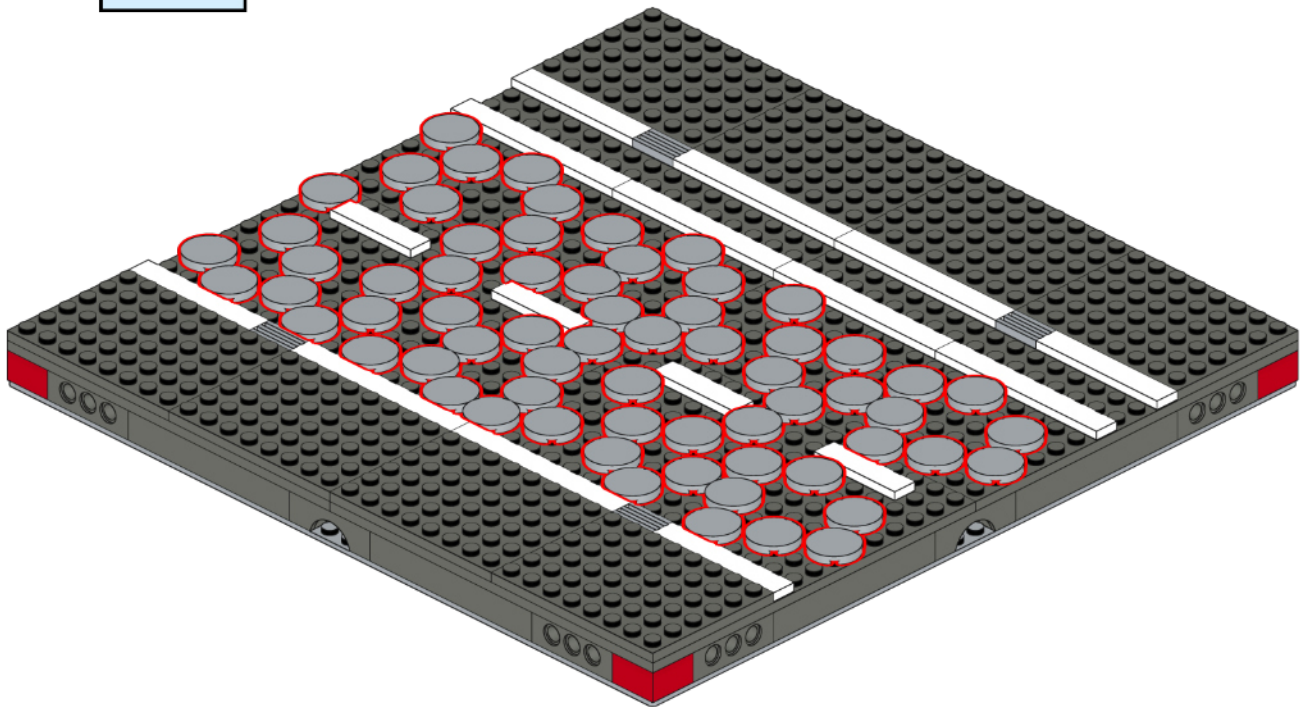
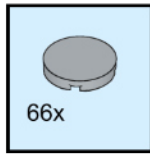


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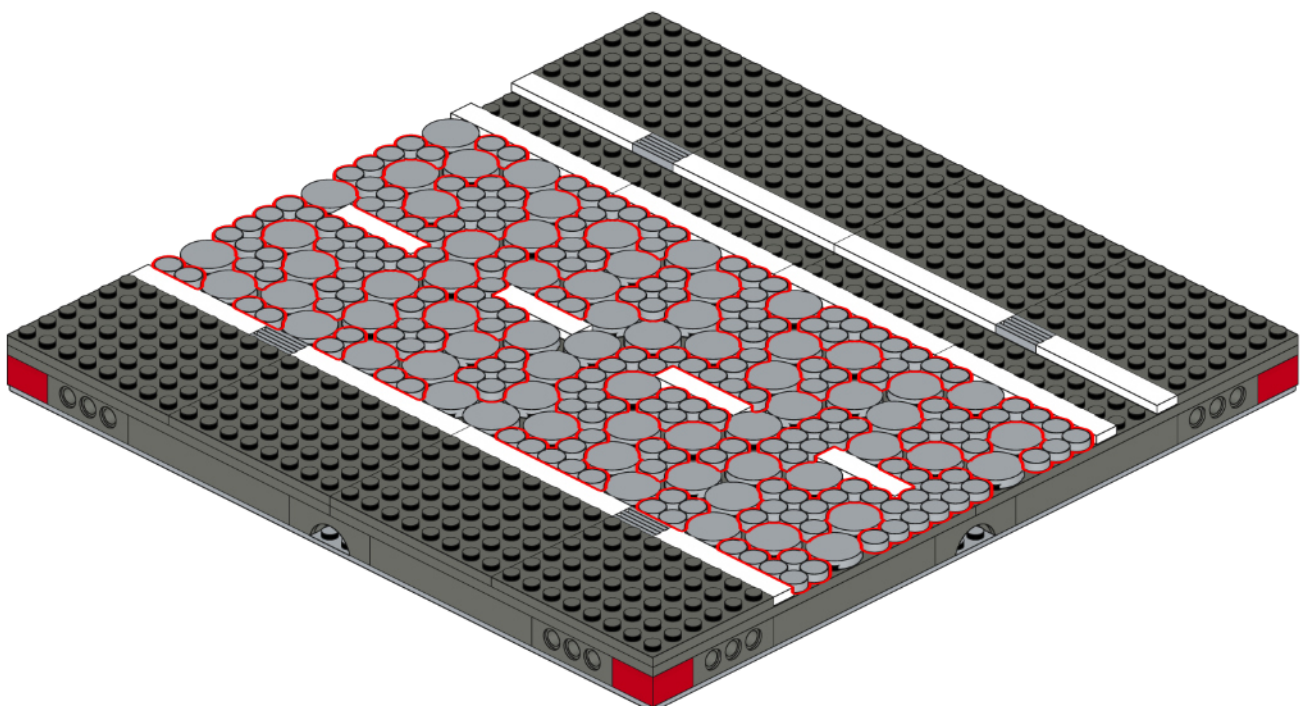
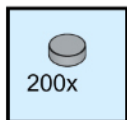




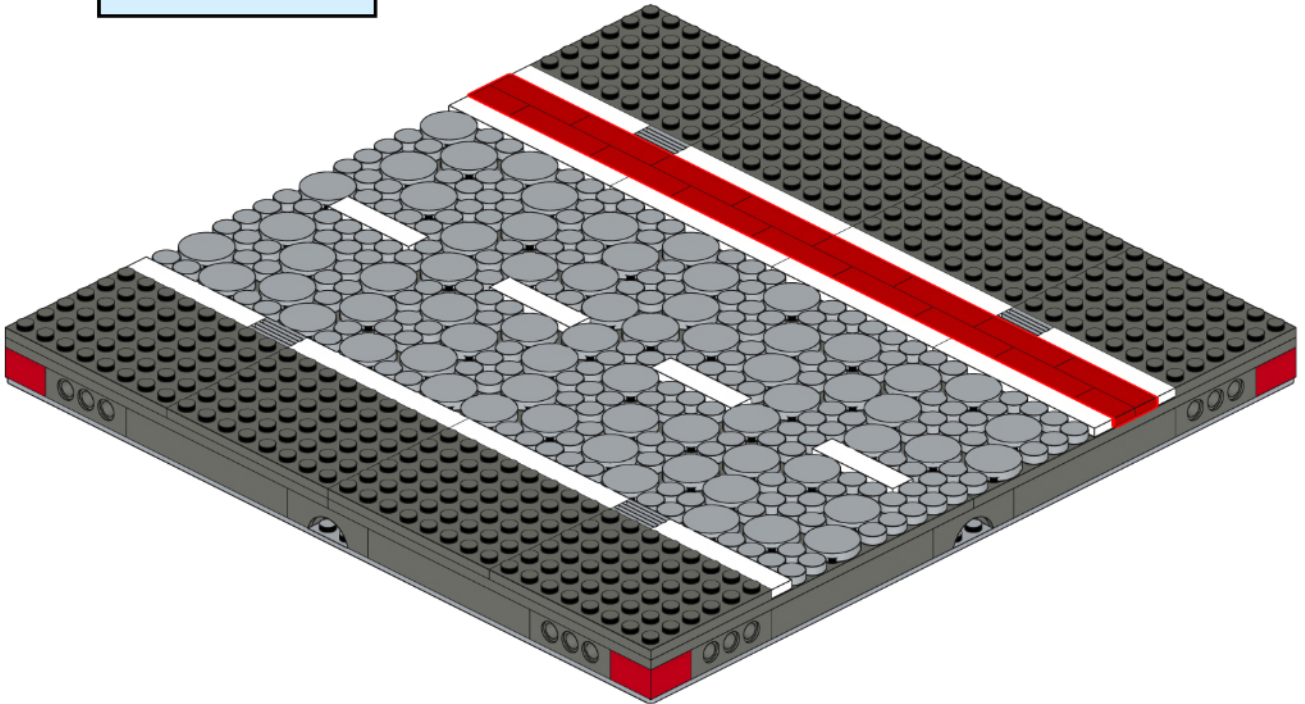
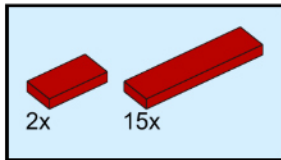
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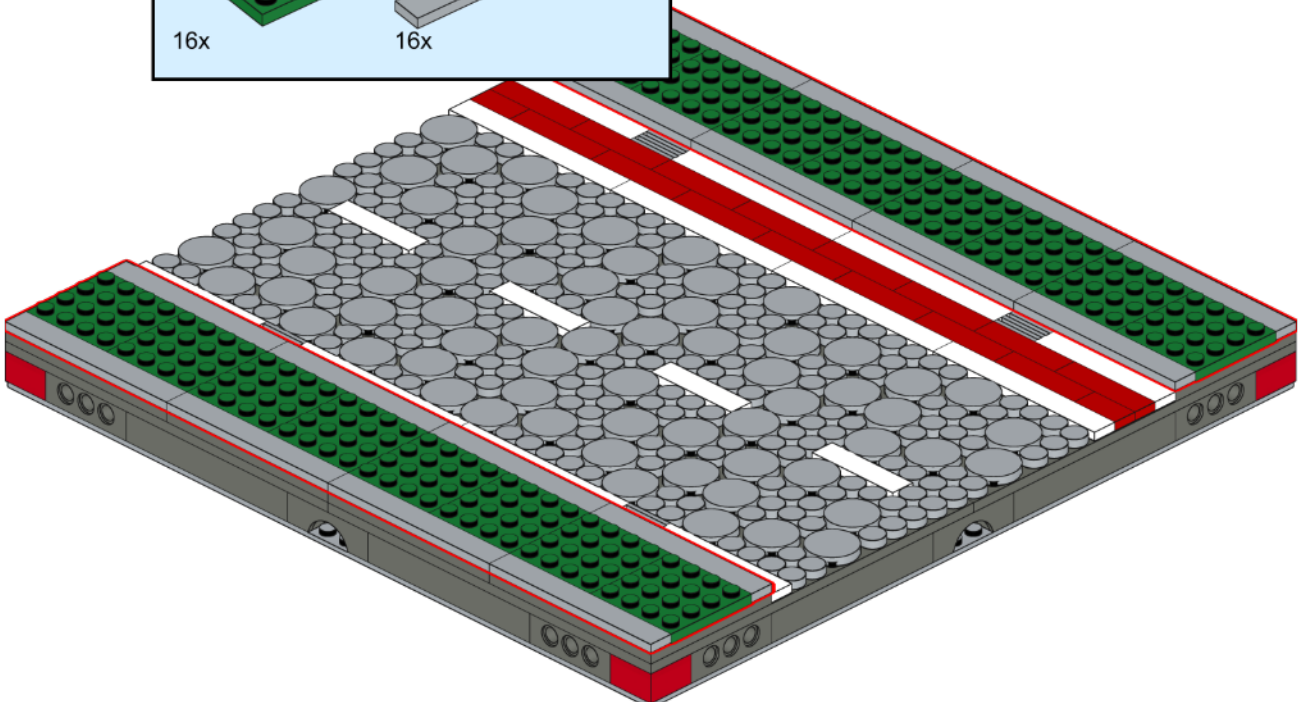
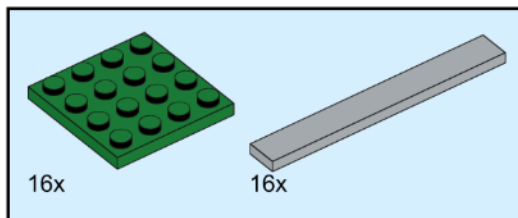
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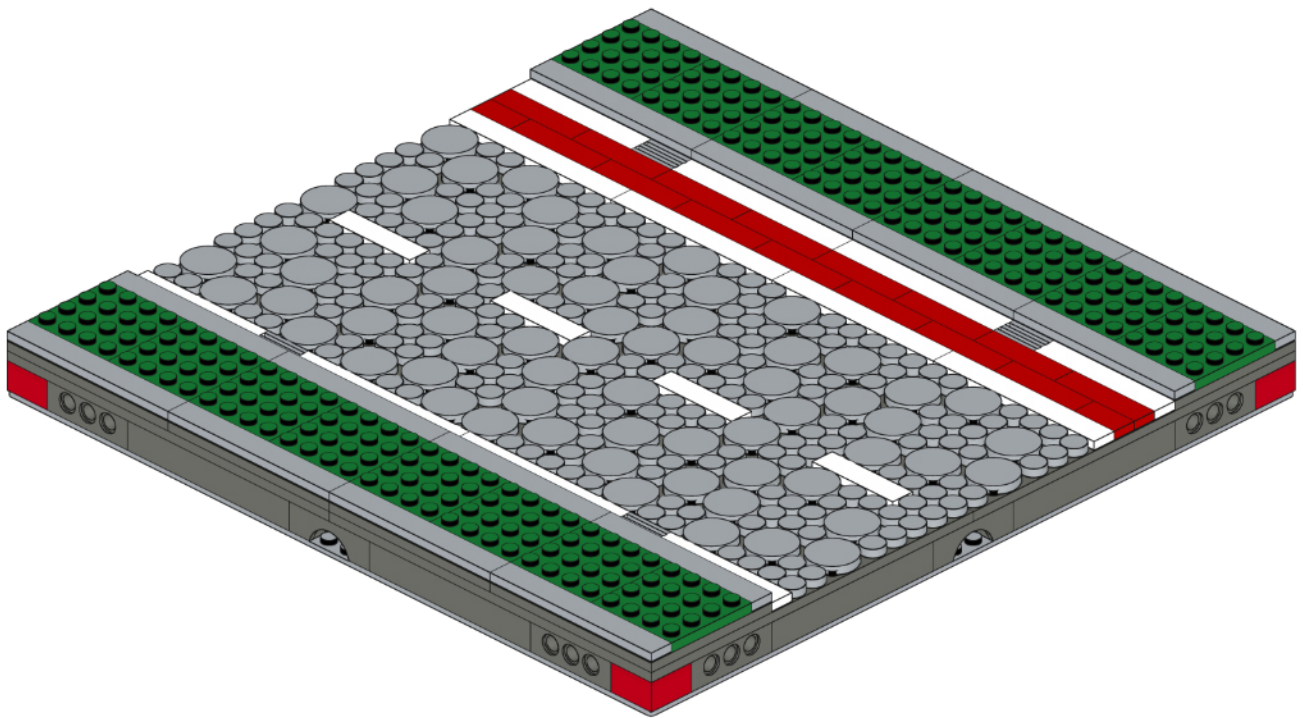
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10







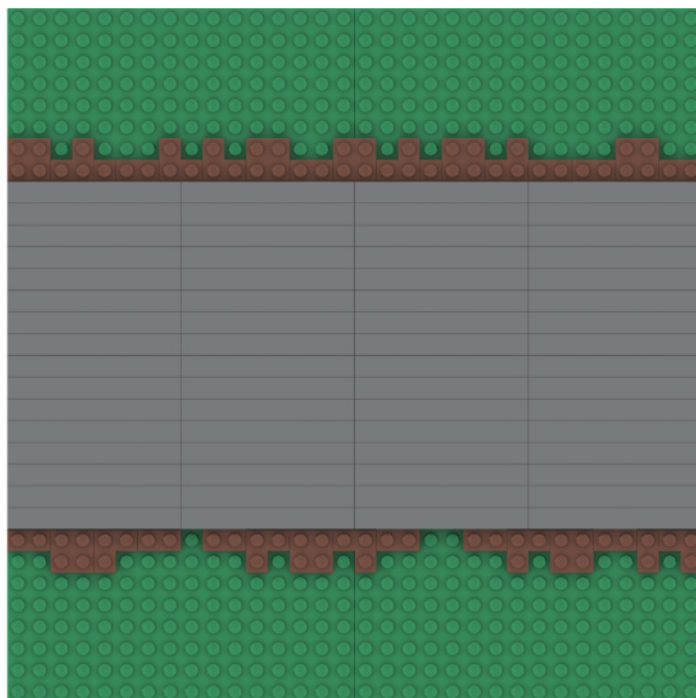


## Country Road

The country road module was developed before we even turned our attention to the City and was meant to be used primarily with terrain modules. For this reason, the surface of the road is actually 1 plate higher than the level we chose for our city streets. Connecting this kind of road to any of our city streets requires the use of a transition module. This would entail modifying a country road module to make use of a slope that brings the road level down by one plate smoothly. The roadsides may also need a similar adjustment to transition from the two-plate-higher city module roadsides down to the lower country module roadsides.

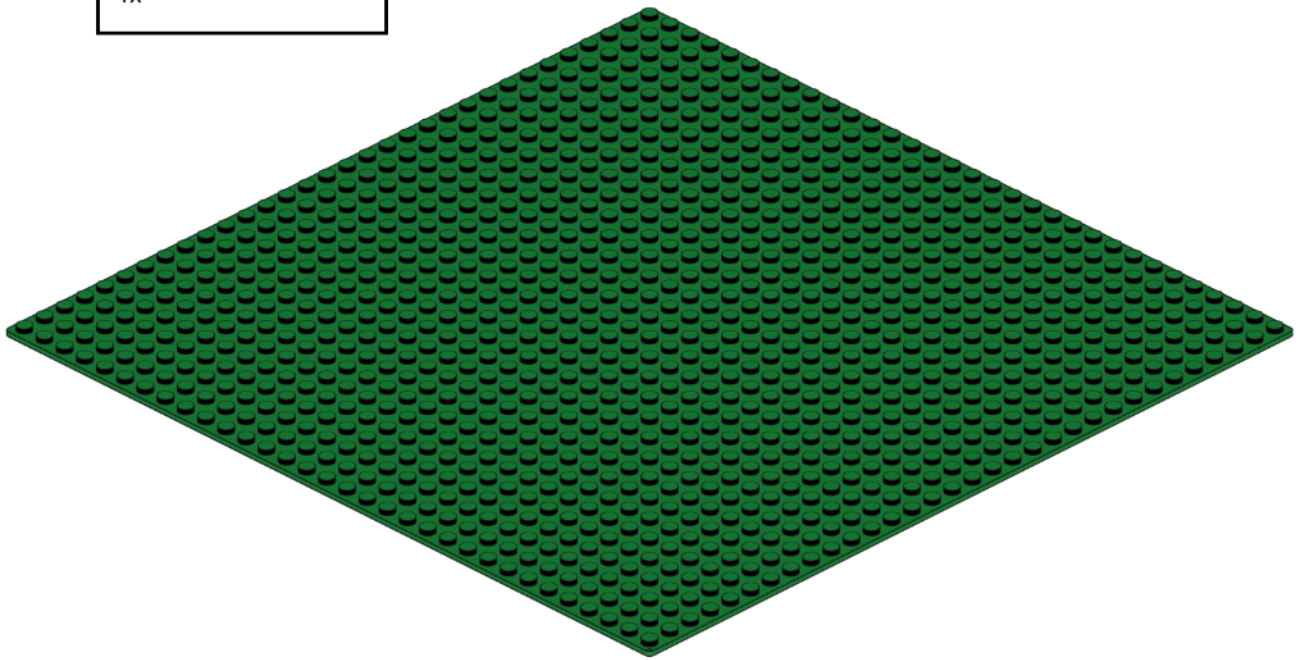
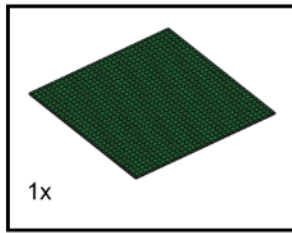
### Parts List

- |                             |                                    |
|-----------------------------|------------------------------------|
| 1 32x32 baseplate           | 4 2x3 plate, reddish brown         |
| 8 2x8 brick                 | 4 2x12 plate, reddish brown        |
| 8 1x4 technic brick         | 9 2x16 plate, reddish brown        |
| 6 1x2 plate, reddish brown  | 4 16x16 plate, green               |
| 8 2x2 plate, red            | 12 2x2 corner plate, reddish brown |
| 15 2x2 plate, reddish brown | 64 1x8 tile, dbg                   |
| 4 2x2 plate, yellow         |                                    |

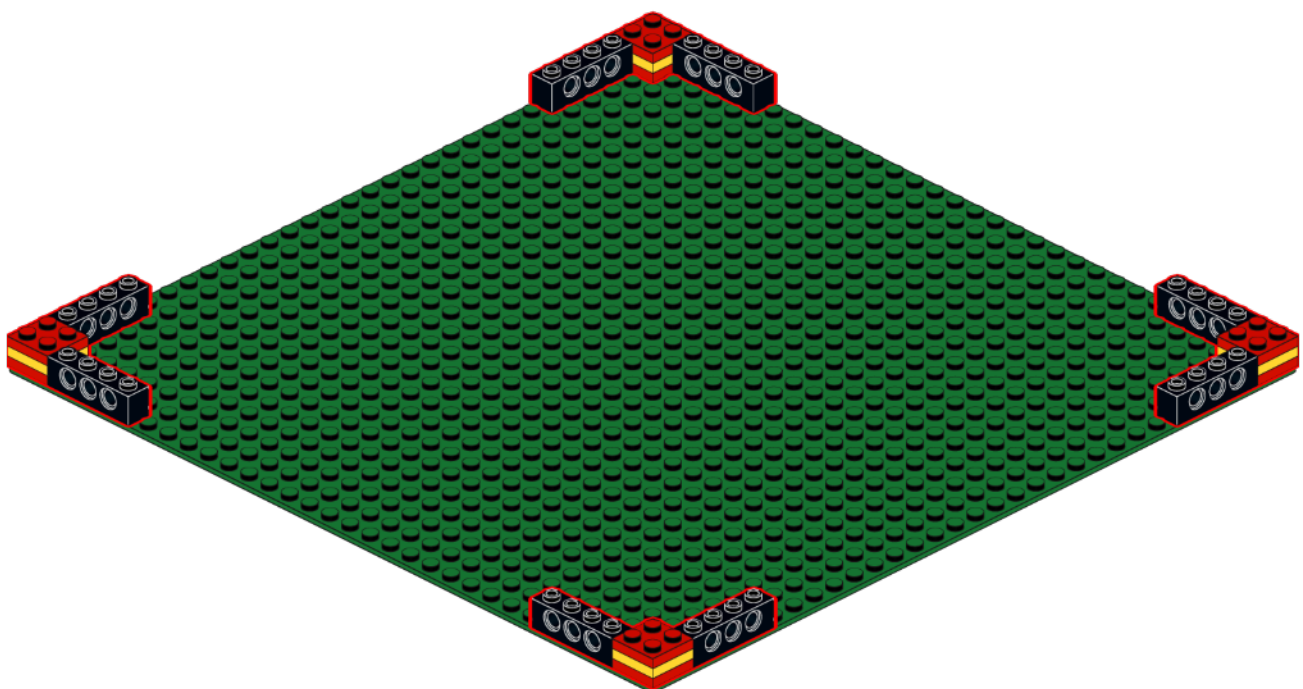
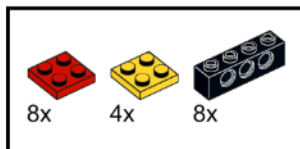




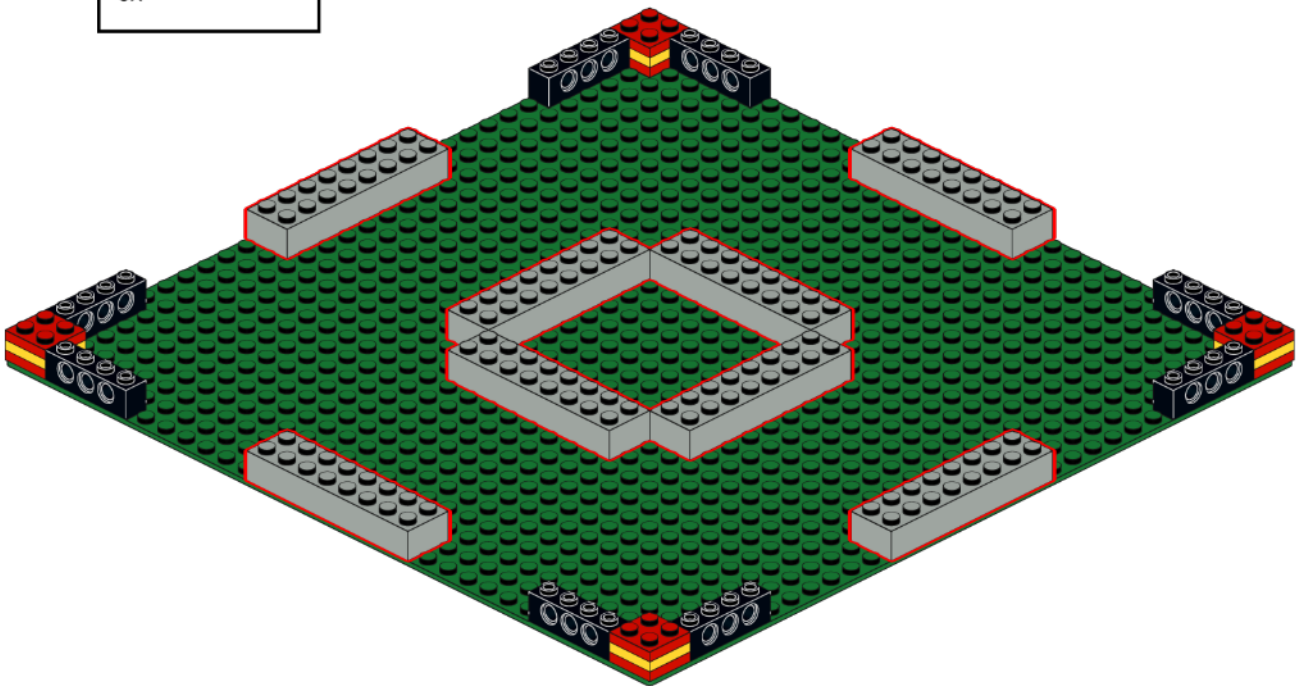
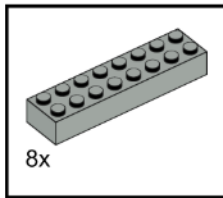
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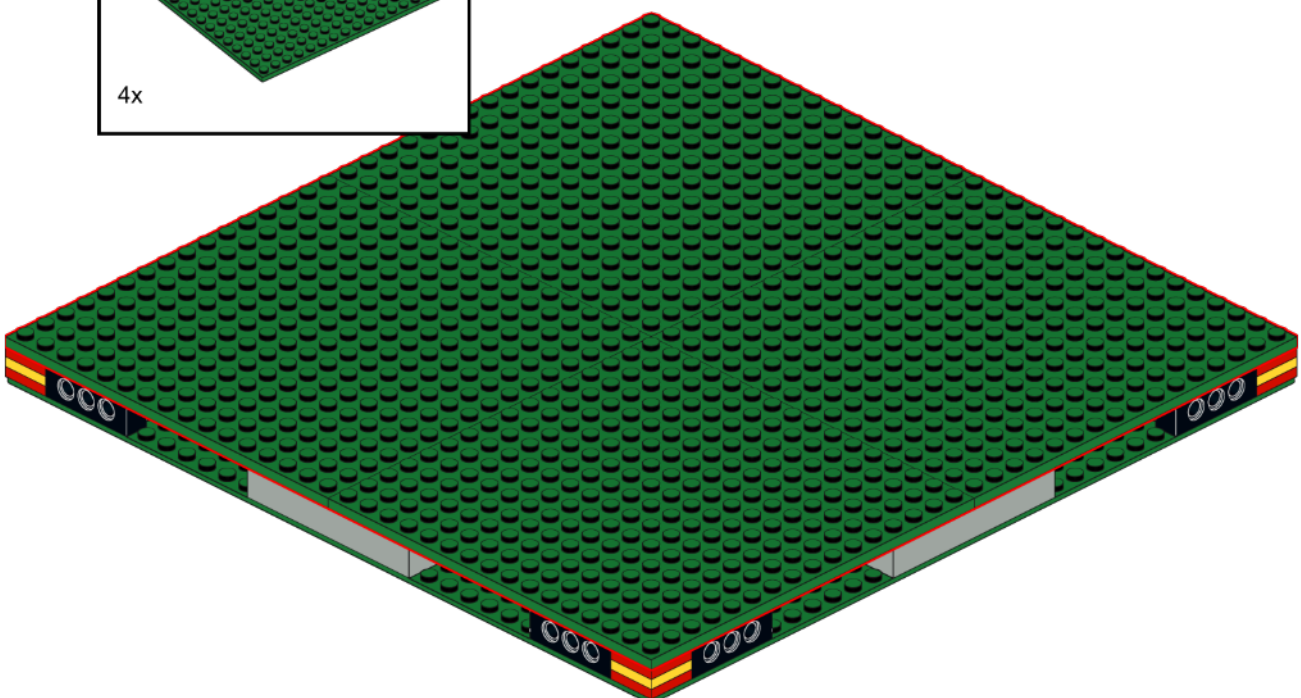
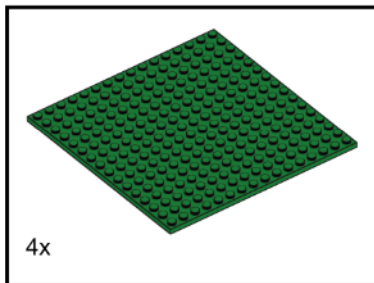
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3

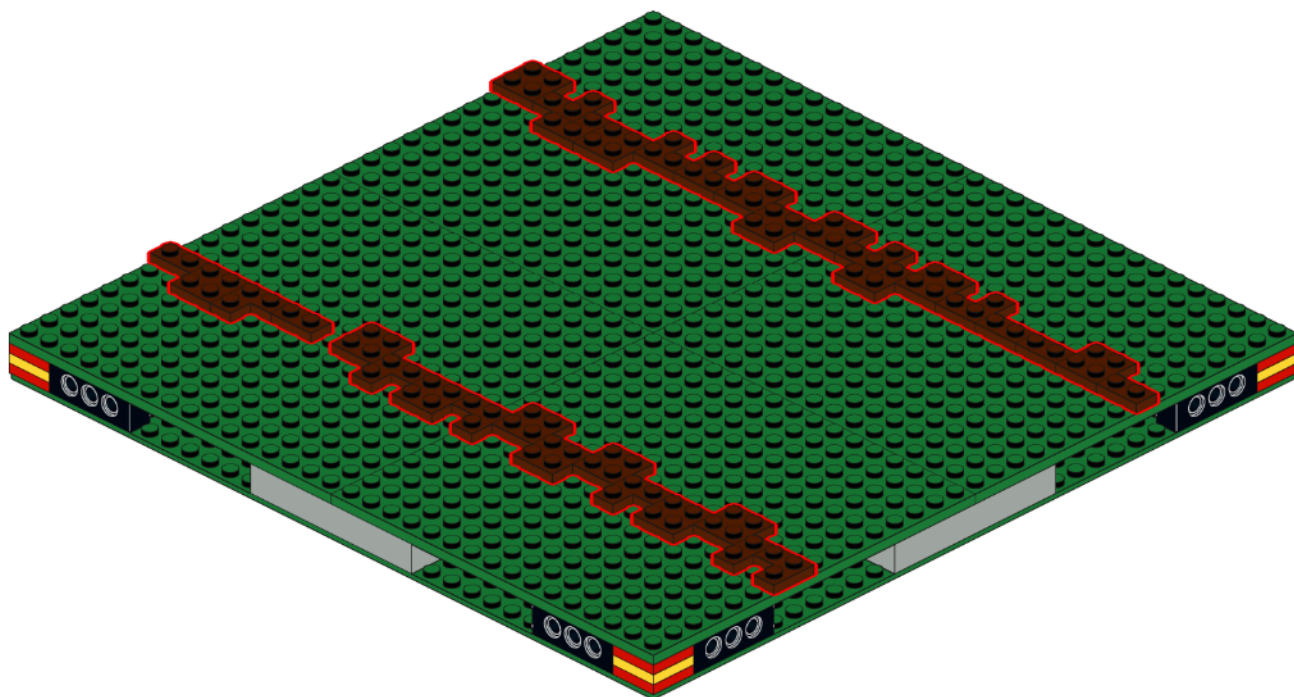
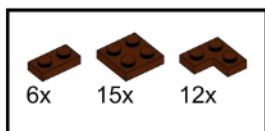


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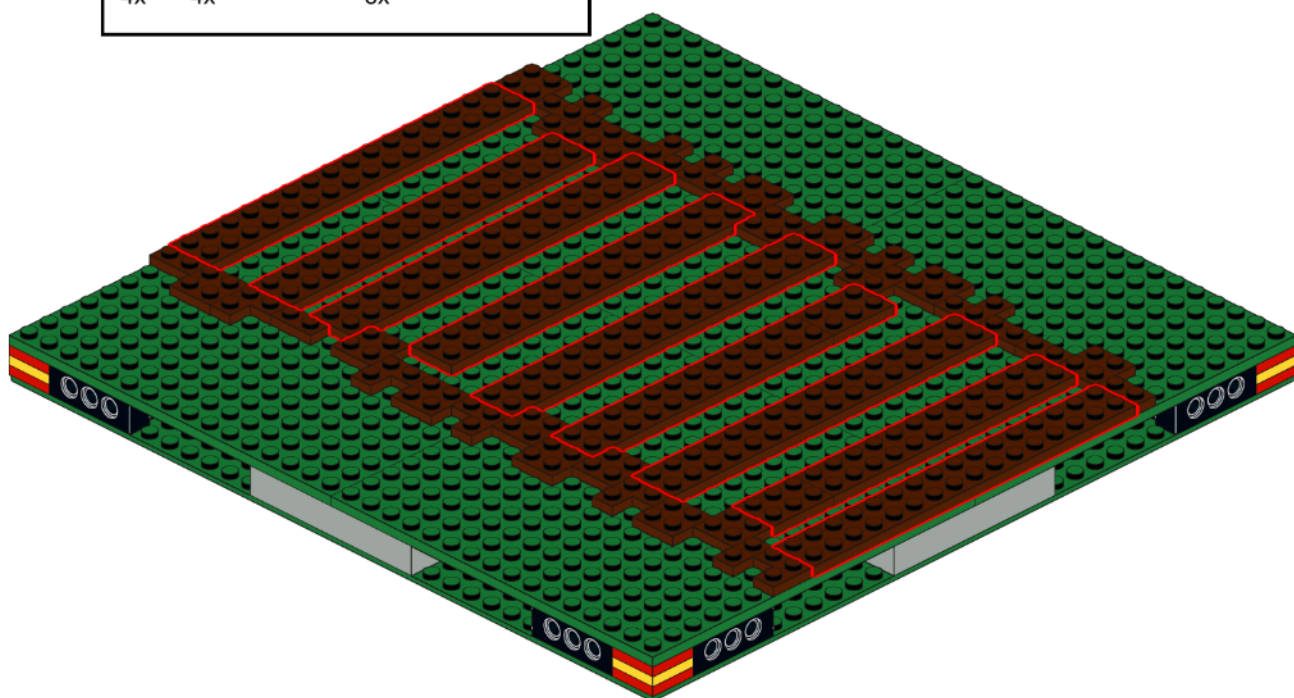
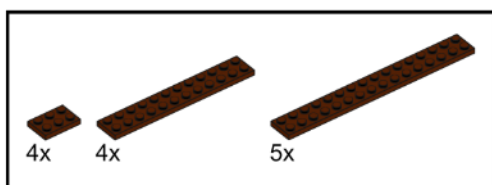




