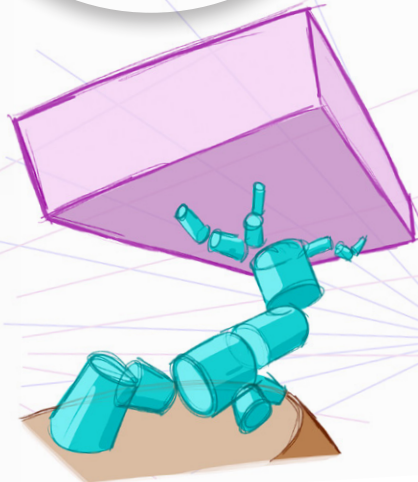
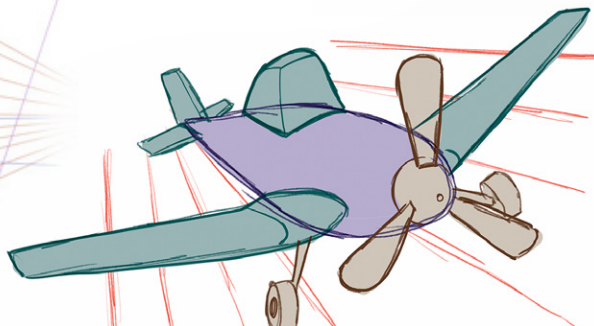
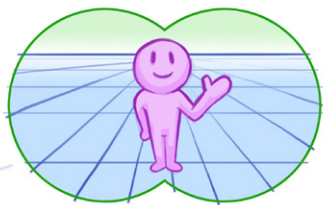
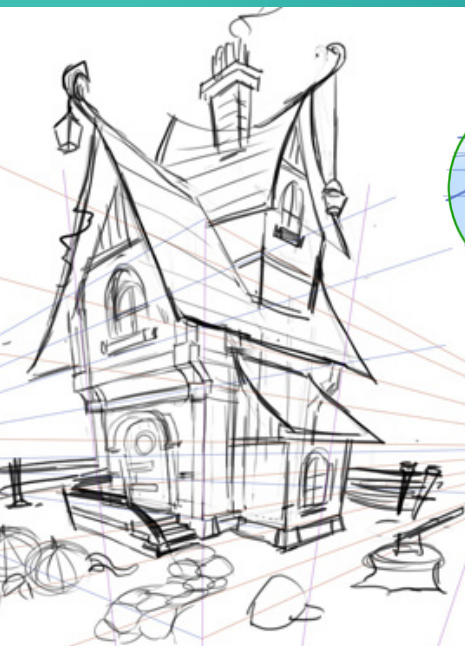




HOW TO DRAW IN PERSPECTIVE

BY MITCH LEEUWE

YOU'LL LEARN
THE PRINCIPLES OF
PERSPECTIVE DRAWING
AND HOW TO
APPLY THEM



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HOW TO DRAW IN PERSPECTIVE

BY MITCH LEEUWE



HI THERE!

Let me introduce myself. I'm Mitch Leeuwe and am an illustrator from the Netherlands. I always drew a lot as a kid. I even had the childhood dream to become an animator at Disney. During my teenage years, I lost that dream. Luckily, I slowly started drawing more and more. When I was 19, I began to do some freelance work as a graphic designer, which made me consider picking up drawing again. I attended several drawing programs at schools but I learned most from online resources. Now, I'm a freelance artist working on visual development. This means I design characters, props and backgrounds for games, animation and toys. However, you probably know me from my Instagram where I release tutorials and more. My goal is to create a place where people can learn the things I wanted to learn when I started out.

HOW TO APPLY THIS BOOK

In this book, I share everything I know from creating environments and working with perspective. Drawing environments is a useful skill to possess, because there is a lot of work to be found for environment artists. Of course, if your main passion is drawing characters you should pursue becoming a character designer. But if you want to work for the animation industry and look to increase your chances to become an artist at a studio, drawing environments is great. Even if you know you love drawing characters, it's really useful to at least have some understanding of how to draw environments.

In this book, I address different subjects. I start off with drawing perspective because that is your foundation for drawing environments. Later on, I will also go into drawing composition and more. The best way to improve your art is to keep drawing. This book contains

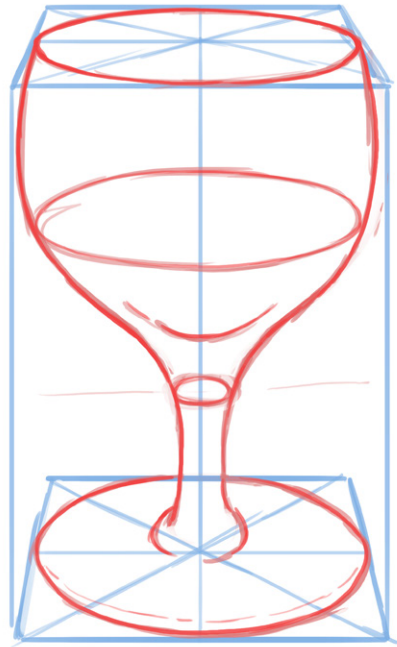
exercises to help you practice. If you decide to do them, you can share them on your social media and tag me in it. I would love to see it and maybe I can give some feedback if you want.

Happy drawing and I hope you will enjoy the book.

Best,
Mitch Leeuwe

DRAWING PERSPECTIVE

DRAWING PERSPECTIVE



Perspective can be daunting. And it sometimes scares off people to start working on environments. However, perspective is something you can learn and it doesn't have to be that hard to do, actually. So, I made a few tutorials to make it as simple as possible.

Keep it simple in the beginning and work from there. Start off with drawing cubes. The big advantage of human cities is that we tend to build everything in straight shapes, mainly cubes. That makes drawing cities in perspective really suitable to begin with. Drawing organic shapes, like characters or trees, are more difficult

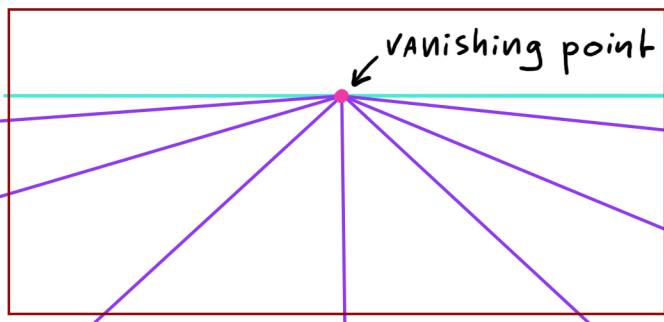
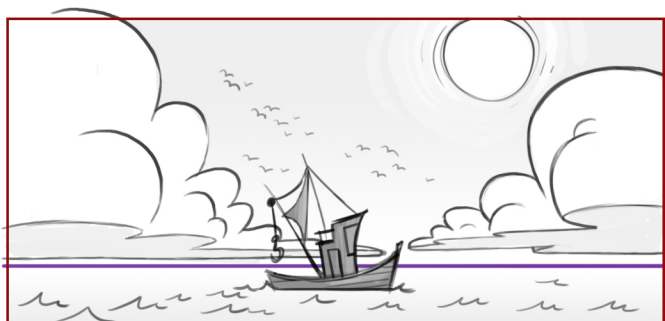
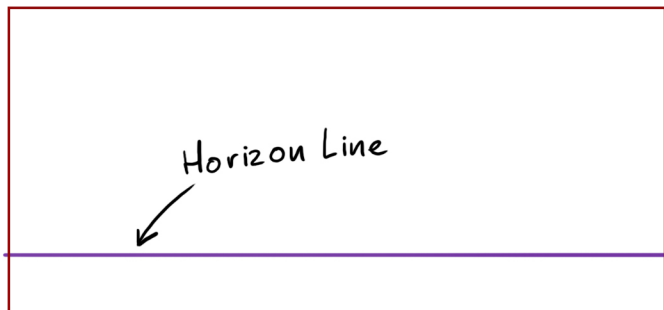
but you can build those shapes from cubes as well. I'll give a few examples of this later on.

In the examples of drawing perspective, I give a number of steps to follow. Some of these steps will be repeated because they are so important. The way to learn to draw is to draw a lot and do a lot of repetition. Learning to draw takes a lot of time and sometimes it can even be boring because of that. But all that practice will pay off eventually.

Maybe, when you start learning perspective your drawings might look a bit stiff. Don't worry, that's

normal when you just start out with that. You'll get more experience and once you have more experience, your drawings will look more natural again. This is because in the beginning you really need to focus and think about the technique. Gradually, you'll do it more automatically and don't have to think so much about it anymore. You can also refer to this book again when you are stuck in a drawing and look up the guides to help you remember how to fix a perspective problem.



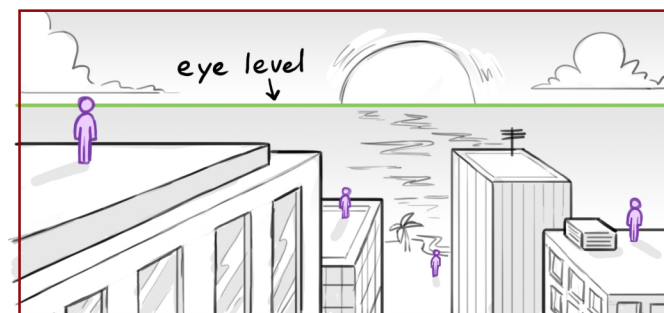
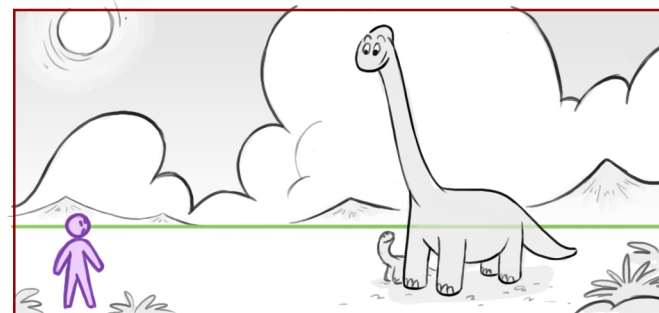
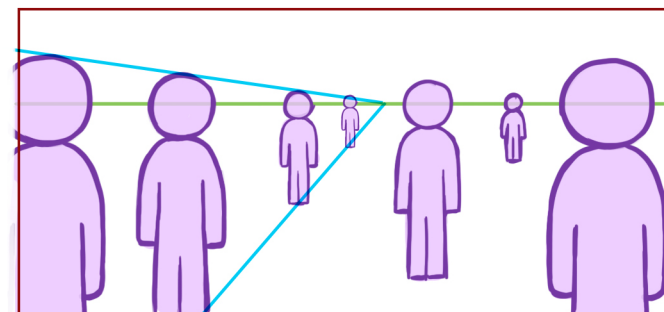
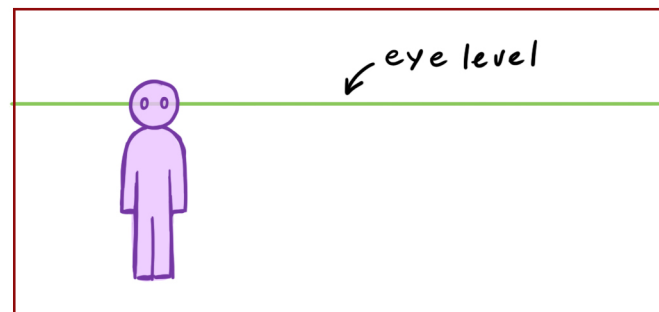


