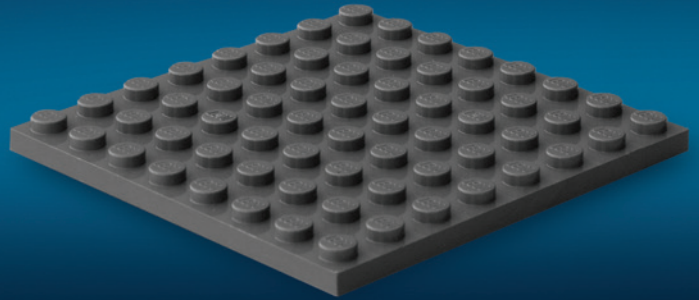


TERRAFORMING

From solid bedrock to landscape and water features, this chapter shows how to create natural environments that form the foundation of your world.

BEDROCK

Plates are the bedrock of your LEGO world and define its size. They're available in sizes up to 16×16. If you want to build bigger, just join several plates together. Empty plates may not be much to look at, but imagine their boundless potential!

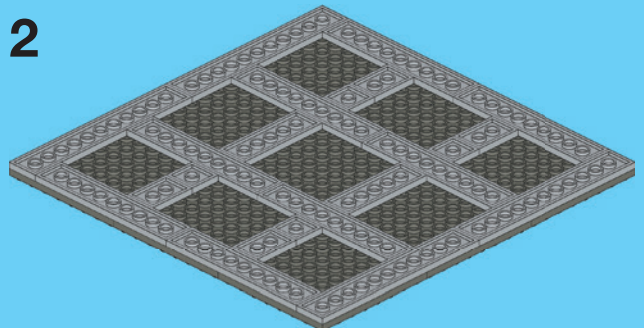
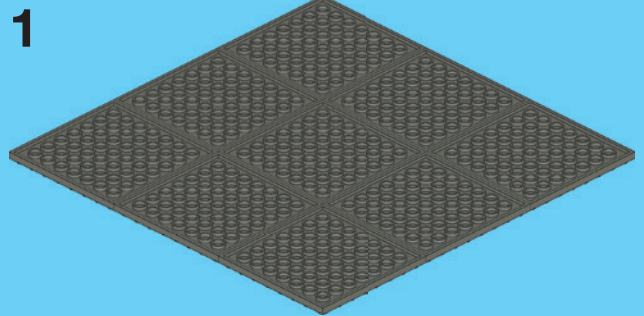


JOINING PLATES

In the real world, tectonic plates shift, causing earthquakes, volcanoes, and other natural disasters. In a LEGO world, you can avoid such calamities by firmly connecting your plates. Line them up carefully, then reinforce the seams from below using 2-stud-wide plates, as shown on the bottom right.

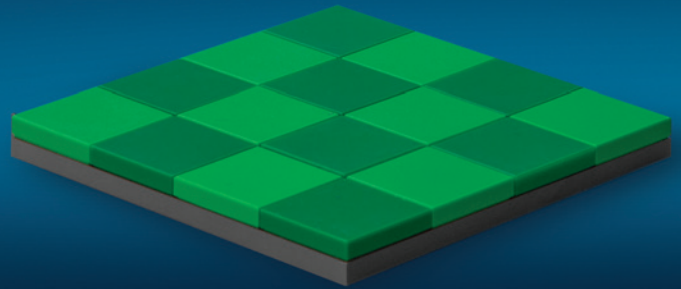
We use 2-stud-wide plates to join larger plates because it's best to avoid stacking larger LEGO plates directly on top of each other. Large plates tend to flex slightly, which is compounded when they're joined together. This may make your base slightly uneven. (If you're making a world of leaning towers, disregard this advice.)

The human eye is surprisingly good at spotting misalignment. Even a tilt as small as 1 degree can look “off,” especially across a large build.



FLAT LANDSCAPES

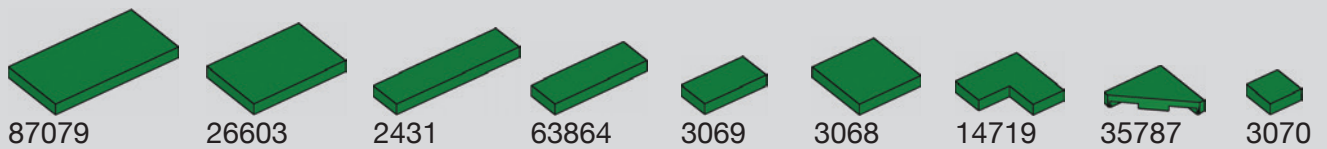
Here's the simplest LEGO landscape: a flat surface made with tiles. You likely have loftier ambitions for your world, and growth requires studded elements. That said, refer to the tile type guide below for any flat sections you want to include.



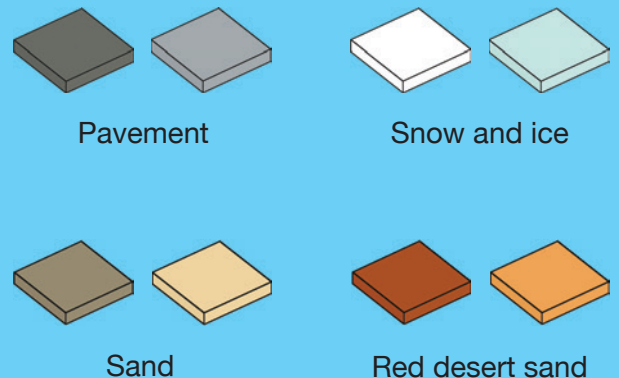
TILE TYPE GUIDE

Tiles come in a variety of sizes and colors, making them perfect for representing everything from

smooth, flat earth to ice or man-made features like pavement. Later in this chapter, you'll discover how tiles can also bring water to life in your landscapes.



Tile colors can represent many types of landscapes. Here are some ideas to inspire your designs.



Earth

Grass

Sand

Red desert sand

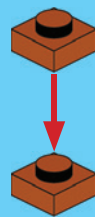
Pavement

Snow and ice

A BASE TO BUILD ON

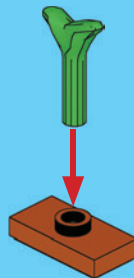
You've learned how to create a bedrock base and a simple flat landscape to top it, but LEGO tiles are like barren plains from which nothing can grow. Your base will need studs wherever you want to place landscape features, buildings, or transportation. LEGO studs are like seeds—starting points from which your world can take shape and flourish.