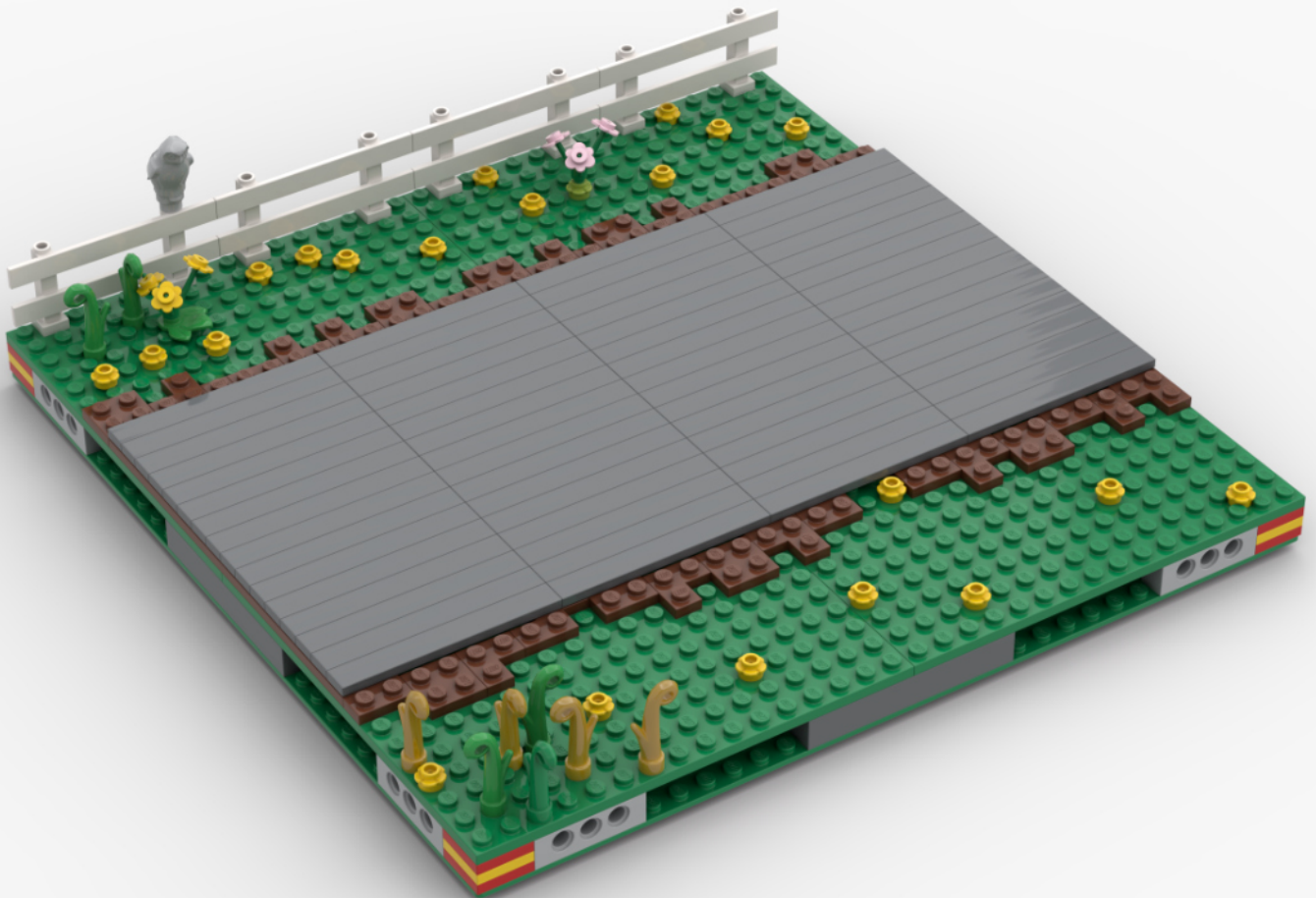
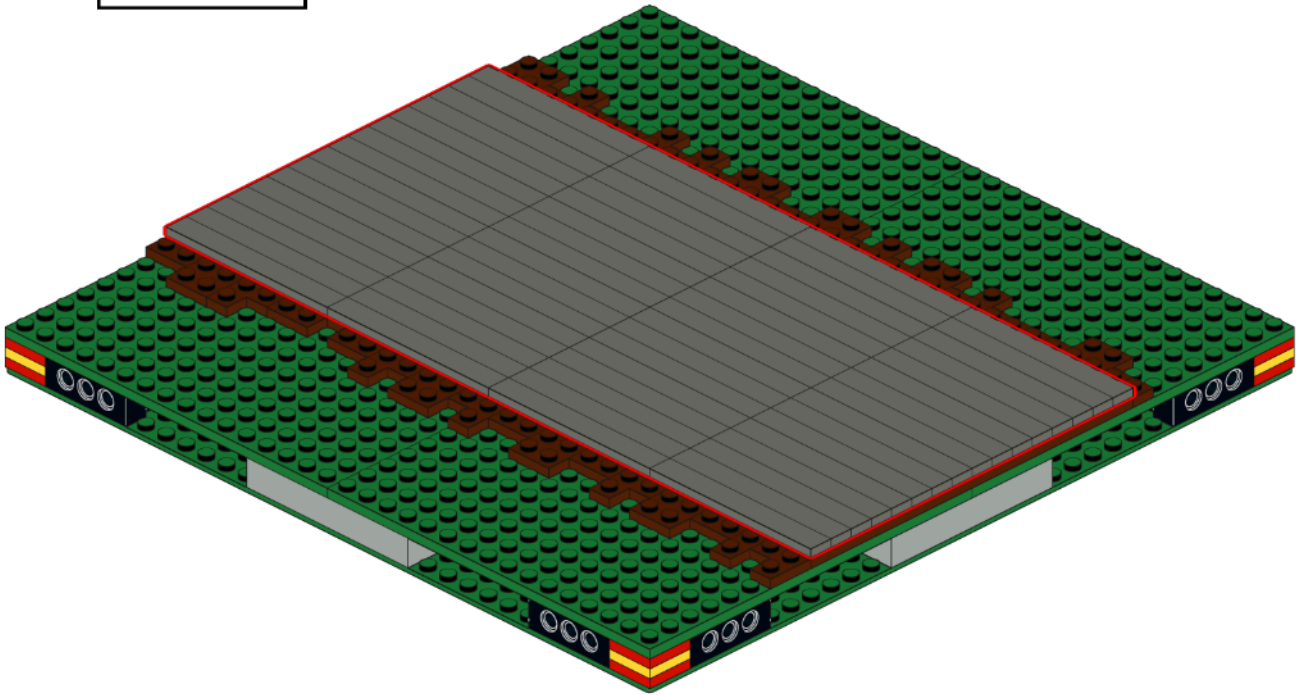
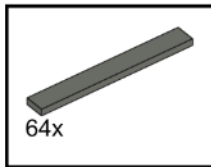
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6



7





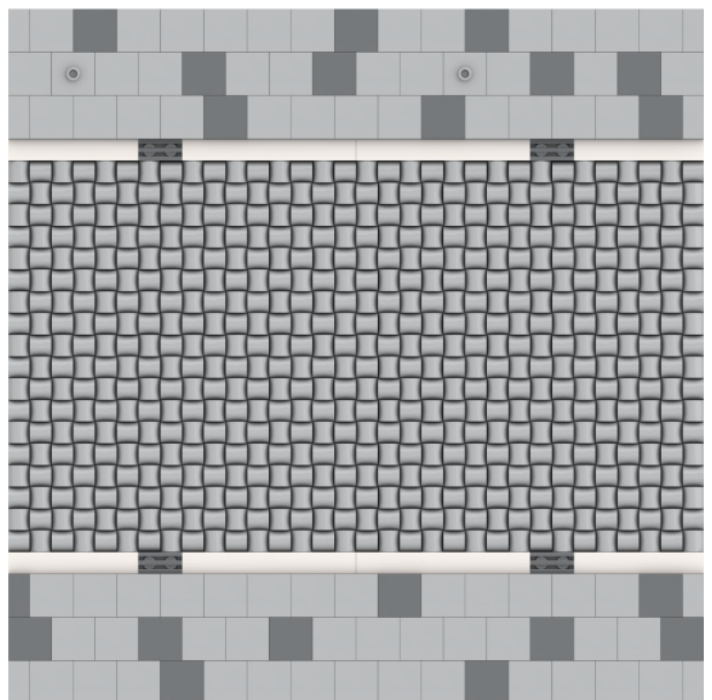


## Bricked Street

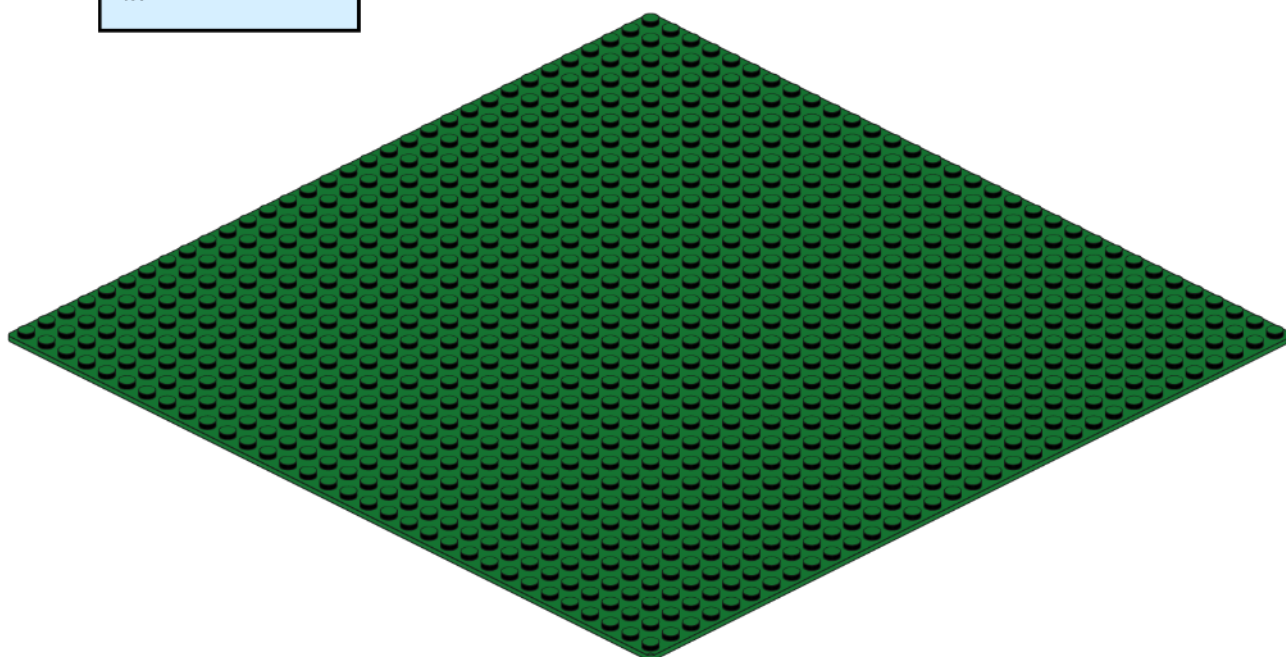
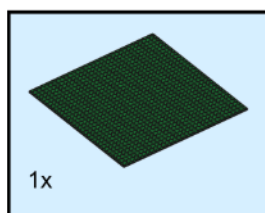
The bricked street is just one example of the way different textures can be achieved by choosing alternative elements to pave the road. Since the curved 49307 brick used for the road surface is 2 plates high, the area underlying the road had to be lowered to arrive at the five-plate-high road surface level of the other street modules. Some of the LBG tiles in the *trottoir* were swapped out for DBG to add to the character of a period street.

### Parts List

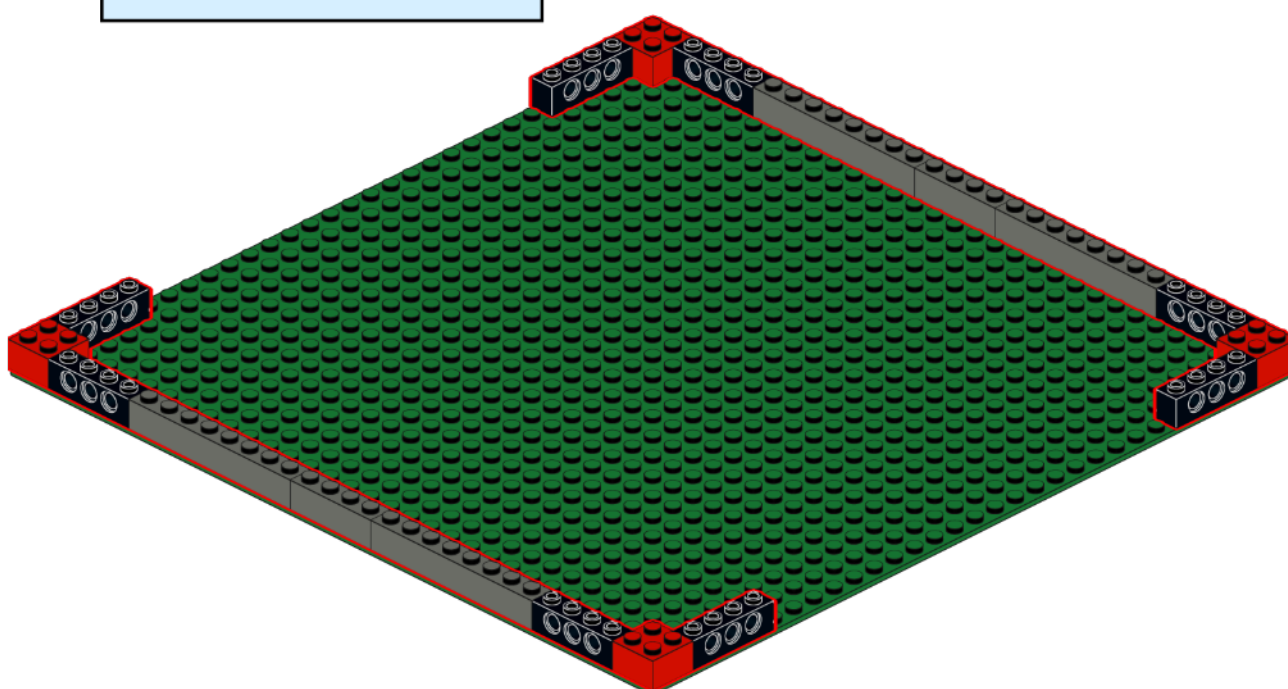
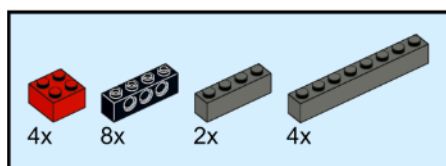
1 32x32 baseplate	4 8x8 plate
2 1x4 brick	1 1x2 tile, dbg
4 1x8 brick	7 1x2 tile, lbg
10 2x2 brick	4 1x6 tile, white
8 1x4 technic brick	4 1x8 tile, white
22 1x6 plate	19 2x2 tile, dbg
12 1x8 plate, dbg	71 2x2 tile, lbg
30 2x2 plate	4 1x2 grille tile, flat silver
16 6x8 plate	2 2x2 jumper, lbg
	576 1x1x2/3 curve top brick (49307)



1

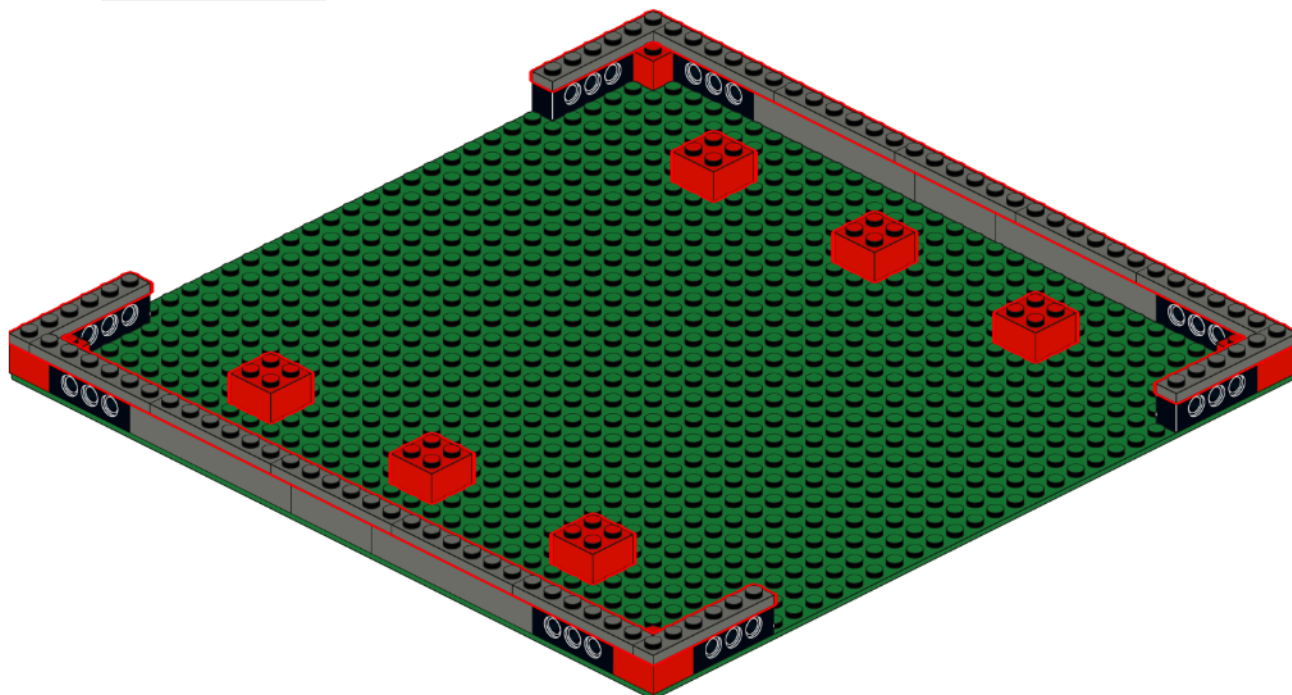
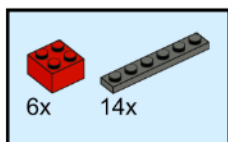


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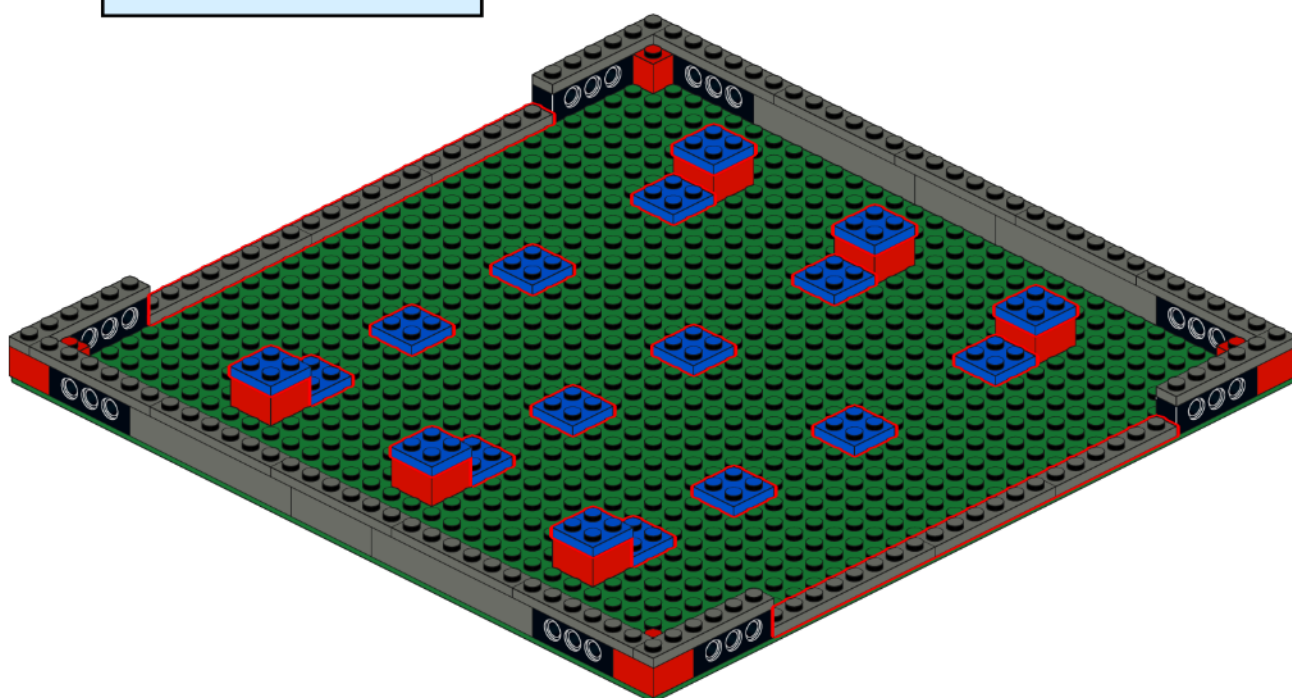
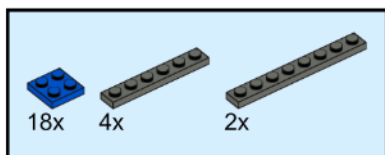




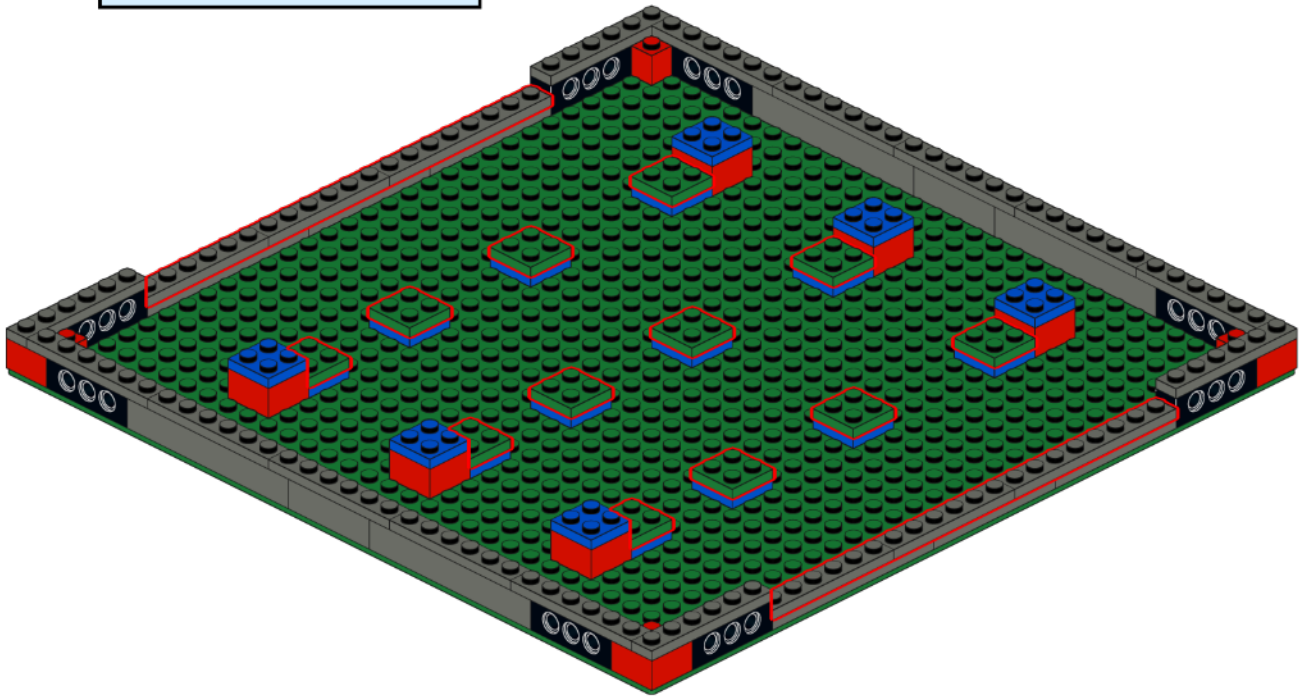
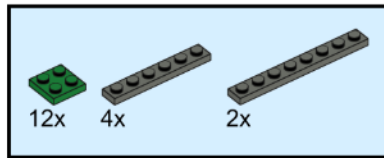
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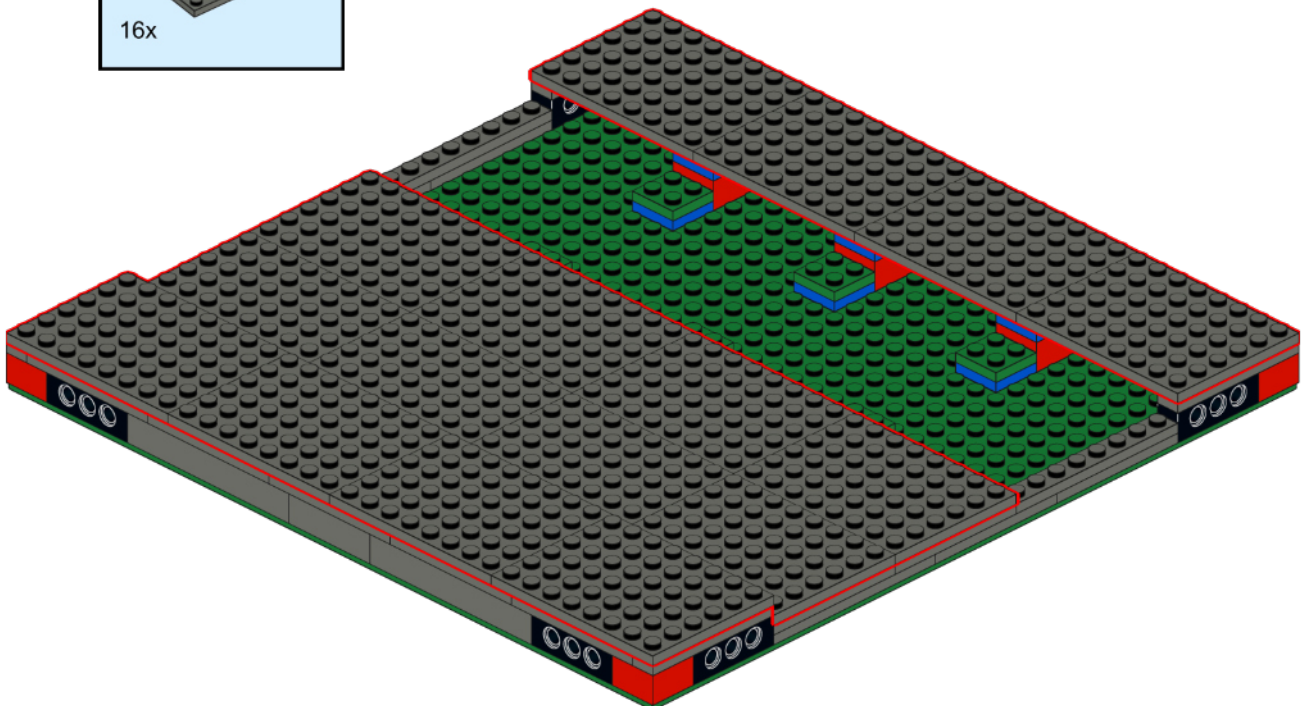
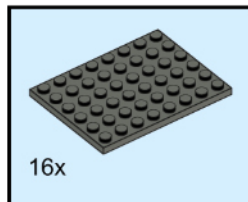
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5

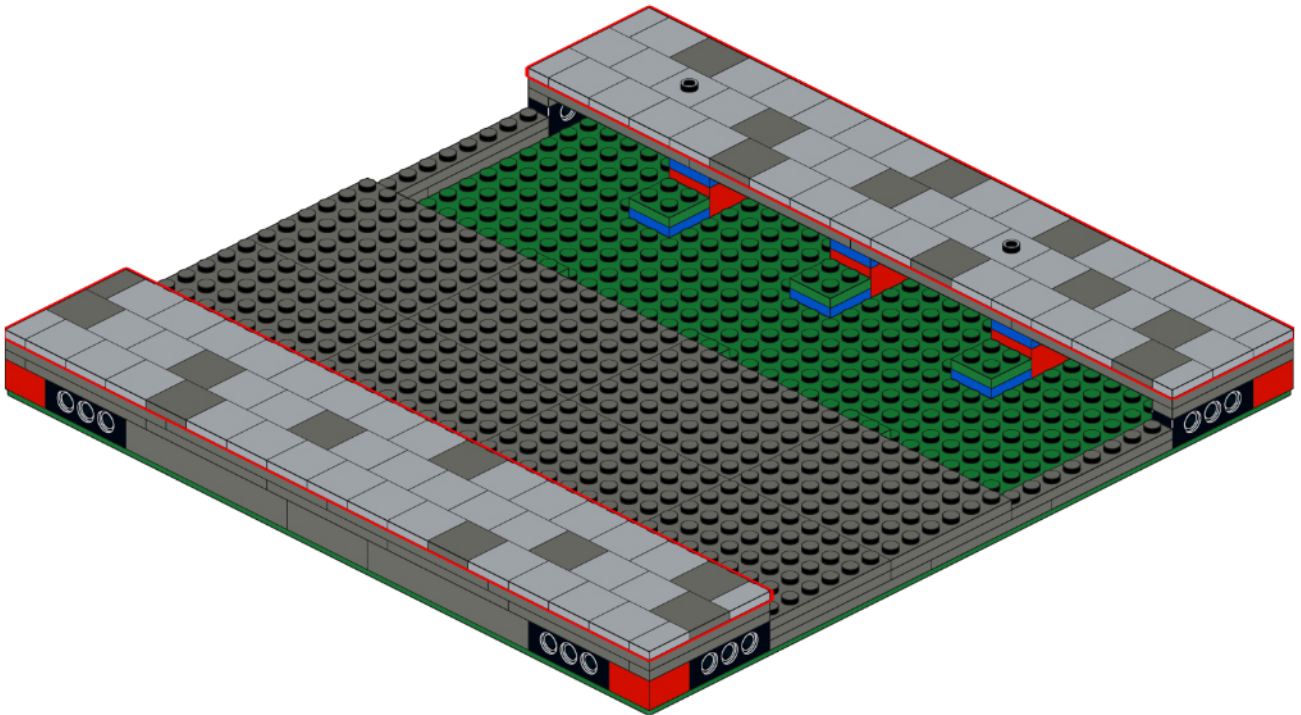
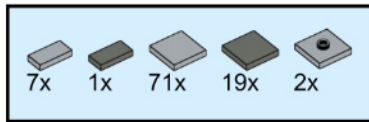


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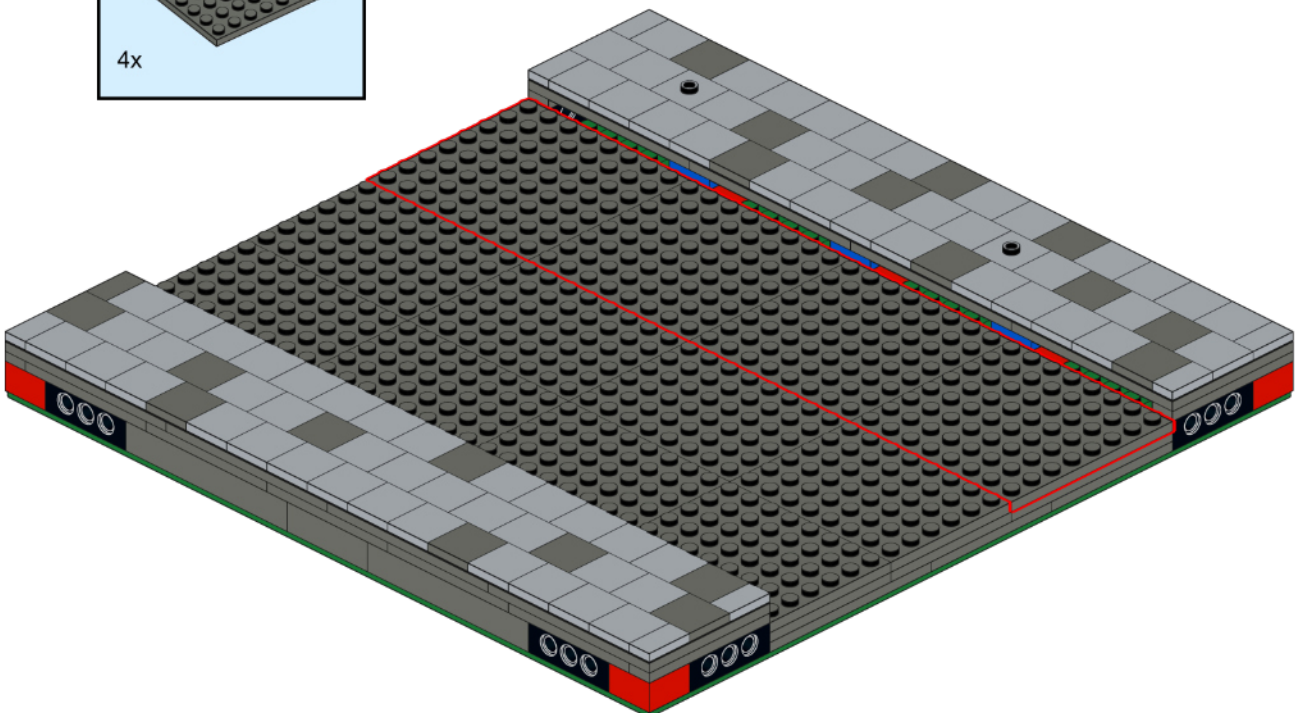
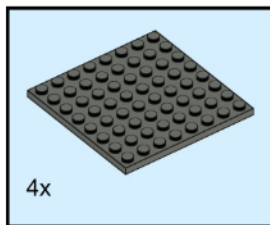




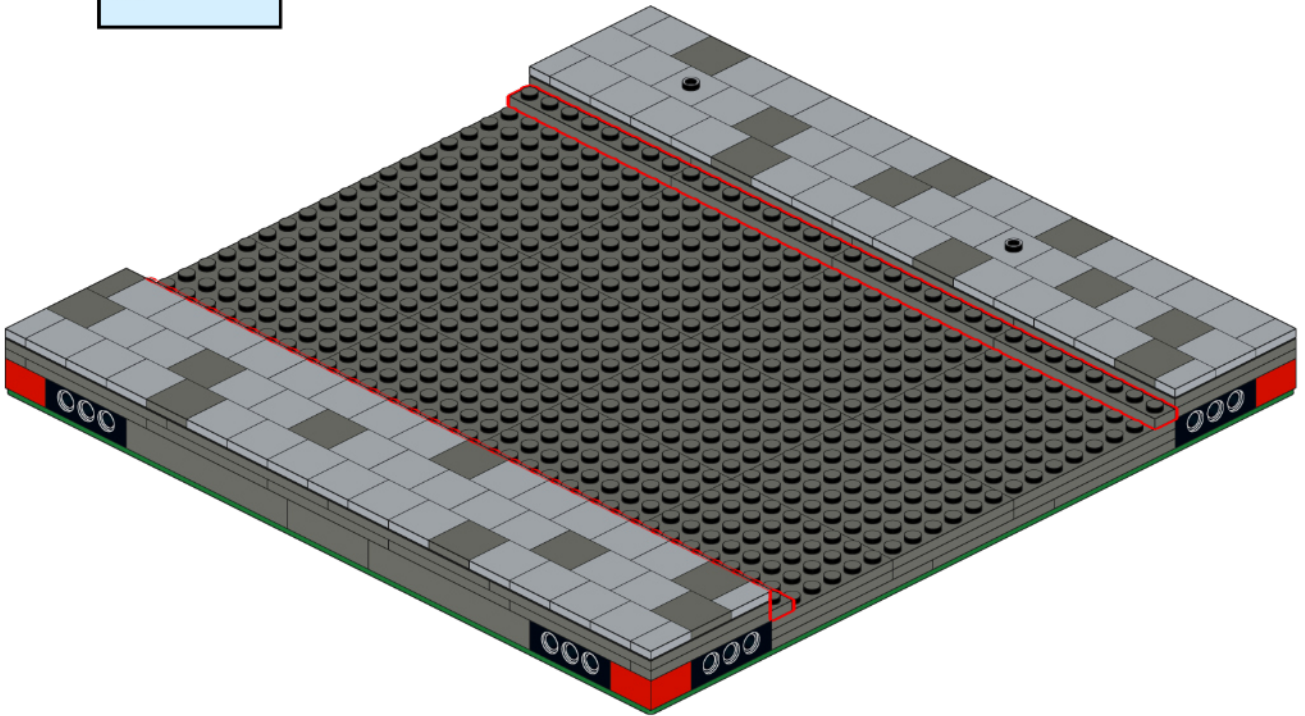
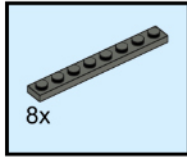
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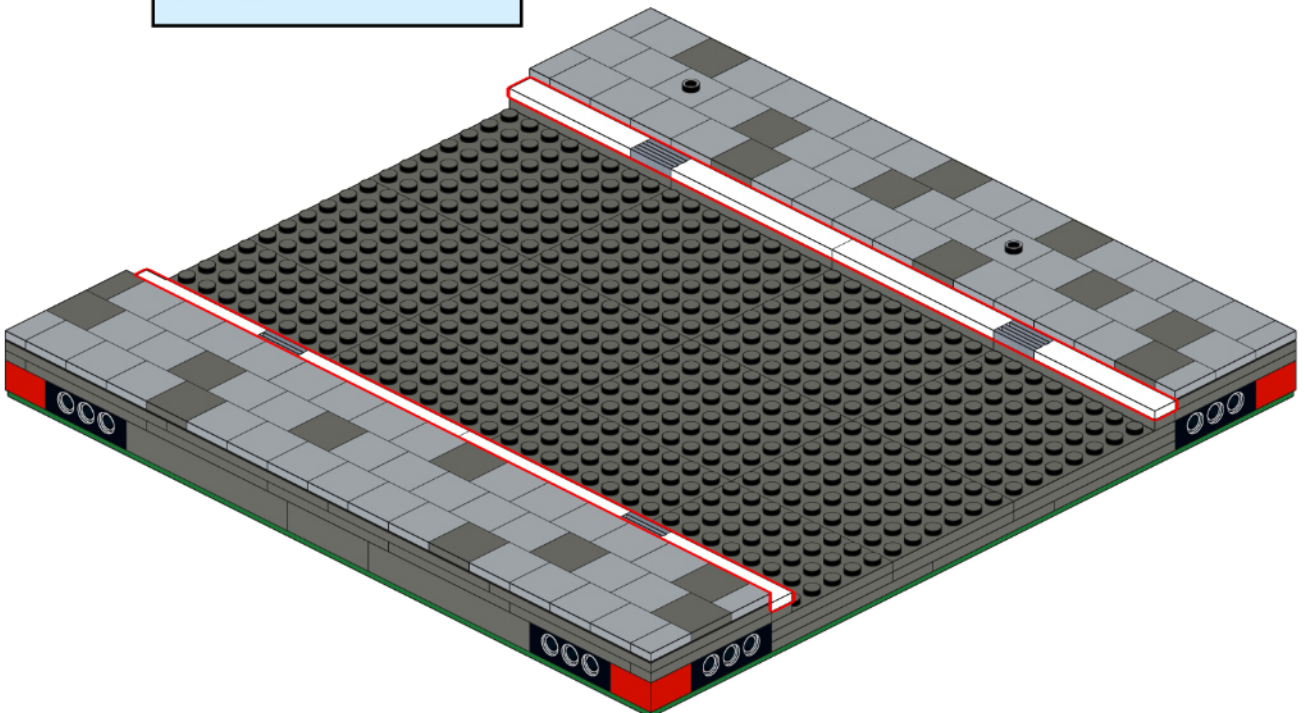
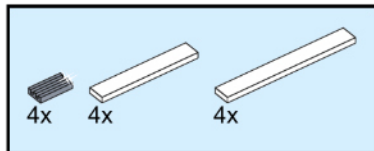
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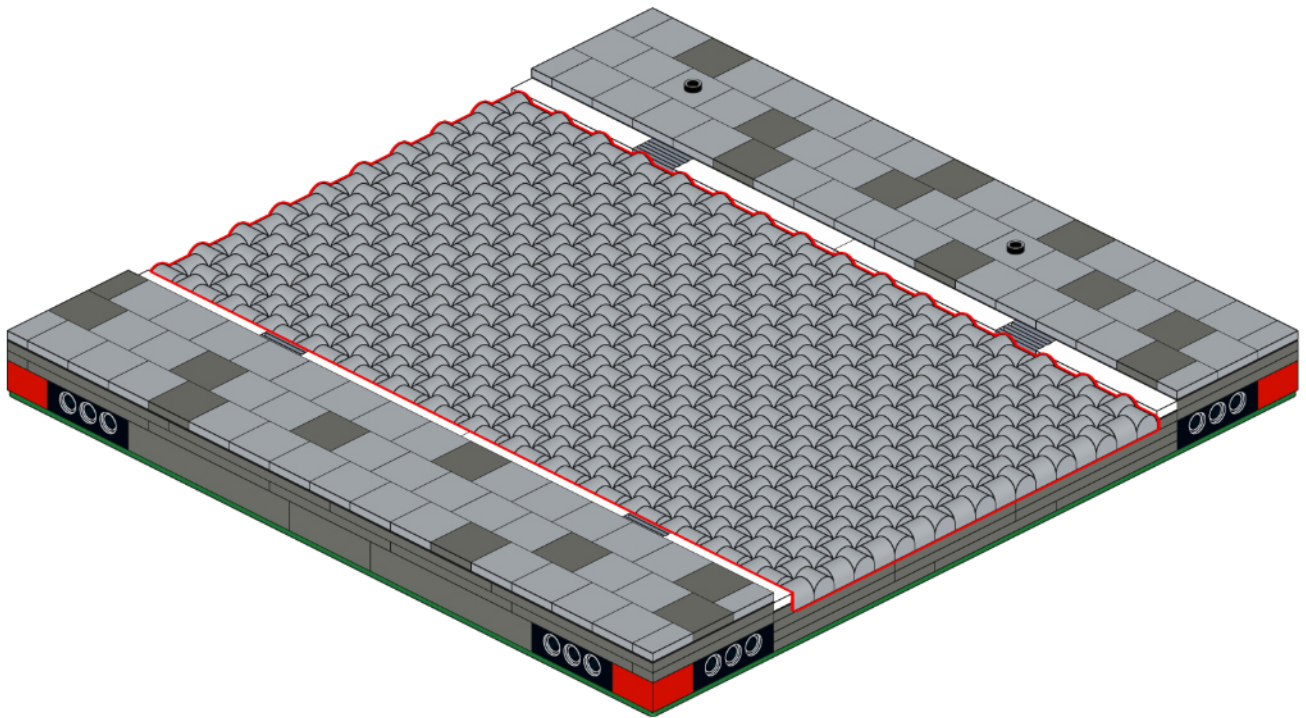