THE HORIZON

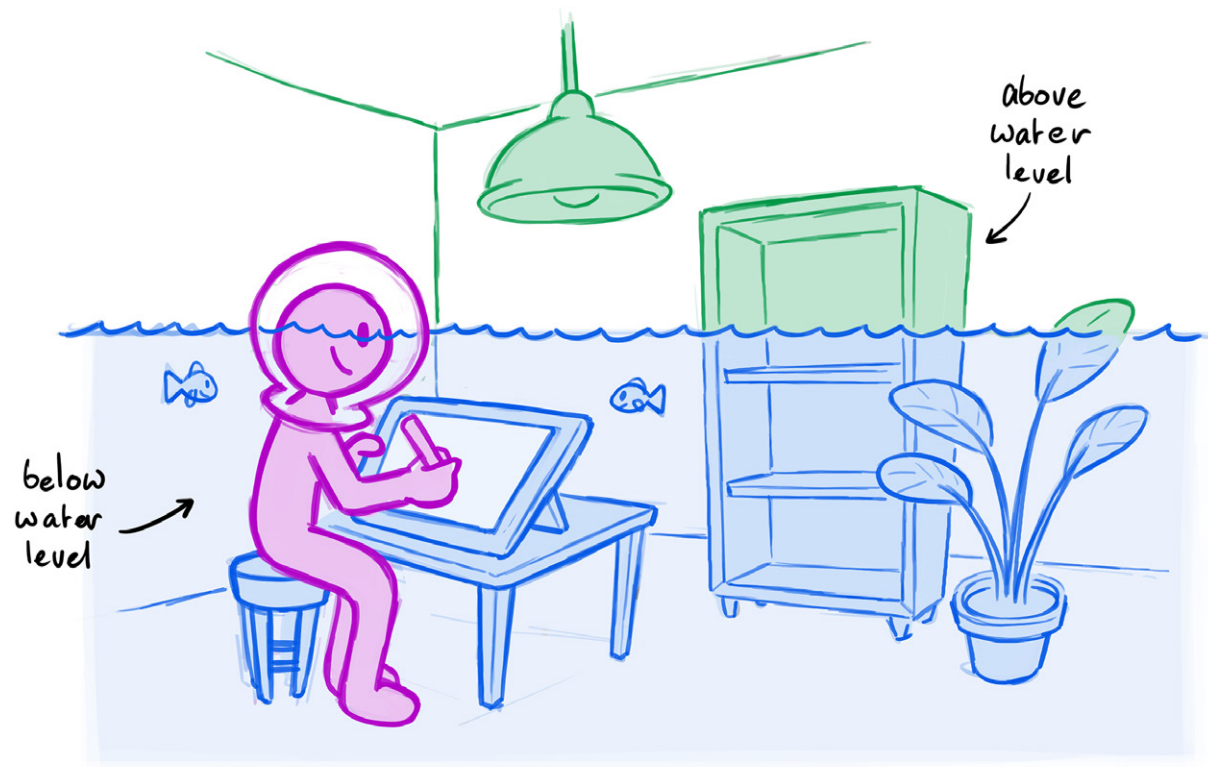
The horizon is the line where everything seems to end. When you're standing at a beach, you get a clear view of the horizon.

The vanishing point is the point where all the lines disappear into. Like a road disappearing in the distance.

A horizon line is also called the eye level line. When you can see it, it's the separation between the sky or water.



Room full of water at the height of your eyes

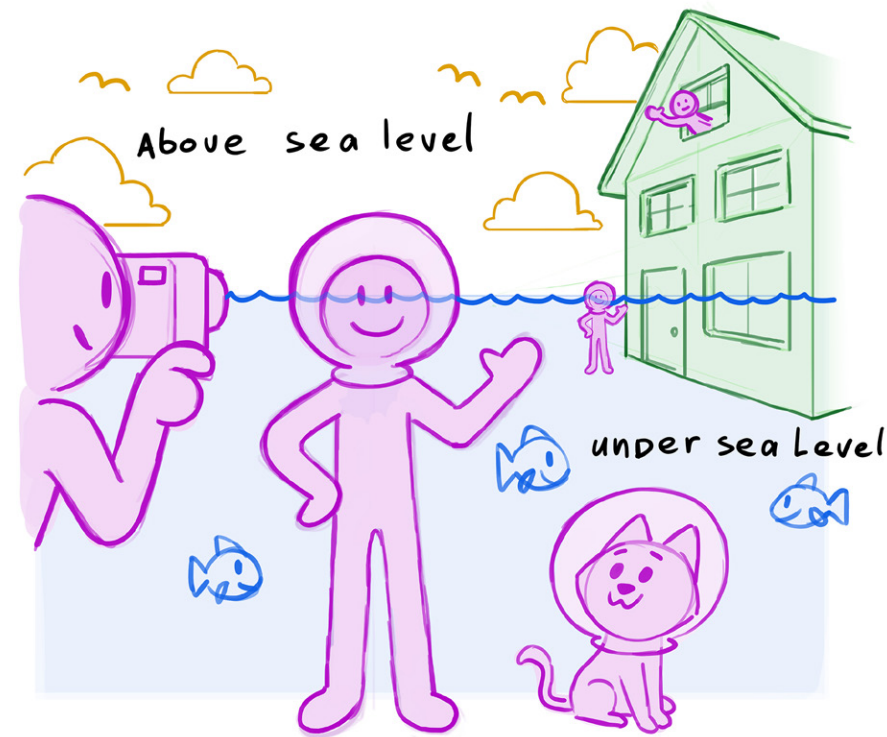


A good way to get a better understanding of what the eye level is: think of it as it is the same height as the water surface.

Imagine that the room you're in is filled with water up to the height of your eyes. Everything above the water surface is above the water level and everything below is below the water level.

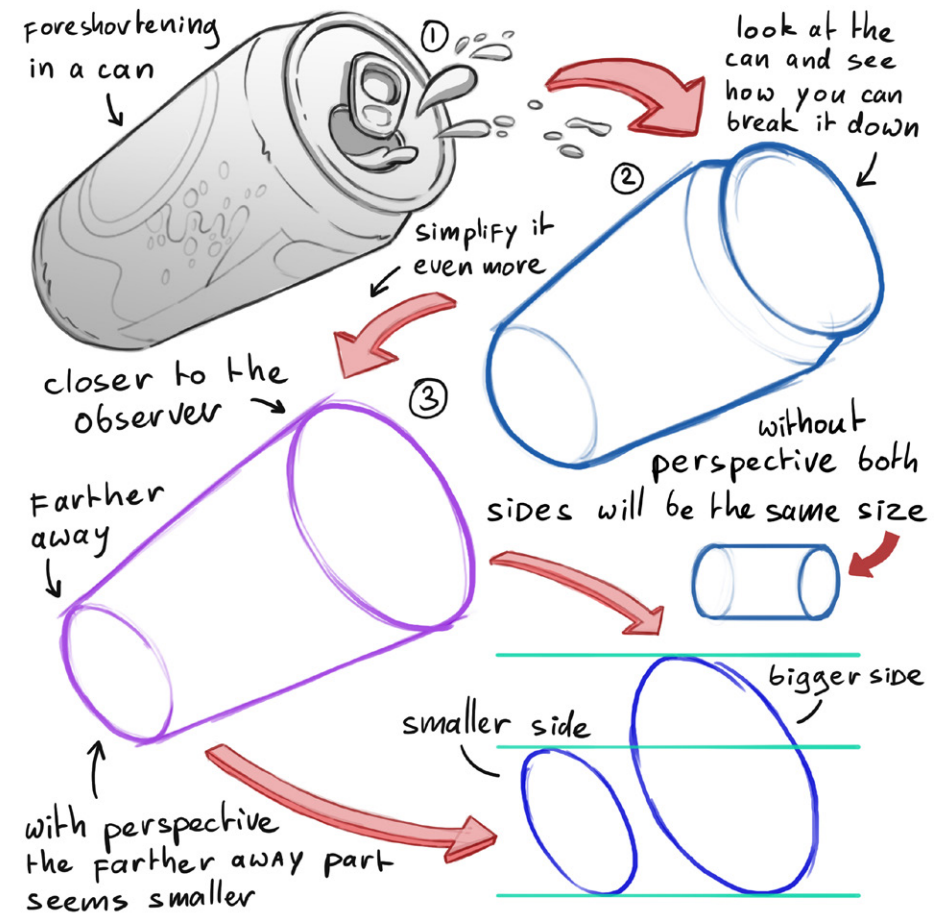
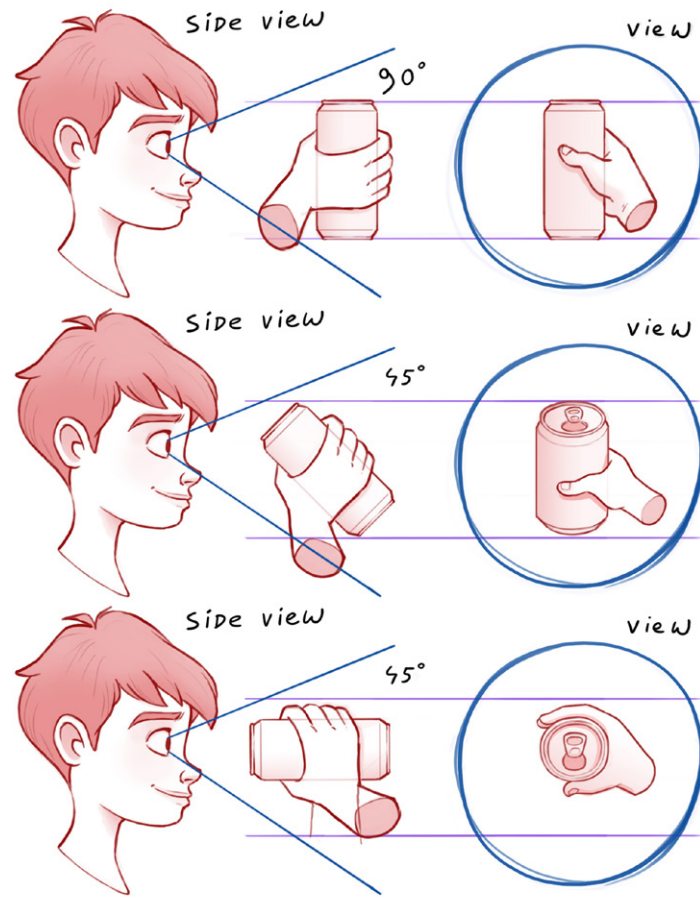
If you're outside, the water is at the height of your eyes. Everything above that level, like the clouds and the birds. Or the part of the house that is above our eye level is above the water level so it's also above the eye level. The water level disappears at the horizon line.