There are builders who like to improvise as they go and builders who like to plan everything in advance. However you wish to proceed, the examples on these two pages show how bases looked before the world was built on top of them. As you can see, a world sprouts from studs!



STUDS

The iconic cylindrical bumps on LEGO elements are called *studs*. They connect to other elements using clutch power.

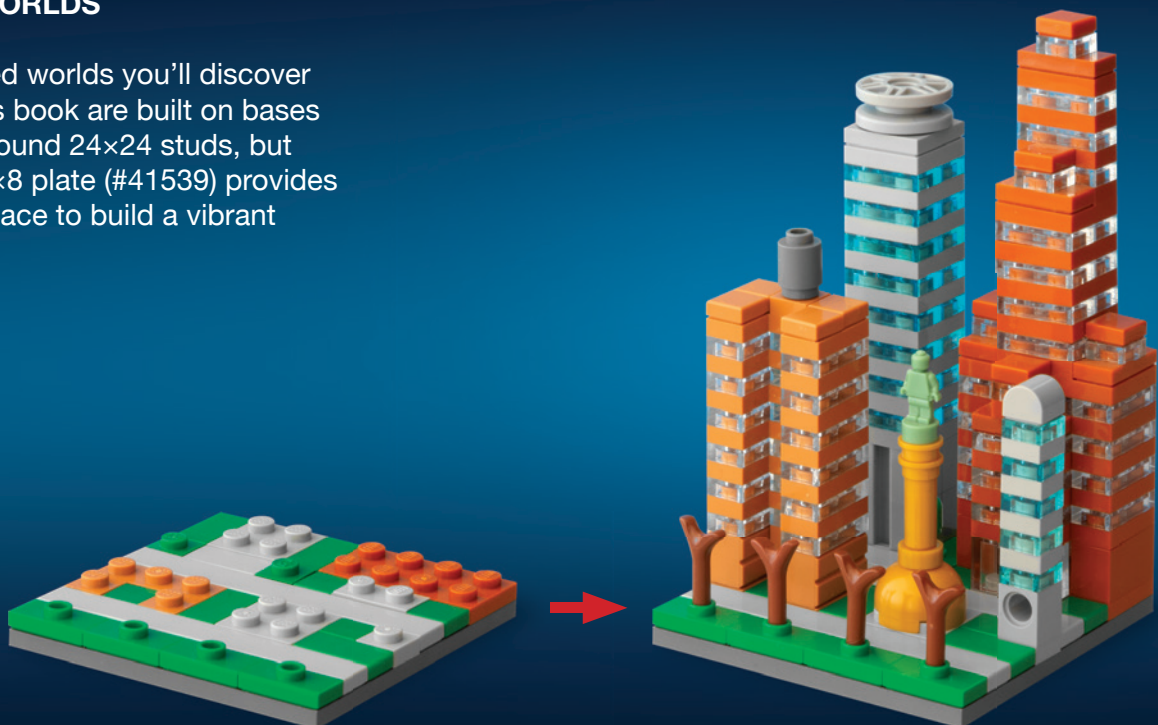


OPEN STUDS

Open studs have a hole in the center, allowing an additional connection point for bars or similar parts.

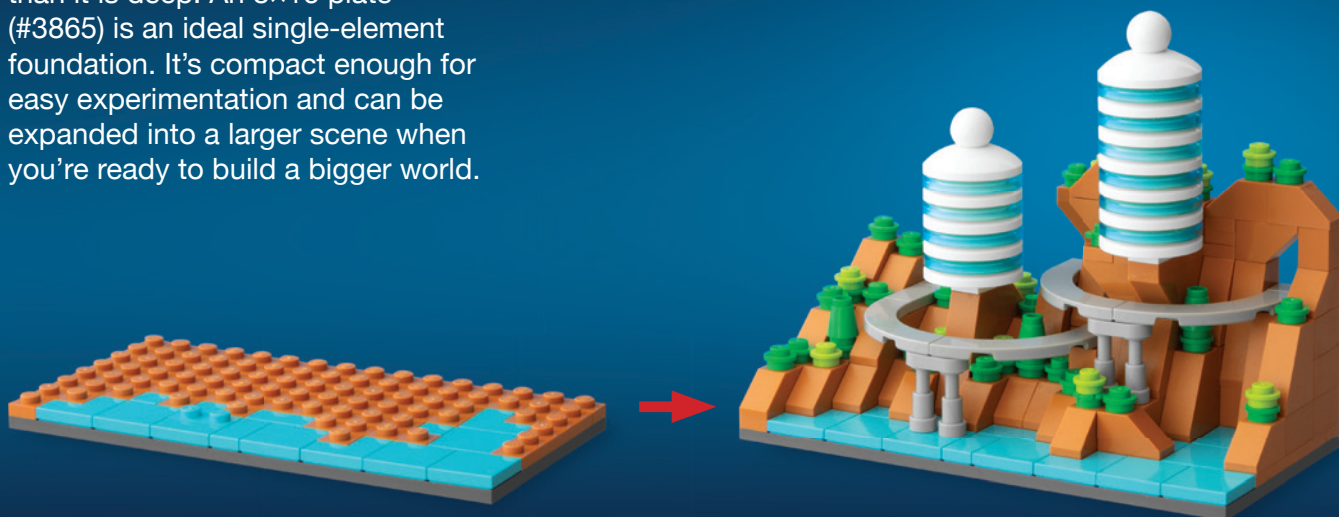
SMALL WORLDS

The themed worlds you'll discover later in this book are built on bases that are around 24×24 studs, but even an 8×8 plate (#41539) provides enough space to build a vibrant scene.



PANORAMIC WORLDS

You can create a panoramic world by starting with a base that's longer than it is deep. An 8x16 plate (#3865) is an ideal single-element foundation. It's compact enough for easy experimentation and can be expanded into a larger scene when you're ready to build a bigger world.



WIDE OR SQUARE?

People naturally see the world in a wide format, similar to the proportions of a movie screen. Building with a longer base captures that expansive feeling.