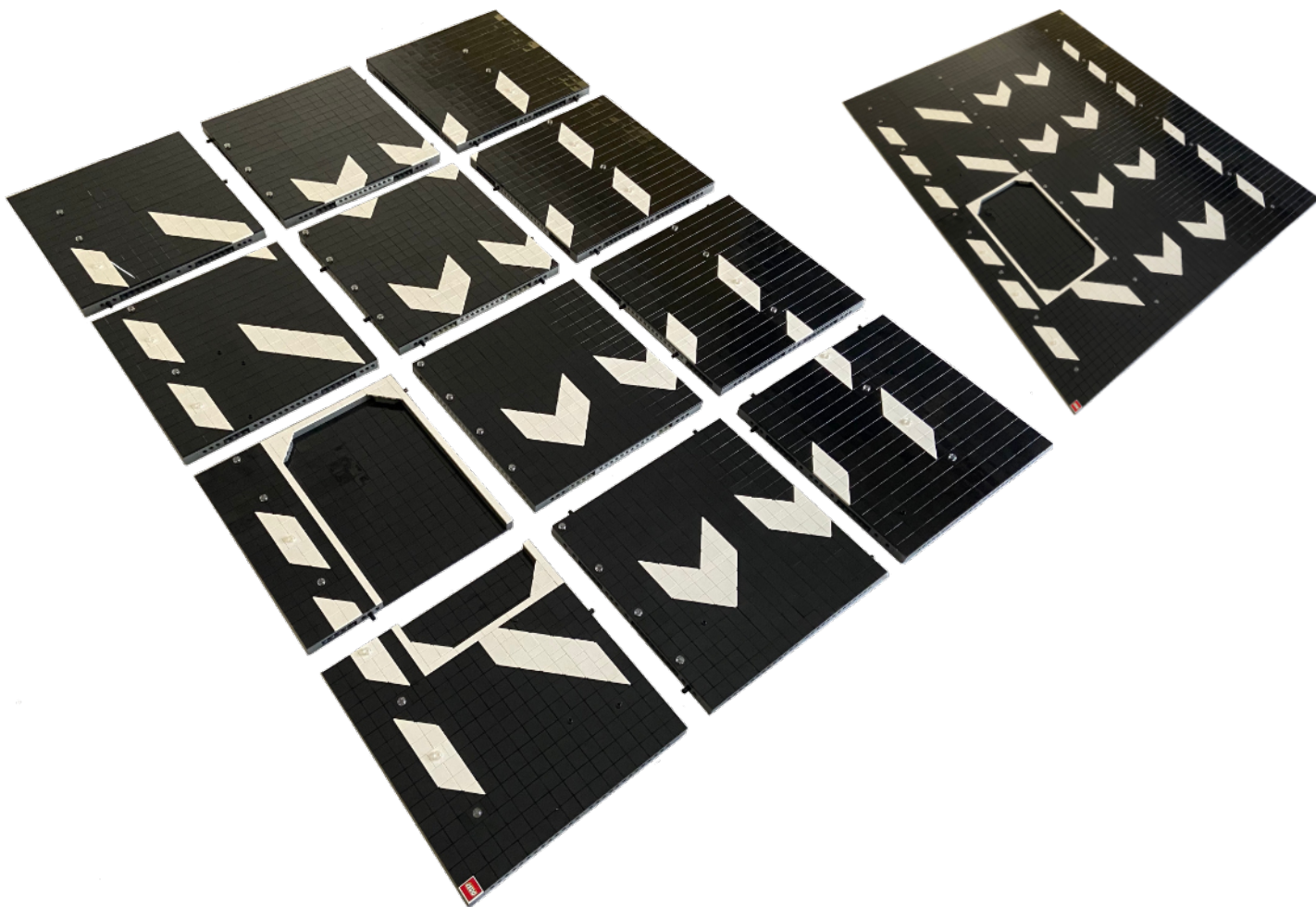
10





11





## Flight Deck

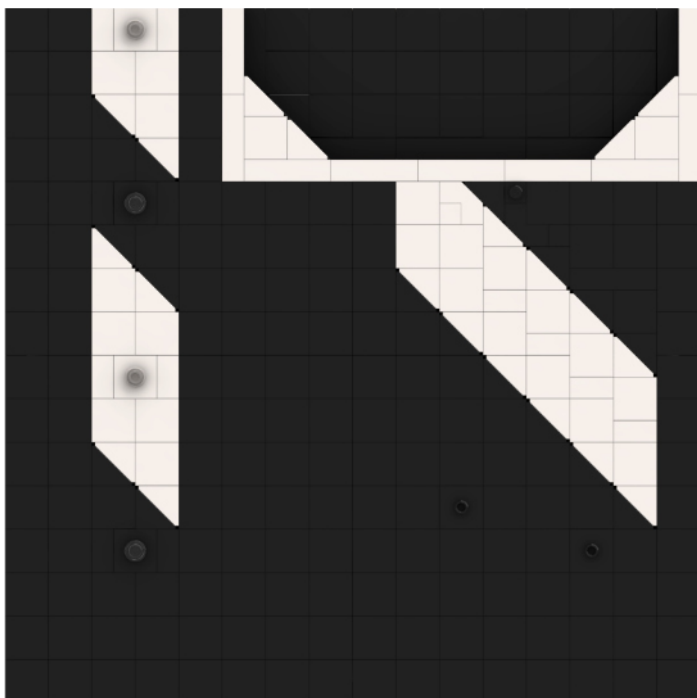
Of course there are many more uses for (paved) MILS modules. Jump into the future or into an alternate universe and turn your MILS modules into a flight deck worthy of a space hangar. Markings on the floor were created with simple mosaic patterns and lights were added using jumper plates topped with 1x1 round tiles.

Now, to answer the questions: yes, this flight deck is comprised of twelve

modules and, no, we aren't going to show instructions for all of them. Unique to this module, however, is a recessed area. While a specifically lowered area of the module wouldn't necessarily make any sense on a road, here on the flight deck it may be a desirable element to add and provide both aesthetic and narrative interest to the build.

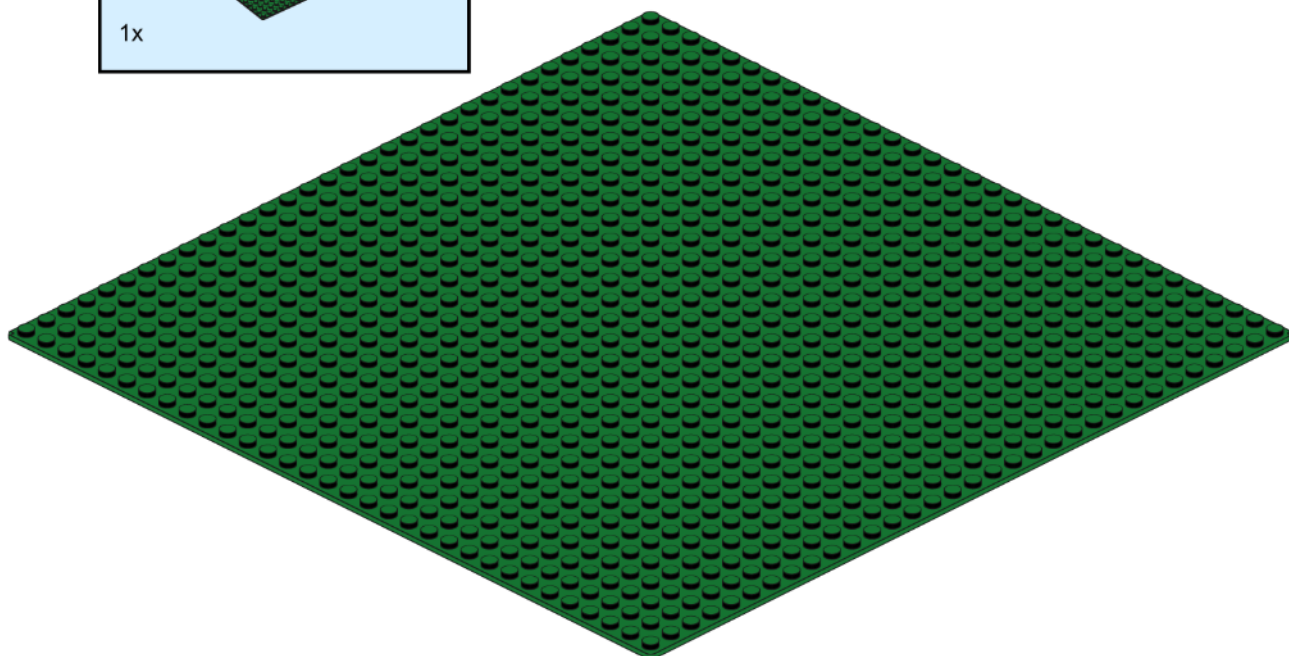
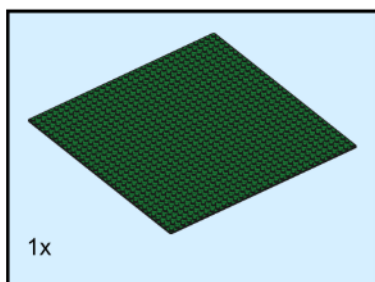
### Parts List

- |                              |                                 |
|------------------------------|---------------------------------|
| 1 32x32 baseplate            | 3 6x8 plate                     |
| 1 1x2 brick, dbg             | 1 8x16 plate                    |
| 1 1x6 brick, dbg             | 2 16x16 plate                   |
| 2 1x8 brick, dbg             | 4 1x1 plate round, trans clear  |
| 3 2x2 brick                  | 1 1x1 tile, black               |
| 7 2x4 brick                  | 1 1x1 tile, white               |
| 2 2x2 corner brick           | 5 1x2 tile, black               |
| 2 3x3 facet brick, dbg       | 8 1x2 tile, white               |
| 1 1x4 technic brick          | 6 1x4 tile, black               |
| 6 1x14 technic brick (1 dbg) | 9 1x4 tile, white               |
| 1 1x1 plate, black           | 184 2x2 tile, black             |
| 1 1x2 plate                  | 23 2x2 tile, white              |
| 2 1x6 plate, dbg             | 18 2x2 tile 45° cut, black      |
| 3 1x8 plate                  | 20 2x2 tile 45° cut, white      |
| 2 2x2 corner platev          | 1 2x2 tile decorated, white     |
| 2 1x4 plate, dbg             | 1 2x2 facet tile (27263), black |
| 1 2x6 plate                  | 1 2x2 facet tile (27263), white |
| 1 2x8 plate                  | 4 2x2 jumper, black             |
| 1 2x16 plate                 | 2 2x2 jumper, white             |

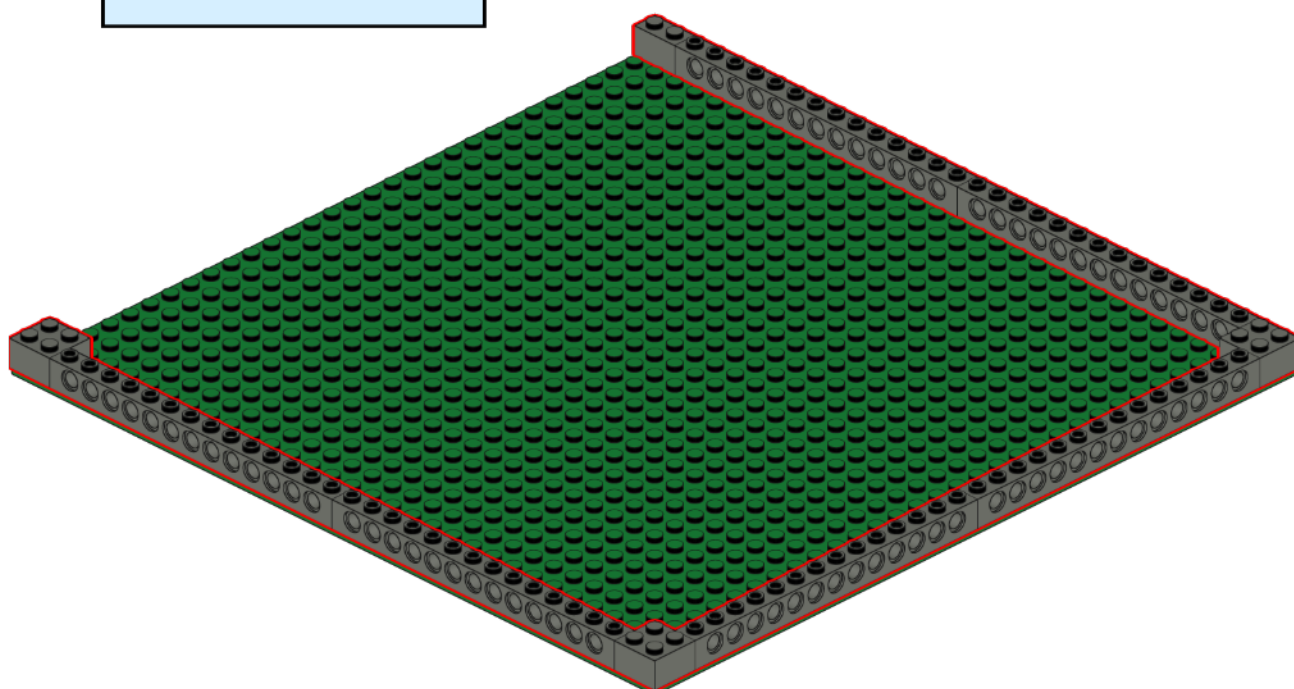
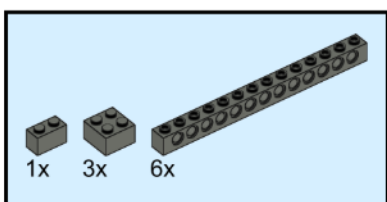




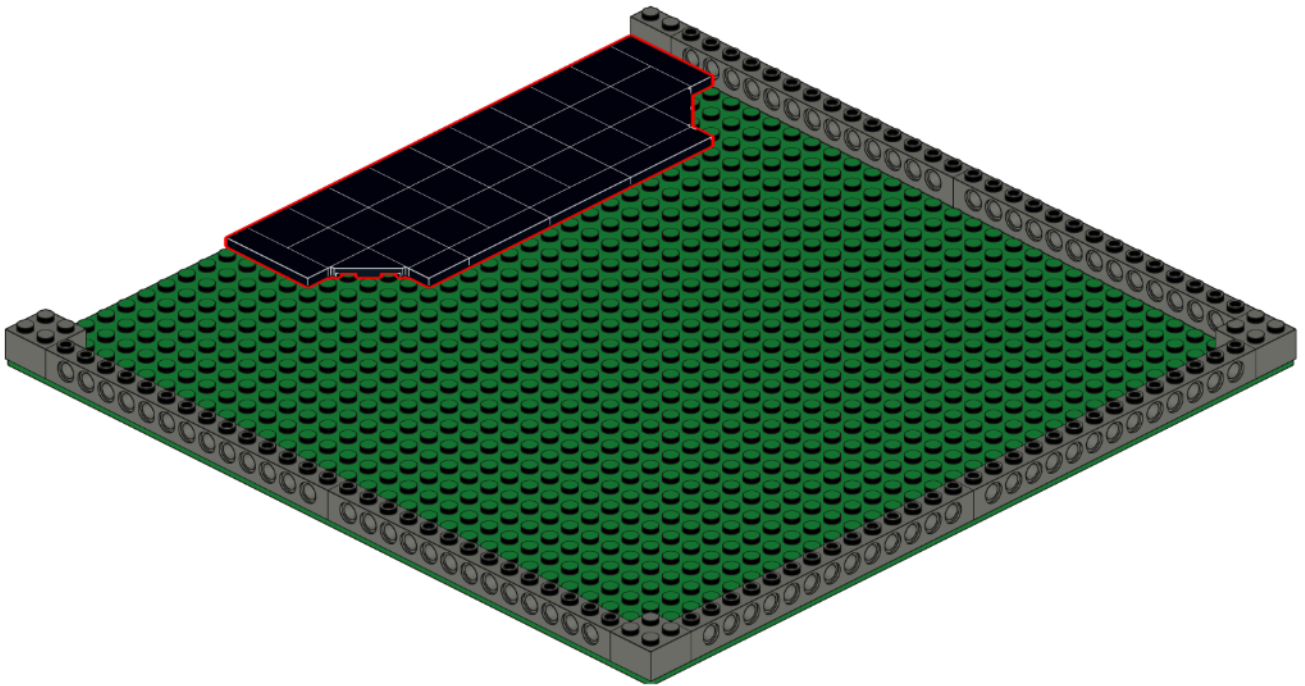
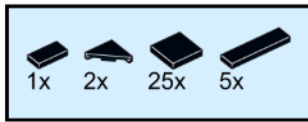
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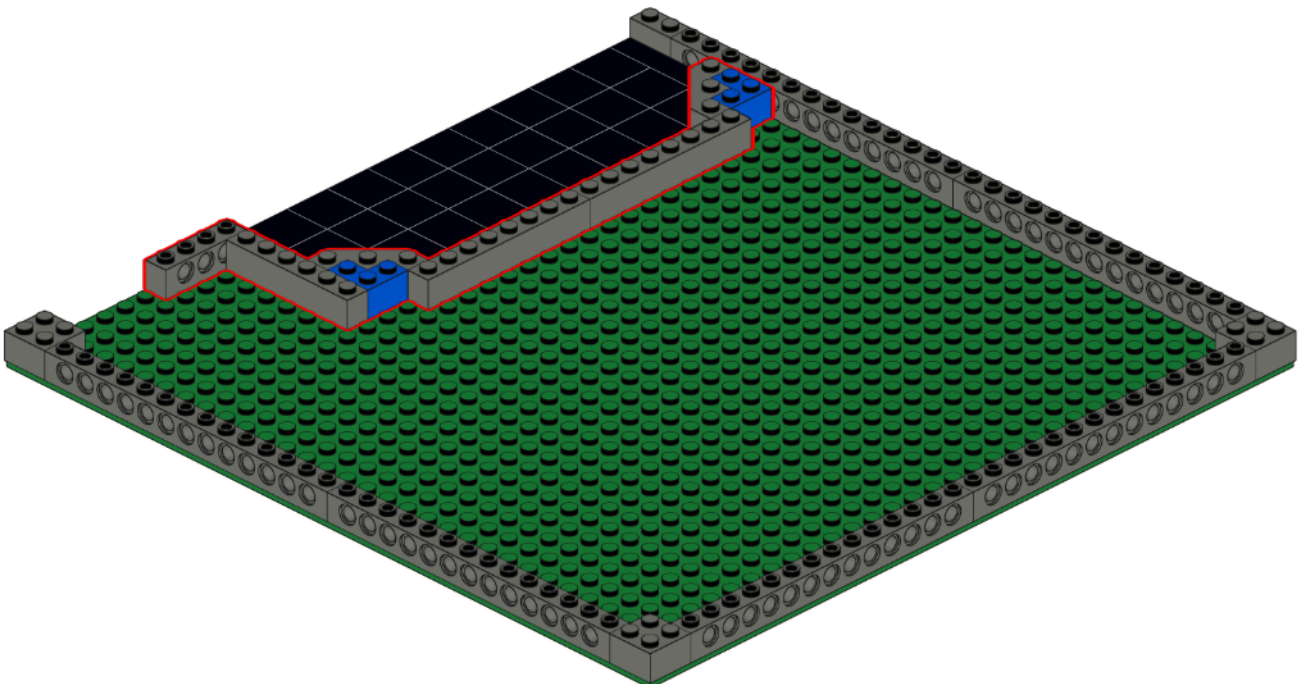
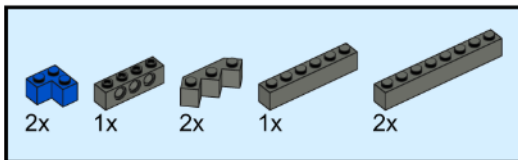
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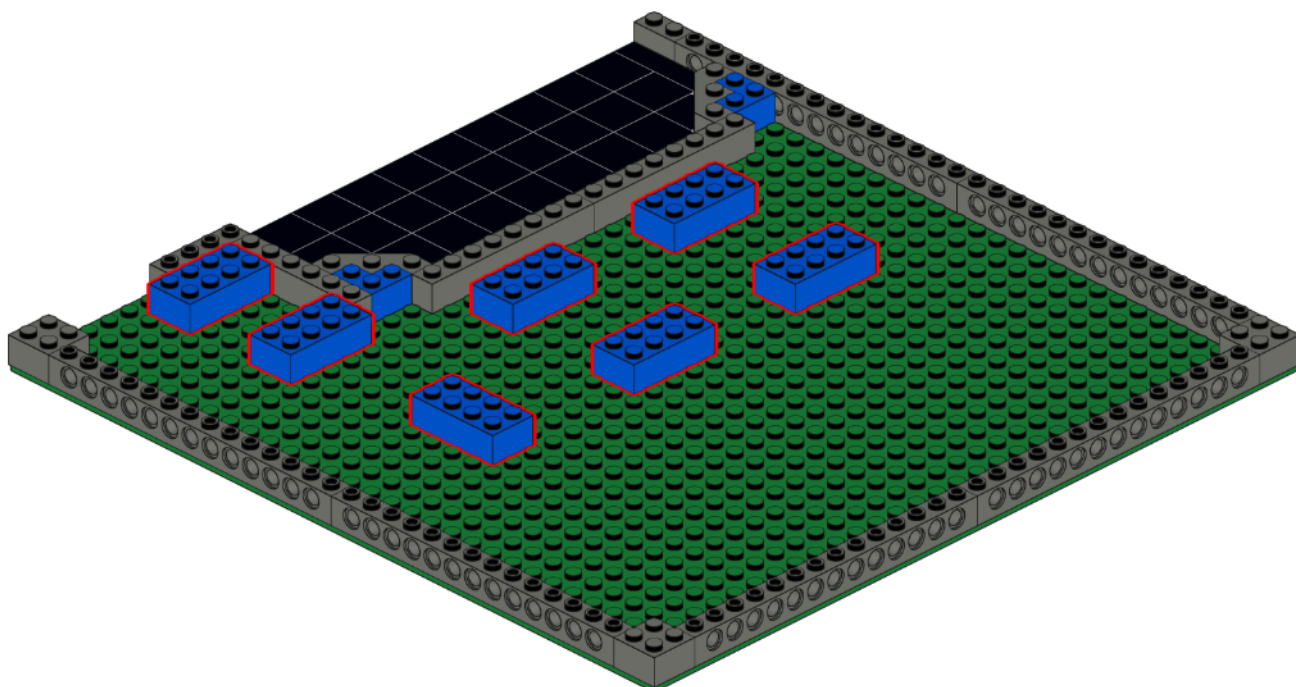
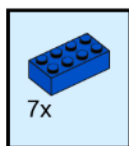


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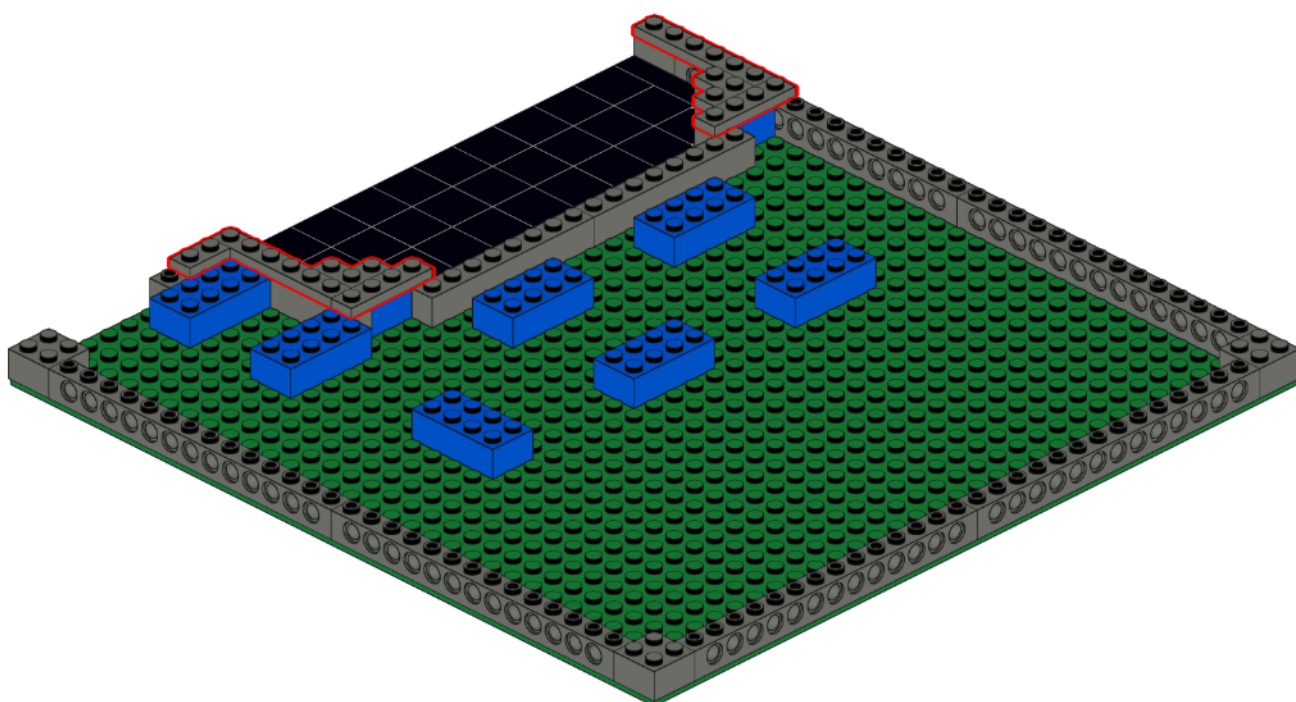
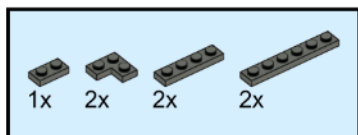


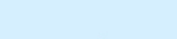


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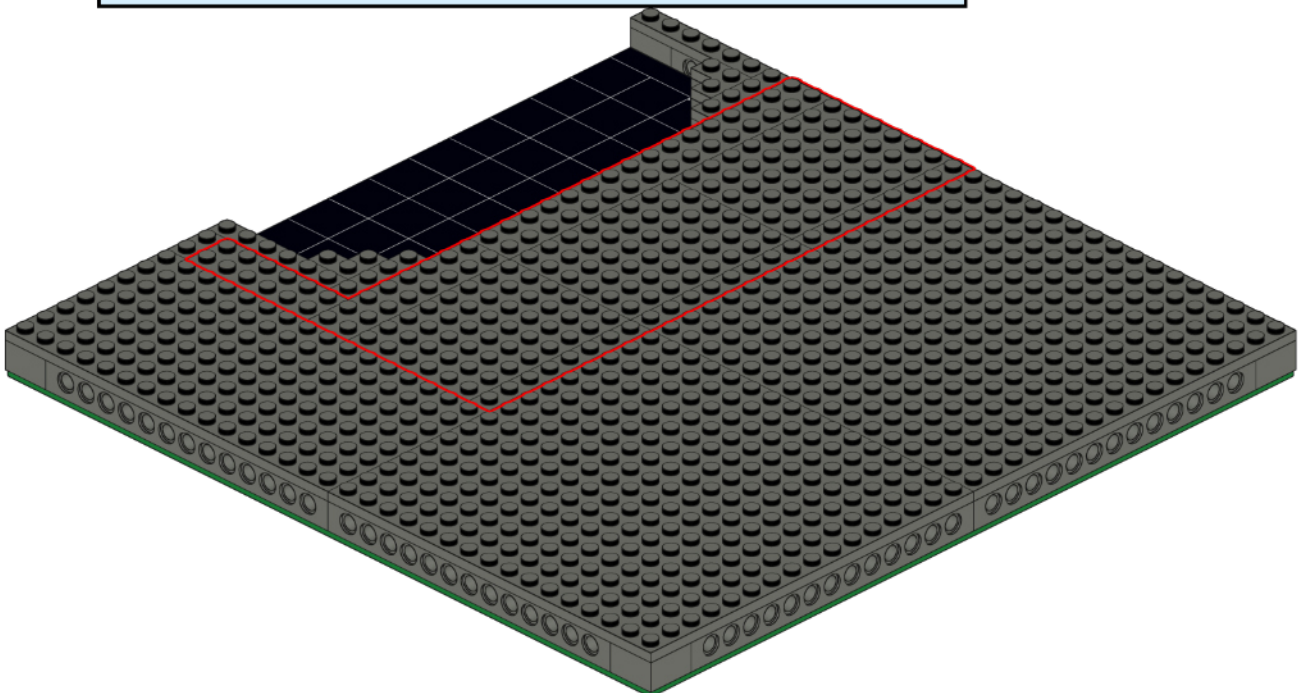
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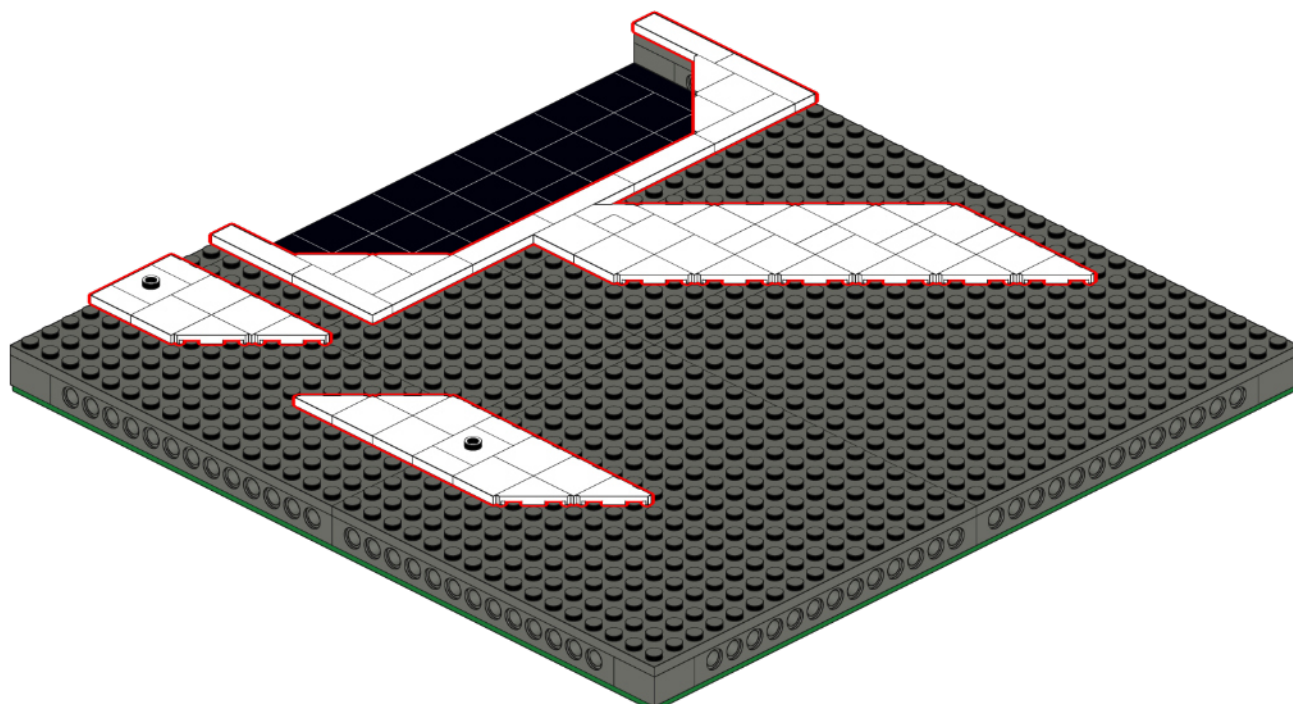
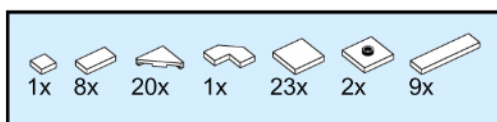
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2x

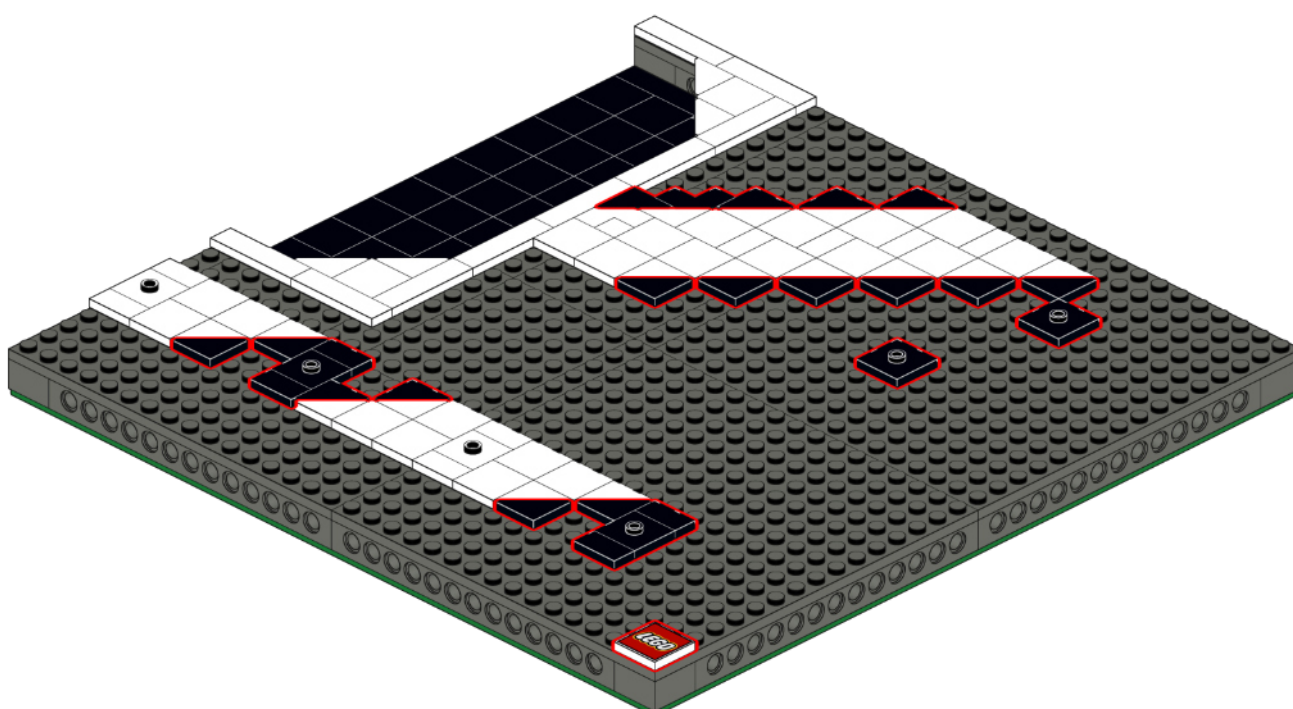




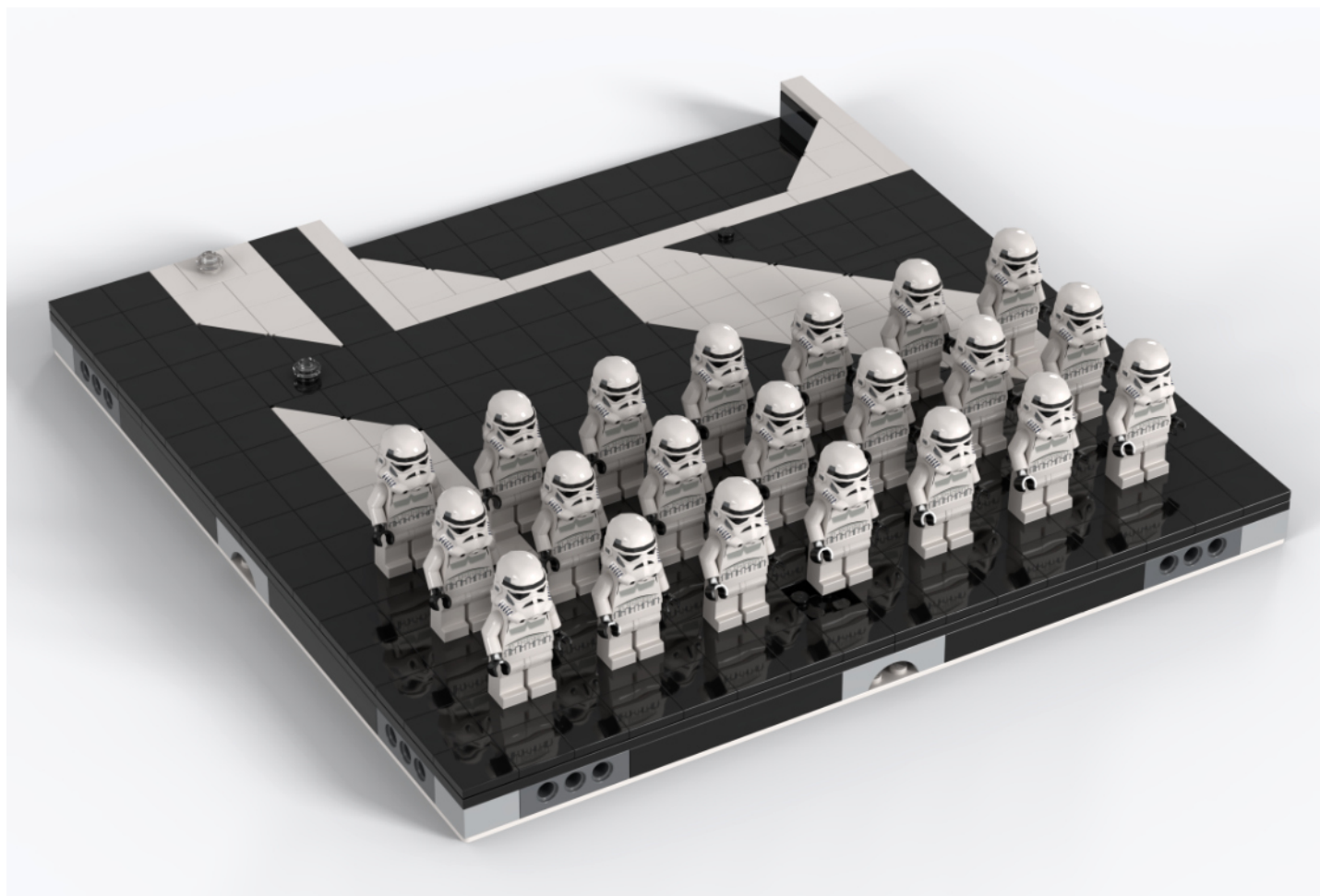
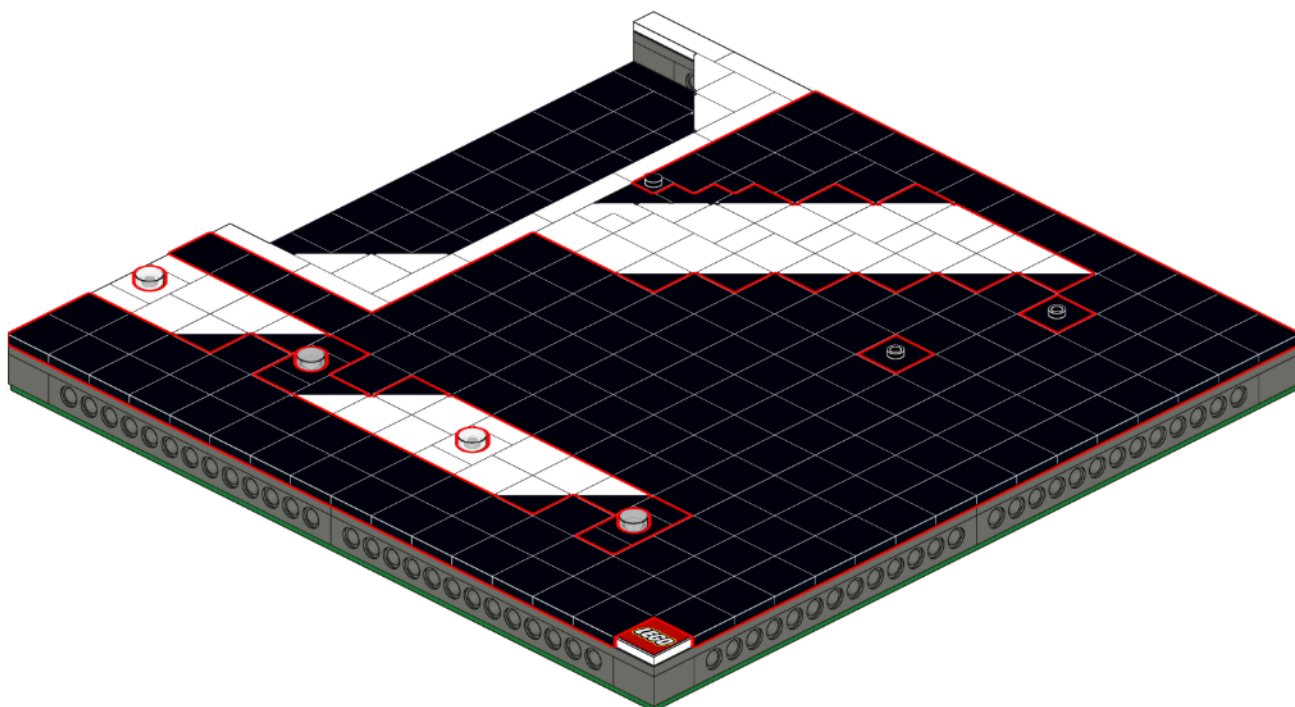
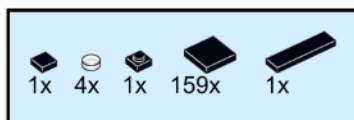
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10