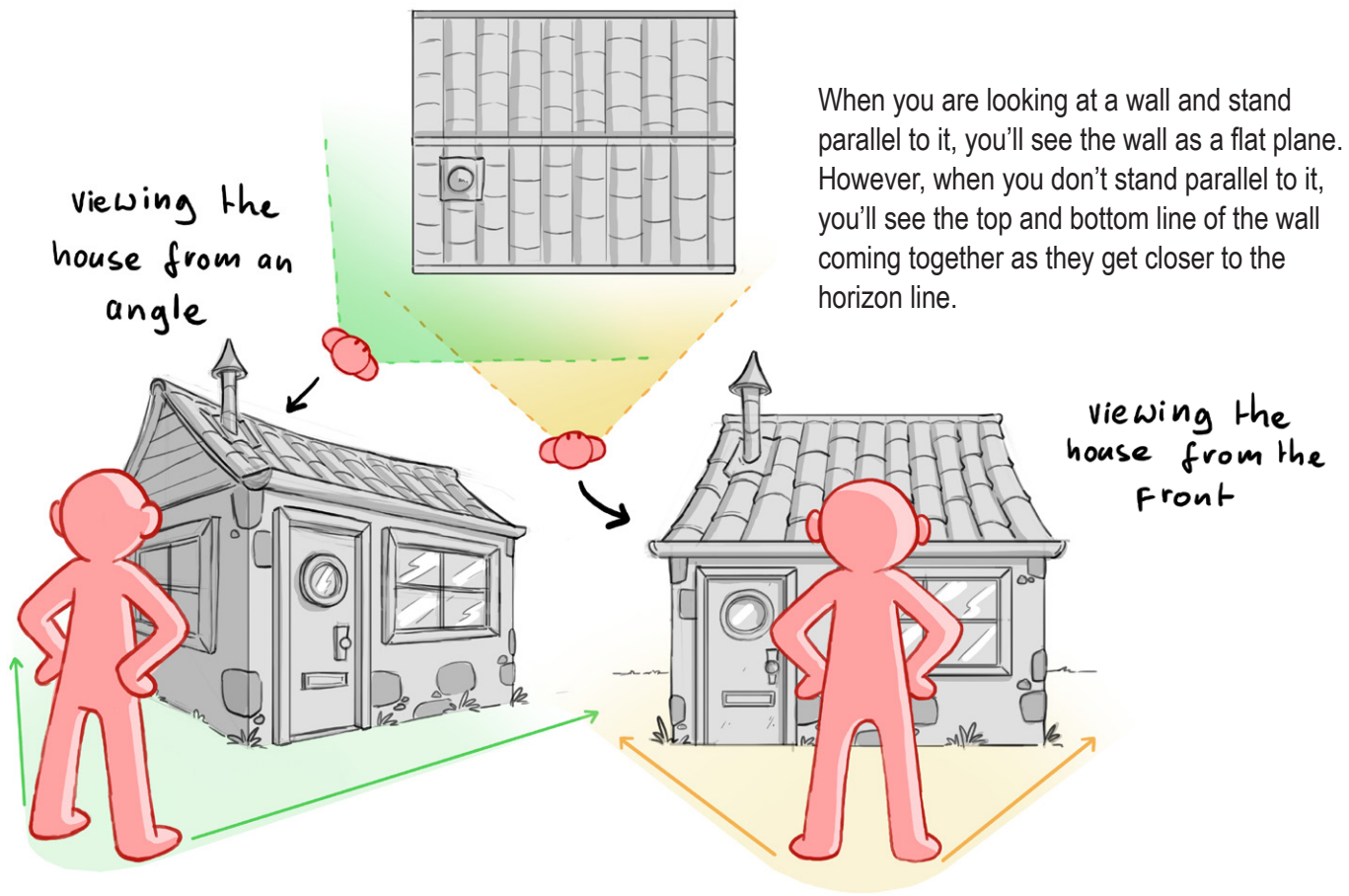
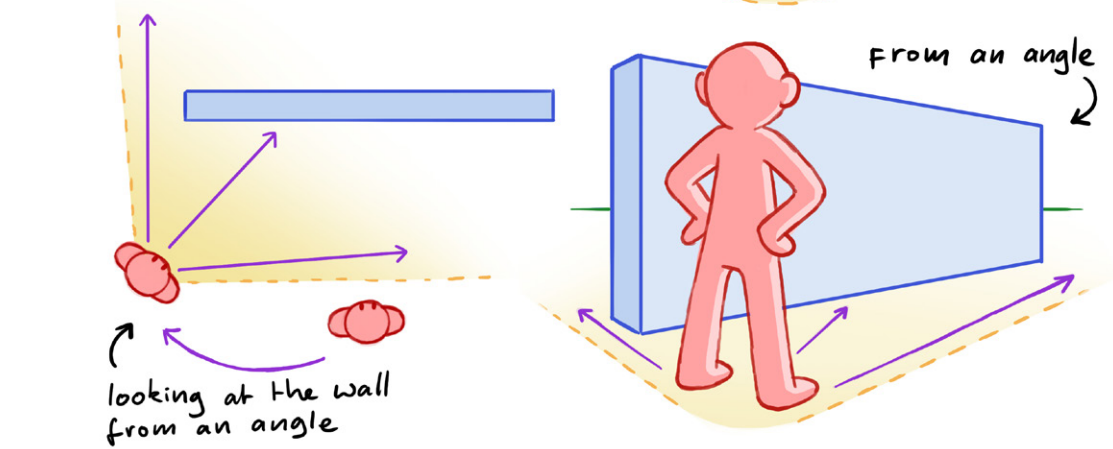
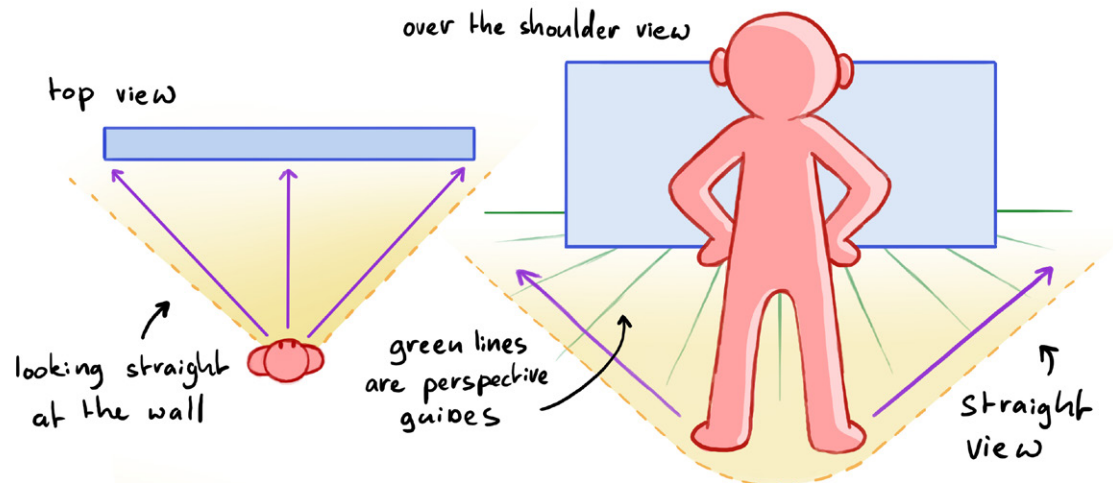
This also works outside



FORESHORTENING

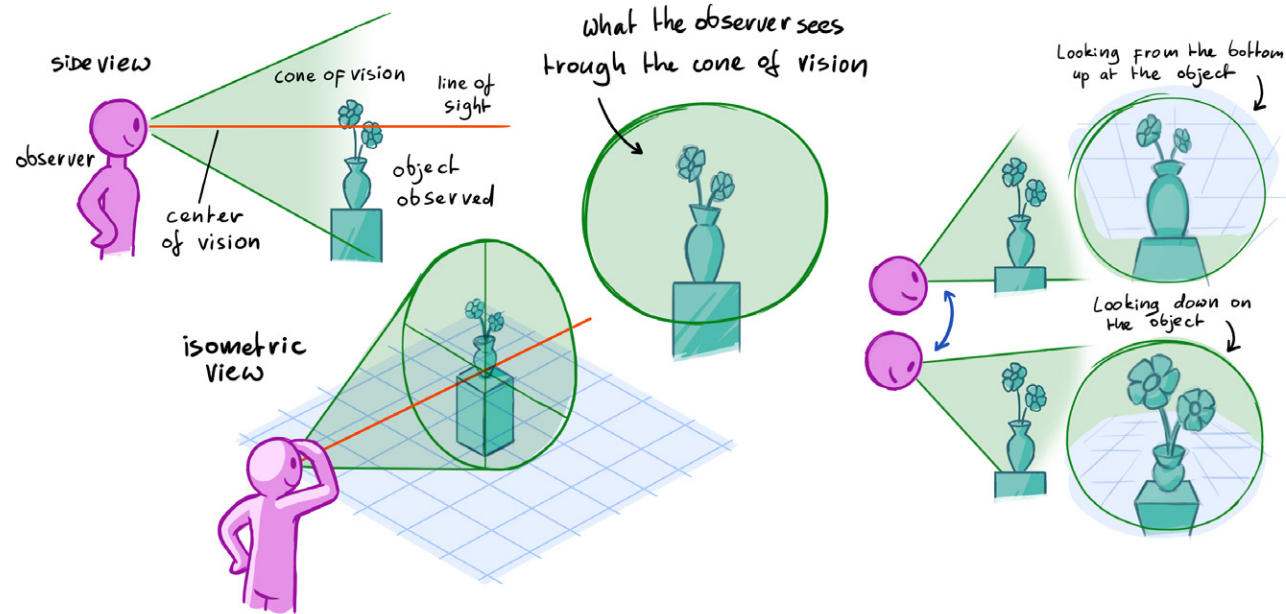
In this example you see a person looking at a cylinder. When the cylinder is parallel, you don't see any foreshortening but when it's rotated 45 degrees, you'll see the foreshortening. The cylinder appears to be shorter.