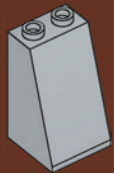
A square base, on the other hand, offers a balanced frame that encourages the eye to explore in all directions, not just left to right.

It's your choice!

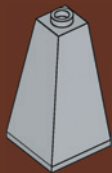


SLOPES

Slopes take your world to new heights. LEGO slope elements come in many shapes, sizes, and colors to shape your landscape, from gentle hills to towering mountains.



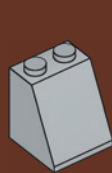
3684a



3685



4460b



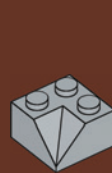
3678b



60481



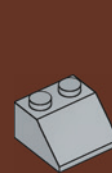
4286



3046



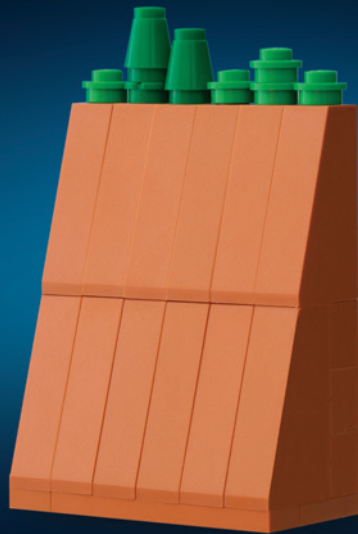
3045



3039



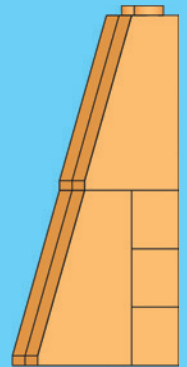
3040



BASIC SLOPE

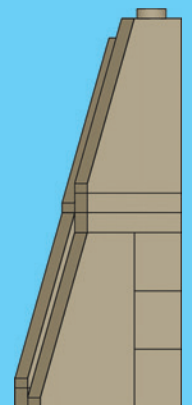
Simply stacking slopes, while supporting the non-sloped side with bricks, creates a uniform incline. While this kind of slope is uncommon in nature, it can represent man-made earthworks, such as the raised ground used for castle fortifications.

For a gentler rise, use slope bricks with shallower angles.



STAGGERED HEIGHTS

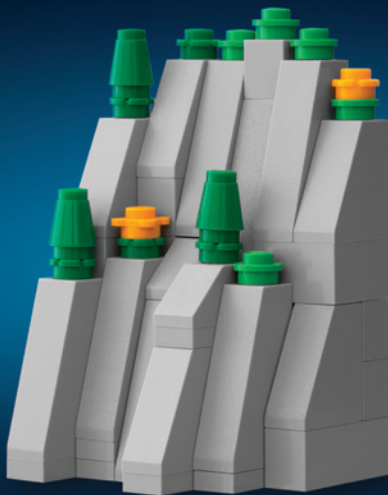
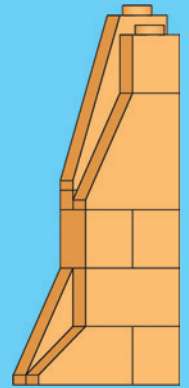
Staggering slope bricks by adding varying numbers of plates beneath them adds visual interest and creates a more natural-looking incline. This technique breaks up the uniformity of a straight slope and better mimics the uneven terrain found in real landscapes.





MIXED SLOPE TYPES

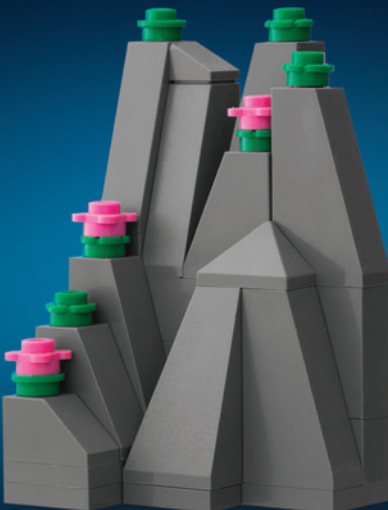
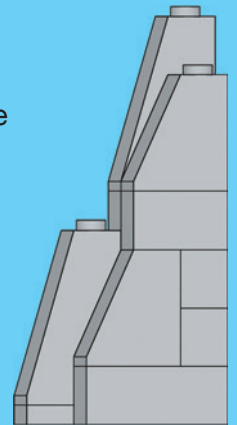
Mixed slopes combine staggered slope heights using bricks and plates with slope bricks of varying angles. The result is a more rugged appearance.



STAGGERED FOOTPRINT

In addition to staggering the height and angle of the slopes, you can also stagger the footprint, with some slope elements jutting out at the base. The result is a slope that's no longer uniform horizontally or vertically.

Exposed studs are left at varying heights, allowing for the placement of plants or small structures.



PERPENDICULAR SLOPES

This ultimate slope builds on all the previous stages and adds a new technique: placing slope elements perpendicular to one another.

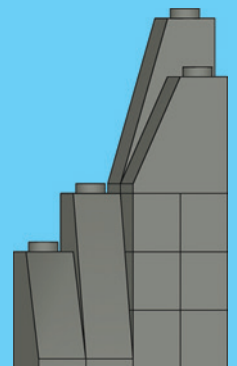
Notice some of the exposed studs are topped with the studless slope pieces shown below.



15571



54200

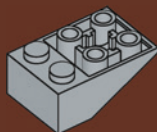


CLIFFS

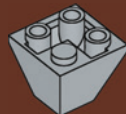
If you're dreaming of landscapes steeper than slopes, it's time to try some cliffs. Cliffs are built similarly to slopes but add LEGO's inverted slope elements, like the ones shown below, to create sheer drops and overhangs.



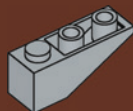
2449



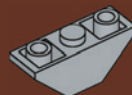
3747b



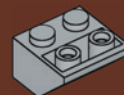
3676



4287



2341



76959



3665



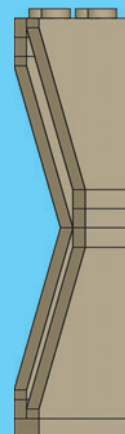
BASIC CLIFF

Capping regular slope elements with their inverted counterparts creates a sheer, 90-degree drop from top to bottom. This smooth, uniform cliff face looks like it was sculpted by man-made tools or machines. Perhaps it's part of a quarry or the walls of an ancient fortress carved into rock.