# 11





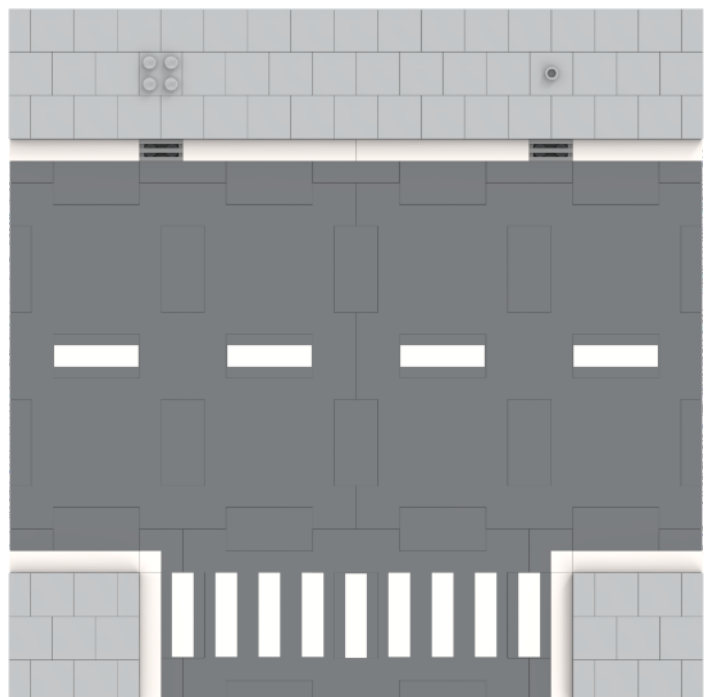


## T-Junction (Road Plates)

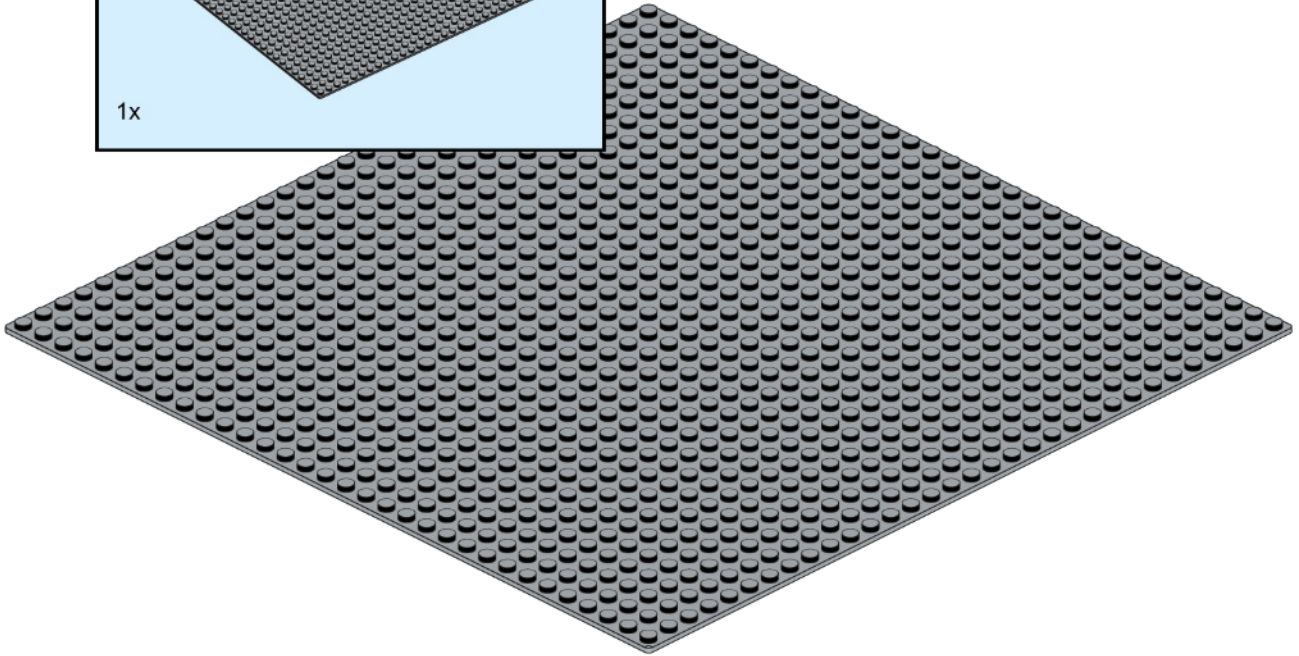
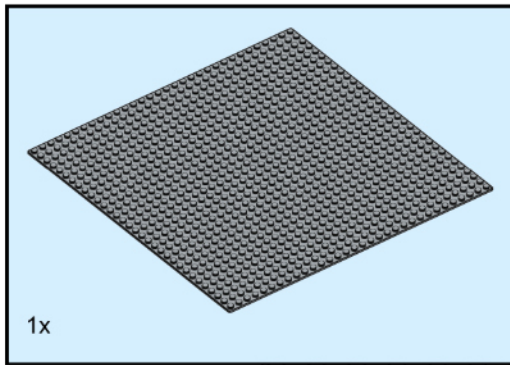
The original LEGO road plates used to come in three models: a straight street, a 90 degree bend and a T-junction. Building a 90 degree corner with square bricks is tricky business and I have yet to find a satisfactory solution for a MILS module. Making a T-junction is an easier way to change the direction of a street. This T-junction is built with LEGO's new road plates.

### Parts List

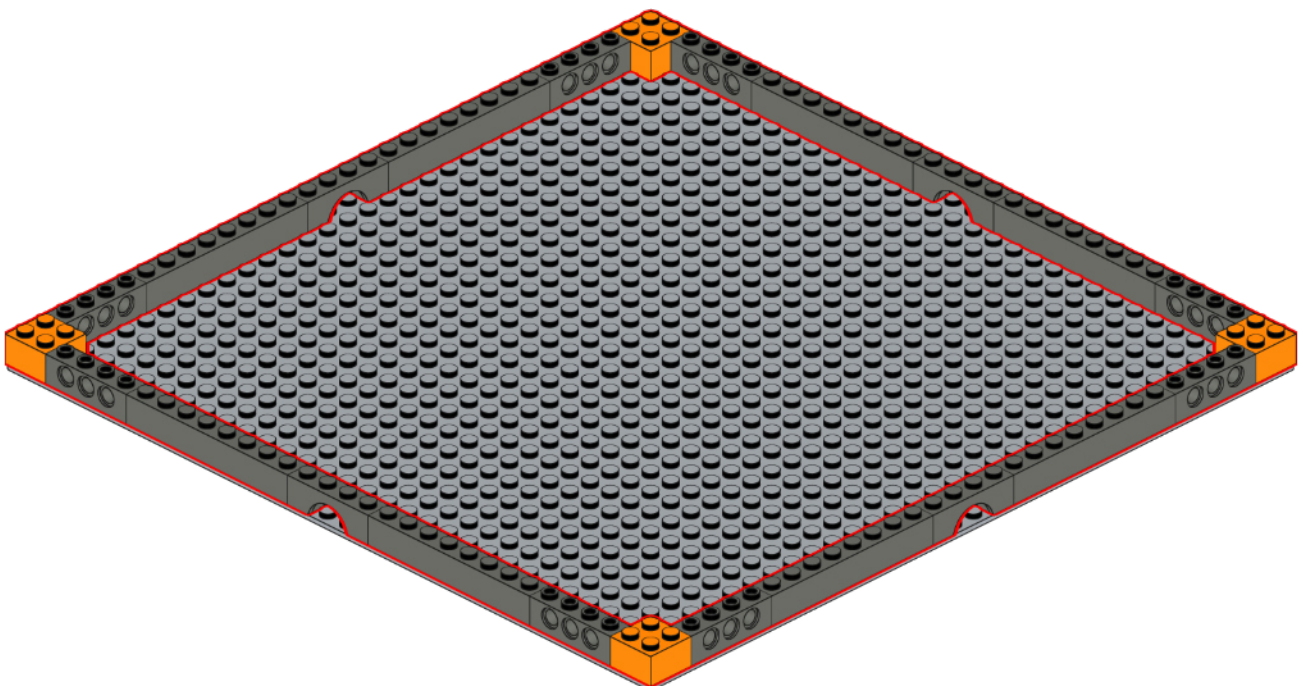
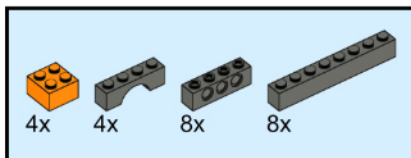
1 32x32 baseplate	6 1x2 tile, dbg
4 1x4 arch brick	12 1x2 tile, lbg
8 1x8 brick	9 1x4 tile, dbg
19 2x2 brick	6 1x6 tile, white
8 1x4 technic brick	2 1x8 tile, white
3 1x8 plate	58 2x2 tile, lbg
1 2x2 plate, lbg	14 2x4 tile, dbg
2 4x4 plate 45° wedge	7 2x4 tile decorated, dbg
4 4x8 plate	2 2x2 corner tile, dbg
2 6x6 plate	2 1x2 grille tile, flat silver
4 6x8 plate	1 2x2 jumper, lbg
2 8x8 plate	1 8x16x2/3 road plate, decorated, dbg
2 1x1 tile, white	2 16x16x2/3 road plate, dbg



1

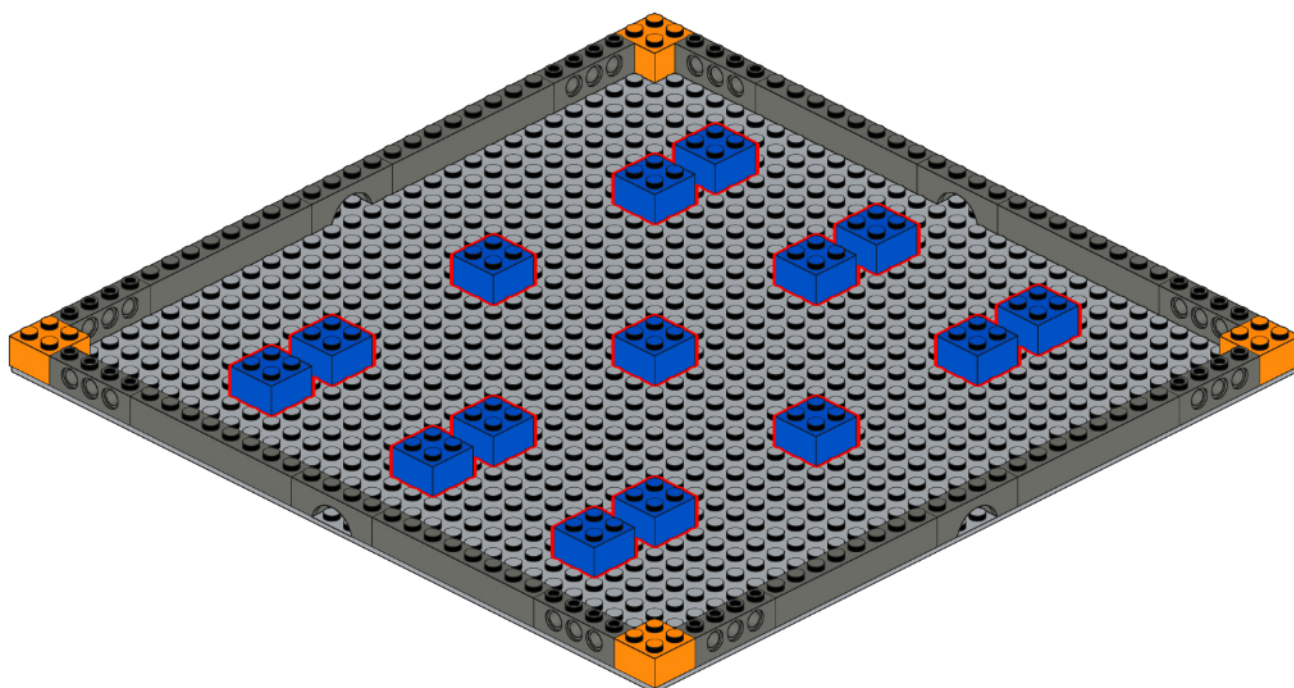


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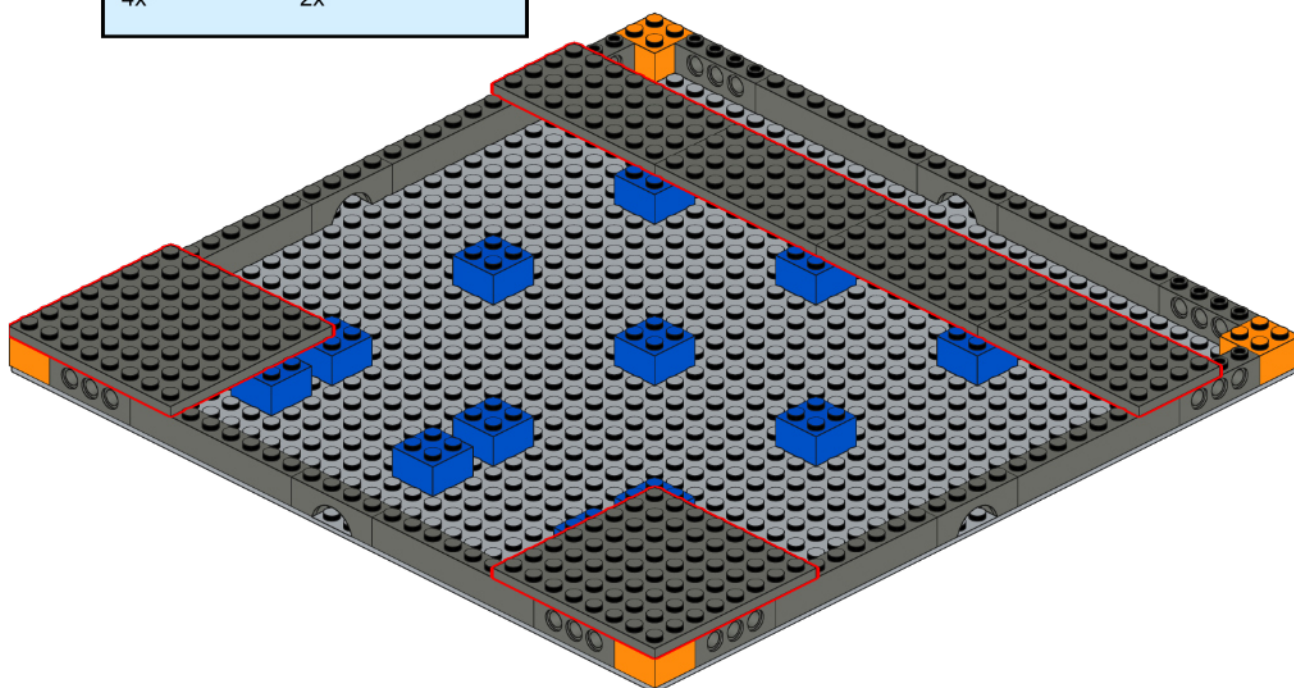
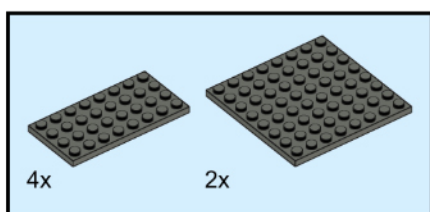




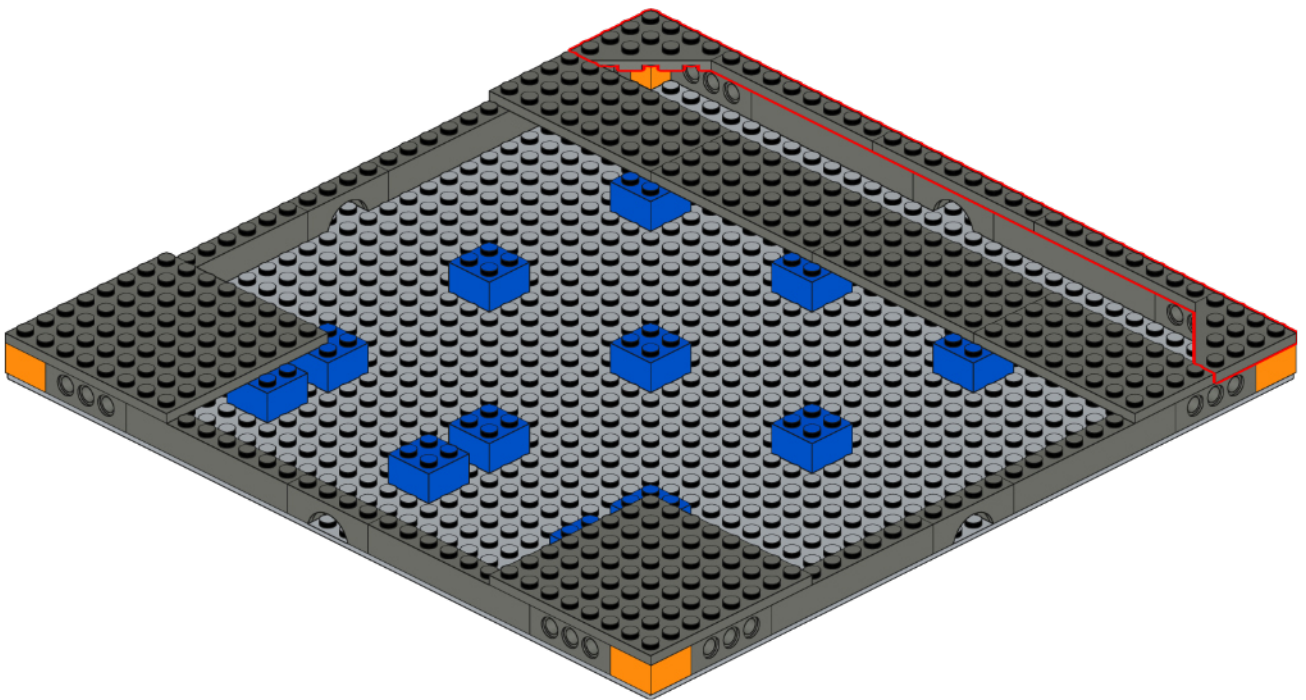
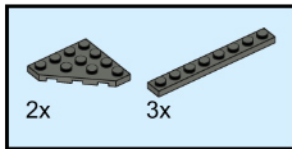
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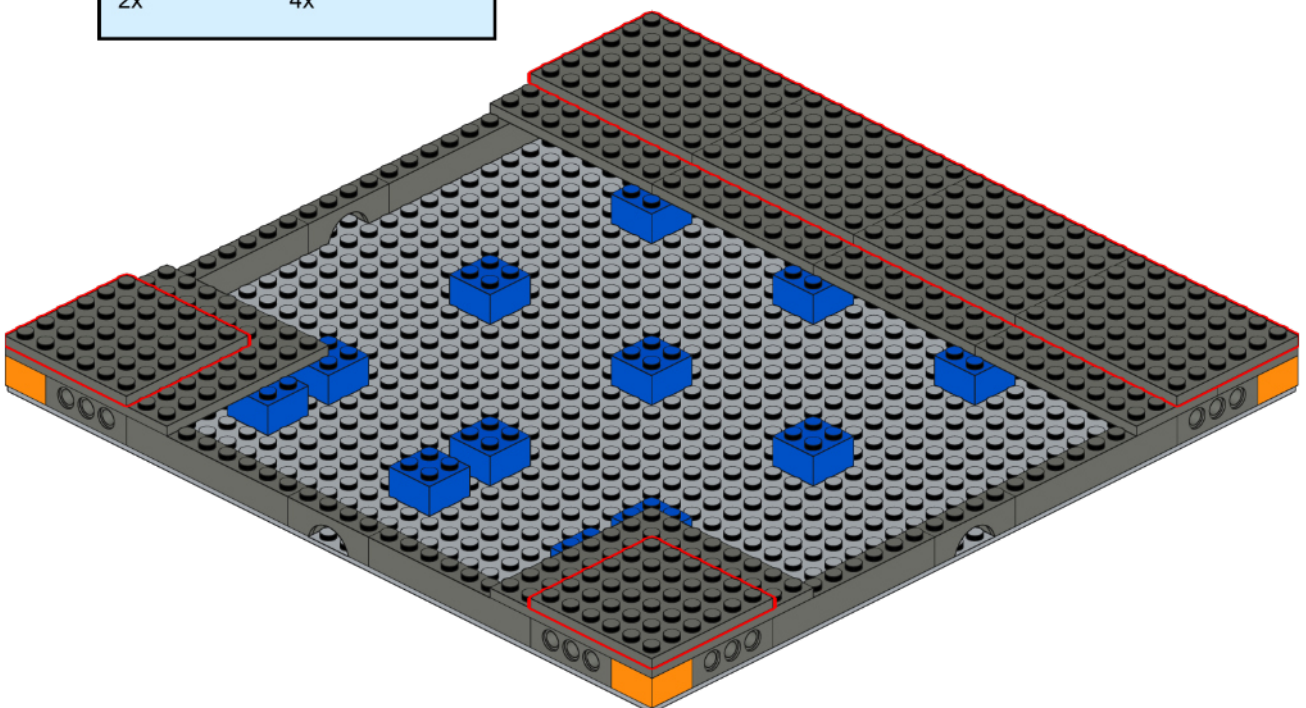
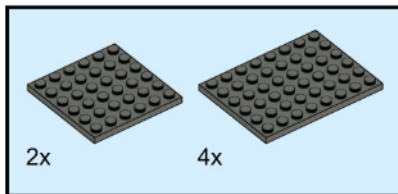
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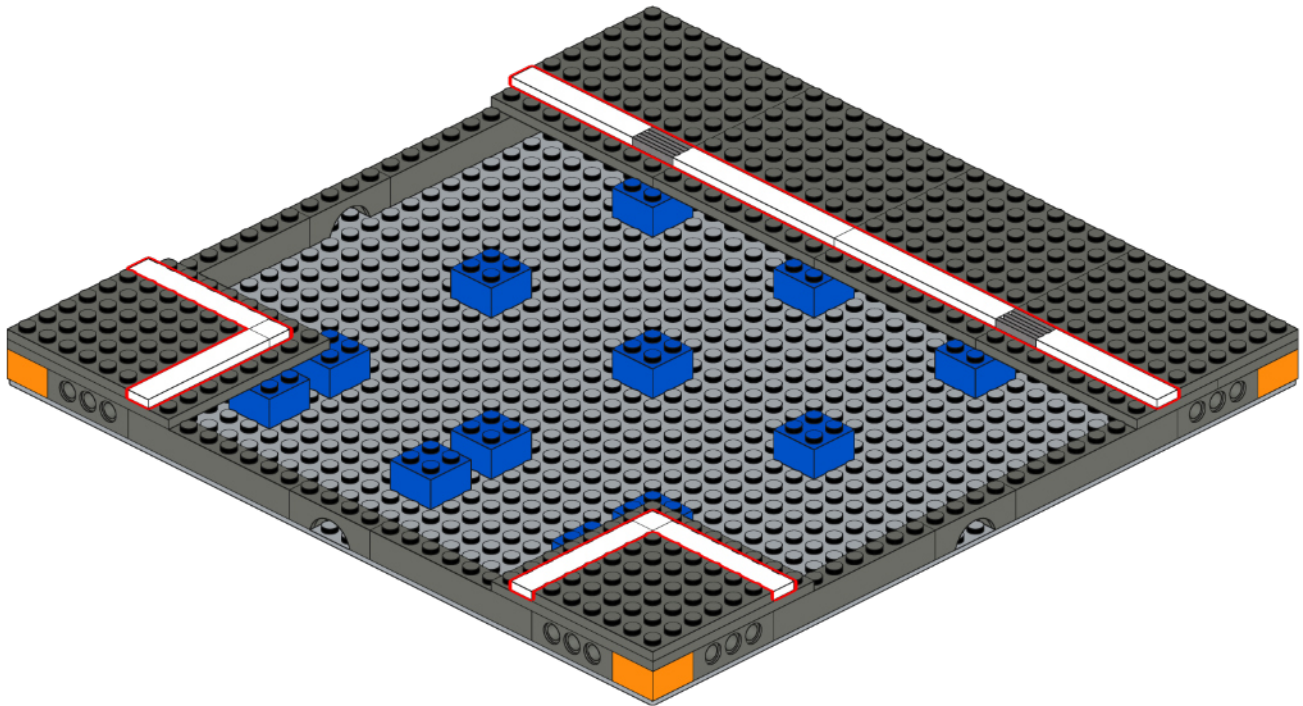
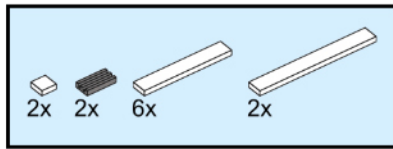


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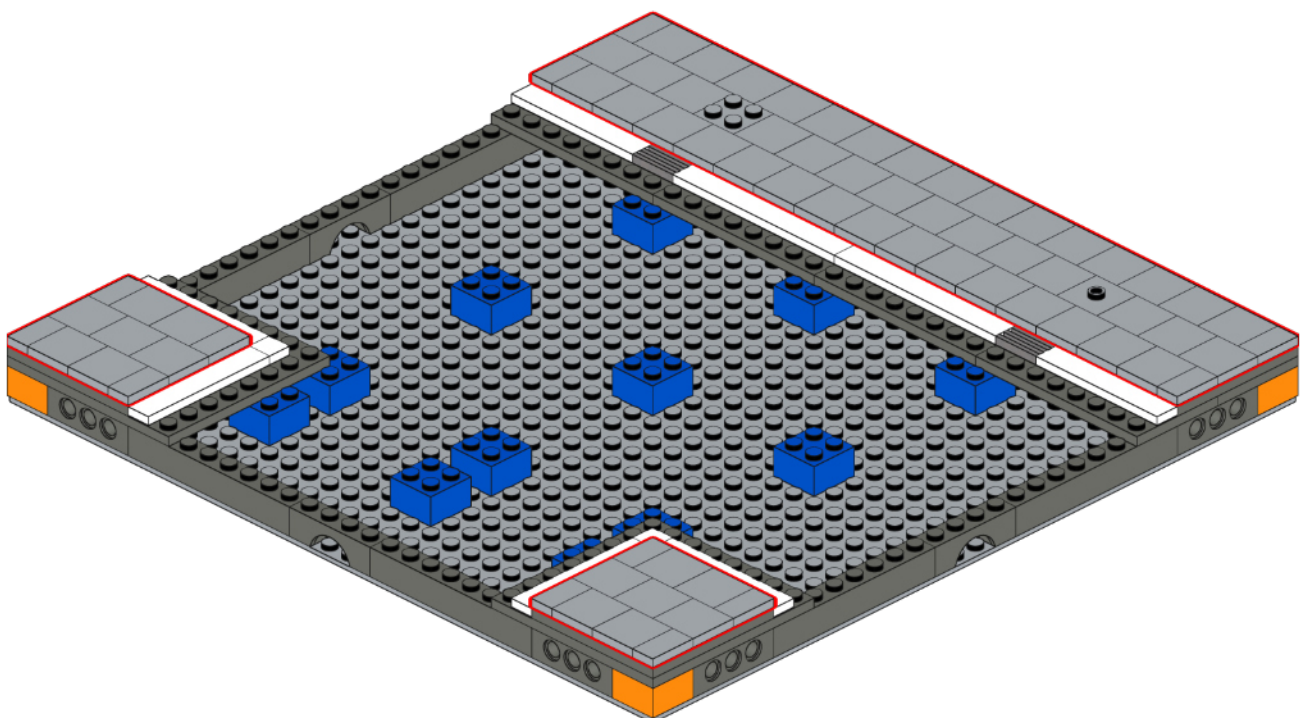
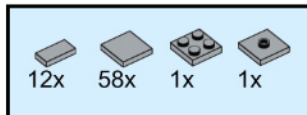




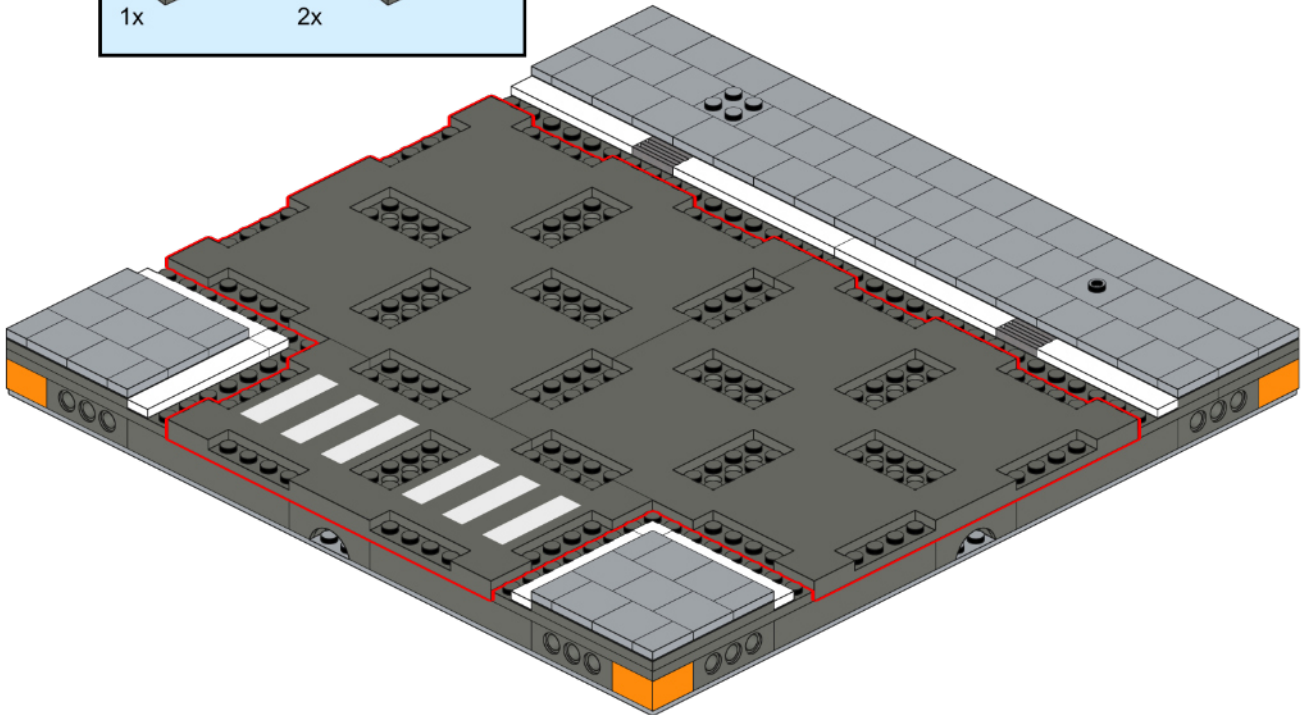
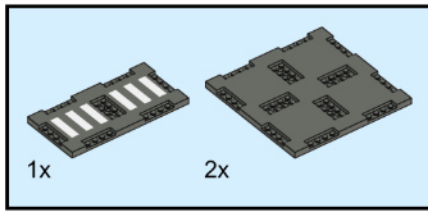
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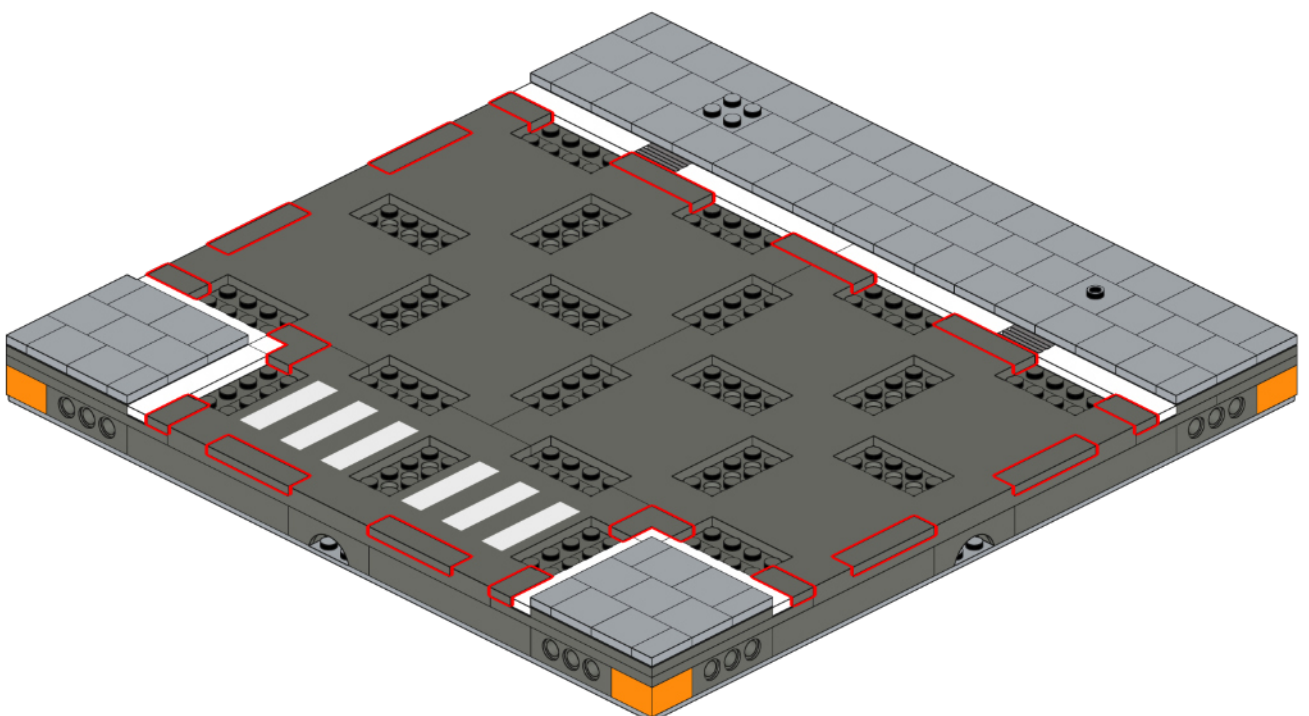
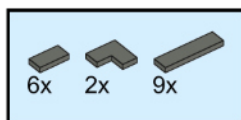
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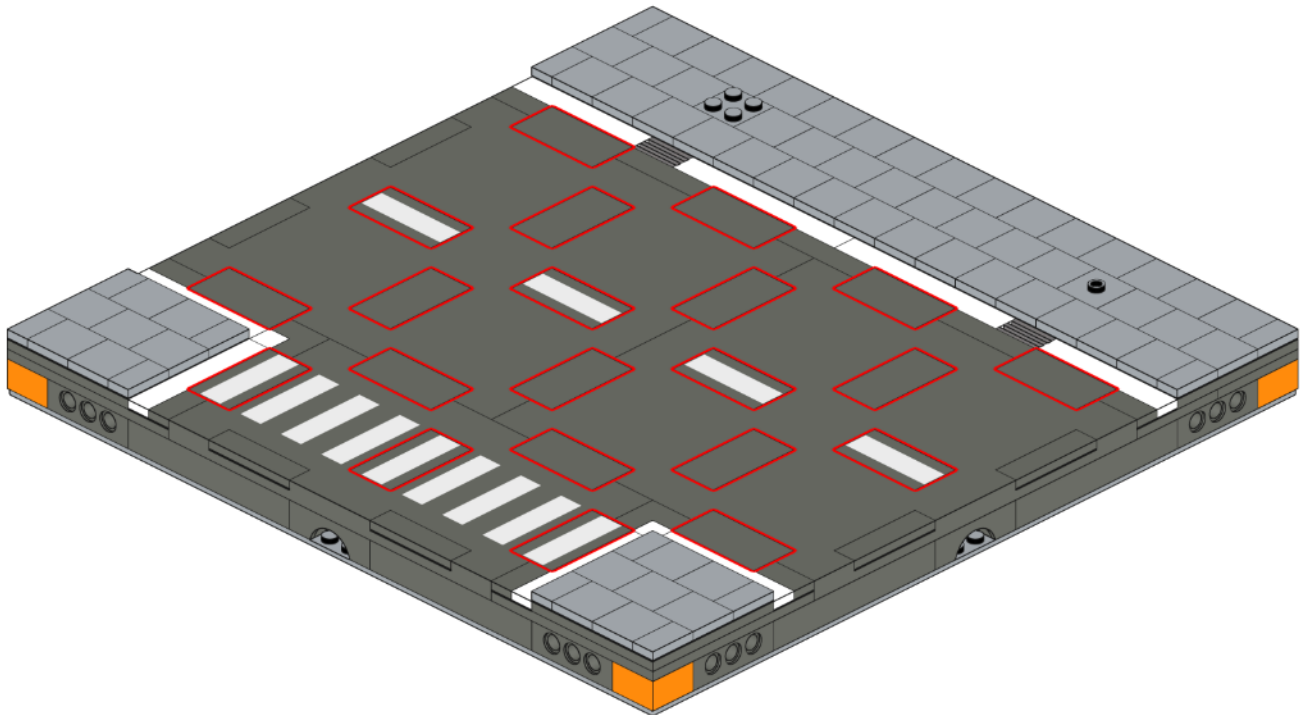
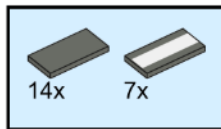