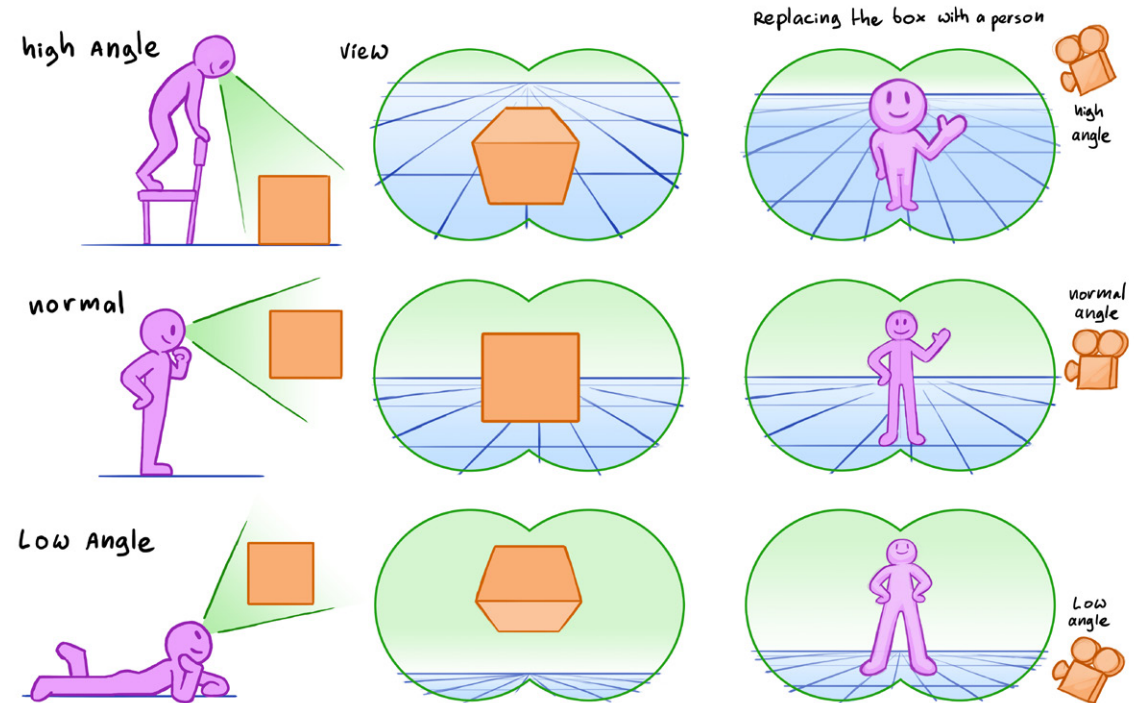


CONE OF VISION

We see the world through our eyes. We call this area the 'cone of vision'. In the middle, there is the line of sight. Using this can help you understand what we see when we are looking at an object. Later I will talk about a floor plan and show more examples of this subject.