STAGGERED HEIGHTS

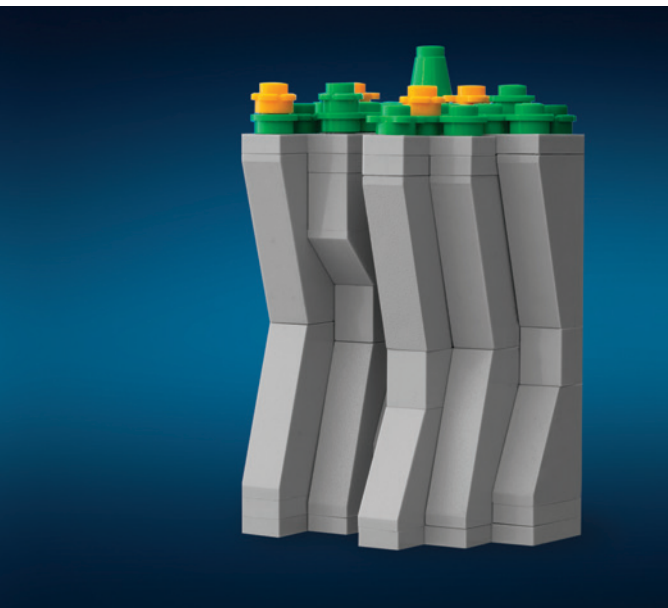
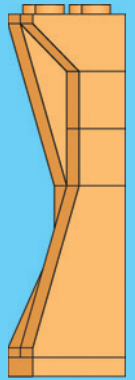
For more organic cliffs, stagger regular and inverted slope elements at different heights by stacking plates underneath. This uneven layering breaks up straight lines and echoes the rugged look of real rock formations.





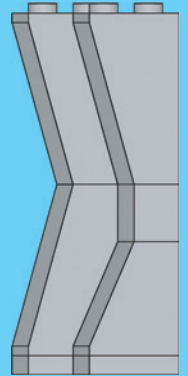
MIXED SLOPE TYPES

Combining both regular and inverted slope elements with different angles and heights adds visual complexity and depth. Rather than using plates to create height variation like the previous example, this type uses bricks. The result is more sheer vertical surfaces. Watch out for falling rocks!



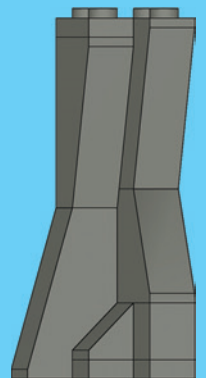
STAGGERED FOOTPRINT

Along with mixing brick heights and angles, as shown in the previous example, this cliff's bottom bricks extend out unevenly, creating an irregular footprint that looks as if it was carved by crashing waves.



PERPENDICULAR SLOPES AND INVERTED SLOPES

As with the ultimate slope, this ultimate cliff builds on all the previous types and adds the technique of placing slope elements perpendicular to one another. This method creates complex angles that beguile viewers and stump climbers. You can also build cave entrances the same way.

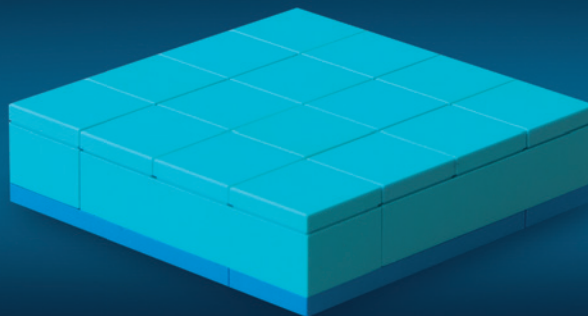


SOLID-COLORED WATER

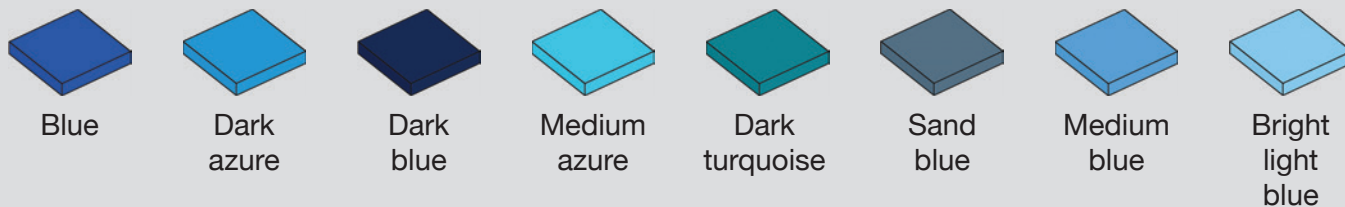
Water brings life to a LEGO world and adds breathing room between landscape features.

ADVANTAGES

Using solid-colored tiles to represent water gives you access to a wide variety of tile shapes and shades of blue. To suggest depth, start with water-colored bricks and layer tiles on top. You can use darker shades of blue farther down to imply deeper water.



SOLID COLORS



As always, use plates or other bricks with studs in areas where you plan to add features.

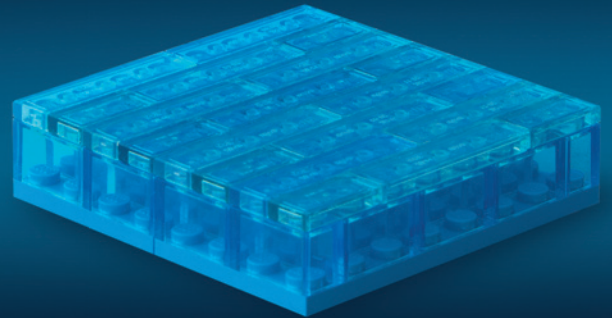


TRANSPARENT WATER

Transparent bricks create authentic water effects because they're more like the real thing.