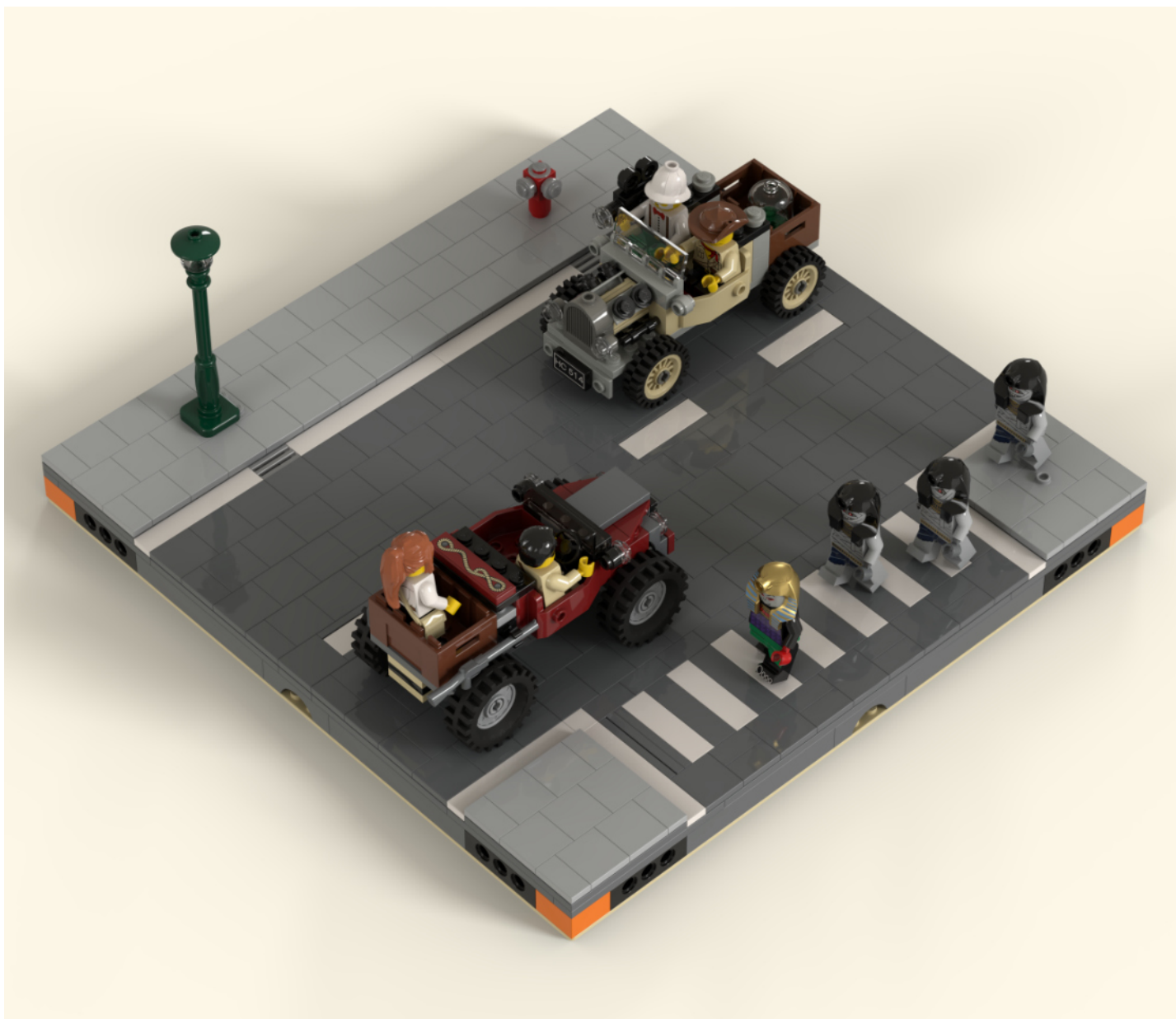
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# 11



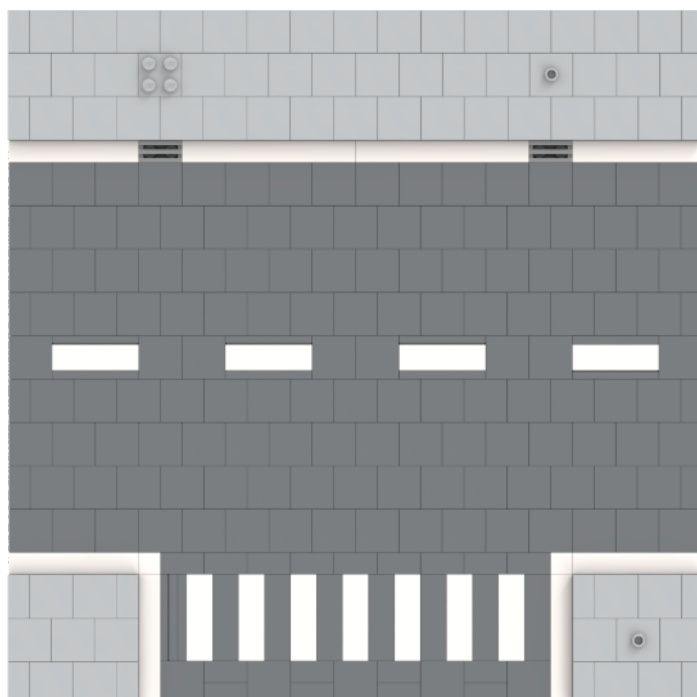


## T-Junction (Standard Plates)

In an exercise of comparison and contrast, this T-Junction is built with standard plates and tiles. Here the zebra crossing is built using the same not-quite-snot technique used for the lane dividers by stacking bricks, plates, and tiles. These stacks are inserted sideways and unattached into appropriate voids in the base.

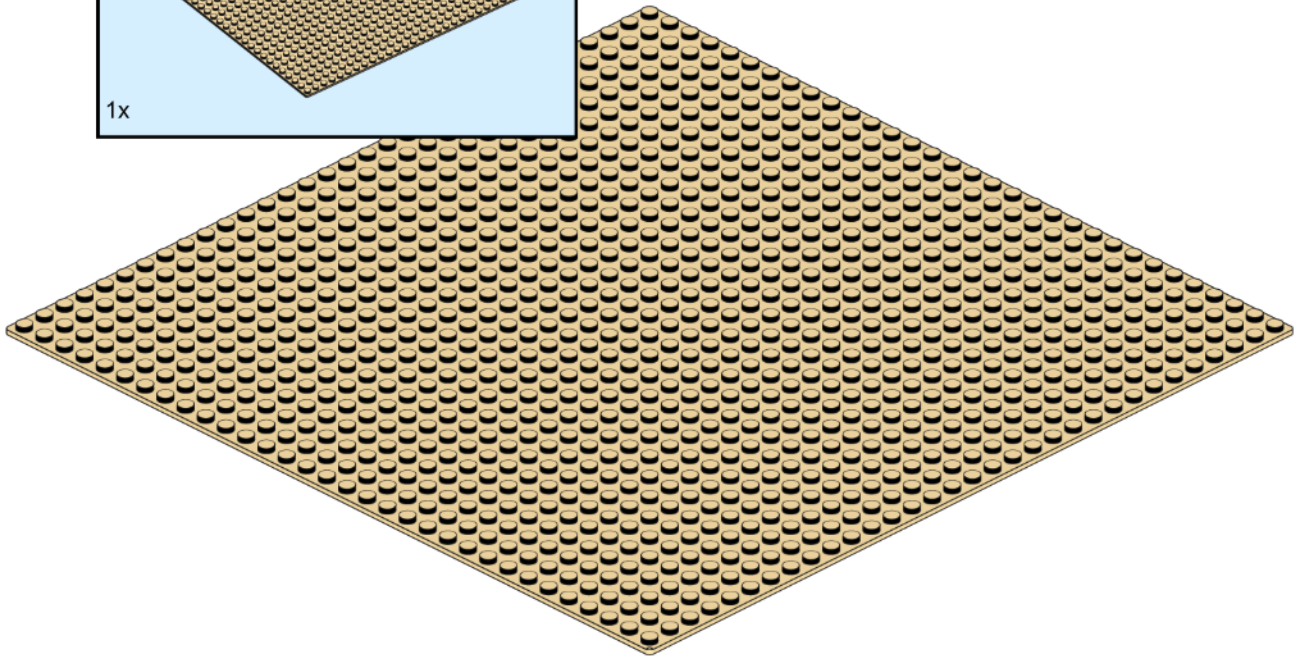
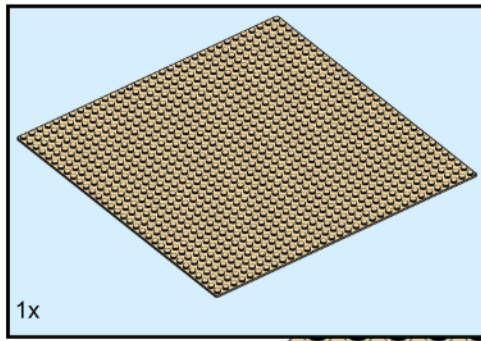
### Parts List

1 32x32 baseplate	2 2x14 plate
4 1x4 arch brick	2 2x16 plate
7 1x4 brick, dbg	2 4x4 plate 45° wedge
11 1x4 brick, white	2 6x6 plate
8 1x8 brick	4 6x8 plate
4 2x2 brick	4 8x16 plate
16 2x4 brick	2 1x1 tile, white
8 1x4 technic brick	25 1x2 tile, dbg
1 1x2 plate	12 1x2 tile, lbg
6 1x8 plate	5 1x4 tile, dbg
6 1x4 plate, dbg	6 1x6 tile, white
14 2x2 plate	2 1x8 tile, white
1 2x2 plate, lbg	137 2x2 tile, dbg
3 2x4 plate	57 2x2 tile, lbg
4 2x6 plate	2 1x2 grille tile, flat silver
	2 2x2 jumper, lbg

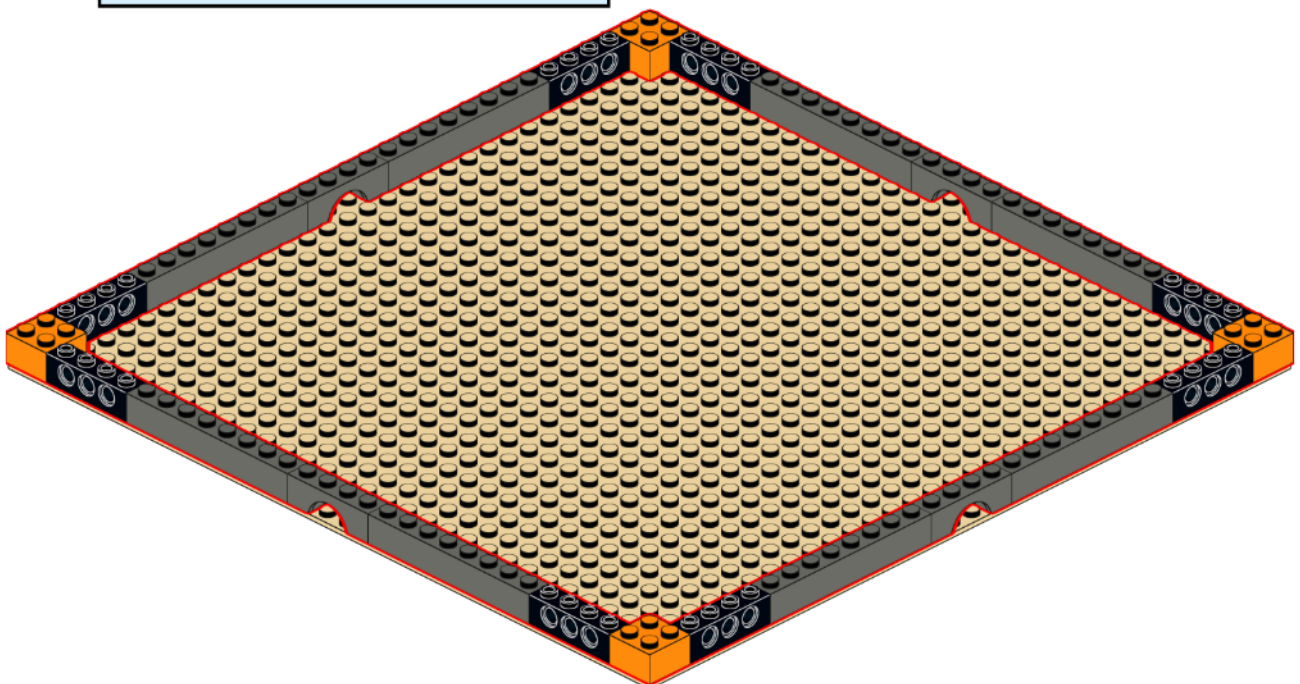
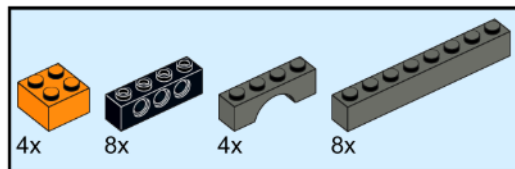




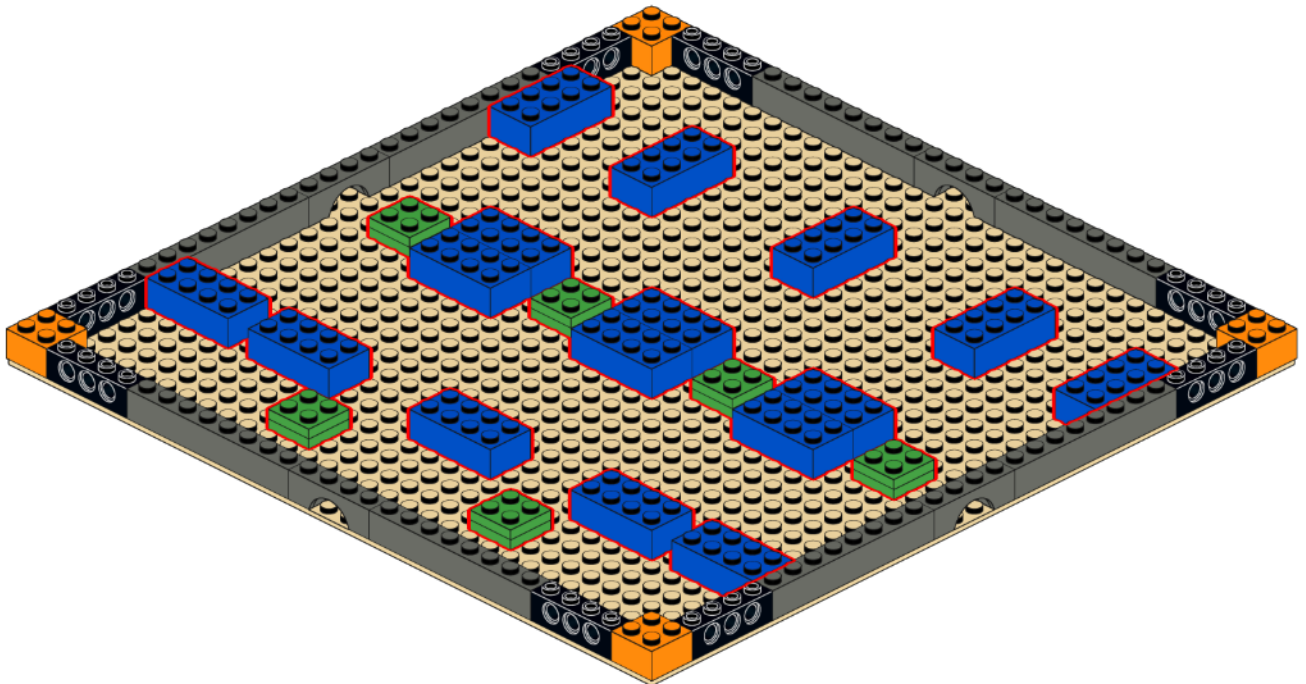
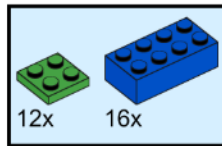
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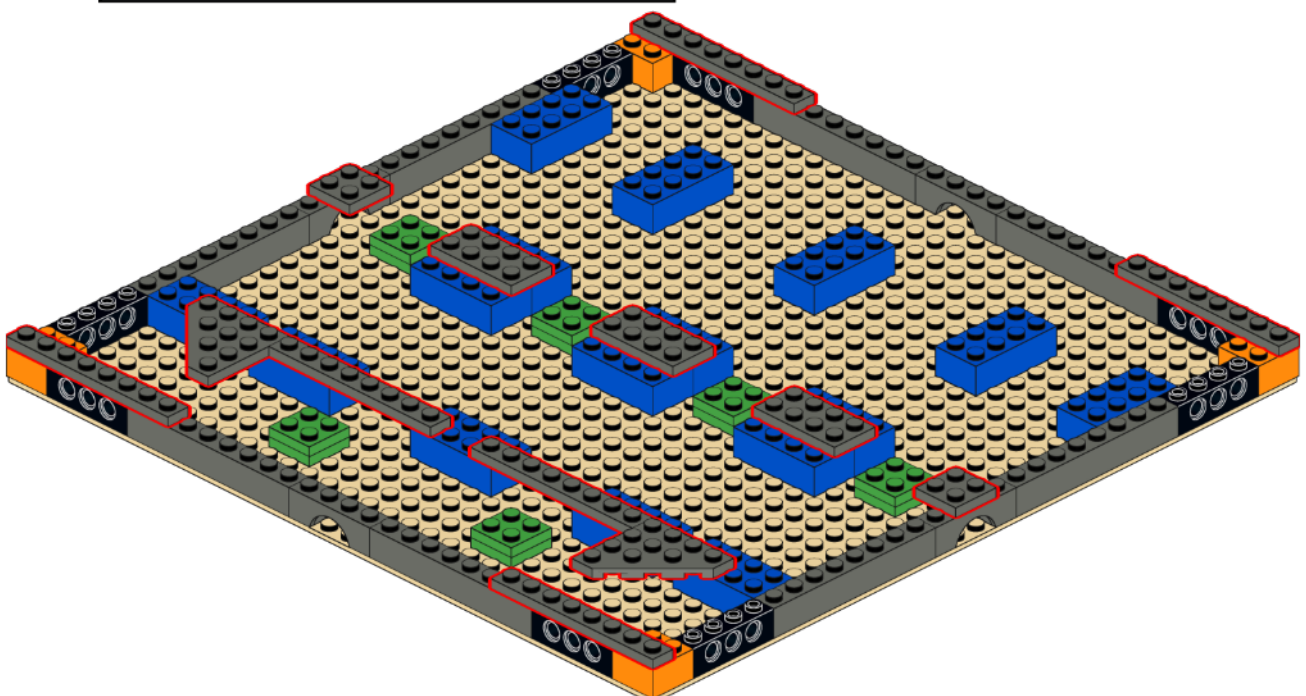
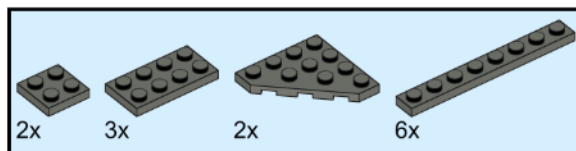
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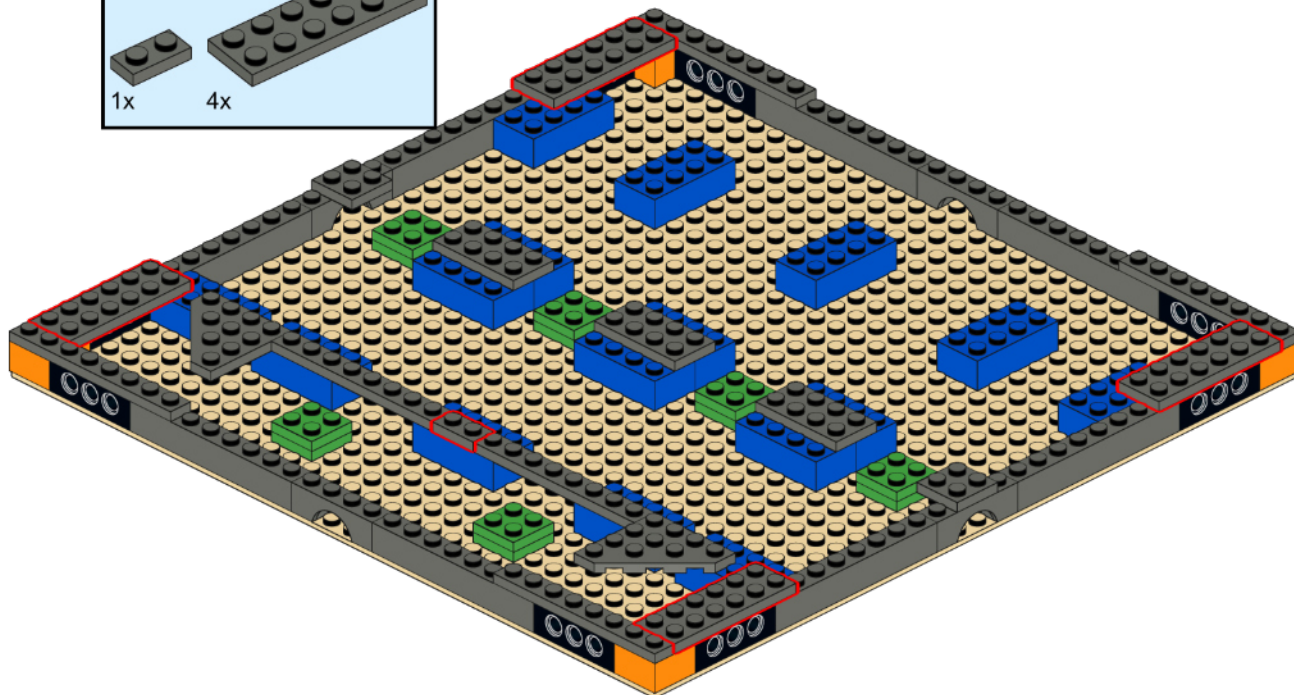
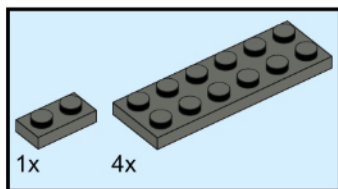


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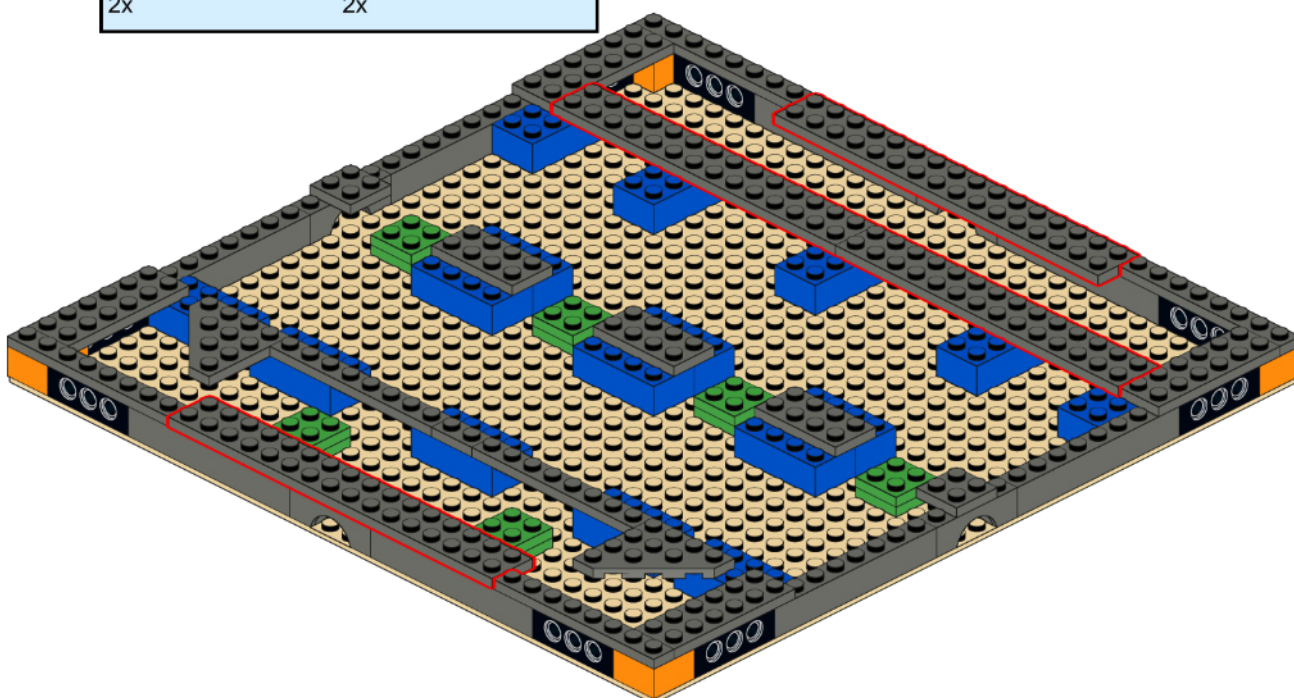
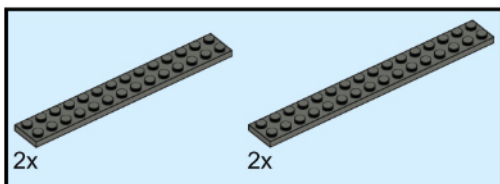




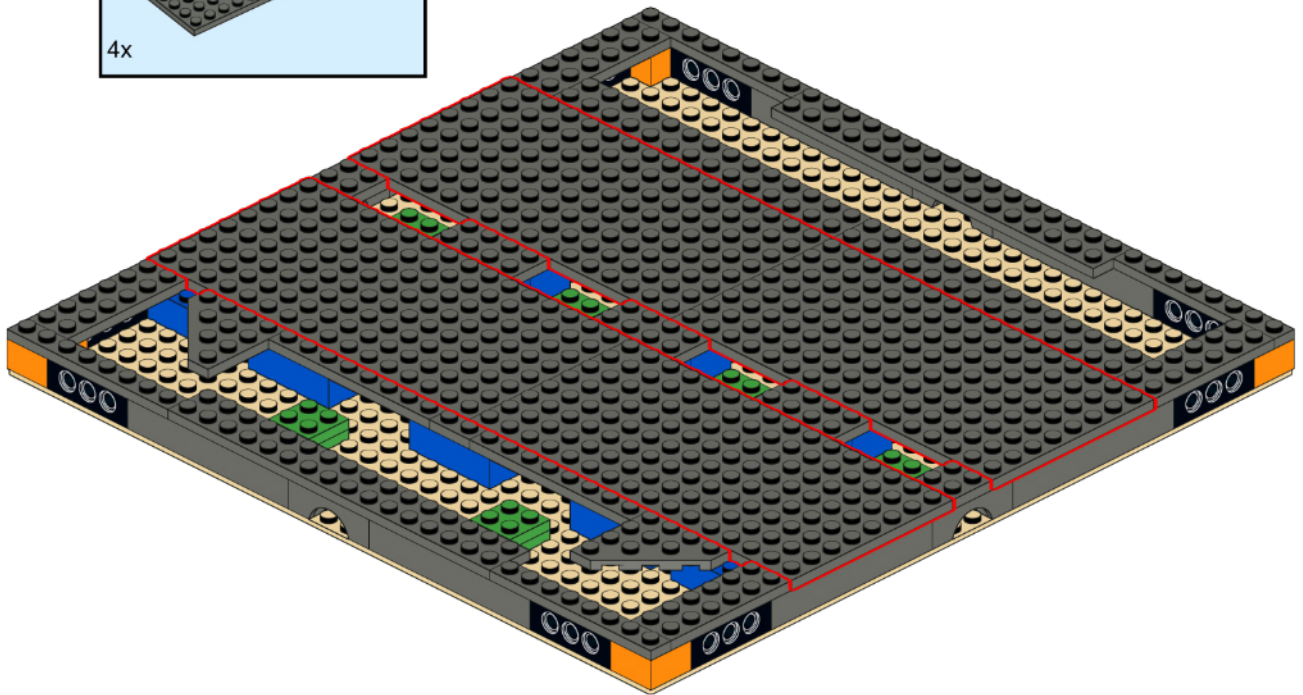
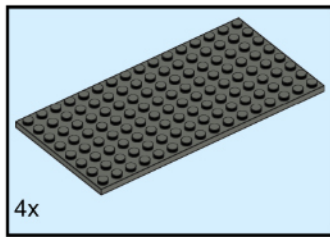
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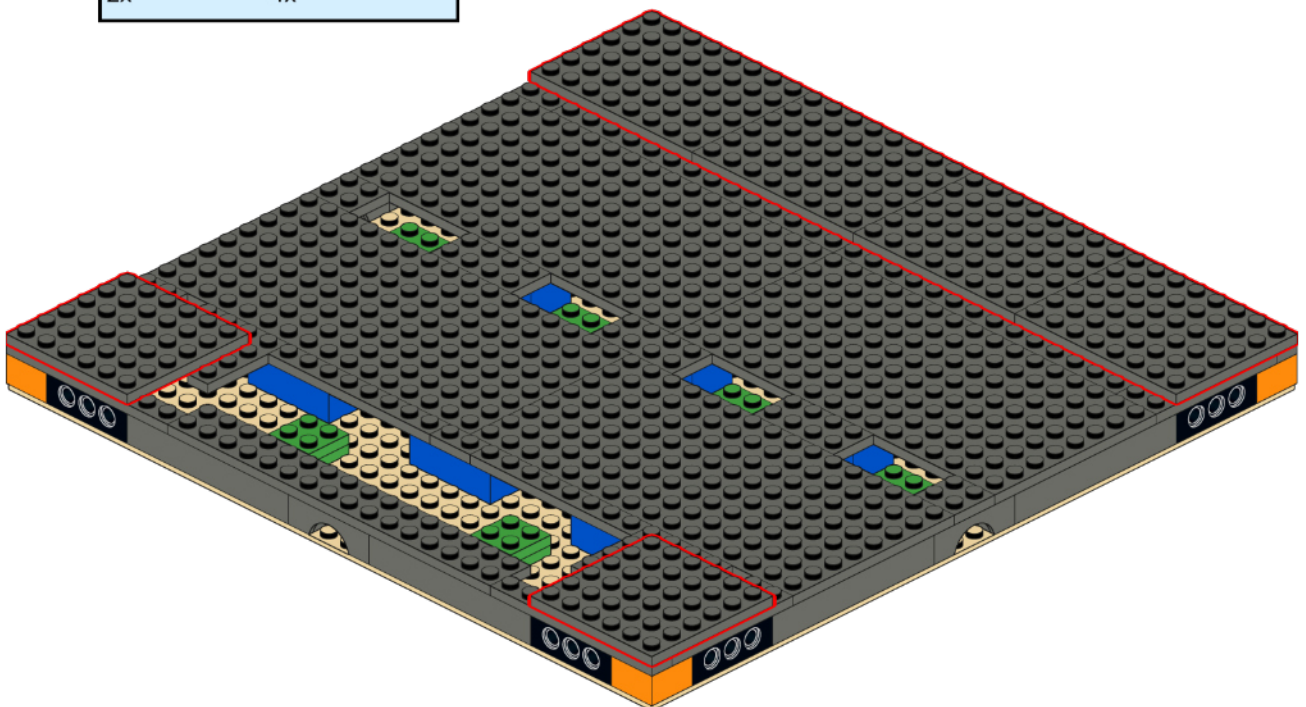
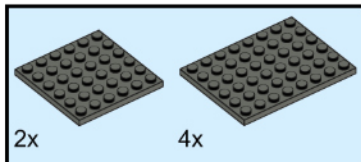
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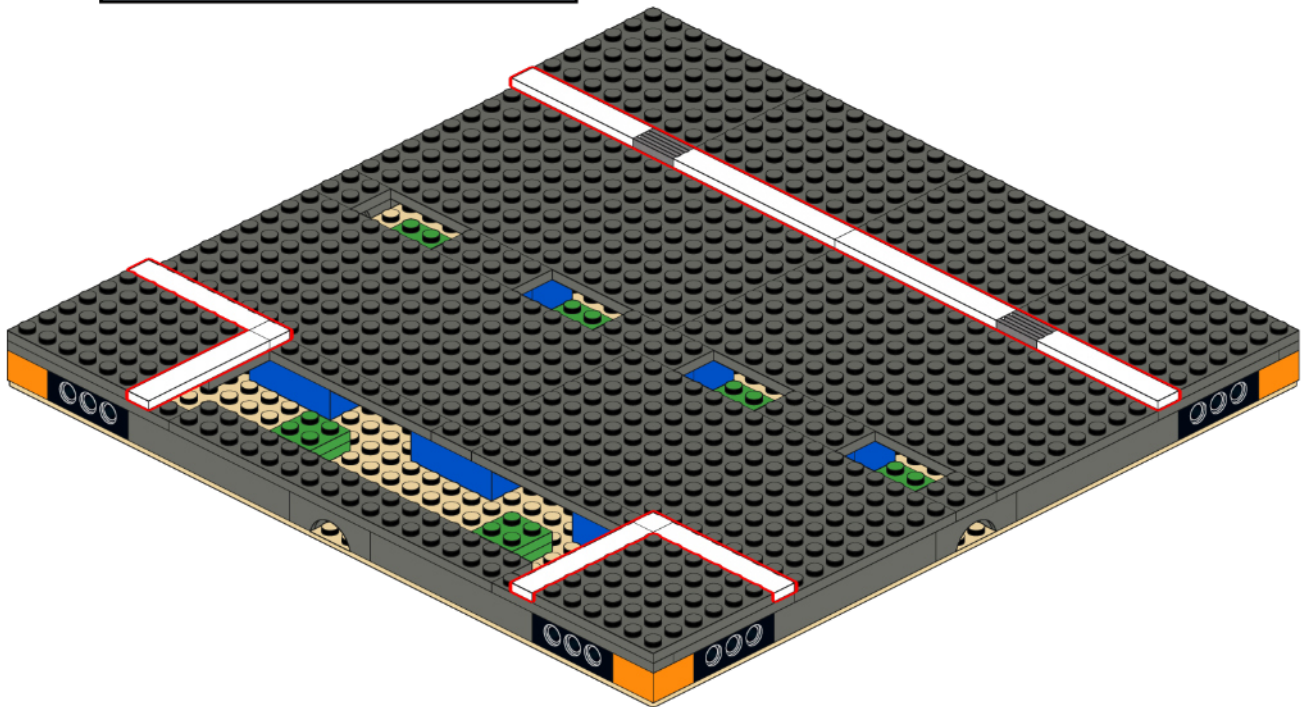
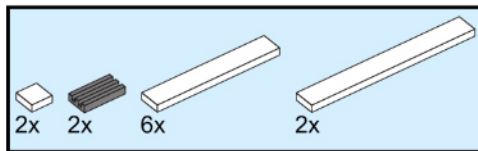


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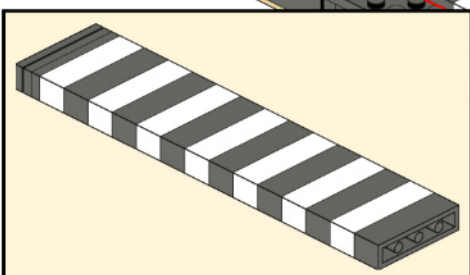
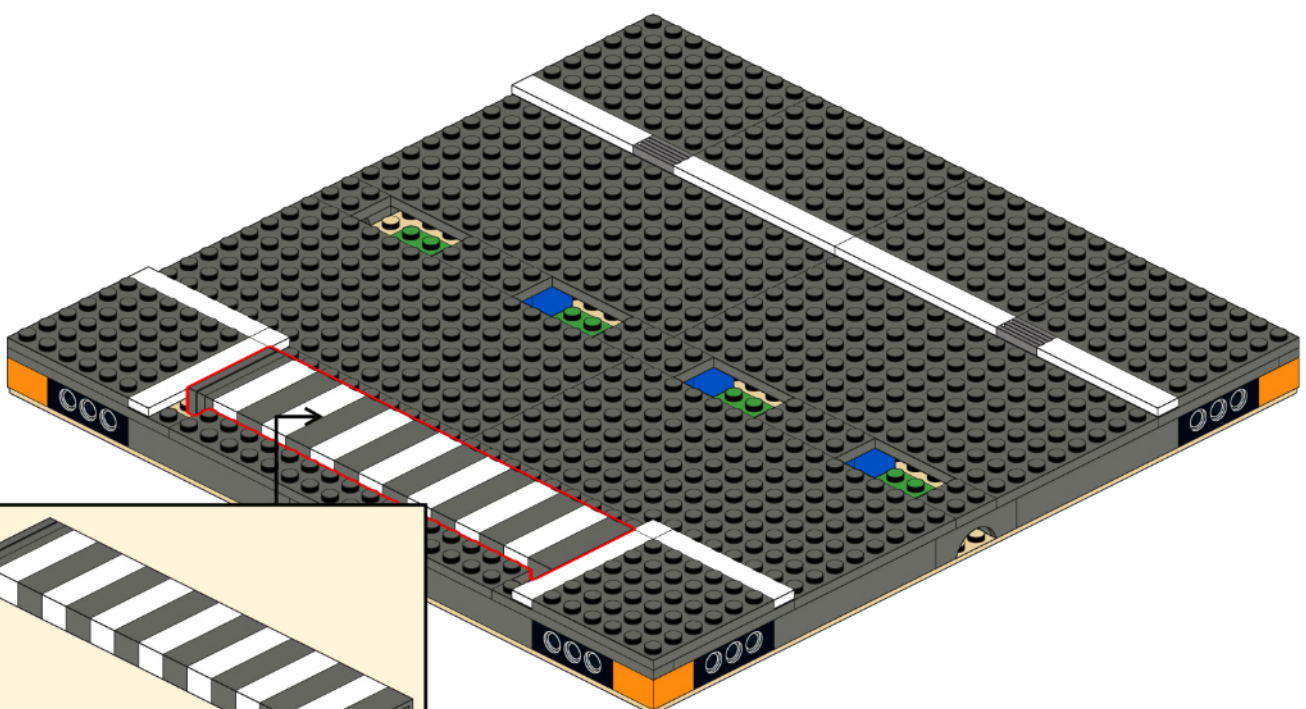
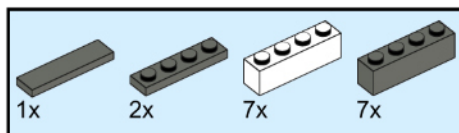