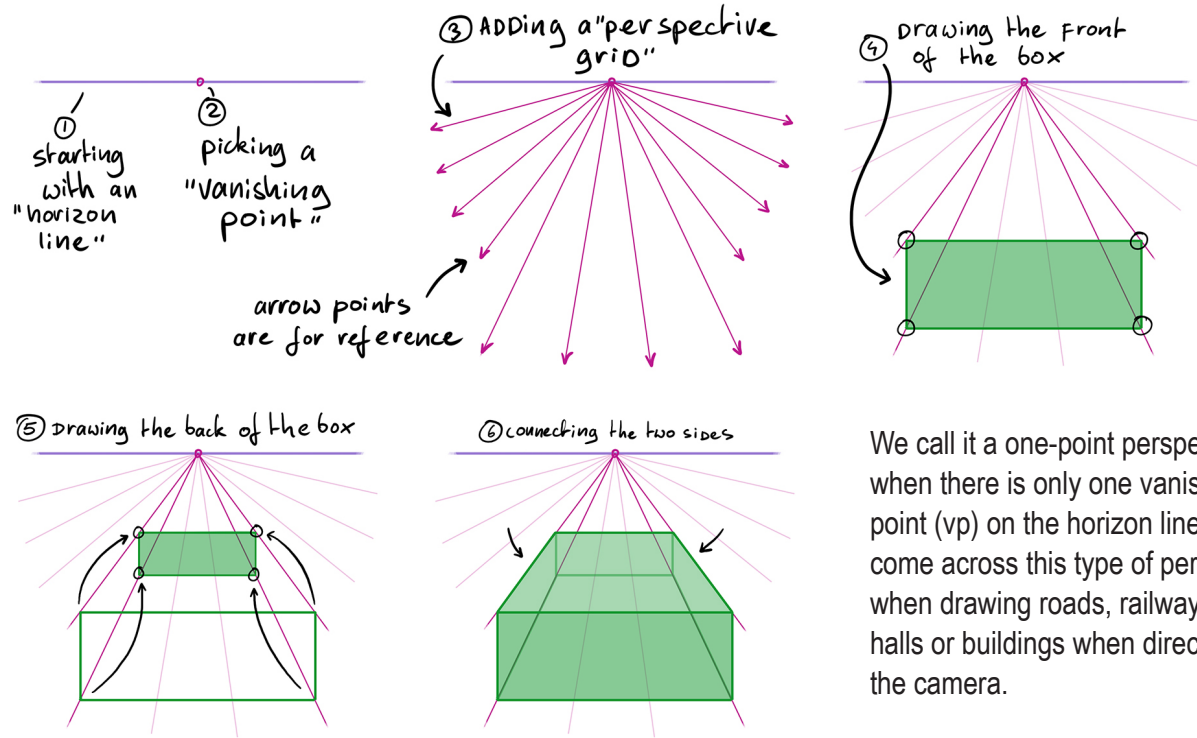


POINT OF VIEW

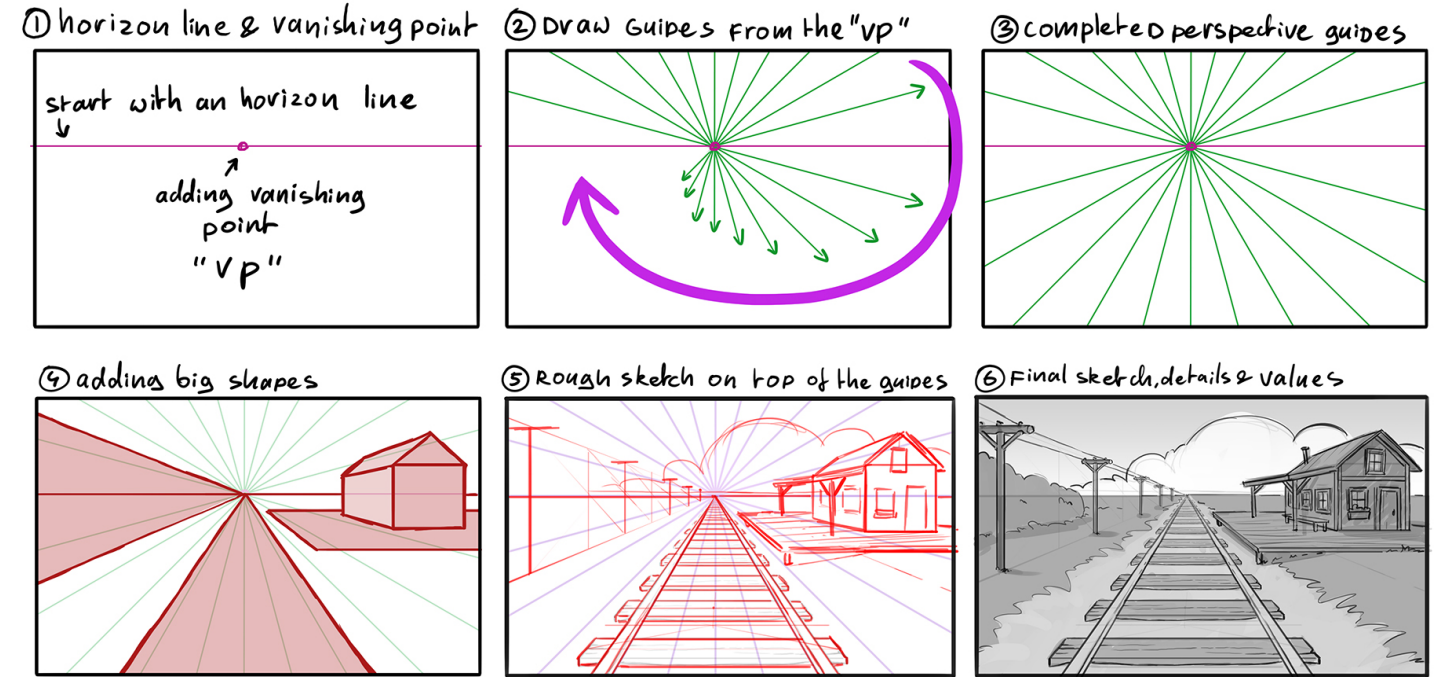


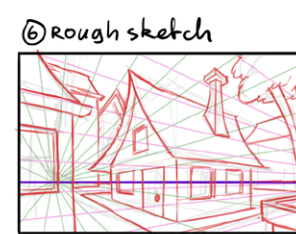
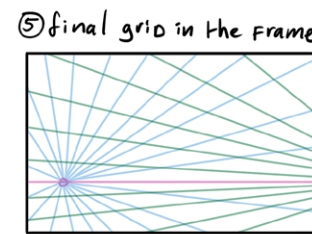
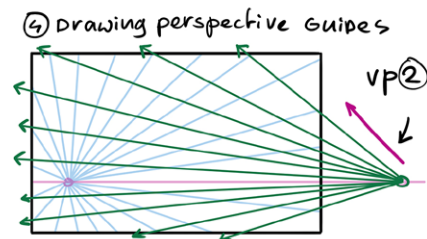
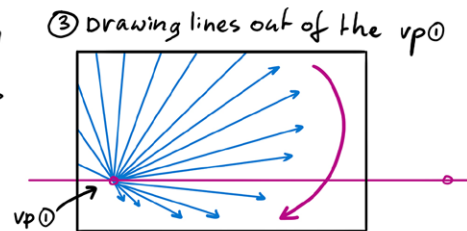
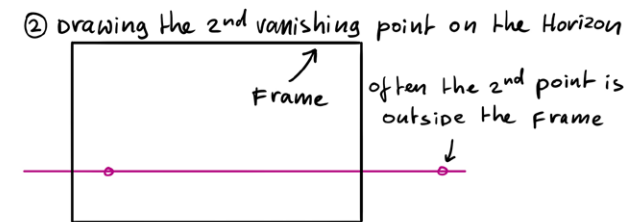
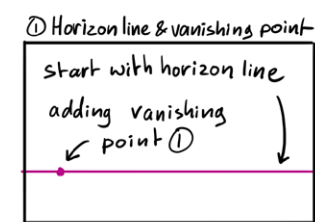
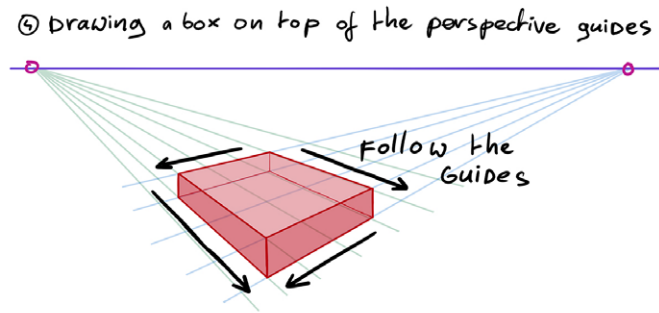
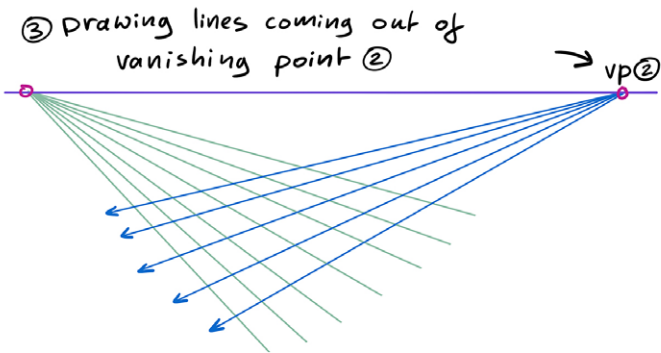
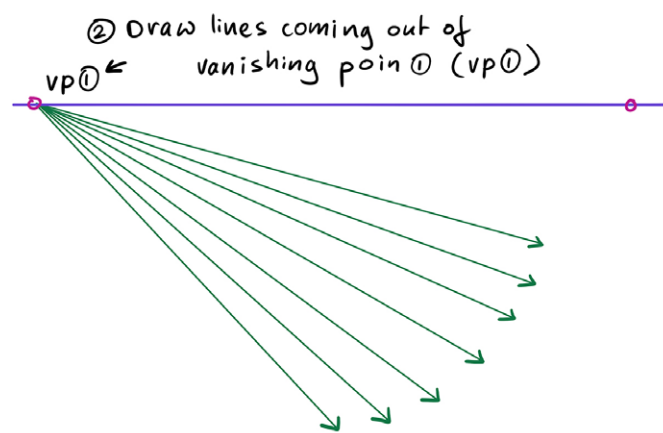
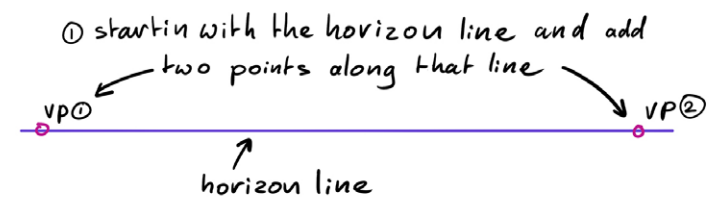
In this example, we look at an object from different angles. So, the view from a higher angle will be different than a view from a low angle.

ONE-POINT PERSPECTIVE



We call it a one-point perspective when there is only one vanishing point (vp) on the horizon line. You'll come across this type of perspective when drawing roads, railway tracks, halls or buildings when directly facing the camera.





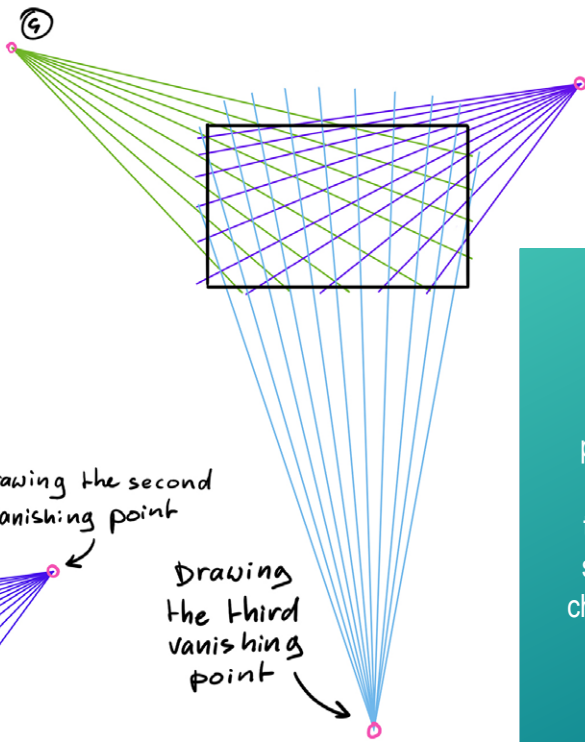
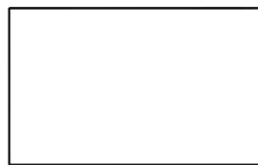
TWO-POINT PERSPECTIVE

When a drawing has two vanishing points we call this a two-point perspective. You can now draw the objects from the previous exercise in two-point perspective. The objects will look rotated. In the example you see how this works with the corner of a house.

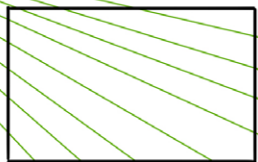
THREE-POINT PERSPECTIVE

Three-point perspective is used for compositions viewed from a very high or very low angle. You can recognize a three-point perspective when you see the vertical lines recede.

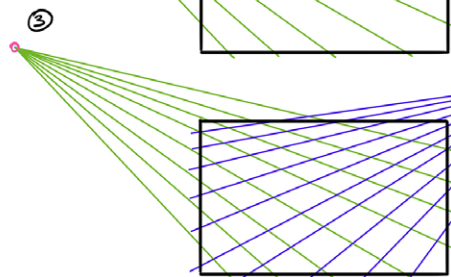
① start with a frame



② Drawing the first vanishing point



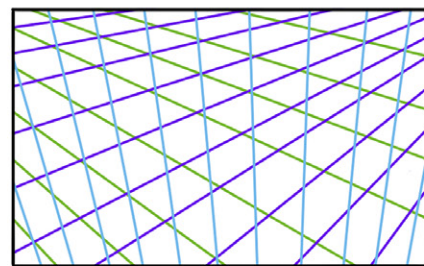
Drawing the second vanishing point



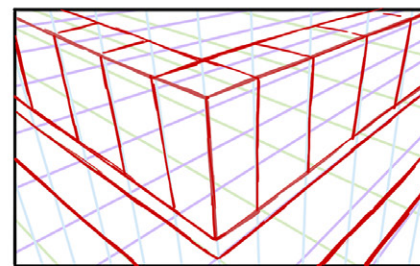
Drawing the third vanishing point

LEARN MORE!

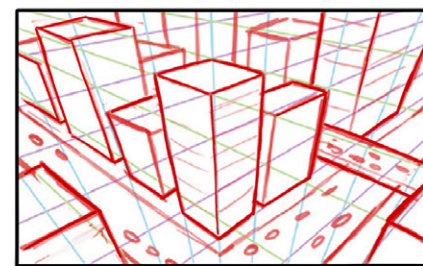
Try to draw some objects in a one-, two- and three-point perspective. By practising this you'll get more feeling with these techniques. Start with a simple square box, a treasure chest or a building. Experiment with more complex shapes and details to master this skill further and further.