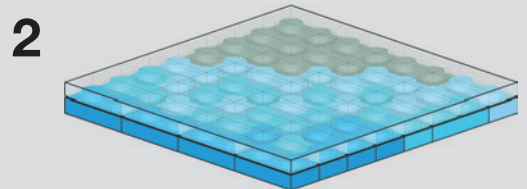
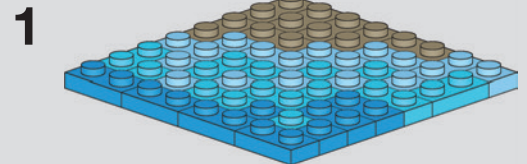
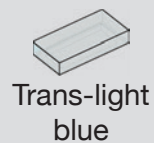
ADVANTAGES

Using transparent tiles creates a shimmering, realistic surface that changes with lighting conditions. Though fewer shapes and colors are available compared to solid-colored tiles, the visual effect can be striking. Place transparent tiles over transparent bricks to suggest depth.

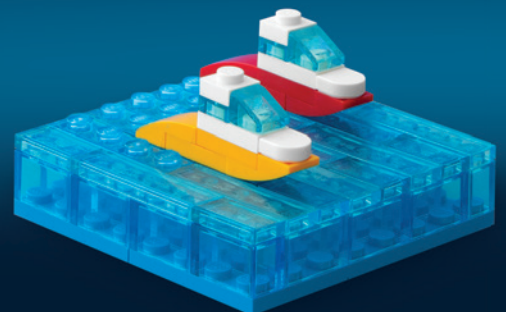


TRANSPARENT COLORS

While only two transparent blue colors are commonly available in tile elements, you can dramatically change their appearance by layering them over plates of different colors. Since plates come in nearly every LEGO color, this technique lets you create a wide range of depth effects.



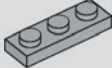









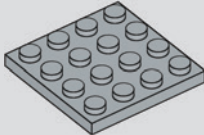



In addition to providing attachment points, studs can be used as ripples or waves.



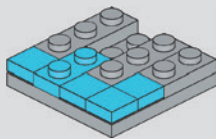
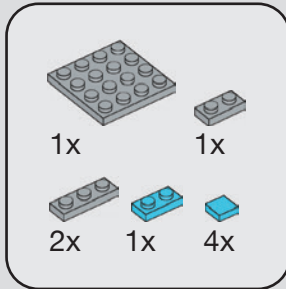
SOLID-COLORED WATERFALL

As with flat water, the advantage of using solid-colored bricks for waterfalls is that they come in a wider variety of element types than transparent ones, offering more options for shaping curves and flow.

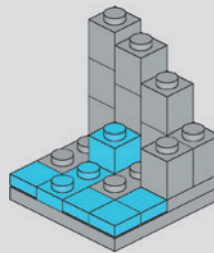
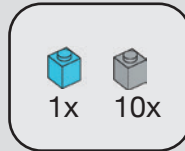


- | | | | | |
|--|--|--|---|--|
| 
2x
3623 | 
1x
3023 | 
1x
3023 | 
5x
3070 | 
1x
4073 |
| 
2x
6091 | 
2x
3040 | 
2x
15571 | 
2x
3005 | 
11x
3005 |
| 
1x
3031 | 
2x
4460b | 
1x
60481 | 
1x
3665 | |

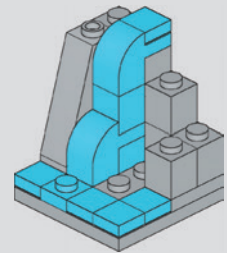
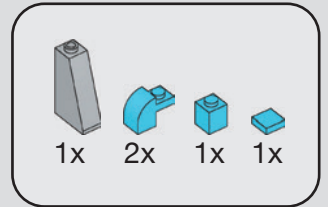
1



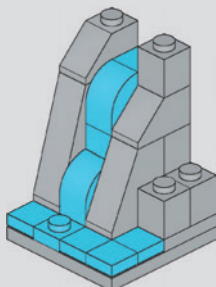
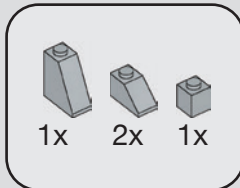
2



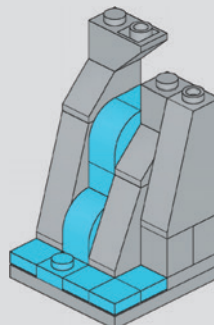
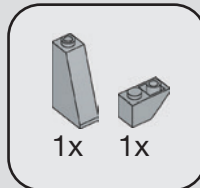
3



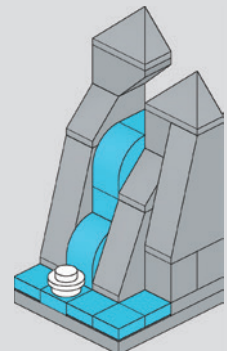
4



5







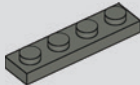



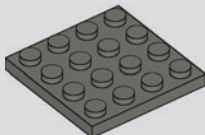



6



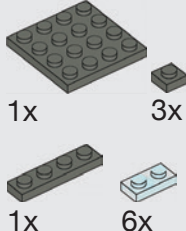
TRANSPARENT WATERFALL

Using transparent bricks to build LEGO waterfalls gives them a luminous quality similar to the real thing. While fewer element types are available compared to solid-colored bricks, the visual effect can make up for this limitation.

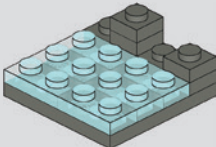


- | | | | |
|---|--|---|---|
| 
3x
3024 | 
1x
3024 | 
2x
4073 | 
8x
4073 |
| 
1x
3710 | 
2x
3023 | 
16x
3023 | 
1x
15571 |
| 
1x
3031 | 
3x
2449 | 
2x
3040 | 
1x
11477 |