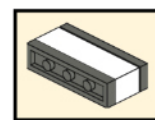
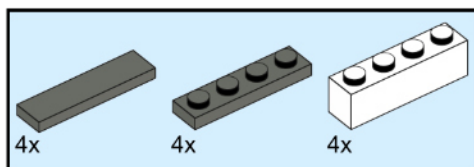
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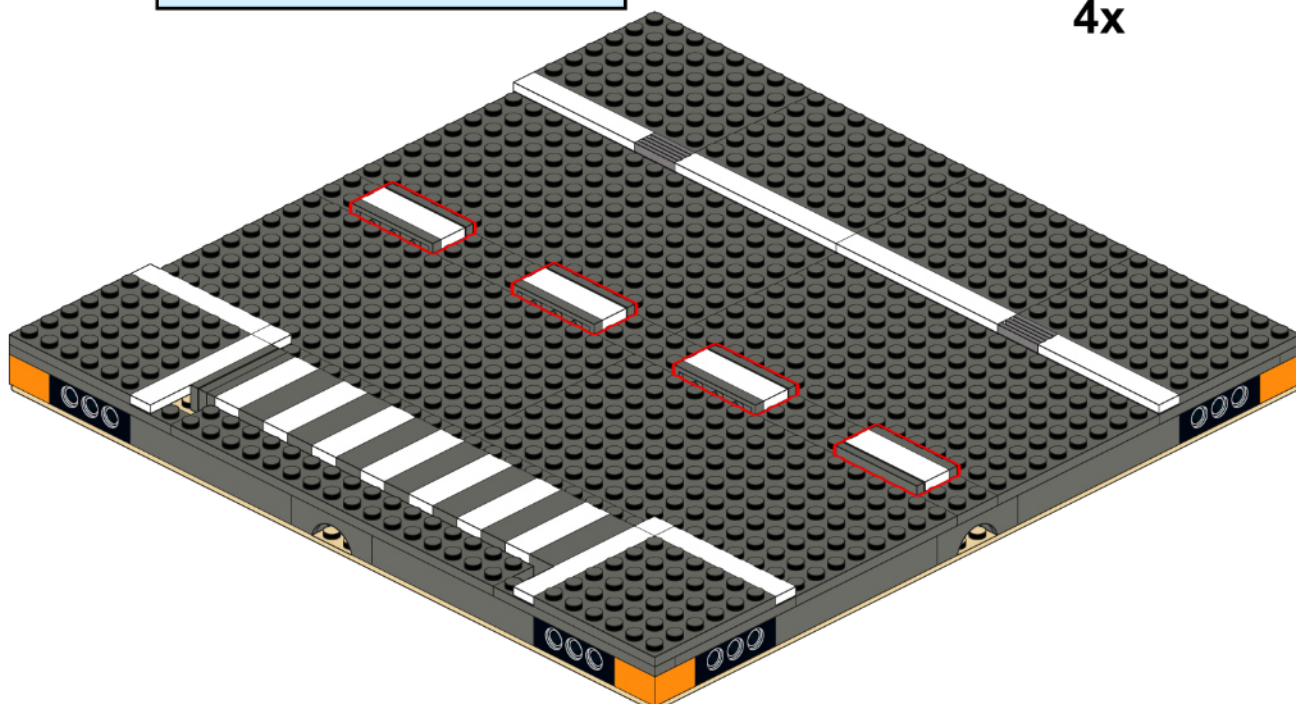
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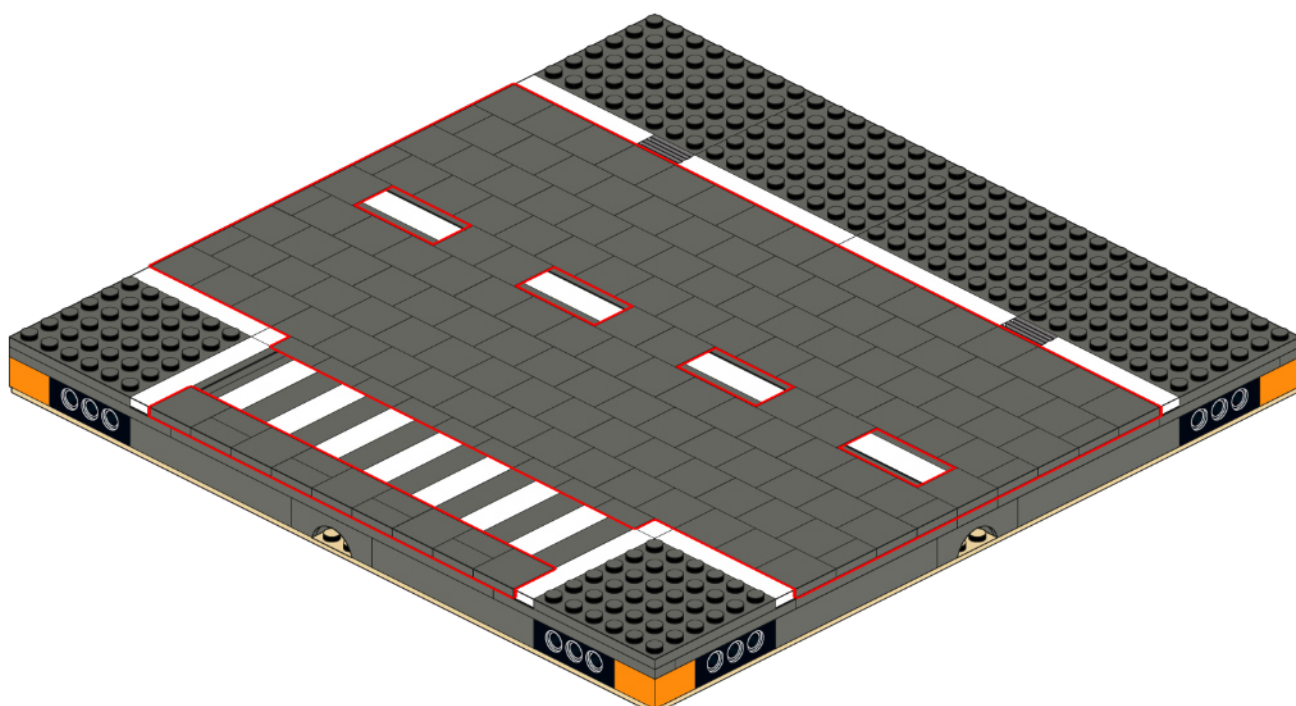
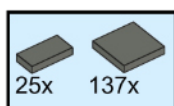
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4x

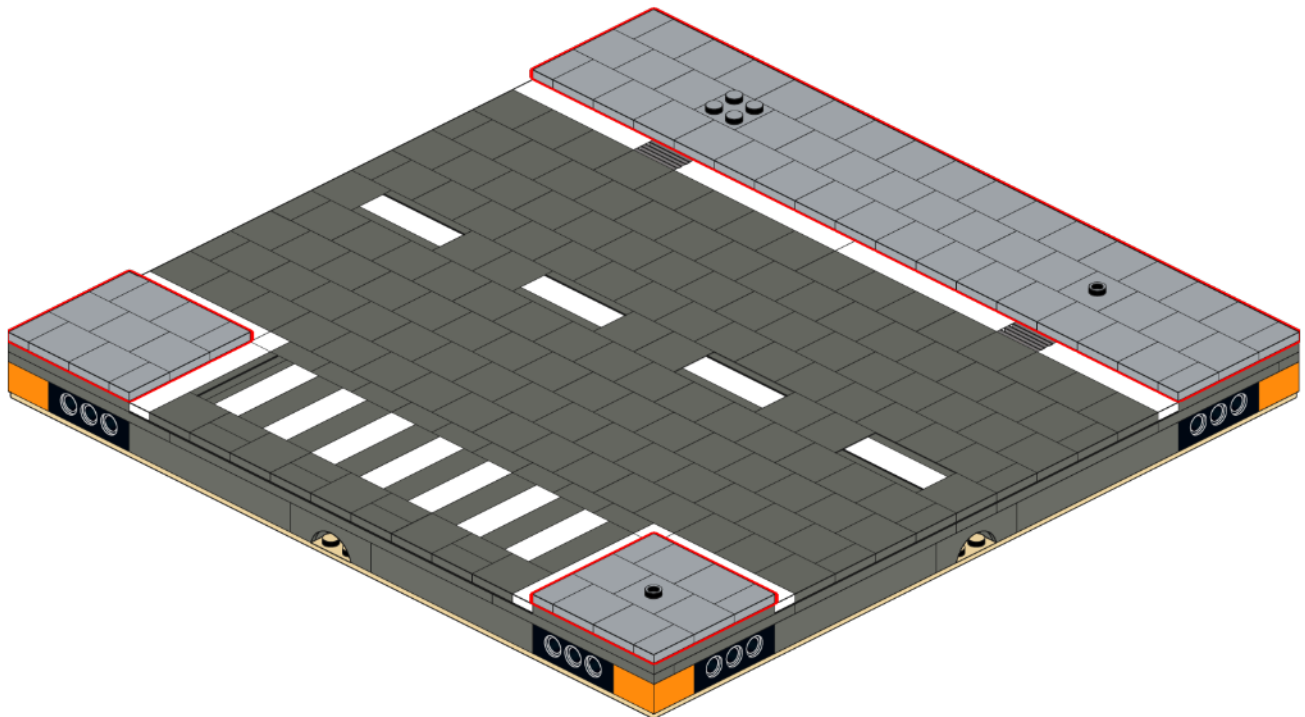
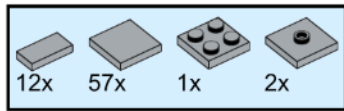


12





# 13



# Turning the Police Station into a MILS compatible module

By Jetro De Château



In the MILS Roads article of this issue we showed you why and how we converted our city to the MILS standard. That involved building road modules with different designs, but also elevating all of our existing buildings to a height compatible with the MILS road modules.

To be honest, I had already converted a number of my modular buildings to MILS modules, but the 10278 Police Station was the first LEGO® Modular Building I built as a MILS module from scratch.

What does it take to build a modular on a MILS base? The required height for modular building is determined by the height of the adjacent edge on our road modules. For us, the tiles of the building's adjoining module edge need to be placed one brick and two plates above the baseplate of the module. That means we needed an extra layer of plates compared to a standard MILS Basic Terrain Module. Of course that extra layer doesn't need to cover the entire surface of the module. I placed a layer of 1x plates along on the bricks that make up the perimeter of the module and then decided how many bricks I needed inside the module base to support the plates that make up the top. I then added a 2x4 plate to each of the 2x4 bricks. Or that was what I planned to do. When it came to building the base I had run out of 2x4 plates so

I used a combination of 2x4 and 2x2 plates instead. And because no one ever ends up seeing what is inside a MILS module any size or colour pieces that are handy (and fit) can be employed. Finally I covered the module with plates. I chose to use a mix of 16x16 plates and 8x16 plates. This allows me to use the LBG plates I sourced for my city MILS display for most of the base but also have some green at the back of the building.

My parts list ended up being:

- 1 32x32 baseplate, dbg
- 4 1x4 brick, dbg
- 8 1x4 technic brick, black
- 8 1x8 brick, dbg
- 4 2x2 brick, red
- 9 2x4 brick, dbg
- 4 4x4 45° wedge plate, dbg
- 12 1x8 plate, dbg
- 4 2x4 plate, lbg
- 3 2x4 plate, dbg
- 2 2x2 plate, lbg
- 2 2x2 plate, green
- 2 8x16 plate, green
- 2 8x16 plate, lbg
- 2 16x16 plate, lbg

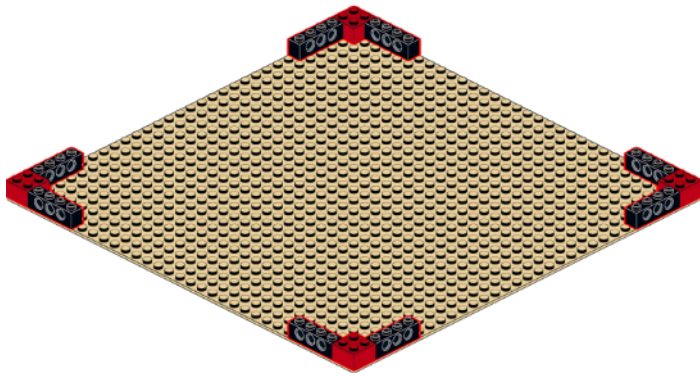
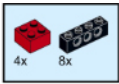
But I would encourage you to use whatever parts you have on hand to achieve your desired outcome.

There are multiple advantages to placing a modular building on a MILS base. One of the first things you will notice is that the base of the building is much more stable and solid. It can be picked up by a corner without needing to worry about the baseplate flexing and some of the tiles and even bricks coming loose. I have also seen some of the corners of my modular buildings on traditional baseplates curling up over time. On a MILS base the corners stay perfectly flat. In addition, I don't have enough space to have all of my modular buildings on display, so I store a good number of them in plastic containers. Putting them into and – more importantly – taking them out of those containers is much easier and safer when the building has a MILS base. And that stability is not just limited to the ground floor of the modular. Precisely because the ground floor is so much more stable, it is a lot easier to remove and replace the higher levels of the building when you want to enjoy the scenes that take place inside the building.

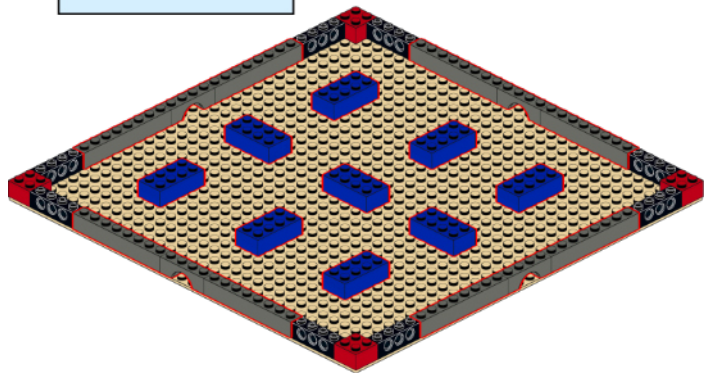
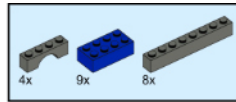
Most importantly though, it allows me to easily use my modular buildings with the MILS roads that I and the other HispaBrick members have created for our displays. Again, the sturdiness of the base makes moving the modules around to



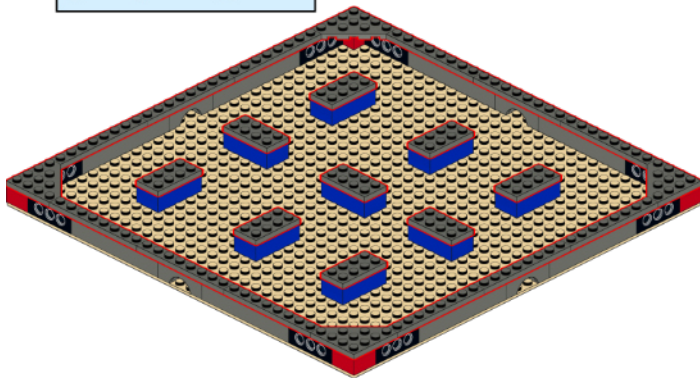
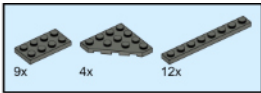
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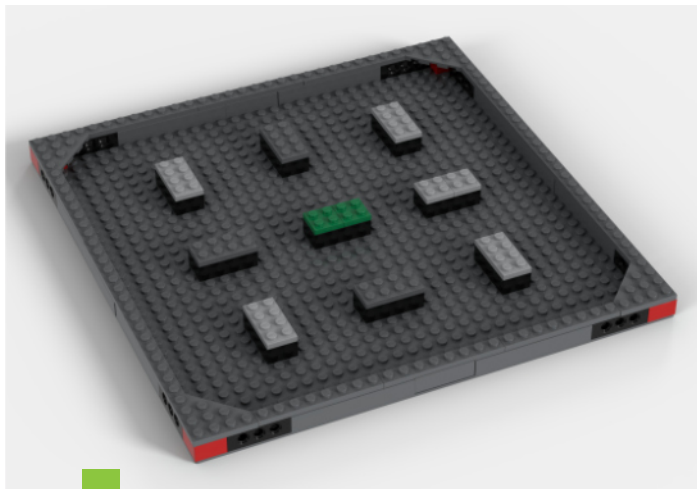
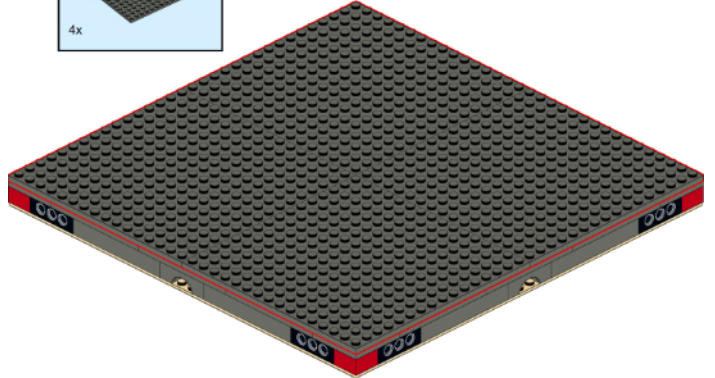
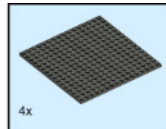
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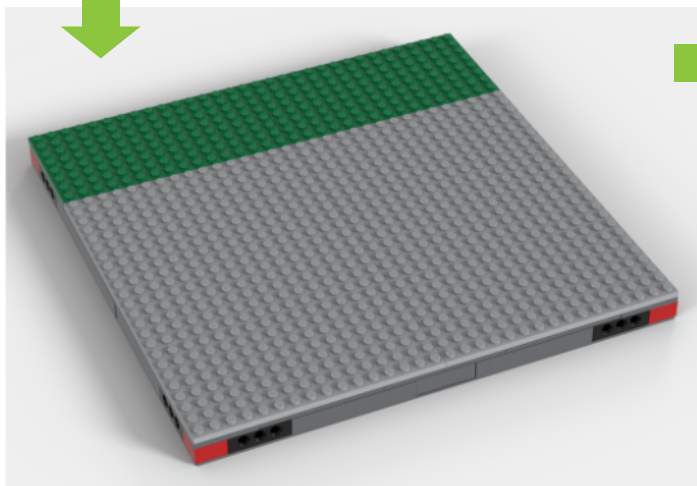


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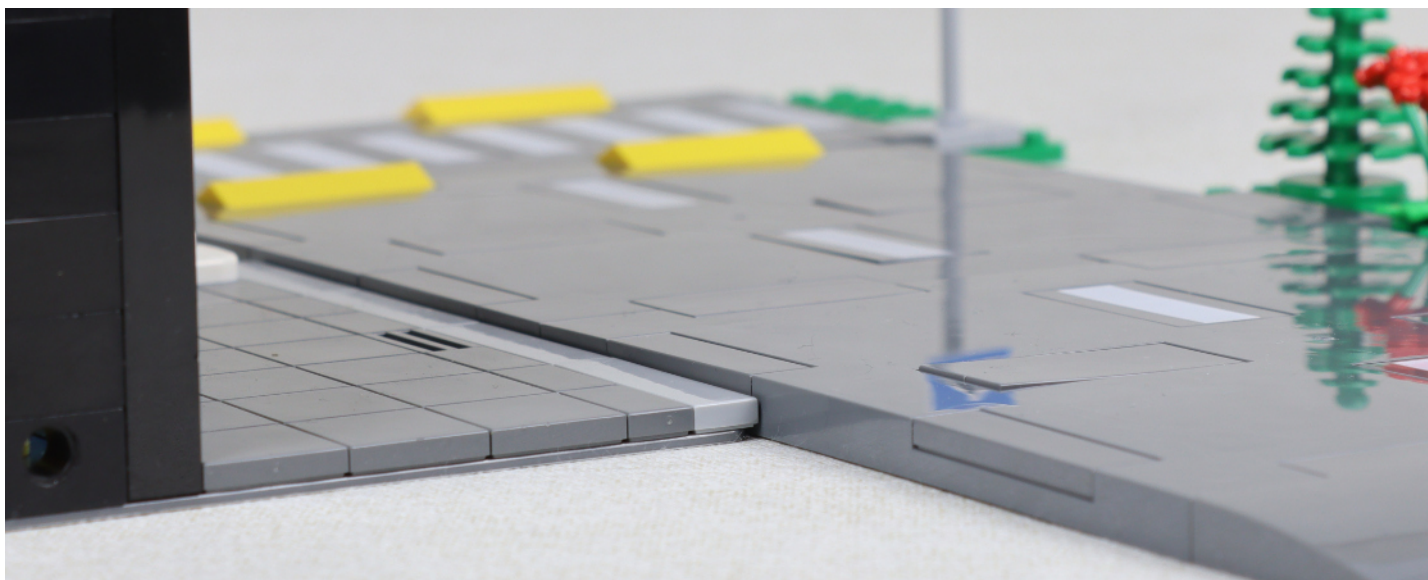


As you can see, the elements used in these sample instructions don't match up 1:1 with the elements I used in my base for the Police Station. The instructions here show the "simplest" way to create such a base whereas I used the parts I had on hand when building the base for the police station. I also wanted the back yard of the police station to be green so it would fit in better with some of my other modules.

For more in-depth information on MILS, visit [www.abellon.net/MILS/](http://www.abellon.net/MILS/)







put them into place easy and risk free, and provided you have a reasonably flat surface, everything lines up perfectly. This means it takes less time to set up and less time to break down.

### Modular vs. thick road plates

Modular roads look a lot more polished than the baseplate road plates LEGO used to market. Recently though, LEGO introduced a new type of thick road plates based on a 16x16 stud footprint. Wouldn't those be a more convenient solution to use together with the modular buildings? Time to compare options.

I had already converted my Police Station to a MILS compatible module when the new thick road plates came out so I built a quick MOC of a modular building directly on a baseplate – the way the Police Station would look if built following the instructions from LEGO. I then

placed some of the new thick road plates next to that modular building to see how that worked.

As can be seen in the top picture, the pavement in front of the modular building (tiles on top of a baseplate) is slightly lower than the thick road plates (the same height as a plate and a tile). This means that when you place a thick road plate next to a standard modular building, the road is slightly higher than the building's pavement – a really strange look. On the other hand, modular buildings already have a pavement and it would make sense to have the road start immediately next to that pavement, just like it does with the thick road plates.

Now compare the way things look when you elevate the modular building to MILS level and place a MILS road module next to it. The height of the road ends up being one plate lower than the pavement – a much more realistic situation. On

the other hand, both the modular building and the road module include a pavement area, making the pavement twice as wide as originally intended. To be fair, this also happened when you used the previous thin road plates, but in that case the pavement area was lower than the pavement in front of the building. Personally I don't mind a wider pavement. Many towns and cities are creating more space for pedestrians, so a wider pavement is a fair representation. In addition you can use this extra space for other purposes as well. In the picture of the modular building next to the MILS road module you can see the area that corresponds to the pavement of the road module has been used for a green area, a nice way to separate the pedestrians from the motorised traffic. You can find more ideas for this extra space in our presentation of the road modules in this issue.





# Programming the RI5 hub with Python

**H**i, I'm Shah. I'm a professional trainer specialising in MacOS and iOS software and hardware, and I also conduct classes on iOS App Development and LEGO Mindstorms.

In the last lesson, you learned how to create your first Python program. Today, you'll learn more about the Python programming user interface, learn about the program you created, and view the programming documentation in the Robot Inventor app. You'll also learn how to make your robot move forward and backwards. Are you ready? Great! Let's go!

## What you'll need:

- LEGO Mindstorms Robot Inventor (set no. 51515)
- A computer (Mac/PC), tablet (iOS/Android) or phone (iOS/Android) with the Mindstorms Robot Inventor app installed

## Before you begin

For this lesson you will need to build the Tricky robot. Make sure the batteries in your programmable brick and device are charged.

## The Python programming user interface

Launch the Robot Inventor app and choose the same program that you worked on last time. It should look like the screen shot at the below.

Let's learn more about the Python programming user interface.

- You type code in the **Editing area**.
- Clicking the **Programming Guide icon** displays details of the Python commands you can use.
- The **Zoom controls** allow you to set the default zoom level, zoom out and zoom in.

- The **Undo/Redo** buttons allow you to undo or redo your actions.
- The **Console button** brings up a panel which displays error messages and other information.
- The **Program slot** button allows you to choose which slot on the hub will be used to store the program.
- The **Stop** button stops any currently running program.
- The **Play** button copies your program to the selected slot and runs it.

## About your program

Let's learn a little more about the program you created in the last lesson. There you ran the program without learning much about it. Let's now look at it in more detail.

The first four lines of your program imports the various libraries and other code needed to make your robot work.

The `hub = MSHub()` command creates a representation of your robot, Tricky in this case. You need to do this so that you can give it commands.

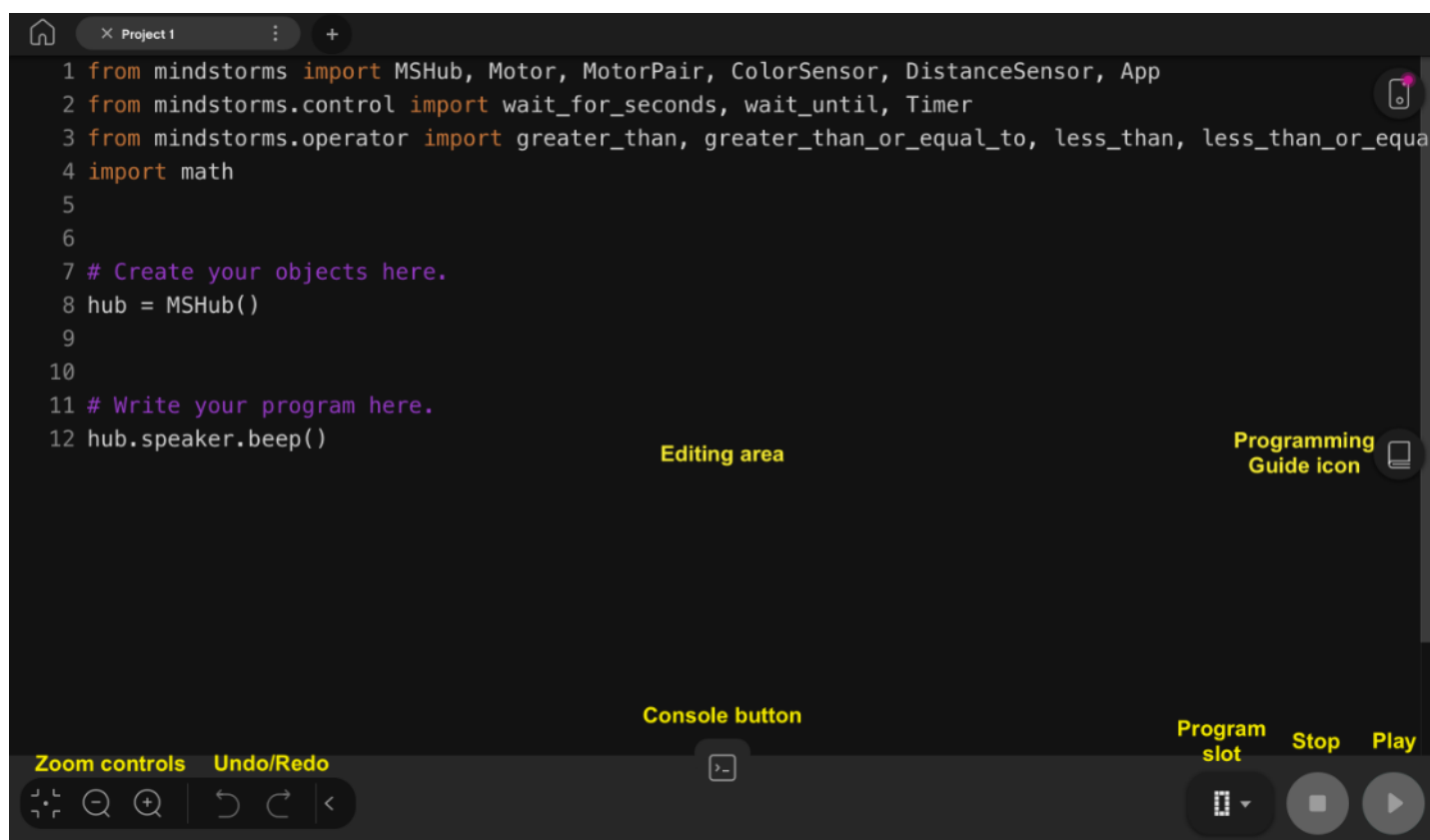
The final line of code tells Tricky to beep.

## Making your robot move straight

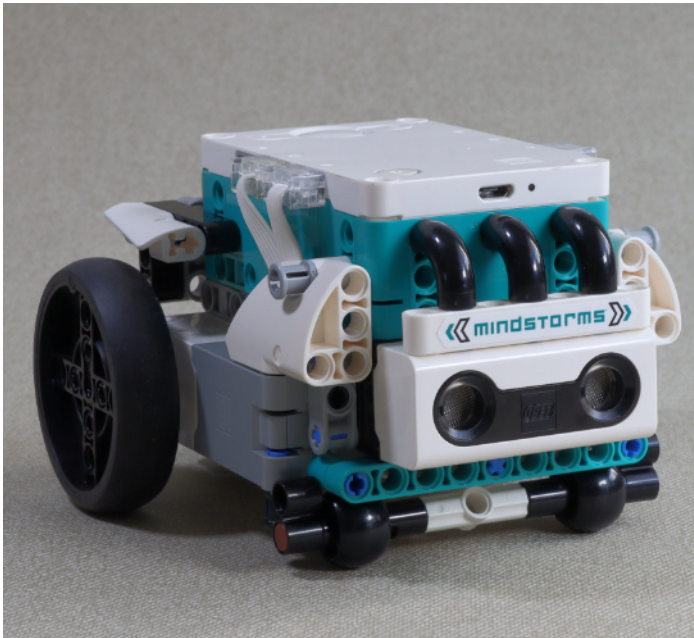
Now let's modify your program to make Tricky move forward and backwards.

You'll be modifying the program that you used in the last lesson to make Tricky move forward and backwards. Follow these steps:

1. Click the Programming Guide icon and search the documentation for details about Motor Pairs. Read about how to initialise motor pairs and how to issue motor pair commands. It's ok if you don't yet understand this as it will be explained in subsequent steps.







2. Remove the line of code that makes the robot beep. Add the following line of code to your program to create a motorPair object and assign it to a motorPair variable:

```
motorPair = motorPair( A , B )
```

The motorPair object represents the motor configuration on Tricky. Note that Tricky has two motors with a wheel connected to each one. The left motor is connected to port A and the right motor is connected to port B. Once the motorPair object has been created, you can program it to make your robot move and turn.

3. Add the following lines of code to your program to make Tricky drive forward:

```
motorPair.set_default_speed(30)
motorPair.move(2, rotations , steering=0)
```

The first line sets the speeds of the motors to 30. You can set the speed to any value between -100 and 100. Setting the default\_speed to a positive value makes Tricky drive forwards; setting it to a negative value makes Tricky drive backwards. The second line makes Tricky drive until the wheels have completed two rotations. Setting the steering to 0 makes both motors move at the same speed.

4. Add the following line of code to make Tricky pause for a second:

```
wait_for_seconds(1)
```

5. Add the following lines of code to make Tricky drive backwards:

```
motorPair.set_default_speed(-30)
motorPair.move(720, degrees , steering=0)
wait_for_seconds(1)
```

The first line sets the speeds of the motors to -30. Because this is a negative value it makes Tricky drive backwards. The second line instructs Tricky to move until the wheels have rotated 720 degrees (2 complete rotations). As before, setting the steering to 0 makes both motors move at the same speed. The third line makes Tricky pause for one second as it did before.

6. Add the following lines of code to make Tricky drive forwards again:

```
motorPair.set_default_speed(30)
motorPair.move(2, seconds , steering=0)
```

The first line sets the speeds of the motors back to 30, and the second line instructs Tricky to move forward for two seconds.

7. Verify that the complete program looks like the screenshot below:

Run your program. Tricky should move forward for two rotations, backward for two rotations and move forward again for two seconds.

You have just programmed Tricky to move forward and backwards! Yay! In the next lesson, you'll make Tricky turn while moving. See you then!

```

1 from mindstorms import MSHub, Motor, MotorPair, ColorSensor, DistanceSensor, App
2 from mindstorms.control import wait_for_seconds, wait_until, Timer
3 from mindstorms.operator import greater_than, greater_than_or_equal_to, less_than, less_than_or_equal_to, equal_to, not_equal_to
4 import math
5
6
7 # Create your objects here.
8 hub = MSHub()
9
10 # motorpair is composed of two motors, with a wheel on each motor.
11 # left motor connected to port A and right motor connected to port B
12 motorPair = MotorPair('A', 'B')
13
14 # Drive forward until the wheels have made 2 rotations
15 motorPair.set_default_speed(30)
16 motorPair.move(2, 'rotations', steering=0)
17
18 # Wait one second
19 wait_for_seconds(1)
20
21 # Drive backward until the wheels have turned 720 degrees
22 motorPair.set_default_speed(-30)
23 motorPair.move(720, 'degrees', steering=0)
24
25 # Wait one second
26 wait_for_seconds(1)
27
28 # Drive forward for two seconds
29 motorPair.set_default_speed(30)
30 motorPair.move(2, 'seconds', steering=0)

```

**Knowledge Base**

**Motor Pairs**

MotorPair objects are used to control 2 motors simultaneously in opposite directions.

To be able to use MotorPair, you must initialize both motors.

Example

```

from mindstorms import MotorPair

# If the left motor is connected to Port B,
# and the right motor is connected to Port A.
motor_pair = MotorPair('B', 'A')

```

**Actions**

- move() >
- start() >

# Norton74 brick design

2018-2019 official guest @



# H USE

Home of the Brick™

## Masterpiece Gallery



**Creators of the World**  
Andrea Lattanzio





Back in 2012, the Italian AFOL Andrea Lattanzio (aka Norton74) contributed an article in HBM013 presenting his amazing collection of large-scale “Swedish Giant” trucks. Given the current issue’s topic of the world of the road, we thought we’d check back in with Andrea to get to know him a little more and see what he has been building since.

**HBM:** It is great to have an interview with such a passionate and talented LEGO builder! Before guiding us through your spectacular LEGO universe, could you tell us a bit about yourself?

**N74:** First of all, thank you for this opportunity. For me it is always a pleasure, and an honor, to share my passion with AFOLs and enthusiasts. I hope the interview will be interesting and can help you to better understand the secrets behind my MOCs and the creative process.

My name is Andrea Lattanzio, aka Norton74 in the AFOL community, I’m 47 and I live in Milan, Italy. I’m the Corporate Fundraiser for an important Italian Non Profit Organization.

**HBM:** What is LEGO to you?

**N74:** To me LEGO is a medium for expressing my creativity and ideas. It’s like playing music or painting a picture; building can sometimes be considered as an art form. Over the past decade LEGO has meant a lot to me and it’s definitely part

of my life now. Thanks to the AFOL community I have had the chance to get in touch with many awesome people from all over the world, some of whom I can now call friends. That’s great!

**HBM:** How much time do you spend building with LEGO?

**N74:** I usually build for 2 or 3 hours in the evening and sometimes a few hours on weekends. Unfortunately my free time is very limited and I have to optimize it. On average, a MOC takes about a month of work, and I mean from the design to the photo shoot, which is a very important part of the whole process. I can’t build every day and it depends a lot on my daily commitments. There are times when I build more MOCs in a few days, and then entire weeks when I don’t touch a brick.

**HBM:** What do your family and friends think about your hobby?

**N74:** All my friends and family support my passion but none of them are fans of LEGO, so I have to balance my private life and AFOL life properly.

**HBM:** What inspires you to create your layouts and MOCs?

**N74:** The process of building starts with “love at first sight” – let me explain. I can do my best in creating a LEGO MOC if I love the real subject. For example, I remember last year I saw the picture of

an A-Frame Cabin in a coffee-table book and I was totally inspired by that view. I immediately said “Yes, this is my next MOC”. And that is what happened. I probably couldn’t build something I don’t really like. Once I’ve identified the subject I start searching for pictures, blueprints and technical schematics (especially for the vehicles). Luckily, on the web you can find practically all you need for building: both information and bricks. I usually build by night because during the day I work and I have to take care of my family. At times it’s hard building at night. I think my design follows two directions: details and clean design. My mottos are “God is in the details” and “Less is more” (both mottos are from the German-born architect Ludwig Mies van der Rohe 1886-1969). I try to have a personal style, which means for me a smooth design that is rich in details. Even though I love classic LEGO, I prefer not to show the studs. The models seem more realistic this way.

**HBM:** What are the most important goals you have achieved in recent years?

**N74:** The biggest goals I have achieved in my building career were displaying my creations at the LEGO House Masterpiece Gallery (2018/2019) and being named LEGO Builder of the Year by The Brothers Brick (2019), which were both really good memories.







© Nort



© Norton7



**HBM:** What is your favorite commercial LEGO building theme?

**N74:** The Classic Castle theme has a special place in my heart, as I have many good memories of the yellow castle from set 375. It was my first big set and my parents gave it to me for my 6th birthday (May 4th 1980). Take a look at the photos and you will understand. Back in the eighties I was also fond of the 12V train theme. I had the chance to get a bunch of them and they are still in my collection. The Model Team series and now the Creator Expert line-up have influenced and inspired me, especially a few years ago when I built my garages which boosted my reputation in the LEGO community all over the world.

**HBM:** What is your favorite LEGO element?

**N74:** From the beginning I have always liked smooth surfaces which is why I have a predilection for tiles. I think tile elements allow you to build creations which don't look like they are made of LEGO – it's almost magic.

**HBM:** You have specialized in creating all kinds of MOCS based around vehicles and everything

related to the classic motor. Where does this passion come from?

**N74:** I'm a so-called car guy, and I especially like classic cars and motorbikes. It's a passion I've had since I was a kid and it came naturally to me to build workshops and hot rods with LEGO bricks. To be honest I've been switching subjects lately, and now I prefer to build nature-themed MOCS rather than car-themed builds.

**HBM:** What MOC are you most proud of?

**N74:** To be honest, over the last few years I have built a lot of MOCS that I am proud of and it's hard to pick just one. Probably my series of rural houses that I have built in the last couple of years are my favorite ones now (my A-Frame Cabin which reached 10,000 supporters on LEGO Ideas is part of this series).

I really like the subjects, color palette, techniques, parts usage, atmosphere, and the photography involved in these MOCS. They perfectly represent my style as developed over my ten-year career as a builder. I also can't forget my Volkswagen Garage as this was the MOC which

helped me become noticed in the LEGO community and boosted my reputation worldwide. I'm also proud of my scooter workshop.

**HBM:** What other theme do you like to build in?

**N74:** As I said before, in the past few years I have built in various genres, and I have recently dedicated myself to building nature-themed MOCS. But I've also built space vehicles, house interiors, 1950s buildings, and more.

**HBM:** Do you have any suggestions for new MOC builders?

**N74:** Follow your passion, enjoy yourself, and build what you like. Last but not least, start with little MOCS that you're sure to complete, otherwise the building experience could be frustrating.