① the grid on the frame

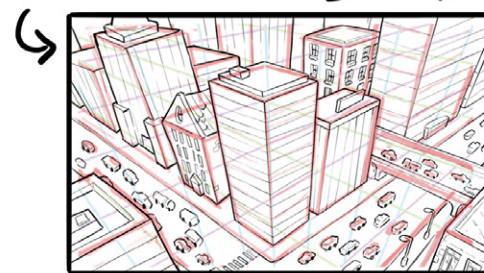


② starting with boxes



③ adding smaller shapes

④ Drawing on the guides



⑤ finishing the sketch & adding values

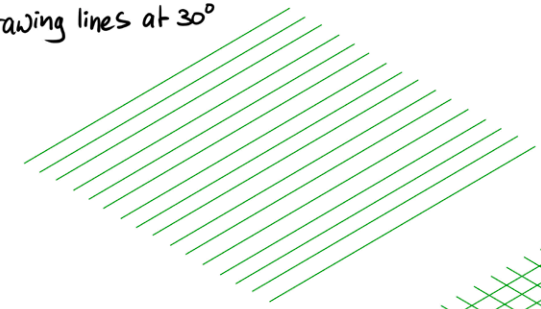


isometric perspective

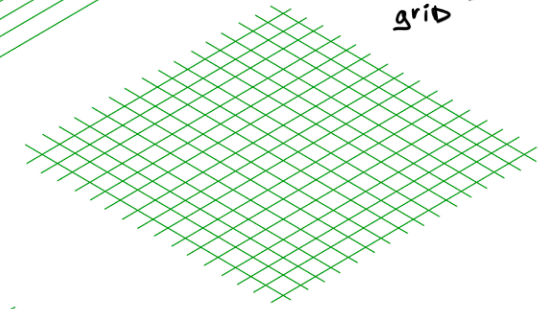


the lines are parallel

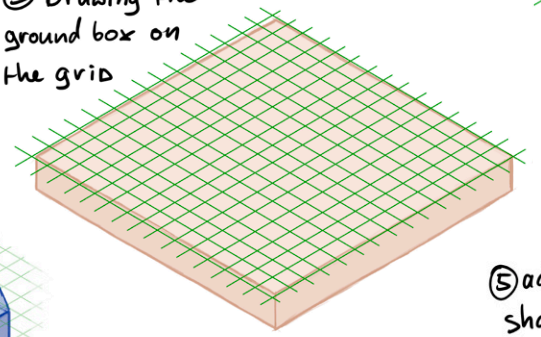
① Drawing lines at 30°



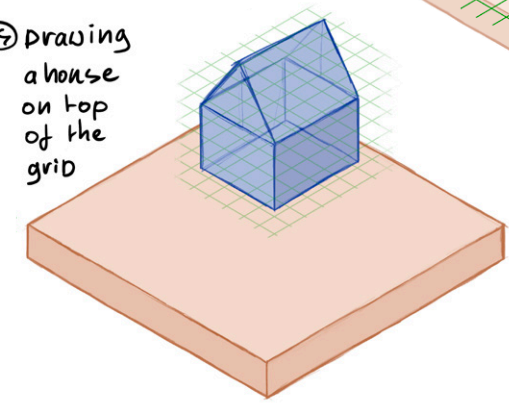
② finishing the grid



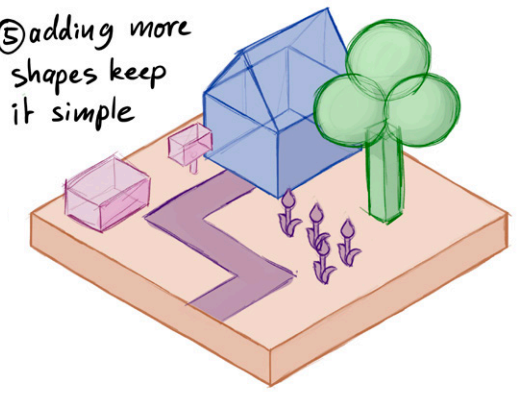
③ Drawing the ground box on the grid



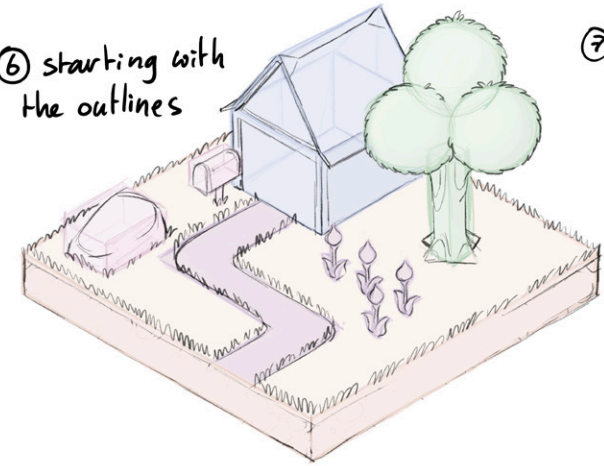
④ Drawing a house on top of the grid



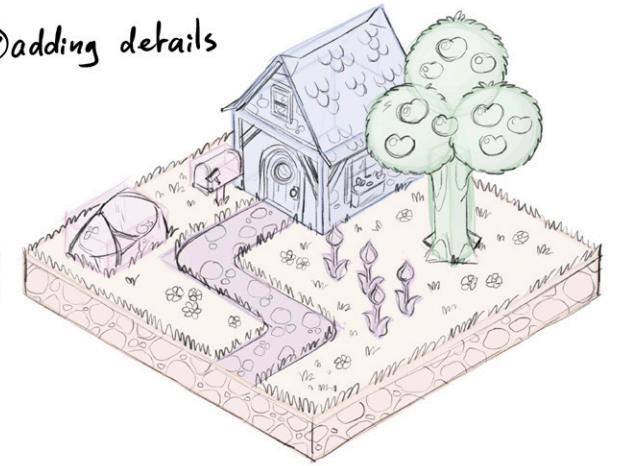
⑤ adding more shapes keep it simple



⑥ starting with the outlines



⑦ adding details

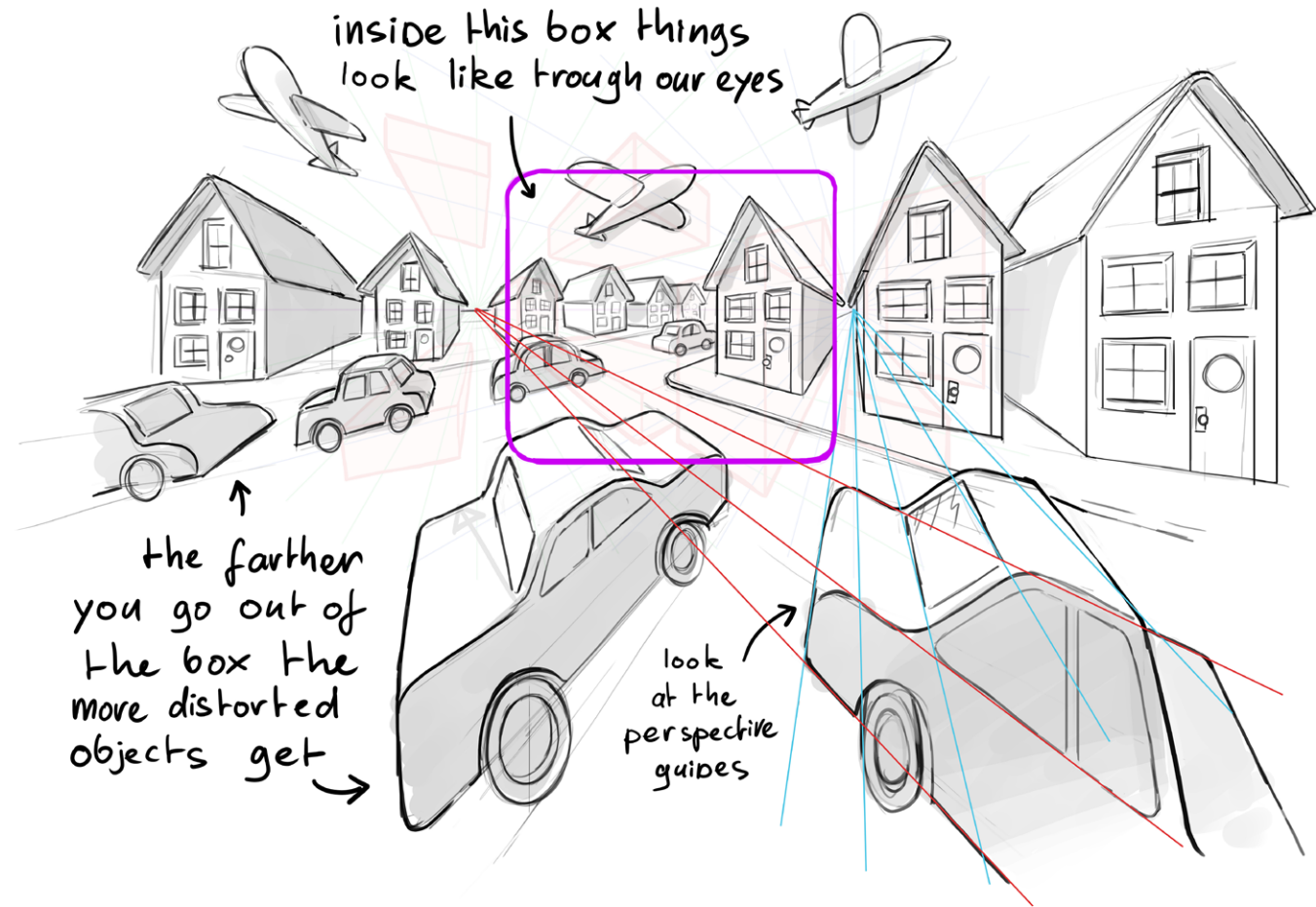
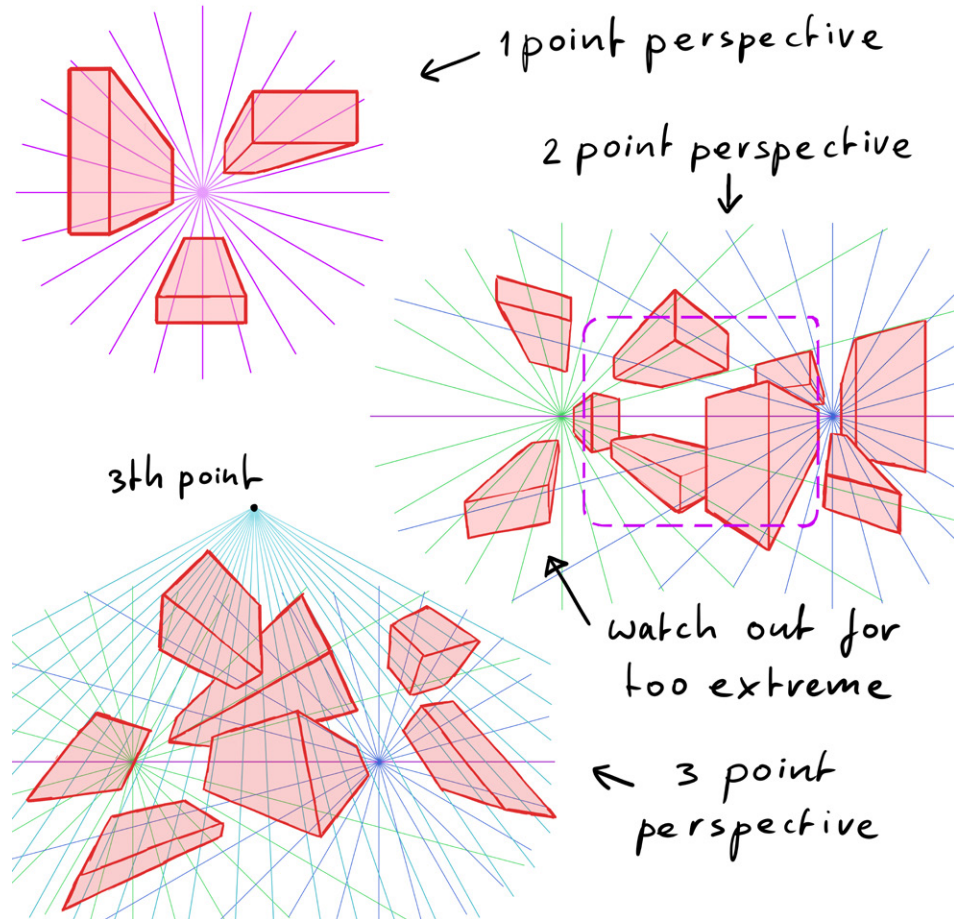


ISOMETRIC PROJECTION

Another way to draw three-dimensional is by the use of the isometric projection. This gives your drawing a 3D look, because the angle between all three the axes (X, Y and Z) is 120 degrees. This is not how we see the world, but it creates a good overview. That's why you see this often used in games, maps, technical drawings and infographics.

DISTORTION

Here you can see all the three types of perspective next to each other. If you draw an object too far away from the vanishing point objects start to look too distorted and extreme.

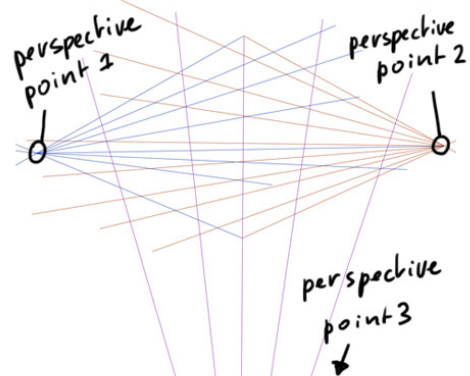


DRAW A HOUSE

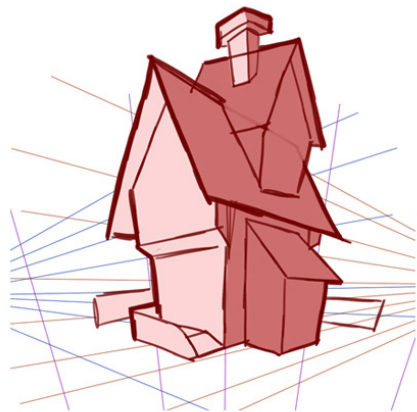
Example of how to draw a house with a three-point perspective. The exaggerated third point gives it this cartoony feeling. Using big shapes first makes it way easier to draw. It's also a great way to determine the proportions before you start adding details. I added time to it, but when you're learning, you shouldn't focus too much on that.