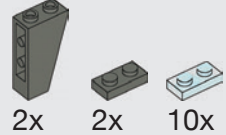
1



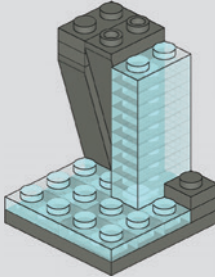
1x 3x
1x 6x




2



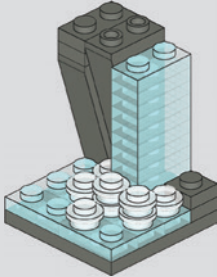
2x 2x 10x



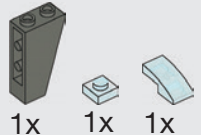
3



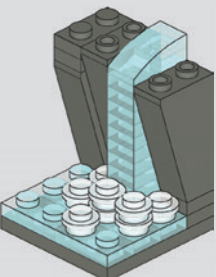
8x



4



1x 1x 1x



5



2x



6



1x 2x








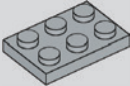













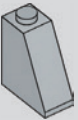

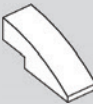






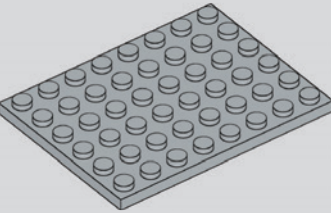
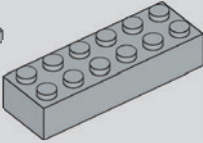
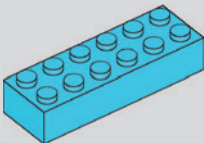
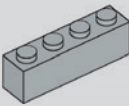
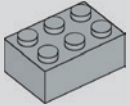
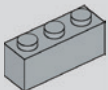

WINTER WATERFALL

Icy waterfalls are a magical feature of cold climates, where freezing spray and mist form towering sheets of ice along cliff faces.

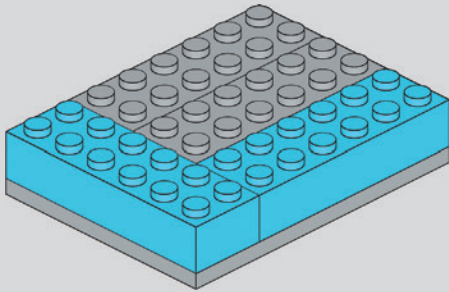
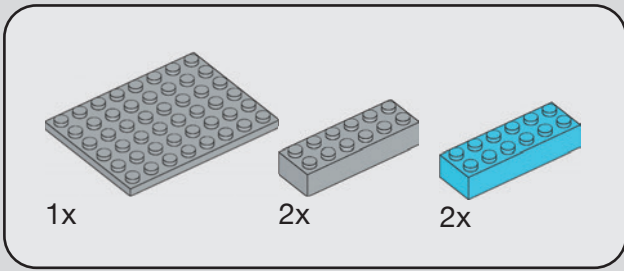
This winter waterfall model uses sideways building techniques to create vertical ice walls. You can expand the techniques you learn in this build to create a massive waterfall landscape for a winter wonderland.

You'll explore more sideways building techniques for architecture in the "Building Sideways" chapter beginning on page 38.

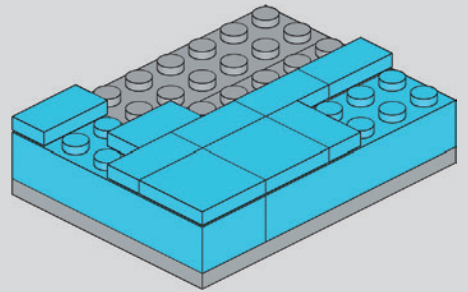
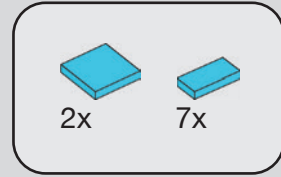


- | | | | | | | | | | | | |
|--|---|---|--|---|---|---|--|---|---|---|---|
|  |  |  |  |  | | | | | | | |
| 6x
3024 | 6x
3024 | 6x
3024 | 10x
4073 | 2x
85861 | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 2x
3021 | 1x
3022 | 2x
3068 | 6x
3005 | 3x
3005 | 2x
3023 | 6x
3023 | 3x
3023 | 9x
3069 | 1x
3070 | 2x
89522 | |
|  |  |  |  |  |  |  |  |  |  |  | |
| 3x
2449 | 1x
4460b | 1x
60481 | 2x
61678 | 2x
50950 | 5x
32952 | 5x
6091 | 1x
3040 | 1x
3665 | 6x
11477 | 5x
15070 | |
|  |  |  |  |  |  |  | | | | | |
| 1x
3036 | 2x
2456 | 2x
2456 | 3x
3010 | 4x
3002 | 1x
3622 | 4x
3003 | | | | | |

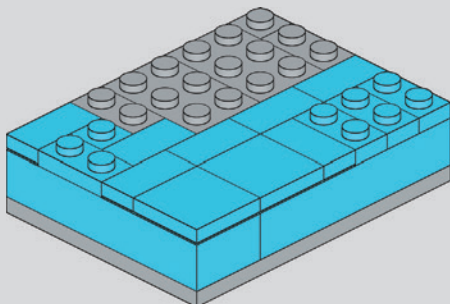
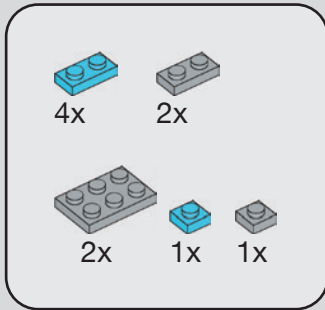
1



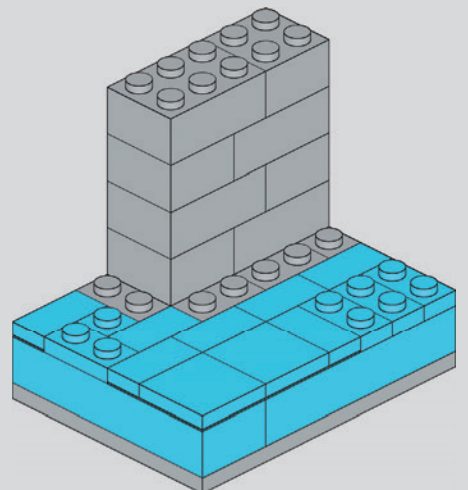
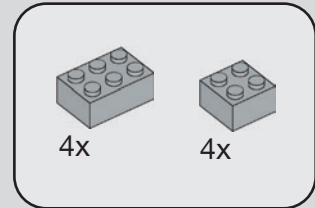
2