**HBM:** Are you currently working on any MOCS or other LEGO-related projects?

**N74:** Yes, of course. One MOC is ready and waiting to be photographed. I'm also working on another, but I need more time to finish it. But I never say what I'm building until the MOC is finished and showcased on my social pages.









## Chema Pérez hachiroku24

**M**y name is Chema, and in the LEGO community I have always used the name hachiroku24. What has interested me the most has always been creating my own things, more so than collecting or playing with sets. I like movies a lot, and my childhood coincided with the Studios theme of the early 2000s (along with Harry Potter and Star Wars), so my interest in LEGO was very strong.

Later I discovered Brickshelf and MOCpages, which I think were the first places on the internet where people started to publish their MOCs. I didn't have many pieces, but I really liked to see the things that people were making, and how different they were from the sets that were in the stores.

In high school I had the infamous Dark Ages for a couple of years, until finishing high school when I started to get quite fond of the Star Wars universe and from there I took the step to buy some LEGO ships. Another step led me into buying sets from other themes, especially Creator. At that time I got my favorite set for my birthday, the Sopwith Camel 10226.

I also assembled some things that I wanted to have, but that were not in stores at the time—like a Delorean from Back to the Future or a Snowspeeder from Star Wars—and I published these on Eurobricks, Hispalug and Flickr.

In 2015 photography started to interest me a lot, so I started learning digital editing on my own and taking quite a few pictures of the figures







Counterclockwise from top: LEGO Ideas submission, single figure diorama, large Spider-Man diorama.

and things I was assembling. I quite liked it and that led me to start setting up scenery to take pictures of minifigures, mostly Star Wars.

In 2016 I bought an SLR camera because photography was growing on me and I needed to take more elaborate photos. Having the camera also allowed me to do stop-motion. I made a YouTube channel to publish these videos. When I had a couple of videos done I was quite pleased with the idea of having a channel, but stop-motion videos required a lot of time, so I decided to start posting videos based on my MOCs.





This change was very good for me, since I could focus on something together and combining in one video everything I wanted to do: putting together some LEGO, taking pictures and even doing stop-motion sometimes, plus making a new video for the channel. In the end, as a few months went by, I stopped doing stop-motion and focused on the videos I was making that showed my MOCs.

I find it to be a very interesting way to share MOCs, beyond taking a few photos and posting them on forums and Instagram or Flickr. Using YouTube has allowed me to create a community where others build the models I post, ask me to create things, and see them in a different way. . . It's something very positive and nice. In addition, there are increasingly more big channels and communities dedicated to MOCs as well (Tiago Catarino, Chubbybots, FirstOrderLego, etc).

In 2018 I signed up for a LEGO activity to make videos for the LEGO Life app on Creator sets. The truth is I liked it a lot and they kept contacting me to make more videos. When the activity ended I asked them if there were going to be any more similar activities, and they told me about the LAN and I joined at the end of 2019.

In 2020 my channel has grown a lot, by about 100,000 subscribers. This year I've focused on making dioramas and this is something people are really liking. From small dioramas with a minifigure to larger Spider-Man ones, for example, which I tried to make look like the cover of a 3D comic book.

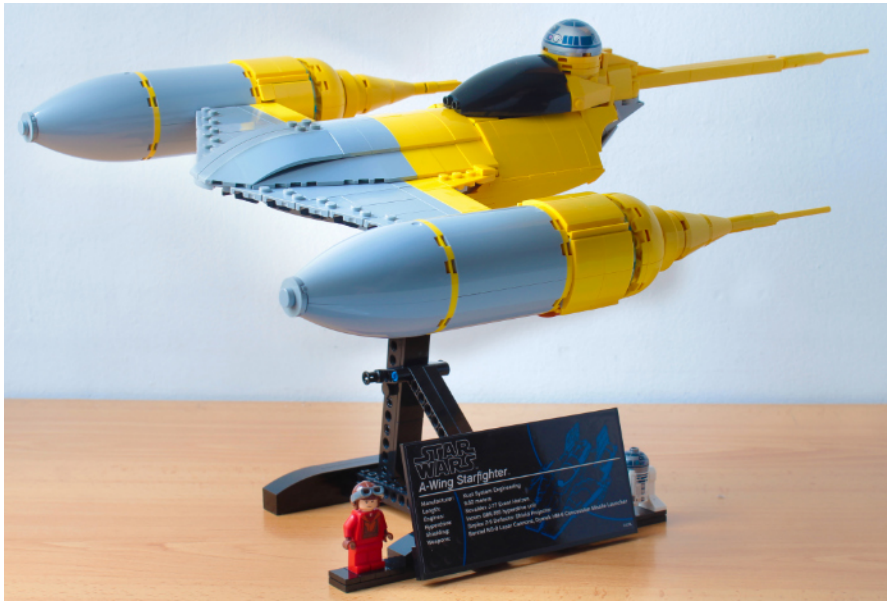
I'm also on Instagram, since in the end what motivates me is almost always photography. Even many of the MOCs I do because I have the idea of taking a specific photo, such as this one of the Lars homestead from Star Wars.

I also managed to reach 10,000 supporters with a project on LEGO Ideas, but it was rejected. Right now I have another one with more than 5000 votes that I think will reach 10K soon. It's a small collection of the insects that I find most interesting and above all that look good together (in color, shape, type of insect, etc):

The truth is I don't know what I will do in the future with LEGO. I think that with the YouTube channel I have already done everything I can do, and the only thing left is to have a set in stores that I have made. What I know for sure is that I would like to continue working with LEGO, either on YouTube, as a LEGO designer or whatever.

Left, top to bottom: Jurassic Park T-Rex Escape and Mad Max Fury Road cars.





Top to bottom: Naboo fighter in UCS style, Iron Man armor, Obi Wan vs Anakin Duel on Mustafar, MOC based on the new 21325 Medieval Blacksmith set.





By Beverley Thomas, @bevvpix Stuck in Plastic

# COVER SHOT

Growing up I had a fascination with toy cars and over time I had built up quite a varied collection. I remember owning Kojak and the Dukes of Hazard's replica cars. As a child, I would watch them on television and owning the toy models allowed me to create exciting stories of my own. Looking back, it becomes evident as to why I chose cars over dolls.

As a family, we could only afford to buy second-hand cars and my father would be constantly under the bonnet fixing something. My toy car collection, I suppose was my way at that time of my family owning a brand-new car and I took great pride imagining the journeys that I could encounter.

On my bedroom wall was a poster of the beautifully designed Ferrari Testarossa. Years later, and I was now behind the wheel, fortunate to drive the Testarossa and the Ferrari 355 around

a racetrack. What a thrill! However, that feeling of driving, speed and the open road is something I never take for granted and it comes with a degree of responsibility that we must never underestimate.

To this day, I continue to have a passion for toy cars but this time in Lego brick form. I am a photographer by profession, and I began shooting toy photography as a hobby. This came about because my boys had grown up, stopped playing with Lego and we had plenty of it. So, I started using a minifigure as a self-representation after completing my degree and this began another journey.

The toy photography led me back to my love of cars and I was asked to shoot the LEGO Creator Aston Martin DB5, Technic Land Rover Defender, the Technic Porsche 911 RSR and the recently released creator Porsche 911 Turbo and Targa,

which can be seen on the LEGO SoMe channels. Aesthetically, I always try to place the cars in locations that compliment and showcase where you would naturally find them. There have been occasions when I am in public lying on the floor taking photographs of the cars by the roadside and drivers stopping to ask if I'm ok? When I explain what I am doing it often makes them park up so that they can come over to have a look and a chat. Which leads me to the cover shot.

Having decided that I would shoot new images and include a few of my Speed Champion models, I set out to capture the essence of speed. I intended to include the new LEGO city road plate that I had purchased especially for this particular collection. Sadly, I found that the Speed Champions are wider than the road width by about 2 inches. Granted, this road build set would have been perfect setting to add a realistic

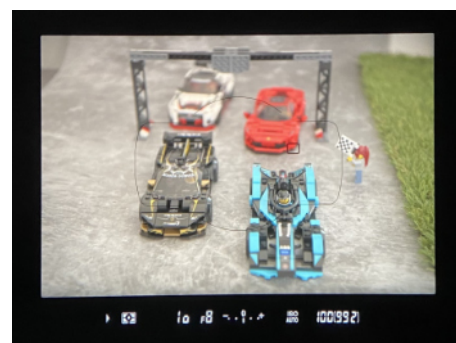


backdrop, but the required modifications to enable them to look right, has made me rethink the shoot at this present time. Needless to say, I love these road plates, they are a great addition to anyone who wants to construct roads into their building sets.

With this in mind, I adopted to use one of my printed backdrops that bares similarity to that of a road surface, this enabled me to have a wider area to allow for cropping. Initially, it was important for me to send images into the editors for approval and I first decided to push the photoshop editing to the edge. I guess, being a woman, I am always trying to prove I am capable of delivering something quite different. And with no disrespect to anyone, the perception of cars and photography were always in the classification of a man's world. Nowadays, the acceptance of

women in photography is changing and yet we are still to see women F1 drivers make the grid.

At first, I had only included two cars, the Formula E Panasonic Jaguar Racing GEN2 and the Lamborghini Huracán Super Trofeo EVO as they complimented each other by colour. However, I knew they were completely different racing types of cars and this played on my mind a little. In order to achieve what I was seeing in my head it was a good excuse to purchase the Nissan GT-R Nismo and the Ferrari F8 Tributo. Ironically, I only now realised that all my minifigure drivers are males, so I did pick up the LEGO City set because it had a woman driver included. Needless to say, many shots later from different angles I felt that I had a selection that I was happy with. The crazy thing is, I added only the male drivers because they were already in the exclusive sports cars.



The technique I used was pretty basic. I shot in my studio using only natural light. However, to avoid the harsh lighting bouncing off the glossy cars from the window light, I decided to diffuse the light using a transparent reflector and then I used a fill light back onto the cars using silver card. If you do not have professional reflectors, then a sheet hung against the window and foil will do the trick.

I shot this particular image using a Nikon D750 set on a tripod with a 105mm macro lens and an aperture setting of F8. The main focus was directed on the Jaguar driver and I wanted the cars in the background to look like they were moving, so the choice of aperture allowed me to get the majority of the front shot in focus and the depth of field was helped with the contributing focal length. On the contrary, very little post-production was made on this occasion. However, I added a little light and smoke effect in photoshop just to give it a more dramatic reality.

The attention to detail is paramount when shooting subjects that are familiar and I have enjoyed the creative process whilst shooting all of the LEGO car models. They have enabled me to develop and slow down my way of shooting. At the same time, shooting for the cover has given me an insight into design layout and what it takes to win the race.





# Bricks en Chile

**H**ello everyone, my name is Gary Ramos, I am Venezuelan living in Chile and I am the founder of Bricks en Chile, a digital media recognized by LEGO.

My Recognized LEGO Fan Media is called Bricks en Chile, the name is very simple as it joins the word bricks or bricks and the country where I am.

Bricks en Chile emerged in September 2015 as an Instagram account of news in Spanish about LEGO for fans in Chile [www.instagram.com/bricksenchile](https://www.instagram.com/bricksenchile). At that time there wasn't a lot of this kind of media on Instagram, and therefore I found an opportunity to create my own space. The purpose was to unite all LEGO fans in our country in one place, providing news, reviews, and other important information for all types of LEGO fans. Whether you are just starting with LEGO or consider yourself a veteran builder, if you like to take pictures of your minifigures or want to share your creations, everyone is welcome here.

Four years later I found out about the LEGO Ambassadors Network program, I applied and was accepted, now the goal of showing updated news to all LEGO fans in my country is more accurate by being able to post news or a review at the same time it is announced worldwide.

Bricks en Chile is a "One man show". I am the only one who works in this community. I have

required help at certain times, but in the end, this is on my own.

I always want to create more content and new sections for the RLFM, but for that I need to assemble a multidisciplinary team to cover all the aspects I have in mind... that's one of the things I've wanted to do for a while... because my free time is becoming more and more limited. I hope to be able to address several of these gaps by the end of 2021 or early 2022.

My RLFM is financed by myself for all operational things (sending prizes when I do raffles, outsourcing when my videos are edited by someone else, etc.) and mainly by the support of the LAN program, which provides me with new sets to create valuable content for the community.

Bricks in Chile has always been a digital medium, so there have not been drastic creative changes. The biggest addition has been the creation of a Twitch channel where every Saturday from 20:00 Chilean time we meet live to talk about LEGO and comment on the latest news that has come out while I build a set that I will later review. Those who participate can see many details of the construction before the review of that set comes out. You can follow me for free at [www.twitch.tv/bricksenchile](https://www.twitch.tv/bricksenchile) and join the live streams. This way we get together to share our

passion for LEGO, while taking care of each other at home.

Regarding our relationship with LEGO, it's neither good, nor bad. I like being part of the LAN, being able to create connections with other ambassadors through the LAN, and knowing all the news to show to viewers in my RLFM. Lately, though, I have had problems with customs in my country and that directly affects my community. I hope it will be solved soon.

I would like to see LEGO take notice of Latin American communities in the short or medium term. We are avid LEGO builders and that should be better recognized.

What I have most enjoyed in recent months have been the live broadcasts on Twitch, it is a space of camaraderie with those who connect every Saturday, we all like LEGO and it has become a place where we feel comfortable. Very entertaining things have happened in those shows. It is well known that Chile is a seismic country, it really shakes every day, in greater or lesser intensity, the most curious thing has been that in a live show there was a considerable earthquake and I had to get up because it was already very intense. Ultimately nothing happened, but it was all recorded and I will never forget that moment.





# FANABRIQUES

Our name comes from the contraction of Fanatic and Bricks—one who's a brick fan. Originally, a few of us organized our first exhibition exclusively focused on LEGO in 2006 in Rosheim, France. Over the next two years this exhibition was renewed, and with each edition it became increasingly interesting for visitors. Before the fourth edition, we decided to create the association Fanabriques to organize future exhibitions.

In creating our association, we decided to propose more than just the organization of an exhibition. We have also created workshops for children and adults as well as activities around the LEGO brick. At the head of the association we have ten people who organize the various activities. Our association has 700 members, and they pay an annual fee and participate in our various activities. We are financed in part by membership, but mainly by entrance fees and drinks at the exhibitions we organize.

Our goal is to continue proposing ever-increasing activities around the LEGO brick, and to continue organizing our annual event in order to remain a European crossroads of AFOLs. Due to Covid it is difficult to clearly envisage the future, but our goal is to continue to offer our activities while working on new ideas and projects.

Our big show has been postponed and we do not yet know if its planned new date in October will prove possible. All our activities are based on meeting in person. We have had to cancel all of them, and have instead offered workshop

alternatives through the internet (Fan@home), and have offered lots of games and contests.

After a few exhibitions we managed to get in touch with LEGO France, so we have had support from them, and then also through the LAN. With the LAN, almost everything is centralized in Billund, but we have also maintained good relations with LEGO France. The General Manager of LEGO France, Eric Maugein, even came to our exhibition! He said it was the LEGO Woodstock!

We have released several LEGO-based boxes (sold at our exhibitions): Bugatti T35, Chateau d'Andlau, and Strasbourg Cathedral. In 2017, 40 members of our association visited Billund and the LEGO factory (following our registration via the LAN). We also got to see the LEGO House under construction!

<https://photos.app.goo.gl/C5UvJczV4okijZBX9>

<https://photos.app.goo.gl/msHFjFRboKX8RuoY8>







I am Bob Oikonomou, the current ambassador of Brecks LUG. I am 42 years old and I live in Athens, Greece. I am a father of two wonderful daughters who are also crazy about LEGO bricks.

Our community's name is Brecks and we are from Greece. When we were trying to find a name for our community, we wanted something to do with the LEGO brick but also related in some way to our country. So, we combined "bricks" and "Greeks" together to create "Brecks". We have also used white and blue for our logo, which are the colours of the Greek flag.

As an anecdote I would like to mention that when we chose the name of our community, we had no idea that the word "breeks" is also the Scottish term for the trousers or breeches that are worn in some sports. At first, we thought about changing the name, but after a while we decided to keep it. Who knows, maybe in the future we'll be wearing special "breeks" at our exhibits and events!

It all started in early 2018 as an idea to create a fun LEGO media website. After talking to some friends from my old LUG, we thought that we needed a way to also show our own LEGO creations (MOCs), not just online but also physically at events and exhibitions. So we all decided to create a new LUG instead.

We currently have 25 active members, of which 12 are MOCers and 13 are collectors. We all share the same goals and principles, which is needed to build a steady and healthy foundation for any community. Most of the members met either online or at an event. Everyone has their

preferences so we cover almost all LEGO themes with our MOCs, from the classics like Castle and Pirates, to more modern ones like Star Wars and Technic/Mindstorms.

Our website is maintained by myself, and two other members are responsible for our Facebook and Instagram accounts. There is an annual subscription of 20 EUR for active members, which is used to pay club expenses (e.g. website hosting, buying items for our events or LEGO sets for charity, etc). We also accept donations in the form of money or LEGO bricks. The latter are used at our activities as loose bricks for kids to play with.

One of our most important milestones was when our LUG was recognized by LEGO in March 2019. Becoming recognized as an RLUG was the ticket for participation in our first exhibition, which in turn made us publicly known all over Greece. Since then, our community has been invited to participate in three major future events and we've created strong partnerships with certain event managers. We always try to improve and keep moving forward, and we are not afraid to push our limits. As an example, we collaborated with Fairy Bricks to deliver LEGO sets to sick children in Greece for the first time.

The only relation we had with LEGO until lately was through the LEGO Ambassador Network (LAN). We never had any other direct contact with TLG or the Local Market Office, but this changed recently when we held our first online meeting with the Local Office and the Region Marketing Team, where we discussed plans for future collaboration between the Greek communities

and LEGO. I do know that together we can achieve great things.

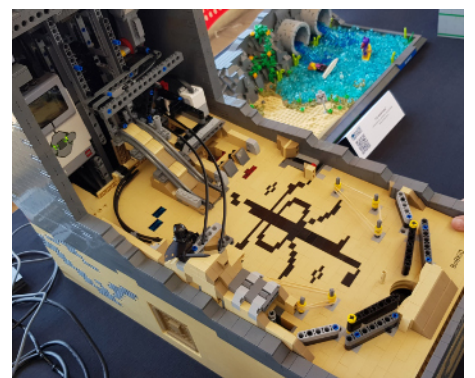
We believe our future will be bright. We always have big plans, but as the Greek saying goes, we prefer to "hold a small basket" and that's mainly due to the situation with Covid-19. We want to participate in many events, but we can't know for sure if and when they will take place.

Even during these hard times, we keep MOCing, keep receiving new member requests, and we keep growing in numbers and publicity. The situation with Covid-19 hasn't affected us directly. What changed was rather the way we participate in club meetings, which is now over the internet.

The main challenge has been the inability to participate in events physically. Since 90% of our activities involve physical contact—such as MOC displays, workshops, interactive activities, etc.—we have had to turn to other ways of showing our work to the public. This has been partially solved by displaying MOCs on our website's forum and our Facebook/Instagram pages. We can't hold any interactive activities though, like LEGO RC Racing, LEGO pinball championships or mini-MOC building workshops. These were some of the activities from our past events that visitors have loved.

Another challenge has been physical LUG meetings. We still meet online, but we all miss the physical meet-ups with set part drafts or MOC building or even a dinner out over beers. But despite these challenges, we are still continuing to create MOCs and have fun! Let's hope things will return to normal soon!









# thebrick.gr

I am Giorgos Solomonidis, aka Gunman in the LEGO community, and I am the ambassador for the Greek RLUG, thebrick.gr. Our initial scope in creating the LUG was to gather all LEGO fans in the Northern part of Greece, though this has changed since our creation back in 2015. Now our membership is expanding all over Greece.

I was a core member of Gricks RLUG and used to live near Athens, but back in 2014 I was about to move back to my home city of Thessaloniki, and that's when I thought to create a new northern Greece LUG.

The early years were difficult, like every other LUG's beginning I guess. We had only a few members, and were running around to put on events and keep up the pace to grow our community bigger. A big role in this was played by

my friend Giorgos Patelis from the city of Kavala, who I got to know after accepting an invite through BrickLink. Nowadays we are happy to have a stable community, all interacting and helping each other.

Because of the coronavirus situation we have had to stop holding physical exhibitions and have moved our activities online. We now have a Viber group which has had a huge impact in binding the group's members together, and we are sending hundreds of messages to each other every day!

Besides myself there are also two other admins on the forum: Giorgos Patelis from the city of Kavala and Manos Kiaourtzis from the island of Rhodes. These guys have a huge passion for the LEGO hobby, and Manos also works as a LEGO

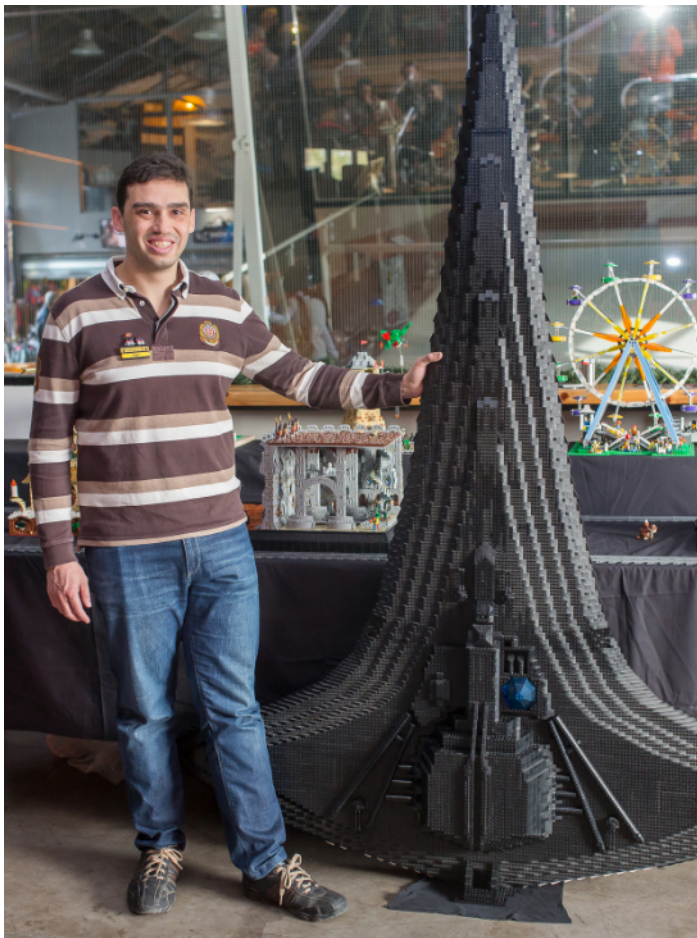
department manager for a big Greek toy retailer chain-store.

Our hope is to reach a normalised post-Covid period soon, and restart our physical activities and exhibitions with other people, because we are really starting to feel the lack of physical contact and interaction to be honest. We have the honor of being the main LEGO contact/participant RLUG at the biggest geek event in Greece – "THE Comic Con", which has had huge success and growth in recent years (pre-covid, of course) and has featured famous visiting guests like Frank Miller and Don Rosa! We are extremely happy to be part of this feast!

Financially, we have a small but stable amount of money for meeting our basic needs like domain name registration, which comes from the kind donations of our members. Free sets as activity support also play a big role in keeping everyone happy! Last but not least, relations with our local LEGO market office are getting stronger and we will try to get to know each other better. Fingers crossed then for the post-Covid period and hopefully the many events to come!







Facing page counterclockwise from top: From left to right, Thodoris Theodoropoulos, Giorgos Solomonidis, Mariana Georgaki. At Comic Con 5 exhibition, Polychronis Kontopidis, Manos Kiaourtzis. This page top, left to right: Mixalis Mballas, Giorgos Patelis, Kostas Vlachos, Thodoris Theodoropoulos, Giorgos Solomonidis at We Love to Create Exhibition 2018. Middle row: Giorgos Patelis, Kiriakos Mallinis. Bottom row: Nikos Nousis, Evangelos Gagkos.



# LEGO 21161: Minecraft–The Crafting Box 3.0

Por Oton Ribić



A bit blocky for conventional LEGO terms, but that's what makes it instantly Minecraft-y.



The alternate model of a house uses almost exactly the same parts as the primary “tower”. No leftovers!

Merging hobbies is always an interesting undertaking. Some combinations, like photography and trekking, obviously go hand in hand perfectly. Some are unusual but actually make sense together, like D&D and cartography. Then there are exotic combinations, like juggling while kayaking. And some extreme ones have, let's be frank, been invented for no other reason than to gain clicks on YouTube.

Somewhere among the lot, there is a natural alliance between the fans of LEGO and of Minecraft. Indeed, being an AFOL and an avid Minecraftsman myself, I was certainly among the rather large group of people whom LEGO had targeted with one of their larger Minecraft sets, the 21161 Crafting Box 3.0. As both hobbies focus on (among other things) building worlds using square blocks that sometimes interact with each other, the touching points are so obvious and deep that we could easily consider LEGO and Minecraft a marriage that was simply bound to happen at some point. And so it did, starting carefully in 2013 – and keeping their wedlock still happy and healthy in 2021.

It raises one obvious question: what are the actual benefits (businesspeople would say synergies) in merging Minecraft and LEGO together? Well, there are multiple possible answers, all of which make sense. Obviously, if you are a serious Minecraft fan, you may just want

to show it a bit more by displaying a Minecraft-themed LEGO set, or an own creation, in a prominent place.

Then there is the play value: especially among children who put as much emphasis on playability as they do on the actual building, playing with physical bricks and figures in the world they already are familiar with from their computer could be very interesting, binding digital and plastic adventures together.

Which is not to say that the serious-minded folk is shortchanged. I started by using LEGO as a sketch board to devise a prototype of a building

I would build later in Minecraft – and it was really fun: both building it, and copying it over into my Minecraft castle. It works vice versa as well, by using Minecraft to plan an actual MOC, if that's closer to your cup of tea.

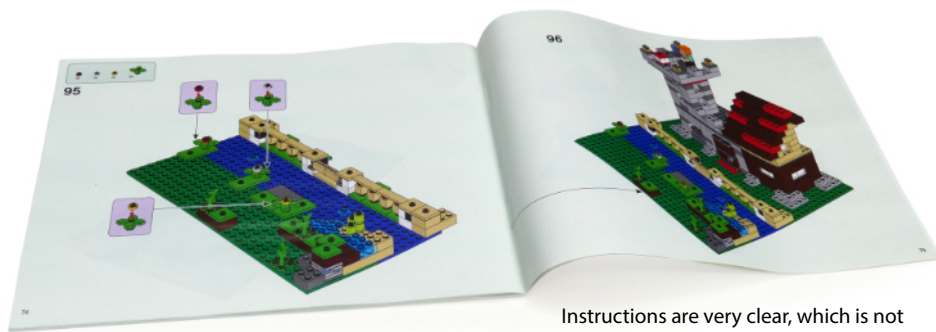
As for Minecraft the LEGO theme itself, like most other themes it has already featured all sorts of sets: from very simple polybags featuring only a couple of blocks and figures, up to the massive Mountain Cave with over 2800 parts. As opposed to most of them which show one or more of the “classical” scenes, very familiar to everyone with the most elementary Minecraft experience, this set is actually oriented towards custom builds – just like the game itself.

Sure, it does include



The box emphasizes creativity rather than building according to the instructions: a pile of parts rather than a finished model.





Instructions are very clear, which is not difficult when mostly avoiding fiddly parts

booklets with instructions for a house and for a tiny castle tower as can be seen on the box and in the promo materials – but notably, the main box image emphasizes a pile of various parts. As if it wants to say – here, all the raw materials you need are ready: go ahead and use them!

And since Minecraft is blocky, so are these raw materials: this set consists of lots of standard bricks, plates, and typical auxiliaries, spread in various colors, though leaning a bit more towards the natural and monochromatic colors, prominent in the game as well. This should already give you a hint about its reusability; indeed, if you are looking for a good source of building material in common colors, 21161 will do that job well. Of course, there are some Minecraft-specific parts (especially the minifigs and their nice little tools), but their share is rather low.

Having said that this set aims at freestyle builders, it does hold your hand a couple of first steps if you want. The small, first booklet of the three enclosed focuses just on building elementary Minecraft blocks from LEGO: a grinding stone, a furnace, an anvil and a crafting table, some dynamite, a chest, a bed, torches and a bucket, a door, a piston, two trees, and a couple of other thingies you are sure to encounter sooner rather than later in Minecraft.

In case you are noticing a pattern, you are correct. This set resides mainly in the Overworld surface, especially the items commonly used in the Survival mode. If you're more of a Nether-dweller type of player, or a Creative mode artist, you would probably expect to see more of other types of building blocks. And let's not even begin with the Redstone logicians... (although one cannot help but wonder how would that even work with LEGO.)

Onward to the building experience – and one property of Minecraft sets surfaces right away. Thanks to the constructions largely consisting of standard 2x2 and 2x4 bricks, building goes easily and quickly, much faster than equivalently-sized sets from other themes. One could see it both as a blessing and as a curse, but if you're into using

and reusing blocks for experimentation, there is a bit more weight on the "blessing" side.

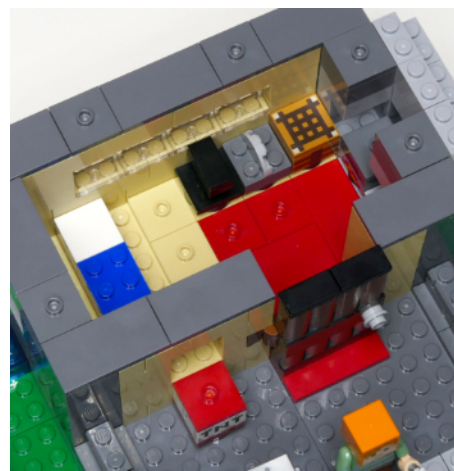
As far as the functions are concerned, they closely follow those seen in the game: the doors and gates open, piston pushes, chest opens, and the TNT fortunately doesn't explode. For a regular set of comparable size, this would be considered a bit skinny, but since we are talking about a reconstruction of a Minecraft world, it is all right.

The design of the two buildings from the booklets is probably a kind wink towards the Minecraft beginners. There is no doubt that most players' homes, if they stick to the game, surpass these two in size, sophistry and aesthetics. But the house and the mini-castle here are exactly the typical first buildings made by the ambitious beginners, once they have completed the simple



The merry gang and their items and trees which serve as elementary "building blocks", used in both main models.

walls and covered them with a semi-sloped roof, and now feel the delight of having a small, but a perfectly proper home, or a defensive tower. Therefore, Minecraft veterans may feel a grain of nostalgia waking up deep in themselves as they catch a glimpse of this set on a shelf. I know I did: this little tower's machicolations very much reminded me of my clumsy first Minecrafty experiments with cobblestone. And the house's crammed interior is almost a guaranteed flashback to the first few hours playing the game.



The house is crammed with furniture and equipment, just like 99% of all players' first Minecraft homes indeed look.

It's not easy to give a simple verdict to a set with such a particular theme and goal – like a car journalist reviewing a quad bike, standard rules don't apply here. The main value of this set depends on your aspect.

And beginning with the youngest, if you are a parent who appreciates Minecraft's depth and positivity, yet would like to encourage their child to spend a bit less time in front of a screen while doing something they are familiar with, 21161 is a great way to accomplish that. (Perhaps it could work vice versa as well, but getting a child in front of a screen is the least of parenting problems nowadays.)

It's just as suitable for experimentation and good ol' playing. It's easy to build and modify, items are simple enough to relocate thanks to the 1-stud plates being everywhere, and the selection of material is well suited for typical Overworld surface ideas.

The further one goes with Minecraft skills, the more would this set transcend into a collector's item or a playground for some real-life fun. The feeling of physically building things you are well accustomed to in the virtual world brings some kind of a subtle satisfaction, like playing a real soccer game after months of playing it on a console.

This is all valid for Minecraft fans, which are the primary audience for this set. LEGO fans outside Minecraft circles could probably just consider these to be rather crude and not overly aesthetically pleasing LEGO buildings with some familiar, and some unfamiliar creatures. But a message to them would be: check out the set contents nevertheless, this could be useful as a parts source.

No no, correction, please. The message to them is: start playing Minecraft.

# REVIEW

By Jetro de Château



## 41449 Andrea's Family House

It has been a long wait, but this year we finally find out where Andrea lives and who her family is. Before we get into details though, let's have a look at the history of the LEGO Friends' houses.

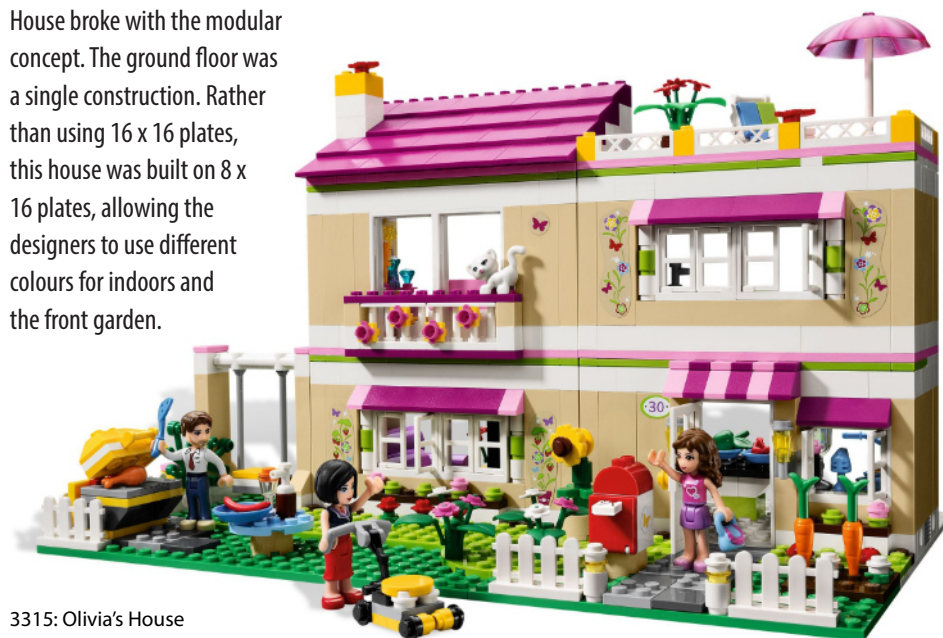
The first of the Friends houses was 3315: Olivia's House, which came out in 2011. The set consisted of 695 pieces and in addition to Olivia, there were also her mother Anna and her father Peter, the very first male character in the Friends theme. The house had a modular design: two ground floor modules (kitchen and living room) were built on a 16 x 16 plate each with an additional 8 x 16 plate by way of garden in front of each ground floor module. There were also two first floor modules (a large bathroom and a bedroom with what looked like a double bed) as well as two roof modules, one with a roof terrace and the other with a sloped roof. My favourite small build in this set was the lawnmower—a cool little construction that really captures the look of the machine with just a few pieces.

It was four years before the next Friends house came out. In 2015 it was Emma's turn with 41095: Emma's House. Again the house was built on two 16 x 16 plates and was modular in design. In this case the two modules were staggered. There was a bathroom and a bedroom for the first floor, this time with a single bed for Emma) and a roof terrace (with a barbecue, operated by Emma's mother Charlotte) and an attic with two roof

windows to top the building off. All in all, the concept was very similar to Olivia's house and Emma's house really felt like the next house on the block, despite the fact that there was less depth to the house as the garden (in the case of Olivia's house an additional 8 studs of green) was included in the 16-stud deep build. There is no lawnmower this time, but there is a little easel and painting for Emma to work on in the front garden while her father, Luis, takes pictures. After Emma's house there was a new Friends house released every two years.

In 2017 it was time for 41314: Stephanie's House broke with the modular concept. The ground floor was a single construction. Rather than using 16 x 16 plates, this house was built on 8 x 16 plates, allowing the designers to use different colours for indoors and the front garden.

Conscious of the need to lend a bit of extra depth to the house (just 8 studs felt a little meagre) there was an additional 6-stud-deep section behind the living room. This section was connected to the main structure with hinge bricks and contained a staircase. Stored under the staircase was a vacuum cleaner for Emma's father James to manhandle, while her mother Alicia was on a video call in the study on the second floor. The ground floor was finished off with tiles so it was easy to remove the two modules of the first floor. However, the fact that those modules



3315: Olivia's House





41095: Emma's House



41314 Stephanie's House



41369: Mia's House

Set number	Set name	Year	RRP	Pieces
3315	Olivia's House	2011	75€	695
41095	Emma's House	2015	70€	706
41314	Stephanie's House	2017	70€	622
41369	Mia's House	2019	70€	715
41449	Andrea's Family House	2021	70€	802

(bedroom with balcony on one side and bathroom and study on the other) could be removed was great for storing the set, but not for changing the layout: each module only really fitted in its designated place. There was also no top module, no roof terrace or attic; just a little sloped façade and some sloped bricks to create the impression of a roof. This meant that the top floor was open to play. It is hard to say what happened that year. The set price stayed the same as for the previous house, but compared the two both Olivia's and Emma's house, the piece count went down by 80. To compensate, the windows in the bay window (a really nice construction) as well as the tree upstairs windows, are beautifully printed, giving the set a lot of style.

Add two years and we arrive in 2019 when we get 41369: Mia's House. Up until now, the Friends houses could all have been part of the same neighbourhood. Mia's house breaks that trend. Rather than living in a house in the suburbs, it would appear that Mia lives in the countryside outside Heart Lake City. And Mia's house is different in many other respects as well. There is nothing modular about Mia's house – it is one connected build, with the two small exceptions. There is a small well, giving the house even more of a countryside feel, and the kitchen table is built on a five-stud-deep semi-circular base. Mia's house has a maximum depth of only 12 studs, a far cry from the lush 16-stud footprint we had been used to up until then, which explains why the kitchen table needed to be on a separate base. Mia's parents, Ann and Angus, have done their best to give their daughter a cool room and plenty of outdoor activities. She has a study with a ladder that takes her up to her bed in the loft, on the outside of the house there is a rock-climbing wall and Mia has a horse. An odd detail of the house is that there are stairs to get to the first floor, but they are on the outside of the building, making it seem as if Mia had her own little apartment on the first floor. I loved the detail of the beehive and the little birdhouse and the glass doors are beautifully printed. The piece count is up again, to 715 so it isn't that the set is small or





flimsy. I like the build, but it doesn't quite fit my idea of a Friends house.

And with that we arrive in 2021 and the last of the Friends' houses, 41449: Andrea's Family House. This most certainly feels like a Friends house again. We are back in the suburbs and we finally get to meet Andrea's family. Andrea isn't the only one with musical talents. Her mother Donna plays the keyboards and her father Martin plays the drums. And there is a little surprise. Andrea has a kid sister: Liz. The inclusion of the micro doll in the Friends theme has added some more diversity to the sets. Together with other characters that have appeared this year, like Savannah, who is blind and Nora, who is elderly, and the reappearance of the baby first introduced in 2017, there has been a significant extension of role play opportunities in the 2021 Friends sets. My only gripe with these micro dolls is that while the design team has done a great job of including at least some connectivity in the micro doll hands, none of the sets I have built in this wave actually include anything for the micro doll to hold. Not that that is an easy task. The only thing those tiny hands can hold are some of the decorations the minidolls can wear in their hair and other elements with similar tiny pins.