First try to learn how to do it and once you get it, you can try doing it faster. You start with the horizon line. Add the vanishing points and after that you start adding the big shapes.

1. start with setting up perspective (5 min)



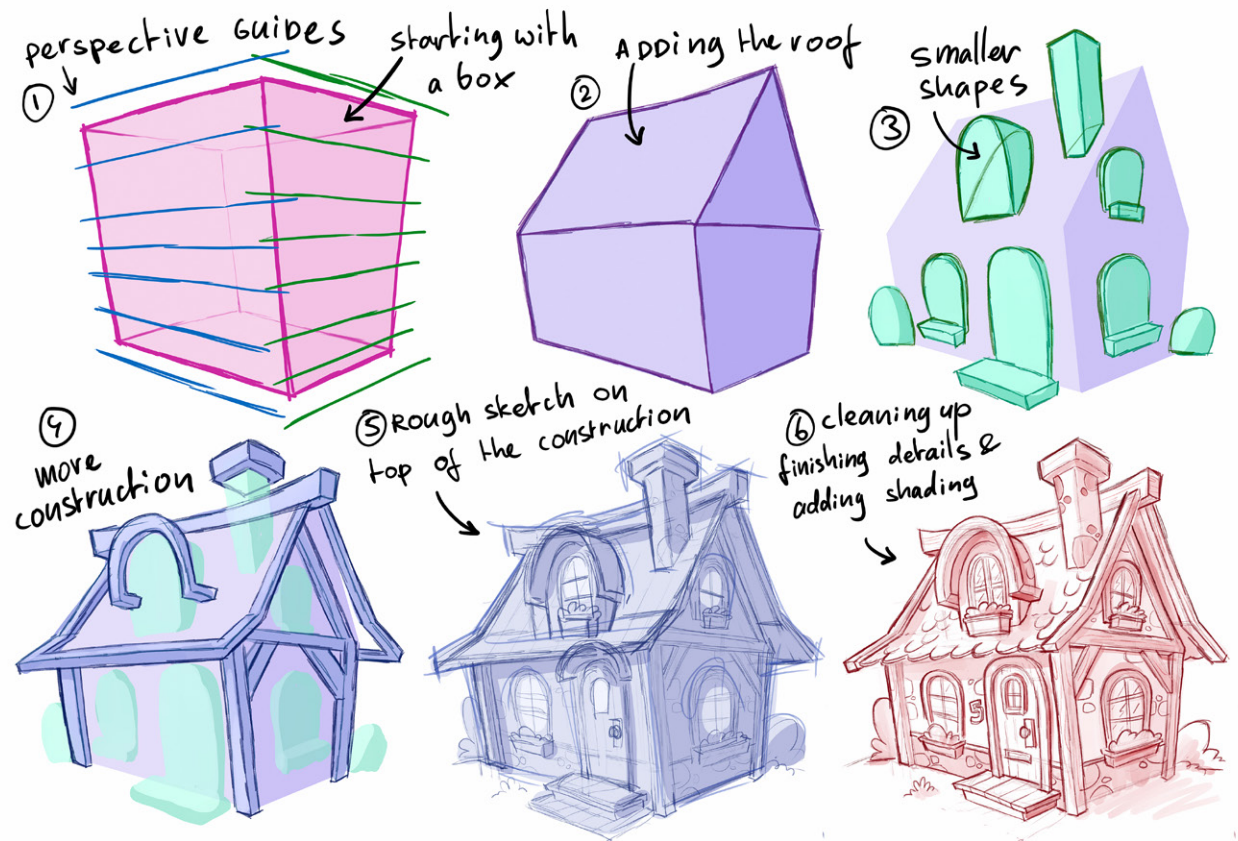
2. think in big shapes (15 min)



3. rough sketch (45 min)



4. clean up (70 min)

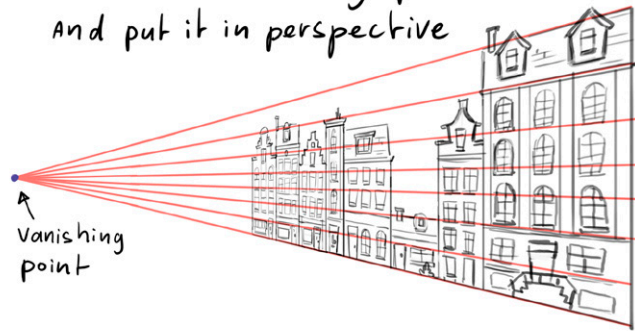


DRAW A STREET

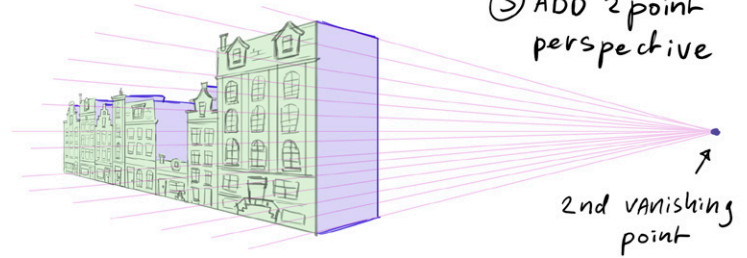
① start with a front design
no perspective/Flat



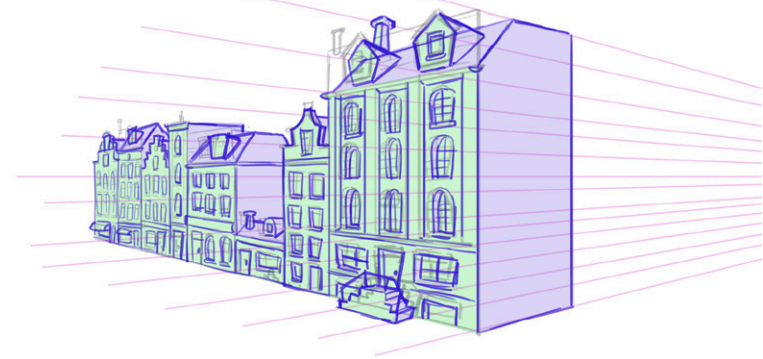
② create a vanishing point
and put it in perspective



③ ADD 2 point
perspective

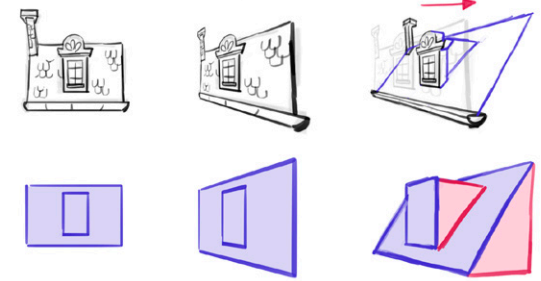


④ create depth in
the details



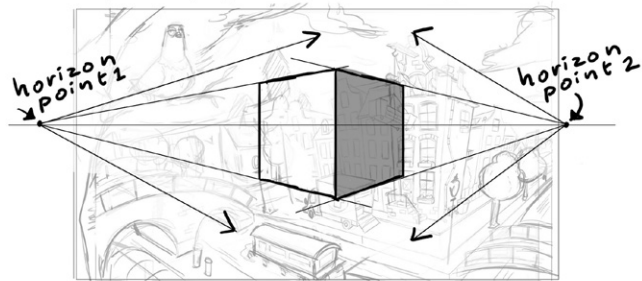
⑤ Final sketch with
depth and shadow

extra example:

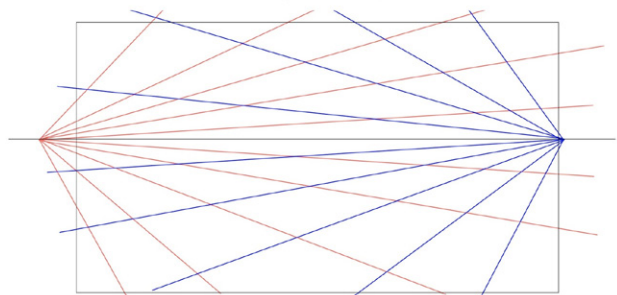


Drawing complex buildings can be tricky. Doing it this way makes it way easier. Of course, this method only works digitally. However, on paper it actually helps if you first draw the front view so you can use that as a reference when drawing it in perspective. This method also works great if you have to add paintings on a wall etc.

place two perspective points based on rough sketch

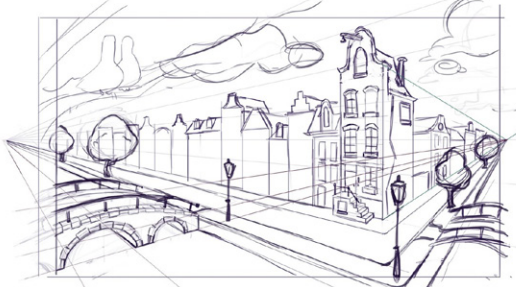


make a grid of each point



Here is a more classic way of drawing a street in two-point perspective. I often start with a rough sketch and after, I draw the perspective on top of that and make everything right. To be able to do a rough sketch, you need to have a good understanding of perspective.