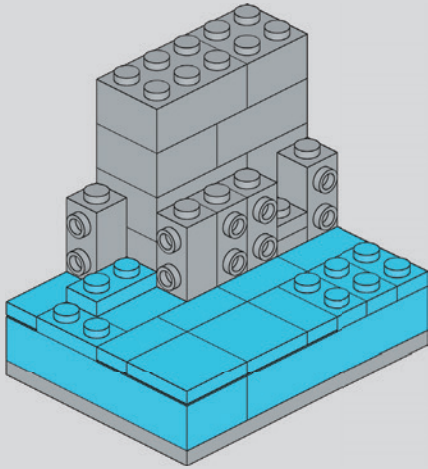
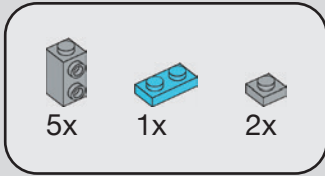
3



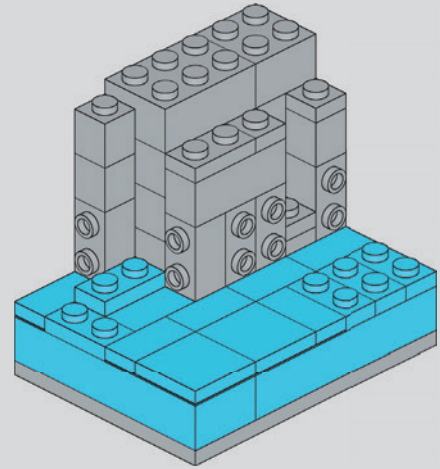
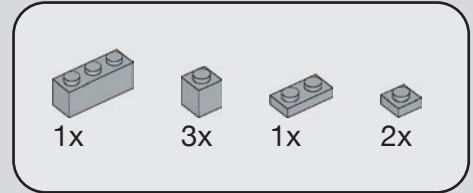
4



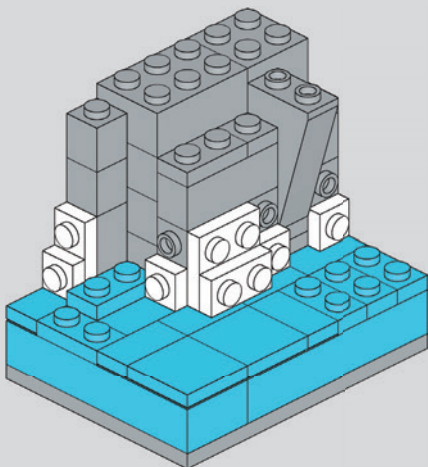
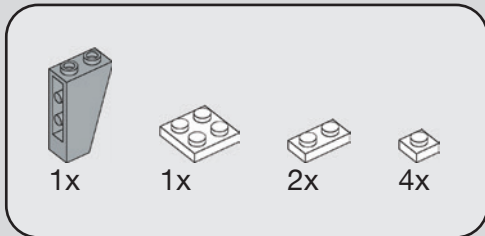
5



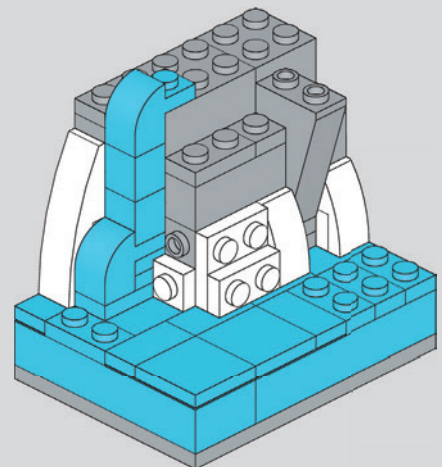
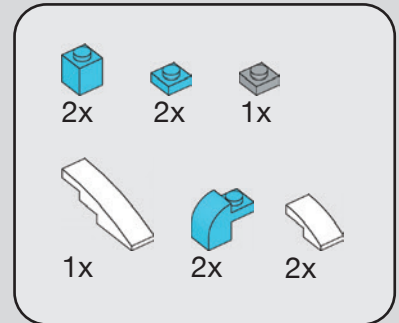
6



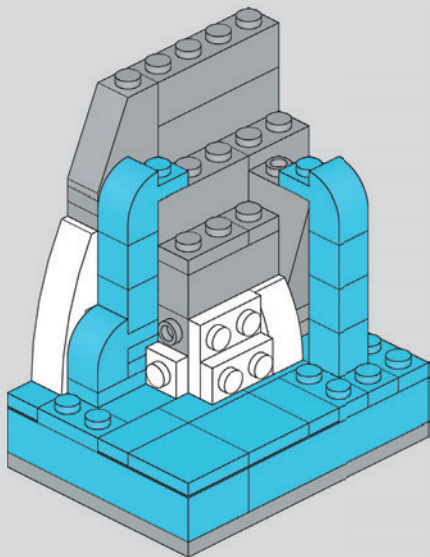
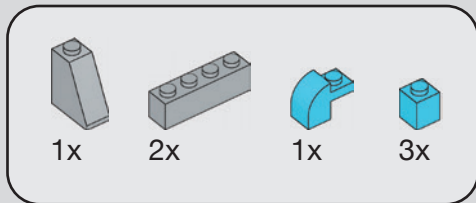
7



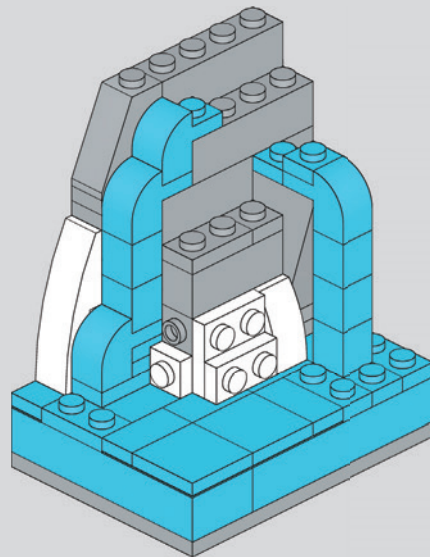
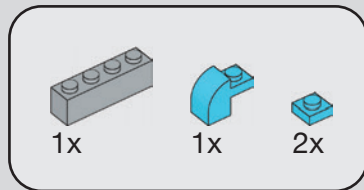
8