There is a cute little bird in the set, as well as a fifth character: Stephanie. I can only guess whether Stephanie is included to make sure there is racial diversity in the set, because Stephanie



was underrepresented in the theme this year or because, despite the large piece count, there was still room in the budget for an additional minidoll. Whatever the reason, Andrea's house is a great playset on its own with a character selection that can spark many new stories.

Andrea's Family house recovers the original 16-stud depth of the earlier Friends houses, even though most plate sizes are smaller, allowing for a more flexible use of colours—separate colours for the ground floor interior, garden and garage. The ground floor is a single construction (no modularity) and has a layer of tiles at the top, making it easy to place or remove the upper level to provide better access to the interiors. It contains a large family kitchen and you can rotate the kitchen counter (built on a plate that is connected to the main structure with a hinge brick) to get better

play access. The garage with a rolling garage door is a really fun area. This is where the family gets creative and stores their musical instruments: a complete drum kit as well as a pair of clips to store e-drum sticks, a simple keyboard with two printed tiles for the keys, and of course Andrea has a microphone. The garage is also the place for a washing machine and soapbox.

The most exciting new element in this set is the Window Round Corner 3 x 3 x 2 (design ID 73878) which is new in 2021. It allows for a bay window with a minimal footprint (6 studs wide as opposed to the 12 studs required for the bay window in Stephanie's house) and uses the standard flat window panes (design ID 60601) used in the 1 x 2 x 2 window elsewhere in the build.

The top floor is built in two segments that each have a fixed place. The rooms are small, but with





an excellent use of space and a lot of fun details. There is a living room with a sofa, an armchair and a coffee table, next to a bathroom with a washbasin, shower and toilet. An interesting detail in the bathroom is that for the first time in a Friends house you can have some privacy in the bathroom. There is a window to let some light in, but the glass is opaque, so you don't have to worry about anyone seeing you while you have a shower. The second half of the upstairs modules contains Andrea's bedroom, which contains a bunk bed, presumably for Andrea and her sister Liz, and a ladder nicely worked into the wall to reach the top bed. Andrea gets a cool light with a flex arm so she can read after her sister dozes off. Finally there is a balcony on top of the porch.

There is no third floor, and similarly to Stephanie's house, only the contour of the roof is represented at the front of the house. There are,

however, solar panels attached to the roof, making the house more environment friendly while at the same time making the roof feel a little more closed.

There are plenty of stickers in every room, but they really add to the atmosphere of the house: shelves with plates in the kitchen, more musical instruments in the garage, a beautiful mirror in the bathroom, a TV set and speakers in the living room, etc.

It really feels like the Friends designers have managed to find a good balance between size, playability and cost. The set contains some 100 more elements than its predecessors and it really feels like a big house. At the same time, the recommended retail price of the set is in the same range as the preceding Friends' houses.

There is a distinct difference between the way my daughters and I relate to these sets. For them

the sets are all about play. For me there is an important element of display. This display focus often means I tend to place houses in a square grid, mandated by the street options I have available. Somewhat frustratingly to me, Mia's house does not conform to that mandate in any easy way.

Even with the differences in relationship to the sets, my daughters' assessment of the sets often coincides with mine on many points. To them Mia's house is a cool getaway somewhere in a forest, a weekend or holiday destination, but not the ideal place for the daily business of meeting with friends and going to school.

### Next to the road

Since I have been building MILS street modules for my City layout I was interested to see what could be achieved with the Friends houses.





Matching these houses to the height of the MILS modules took some engineering. We built some struts made to place under the houses using the materials we had available. Stacking a brick, a plate, and a tile creates the perfect support to place under the houses as a makeshift solution. We also felt there should be some green space

between the houses so we set about building that too. We then placed some cobblestone modules in front of the houses to see what the result would look like.

Next up we wanted to compare the result to what we could achieve using the new thick road plates. It took next to no time to create a street with some nice decoration. The first thing that drew our attention was that we missed a pavement, or at least some more separation between the houses and the street. We also noticed that it was fairly easy to connect the street elements to the houses to anchor them in place. We only needed to move a few of the decorative elements in the gardens to make space for the DBG 2 x 4 tile that connected it to the road plate. The street level is one plate (or tile) higher

than the level of the houses, but that wasn't really distracting. The real plus side of the thick road plate was all the decoration that comes with them: street signs, lampposts, traffic lights, flowers and small trees. Compared to the older thin road plates LEGO used to market, these decorative elements really help to create the feeling that this is an actual street, rather than an empty stretch of asphalt.

Despite the quick build and the great level of decoration, my daughters really preferred the slick look of the cobbled MILS modules. I can't really fault them for that. The thick road plates are the clear winner when it comes to everyday play, but when we get serious about building our next Heartlake City diorama, the MILS modules will be in high demand!





# 10271 Fiat 500

By Adrian Barbour

The Creator Expert series of LEGO cars has become very popular, especially with incredible sets like LEGO Designer Mike Psiaki's 2019 Mustang and 2021 Porsche 911 to choose from. Yet sandwiched between these two was 2020's smaller and less iconic 10271 Fiat 500 set by designer Pierre Normandin. In some ways this model could be seen as a step backwards, with its smaller scale and parts count, lack of steering, and less complex building techniques. To be honest, it's a set I could easily have passed on, if only because the vehicle choice isn't one that has much personal appeal for me. But I'm very glad to have had the opportunity to build and review this smaller set, as it really does have a lot to offer - and as we'll see later in this article, it also offers a lot more for those willing to go beyond the official instructions.

## Box and Contents

This proved to be the last Creator car to carry

the official 'Creator Expert' branding and logo, before the introduction of LEGO's new adult-targeted 18+ box art. The Fiat 500 is depicted in front of the Colosseum - a tie-in to 2020's 9000-piece 'microscale' architecture set - and the Fiat and Colosseum are also featured (via sticker) on the included canvas painting accessory.

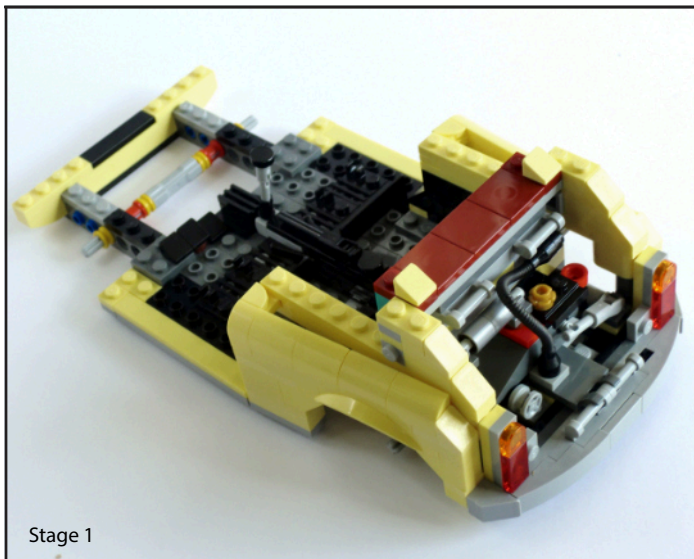
The box itself is much bigger than necessary, and was only about 60% full. Emptying the box provides nine bags across three numbered building stages, sealed instructions with sticker sheet, and a cloth piece bagged with cardboard support. Stickers are used for the art painting, luggage travel stickers, ignition, rear badge, rear grilles, A-pillars, and number-plates (for which there are three options). This does feel like a step backwards, and it would have been nice to have had at least the number-plates printed. The only printed parts in the set are 1x1 round tiles for the Fiat badges and dashboard dials. (You won't see the stickers in this review though, as I have other things planned after the primary build is done.) The instructions have a particularly striking cover,

and also include information on the real car's heritage and the model's design process.

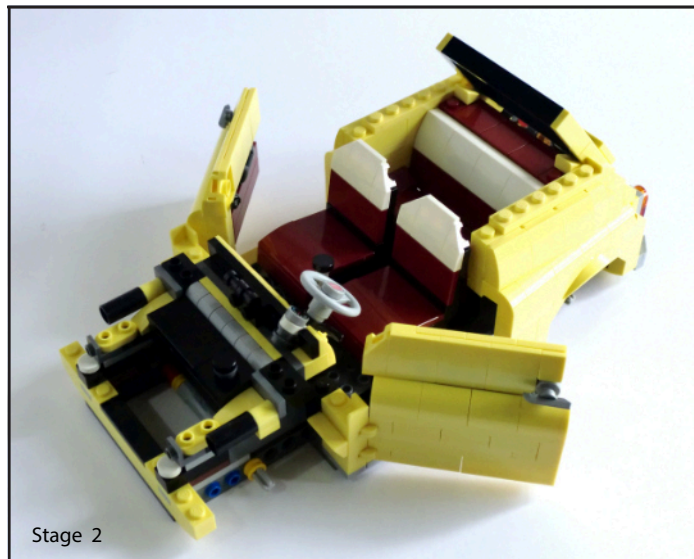
## Build Process

The first stage builds the chassis and rear fenders. The chassis is very sturdy, built from Technic bricks and interestingly connected with multiples of Plate 2x4 with Pins (#30157) for the floor. The two-cylinder (13 horsepower!) engine is also built here, and while detailed and technically accurate, somehow the colouring and shaping don't really come together for me in a convincing way. The engine block would benefit from better shaping and better colour-blocking for contrast with the chassis. The rear fenders though are fantastic, and as with the front fenders built later, they are angled inwards on hinge-plates to replicate the Fiat's signature body-shaping. This is quite cleverly built, very secure, and adds a great deal to the look of the final build.

The second building stage builds the doors, seats, and dashboard. The two-tone colouring for the seats is an interesting look, and accurate to



Stage 1



Stage 2



Front



Rear

the real vehicle. Both front seats are hinged for rear access, though they do need to be carefully positioned laterally to avoid interfering with the doors. The combined dashboard and fuel tank are built next, using an interesting SNOT assembly, and leaving space up front for the spare tire. The doors are nicely designed, featuring the signature stepped-ridge on the outside, and manage to include some interior paneling and detail without being too thick. Thanks to the angled rear fenders, they also open and close very smoothly without catching. Unfortunately, there is a half-stud gap left between the rear of the door's upper section and the B-pillar. This is necessary for the door's functioning, but is also quite noticeable.

Stage three completes the model, building the front end, roof, and artistic accessories. Unicorn horns are used well flanking the front Fiat badge, and the same excellent tapering technique from the rear fenders is used again at the front. The windshield is locked securely in place, and connects via 1x1 clips to the roof, providing strength around the hollow left for the fabric

sunroof. The build for the sunroof is simple, yet the resulting mechanism is immensely satisfying to operate, and it looks perfect. The accessories comprise a folding easel and canvas, with a nicely coloured two-tone storage box for the paint palette and paintbrush (or two if you include the spare). Stowing the easel requires putting it through the open sunroof, but these accessories really are a great addition to the set, adding value and character with only a few parts.

### Features and Functions

Steering is absent here (and would hardly be feasible given the scale of the set), yet all the functions included here work very nicely. The doors open smoothly, with the front seats hinging forward for rear access. The front hood only opens to about 45 degrees, though this is accurate and provides sufficient access to the spare wheel. The opening engine hatch also provides a secure mounting point for the art storage box accessory. The best function though is definitely the sunroof, which is fun to operate, looks great either open

and closed, and also gives access to the interior cabin detail.

### Overall Impressions

The real Fiat 500 is distinctly curved and rounded in ways that are very difficult to capture in LEGO form, even using the latest parts. Yet I think the designer here has done an admirable job. If there's one thing that's not quite there, it's rounded corners for the windscreen from the real car. But with the angled fender sections and the ridge-line along each side, the model is easily recognizable and looks really good even without stickers. And there are plenty of satisfying functions here even without steering. The Bright Light Yellow colour choice also looks nice, though I did notice some colour inconsistency between parts.

The weaker aspects of the model are the engine detail, upper door gaps, stickered A-pillars, and easel storage; while the highlights are the sturdy construction, satisfying functionality, the angled fenders, great accessories, and the canvas sunroof. So, is it a better set than the Ford Mustang or





Porsche 911 Creator cars? Well, no. But being smaller and cheaper than either of those sets, the value here is arguably just as good. The set will appeal to Fiat fans, and would also serve as an excellent introduction for anyone new to the Creator Expert vehicle range. I certainly found myself enjoying the build process and completed model much more than I'd expected to.

This is where a regular review would end, but today we're going the extra mile to see what else can be done with the parts from this set. Single set alternate builds can be tremendous fun, but even the best of us would be hard-pressed to do better than what previous HBM interviewee Firas Abu-Jaber (see HBM011 pp.41-43) has already achieved with his incredible Shelby Cobra alternate build. In fact, his model was so impressive I decided I had to build and review this creation too! (The wheel inserts shown are my own addition but everything else is built purely from the Fiat set's parts.) Instructions for this Shelby Cobra build can be purchased from Firas' website Bricks Garage ([www.bricksgarage.com](http://www.bricksgarage.com)) and are well worth the purchase!

### Alternate Build: Shelby Cobra

The build starts with a conventional but very sturdy chassis, featuring a dark red interior for the boot and seats. The dashboard is nicely detailed, and the windshield is securely mounted at a fixed angle with clips and hinge bricks. The build does make use of the sticker sheet, though placement is not the same as for the Fiat, so I've chosen not to apply them here. The rear fenders and quarter panels are really nicely sculpted, and the colour-blocking is impressive. Halfway through the build it still feels like I'm building an A-model rather than an alternate build limited by parts. Only the



underside of the chassis hints at compromises made due to limited parts selection.

The symmetrical side exhausts are very satisfying, though I did eventually swap out the Dark Bluish Grey 1x1 bricks for matching 1L Technic beams/connectors. The engine bay isn't super-detailed, but still looks at least as good as the Fiat's engine. The doors function very nicely, using stacked 1x2 rounded plates behind each door to avoid catching. The sun visors are a bit large, though easily removed. The front grille and headlights are a complex forward-angled sub-assembly, which is locked securely in place by the front fenders and adds a lot to the overall shaping of the front end. One flaw though is the gap left between the opening front hood and the angled windscreen area, and this is quite noticeable when viewed from the side. My only other nitpick is that the steering wheel is left a bit loose in terms of vertical movement, though this can easily be corrected with a few added parts. The build does leave a fair amount of Fiat parts left over, though given the absence of any roof on the Cobra it still used more of the set than I expected.

So how does the Cobra build compare with the set's official Fiat build? If I were comparing two A-models, unrestricted by parts limitations, then

I'd have to say that the Fiat wins – but only by the slimmest of margins. The Cobra build is an absolute masterpiece as an alternate build, and while your mileage may vary, I think most will agree that the Cobra leaves the Fiat behind in the dust as far as source material is concerned. If it weren't for Firas' brilliant alternate build, I probably would have passed on the Fiat set – and that would have been a great pity, as I would have missed out on a really nice official build with great accessories and functions. Yet now that I've built both cars, I can confirm that my copy of the 10271 set will absolutely be remaining in Shelby form for display. The Fiat set is well worth picking up on its own merits, especially if you are a Creator completist or Fiat fan, but with the Cobra as an alternate build it really is too good to pass up.

Again, this is where our article could conceivably end, but as the magazine last spoke with Firas a full decade ago in issue HBM011, I thought I'd reach out to him to ask about his recent work creating alternate builds from Creator Expert vehicles. If you're not already aware, his website also features incredible alternative builds for the 10265 Ford Mustang and 10295 Porsche 911 sets, with his most recent build being a jaw-dropping Lamborghini Countach built as an alternate to the official Porsche set (a model so good I immediately bought a second Porsche set just so I could build it). So here is our bonus designer interview!

**HBM:** You've been well-known in the AFOL community for many years already for your amazing car models, but what led to your recent focus on single-set alternative-builds over the less restrictive challenge of pure MOC-building?

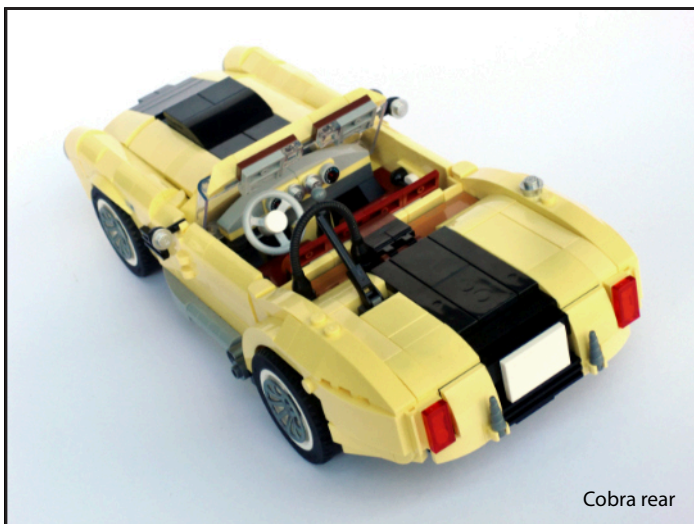
**Firas:** Ever since I started doing instructions for my designs, I began getting notes from people



Cobra front



Cobra side



Cobra rear



Cobra functions front



Cobra functions rear



Cobra functions side

having a hard time collecting the parts for my MOCs, especially those with rare, expensive or unavailable pieces, such as the Ferrari F40 wind-shield. This made me look for an easier way to have people enjoy my designs with the least effort possible, and for this there is nothing better than a single-set alternate build, as all you have to do is grab that specific set and then you can start building the model instantly! I still build MOCs out of pieces from my own stock, but most of these I keep unpublished and take to LEGO events.

**HBM:** Is the Ferrari FXX still your favourite

modern set, or have any of the more recent Creator Expert cars taken over the top spot for you?

**Firas:** I really loved the new 10265 Mustang set, but yes, the Ferrari FXX is still my favorite set, because it was the reason I got back into LEGO from my dark ages. I was stunned when I first saw the design of that set with all the new great pieces it used.

**HBM:** What are your thoughts on the official 10271 Fiat 500 build? Do you have any favourite details or points of criticism?

**Firas:** I do like that set but I don't love it,

maybe because I'm not a big fan of the real car. But design-wise, it's a well constructed set with nice colors. My favorite part is the angled front and rear sides above the wheels – a very creative idea in my opinion! But unfortunately I found the build itself to be a bit fragile.

**HBM:** How well does the Fiat set rate as a donor/parts pack for MOCs/alt-builds, compared to the other sets you've been working with?

**Firas:** If I were to sort the sets (which I built alts from) from the most useful to build alternatives down to the least useful, it'd be the





Mustang, the Porsche, then the Fiat. Actually it's very hard to build a good alternative out of it, but it's possible nonetheless.

**HBM:** How do you choose which vehicle to build as an alternative-build? Why the Shelby Cobra and Mazda Miata for 10271? Have you ever chosen a vehicle for an alt-build but then found it impossible to achieve well with the given parts selection?

**Firas:** I usually like to challenge myself. I choose most of my alternatives randomly, then keep trying to achieve an acceptable design. Sometimes it's easier, sometimes it's harder. As for the Shelby, I took the choice to build it because of all the 1x2 curved slopes in the Fiat set. I thought I could make a good-looking Shelby using those pieces. As for an unsuccessful alternative, it actually happened one time when I tried to build an Alfa Romeo Giulia Sprint GTA [from the Fiat set] but unfortunately I found it to be impossible.

**HBM:** Can you briefly outline your alt-model design/building process? How does it differ from pure MOC-building, and how long did the Shelby Cobra design take?

**Firas:** There's a big difference actually. Building a good-looking model from a limited amount and type of pieces is much harder and sometimes much more frustrating than building a free MOC from my own pieces. The main challenge is making the model sturdy enough, and making it playable with functional elements. Making

a strong chassis is a priority when building alternatives, and then comes the overall look and sturdiness of the overall body. After I've achieved this, I start working on the interior, engine and the smaller details of the model. The Shelby model took me around one month to build.

**HBM:** What are you most satisfied with in your Shelby Cobra build, and which aspects were the most challenging?

**Firas:** The answer to both questions is the same – tilting the front end was very challenging to achieve and this is my favorite part of the build. If it wasn't for that feature, I believe the model would look too boxy and straight at the front end.

**HBM:** You've mentioned before that you have difficulty ordering parts in Jordan, and that you consequently work from limited bricks. Is that still the case, and have things changed for you under covid restrictions over the last year?

**Firas:** Nothing changed here at all, before or after Covid. It's still the same, and it's still expensive to order pieces online, and very expensive to buy sets from my local LEGO store. That's actually another reason why I decided to build more alternatives, as it's always easier to order official sets online.

**HBM:** You've also mentioned that you don't use digital design tools when building, but prefer to just dive right in with physical bricks. Has that changed at all now that you're selling instructions

online? And how do you manage to nail the scaling and shaping so well without prior planning?

**Firas:** It's still the same here as well. I still sit down and start putting pieces together, just like how kids build with LEGO, and just as it is supposed to be in my opinion! I have a professional digital designer who makes the digital instructions for my models. At first I was working with Simone Bissi, but then he got very busy so now I'm working with Ron Hebben of ForelockMocs. Making digital instructions or building digitally is the last thing I'd want to do.

**HBM:** Do you have any upcoming projects? You've mentioned before your love of the first VW Camper Van set – will you be trying your hand at alt-builds from the just-released new version? Or do you have more planned from the Creator 911 Porsche set?

**Firas:** Actually both. I have more plans for the Porsche set and I think I'd like to build a couple of alternatives from the new VW set – it looks challenging to build alternatives from, but I'll see what I can do. Hopefully there will be more to come in the future, but I prefer to keep my upcoming projects as a surprise!

*We wish to thank LEGO for providing this set for review. The opinions in this review are not supported or endorsed by LEGO.*

*Special thanks also to Firas Abu-Jaber for contributing his time and comments for this article.*





By Ahmad Sahar

## Behind the MOC: The Making of the RI5 Wooden Truck

For this issue of Hispabrick Magazine with its overall theme of "On the Road", I was inspired to create a LEGO Mindstorms model of an early LEGO wooden truck toy originally released between 1930 and 1940. You can see a picture of this truck at the following link: [https://brickipedia.fandom.com/wiki/Wooden\\_Truck\\_4](https://brickipedia.fandom.com/wiki/Wooden_Truck_4)

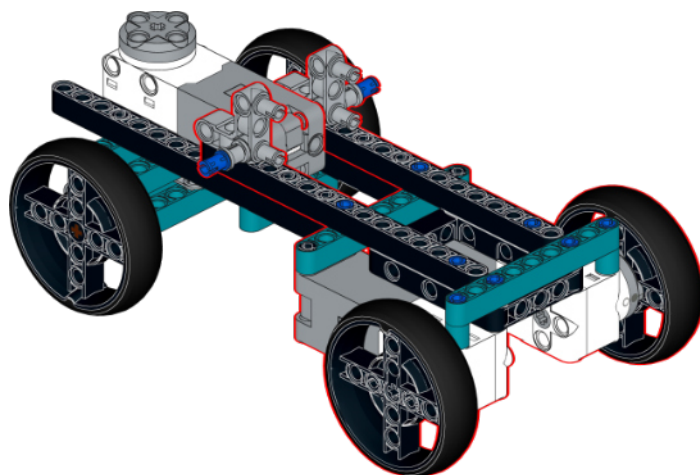
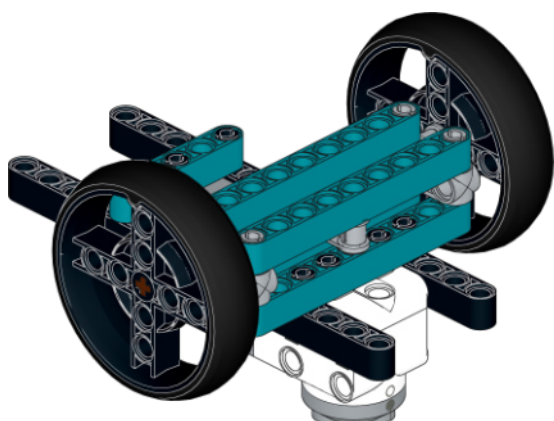
In this brief article, I'd like to share how I went about creating the model.

The first step was the model selection. I had seen a model of the early LEGO wooden truck during a virtual visit of the LEGO House, but I could not remember exactly what it looked like. Googling for LEGO wooden toys led me to Brickipedia, which has a page covering all the wooden toys that LEGO have made ([https://brickipedia.fandom.com/wiki/Wooden\\_Toys](https://brickipedia.fandom.com/wiki/Wooden_Toys)). While perusing this page, I saw the wooden truck shown in the link above. I was attracted to this truck because it had six large wheels, and there are also six large wheels in the 51515 set.

The most complicated part of the build would be the steering mechanism, so I decided to start there. The mechanism was inspired by a design I saw years ago in a book by Laurens Valk, titled *The LEGO Mindstorms EV3*

Discovery Book. I went through a few iterations until I was happy with it. It's actually much simpler than the EV3 version shown in the book due to how the RI5 medium motor is designed.

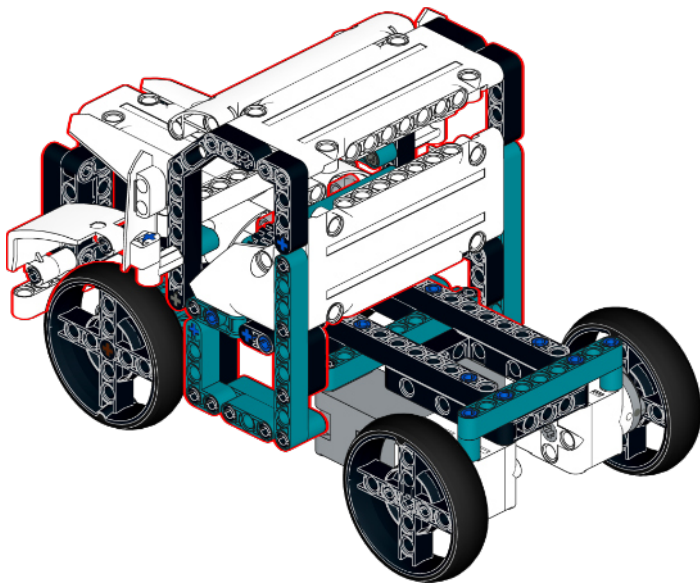
Once the steering mechanism was done I realized that there had to be a way to support the driving wheels at the back. I experimented by adding liftarms beside the medium motor, and after a few iterations I had a complete chassis with two medium motors at the back, each driving one wheel. I could have used a differential but I chose not to, because having each



wheel independently driven meant that I could program different speeds for each motor later, in effect acting as a software differential.

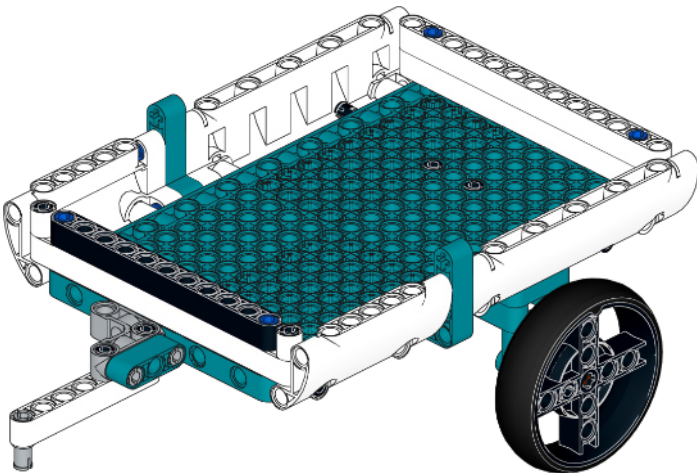
I then tackled each component in turn, starting with the front grille, followed by the bonnet, front mudguards, and cabin. I did not plan anything



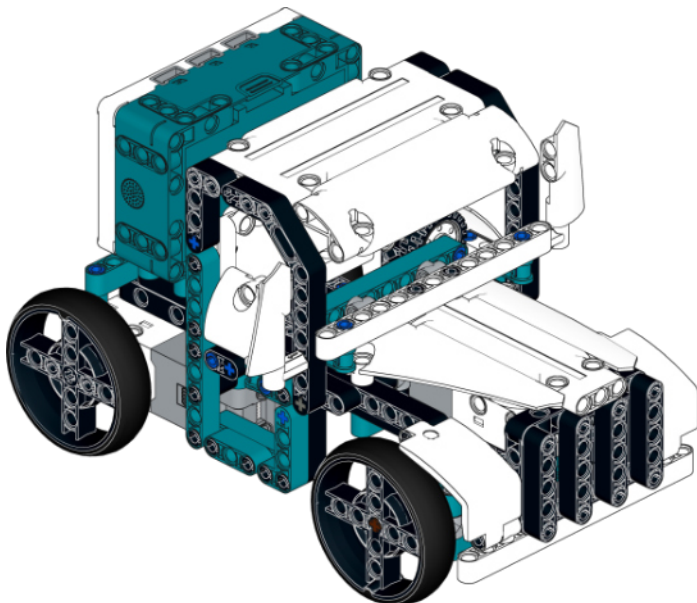


initially – the process was just one of adding various parts until I was happy with how it looked.

With the truck complete I then started on the trailer. This was a pretty straightforward build. Again, I did not plan things, and just added parts until



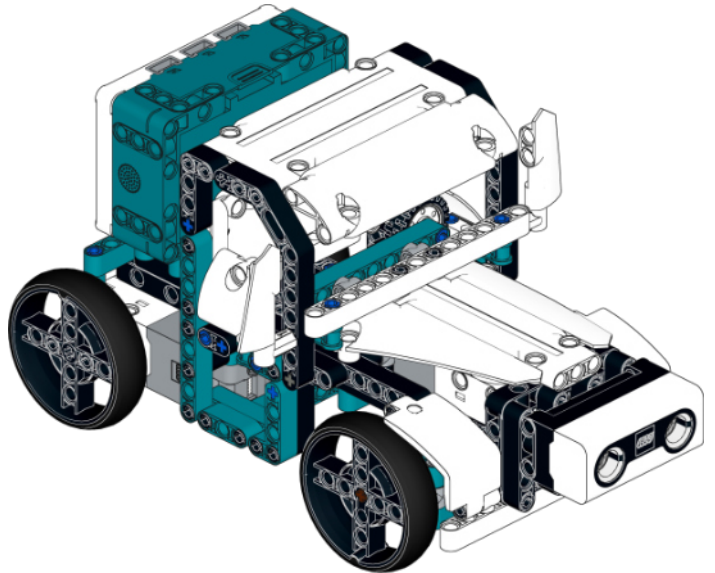
I was happy with the result. Initially I had thought of putting the RI5 brick on the trailer but then I realized that by putting it just behind the cab, all the wires from the different motors could be connected easily and it would also



put some weight on the driving wheels to provide good traction. This placement also made it easier to charge by making the USB port easily accessible.

Next up was adding the Ultrasonic sensor. This was a bit of an afterthought, but I found that it could be mounted easily on the front grille, and I could then run the wires under the chassis to the brick.

The final step was programming the truck. I wanted it to move forward until an obstacle was detected, at which point the truck would reverse and turn, before going off in a new direction. I found that the connection to the trailer had to be extended for it to work reasonably well.



I also found that the front wheels would rub against the top of the bodywork, so I had to remove some parts to make sure the front wheels could turn unhindered. I could always have added parts to increase clearance for the front suspension, but this would have meant that both the rear drive motors and the trailer would also have to be modified, so I chose not to.

The whole process took me roughly four hours, and at the end I had a cool truck that would hopefully be fun to play with.

You can find the complete photo-based building instructions here: <https://www.youtube.com/watch?v=py-uXbFB93A>

I hope that this article has been interesting and informative, and I look forward to writing more articles for the next issue.



# TOP MOC ROUTE 66



**Fabrizio Franchini**

(AKA Faber Mandragore), Italy  
*Street Racers' Haunt, 2020*

I left my dark age in 2016 through buying a Star Wars set and from that moment I have rediscovered the pleasure of building with bricks and the real fun and creative process in building MOCs.

[https://www.flickr.com/photos/faber\\_mandragore](https://www.flickr.com/photos/faber_mandragore)

**Alexandre** (AKA Alex  
THELEGOFAN), France

*Mini Road Trip, April 2018*

My name is Alexandre. I am from France, I'm 19 years old, and a student in computer science. I like photography and LEGO for sure. I have built with LEGO from as far back as I can remember. My dad and I started with LEGO Technic models because he was a huge fan, and we then moved to minifigure collecting and special parts.

[https://www.flickr.com/photos/alex\\_thelegofan/](https://www.flickr.com/photos/alex_thelegofan/)





**Sean Runkle** (AKA SDR), USA

*Scrambler on Route 66, 2020*

For as long as I can remember I have been building with LEGO bricks. My parents told me that the first time I used them was when I was just a couple of years old at my grandparents house, where they had a bucket of old bricks.

<https://www.flickr.com/photos/164108125@N03/>



**Steffen Kasteleiner** (AKA Buff83ST), Germany • *Route 66 Back on Track, 2018*

I got hooked on LEGO first through Duplo, and I got my first Lego 12V train when I was six years old, back in 1989. When my family moved to a new house one track segment got lost and sadly my train couldn't go around in a circle anymore — until Lego offered some more 12V spares before the 9V system took over. As a kid, I spent weeks setting up LEGO cities in a playroom at my family's, and the layouts included more and more self-built creations over time. I had a dark age during my teenage years, though I sometimes still let the trains circle in a layout I had kept. I became re-attached to my favorite childhood toy again as a student, when I began working at Frankfurt International Airport, where I got tons of inspiration for building aircraft.

<https://www.flickr.com/photos/29666619@N04/>





**Thomas Weigelt**

(AKA Sylon-tw), Germany

*Red 66, January 2017*

As a kid of the 90s, LEGO was a beloved part of my childhood. Later other things took my interest and I sold all my LEGO. Several years later, when my wife was pregnant, LEGO came back to mind and my wife and I made a deal. If it were a boy (we didn't want to know the gender until birth), the new father would get a LEGO castle. So... the first bricks were back in. After that I started to browse the internet. I hit on Brickset and LEGO Cuusoo (now LEGO Ideas). I fell in love with a small airplane project, tried to build it, and contacted the creator (who now works for LEGO). I also created a Flickr account, which is where you will find the rest of my story.

[https://www.flickr.com/photos/sylon\\_tw/](https://www.flickr.com/photos/sylon_tw/)

**Peter Dornbach**

(AKA Dornbi), Hungary

*The Route 66, April 2020*

I played a lot with LEGO as a kid, which was not always trivial to get in the Eastern Bloc. I had a dark age, and started getting back into LEGO during a trip to the US and visiting a LEGO store. Initially I was more interested in Technic, but the interest gradually shifted to scale modeling of airplanes and cars. Apart from the topic, I also met with a lot of enthusiasm and friendly builders on Flickr, in groups like LUGnuts and the people involved in the Military Build Competition, like Mad Physicist.

<https://www.flickr.com/photos/dornbach/>





**Maciej Kocot**

(AKA Toltomeja), Poland

*Route 66, October 2013*

LEGO bricks were always my favourite toy since a young age. I re-discovered them in high school (around 2011) when I found an online AFOL and TFOL community in my country. I soon joined their exhibition and have attended many other events since then.

<https://www.flickr.com/toltomeja>



**Stefan Mueller** (AKA Bricking-Robo), Switzerland • *Brickroad-Motel, April 2021*

I started building with LEGO bricks as a child and have stayed with it more or less since then. But I really first started building big MOCs and collecting LEGO sets after visiting an exhibition from my local LUG (SwissLUG) in 2009. I would say my "turning point" set was the 2008 Green Grocer modular building (set 10195).

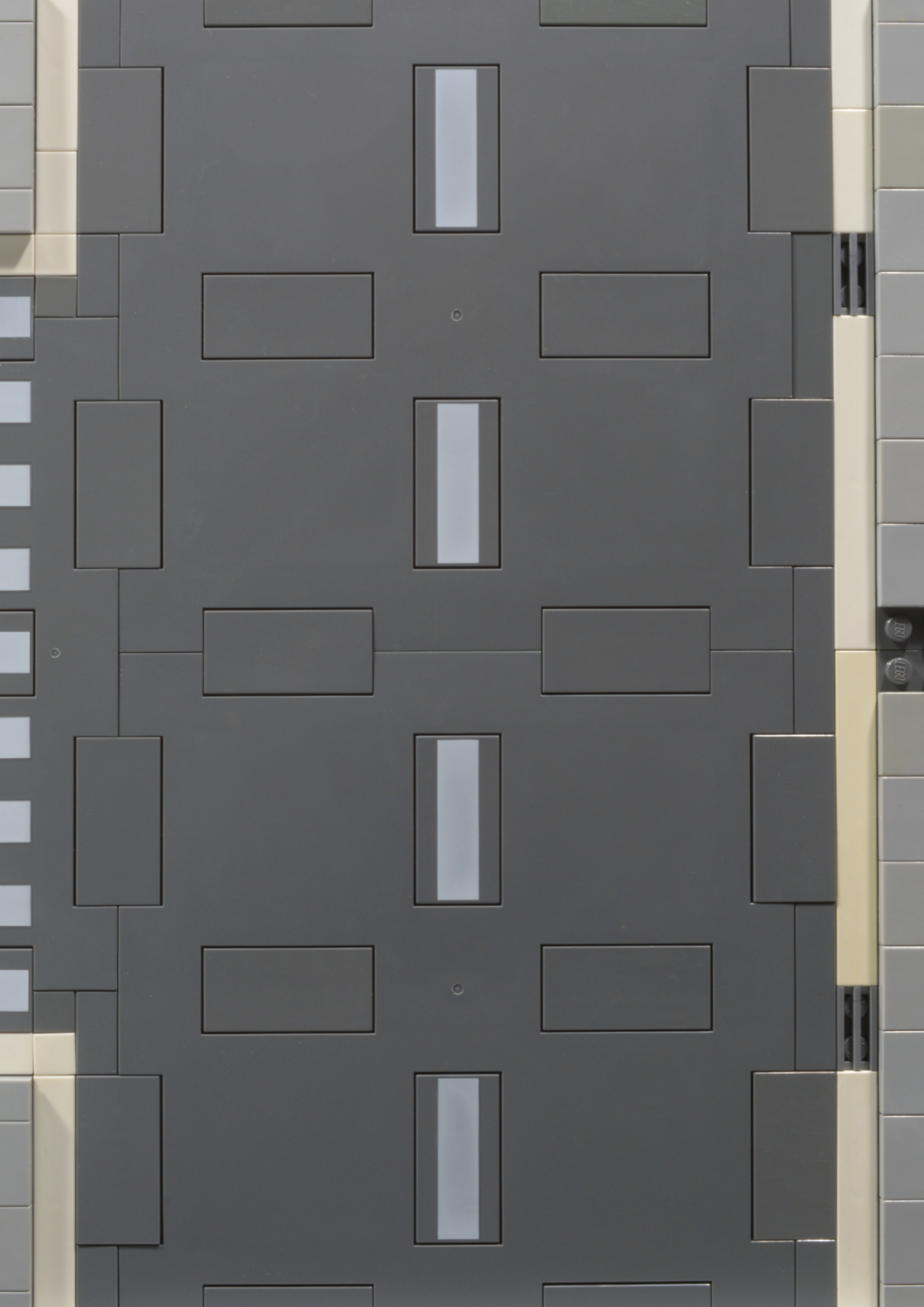
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# Beyond Desmontados









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ENGLISH