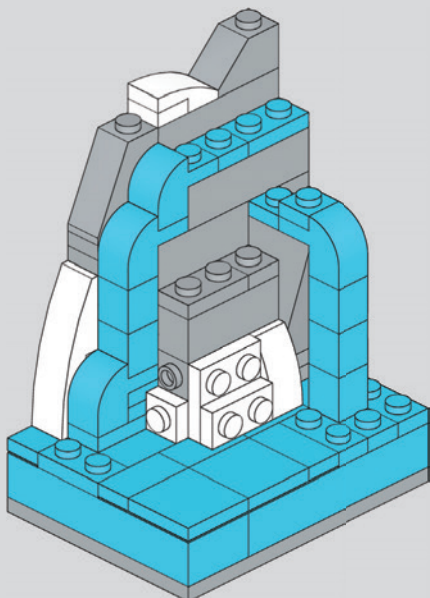
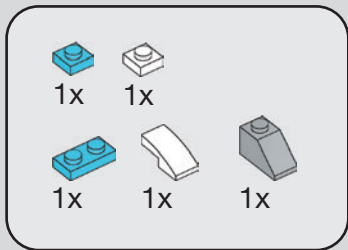
9



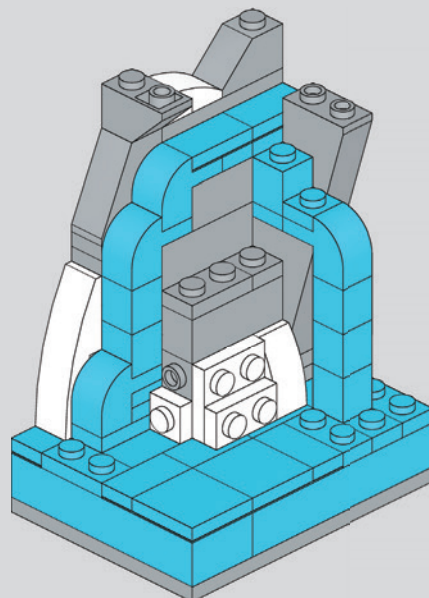
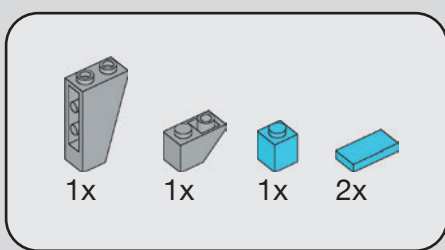
10



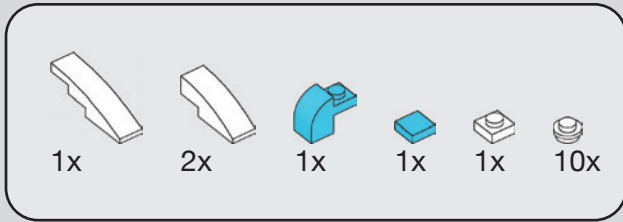
11



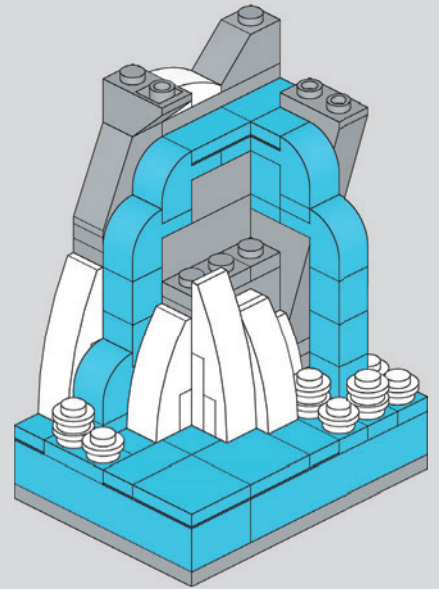
12



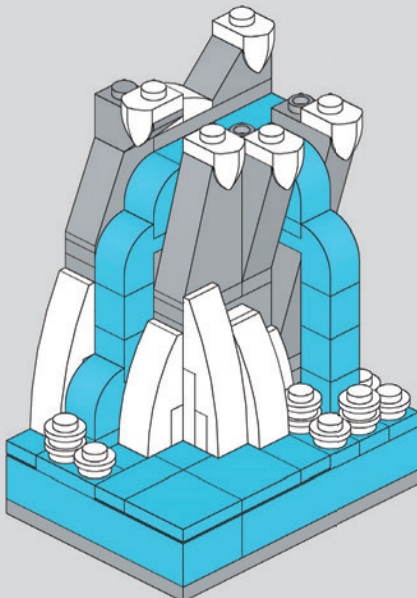
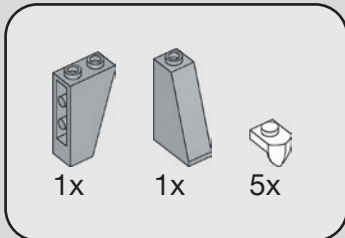
13



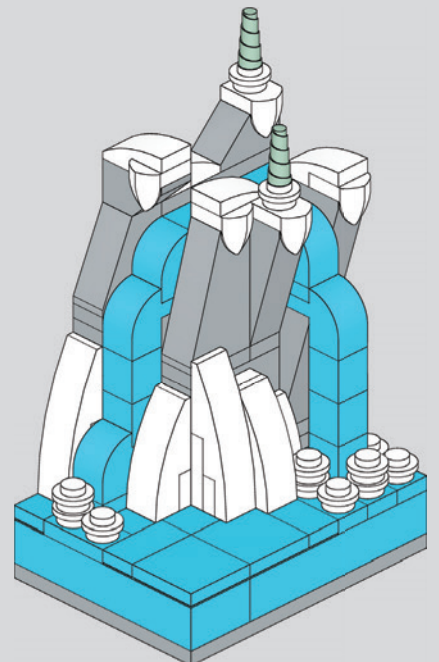
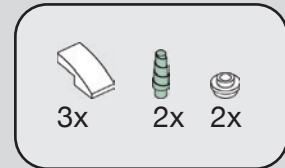
Before placing the 1x3 slope on the right, attach the 1x1 plate as shown.



14



15



LANDSCAPE INSPIRATION

In Norse mythology, a cosmic cow named Audhumla played an important role in creating the Viking world—yes, it's complicated. You'll only need your imagination and some LEGO bricks to expand your winter waterfall into a mythical Viking landscape.