start sketching everything on the perspective grid



after that you can start working on the final linework

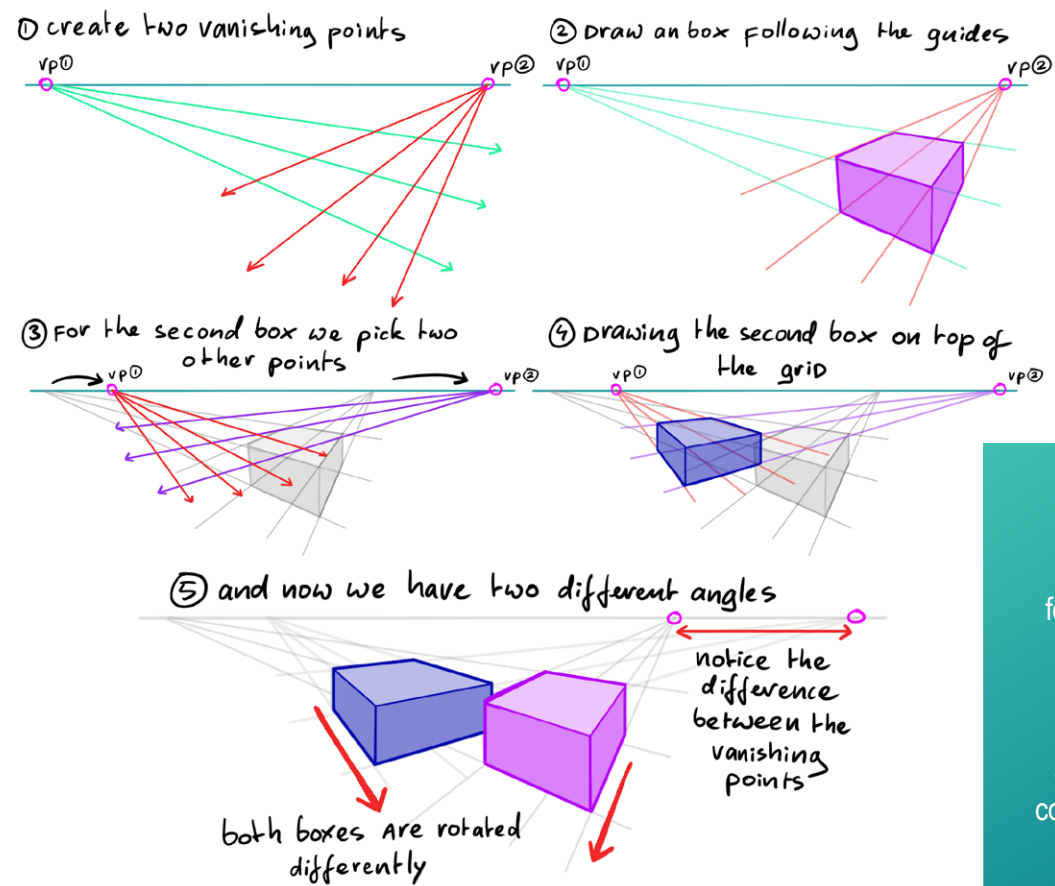
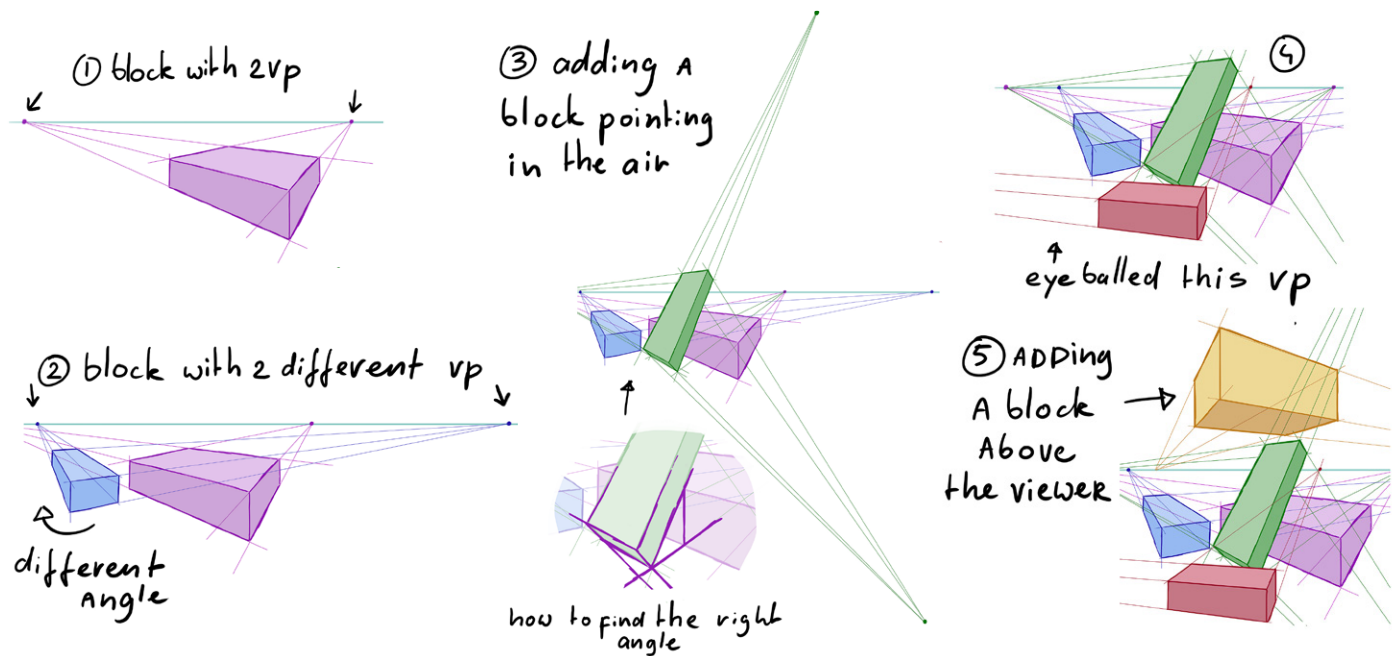


It's a good exercise to also learn to quickly sketch an environment in perspective. And once you have a rough sketch you like, you can start adding all the perspective lines and make it work.



OBJECTS WITH DIFFERENT ANGLES

Not everything is at the same angle, oftentimes two objects have different angles. In this image I show how you can draw those objects. Most of the time, I guess how it's turned. Make a rough sketch and when it feels right, add the vanishing points to the horizon line.

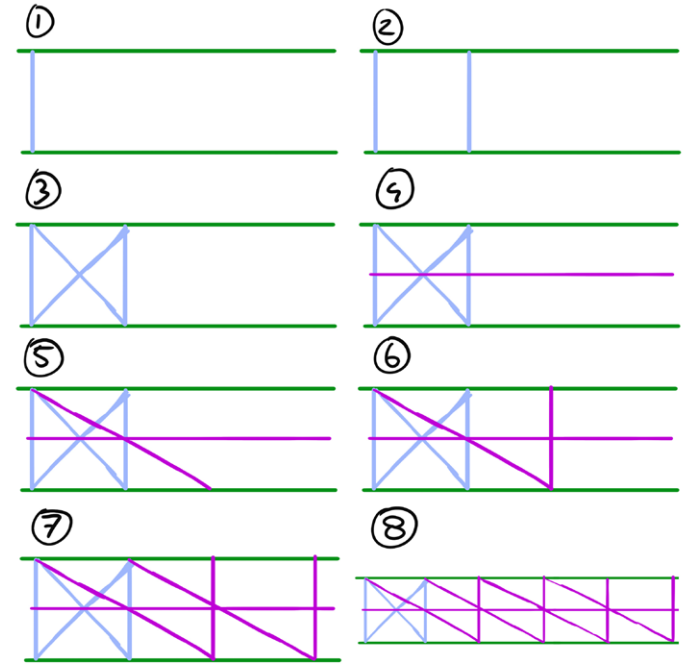
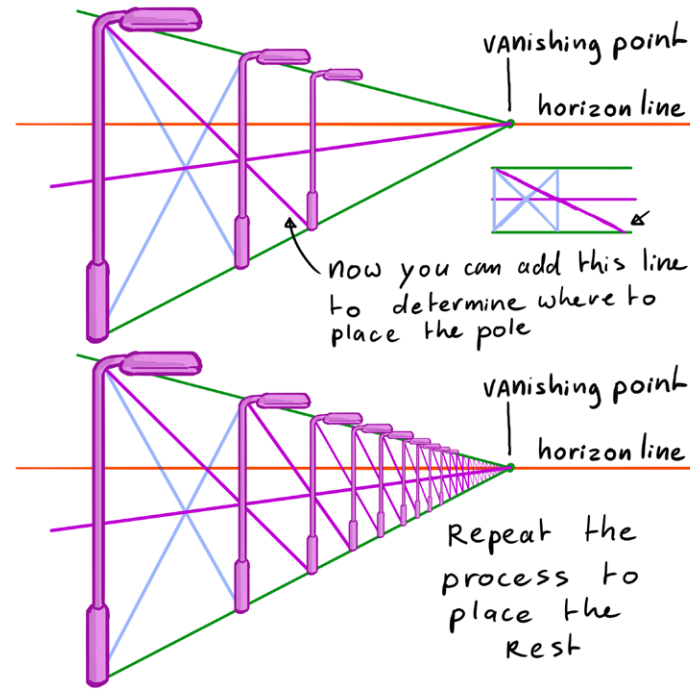
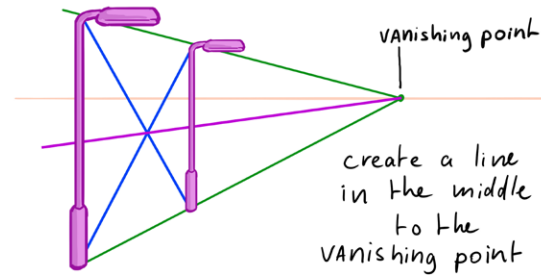
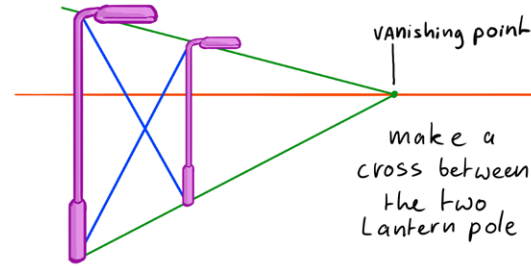
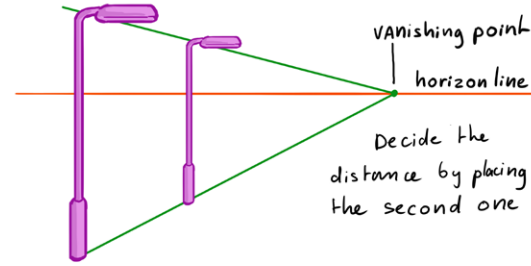
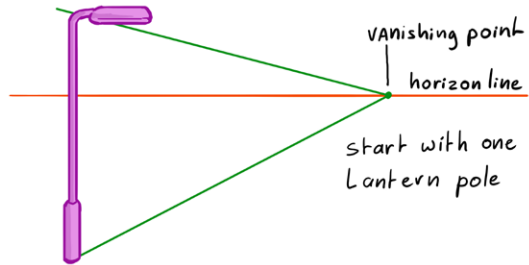


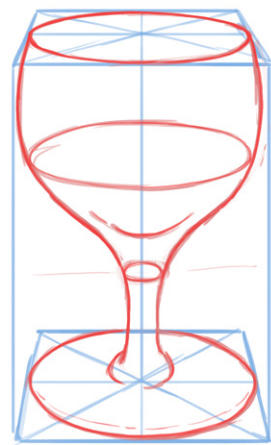
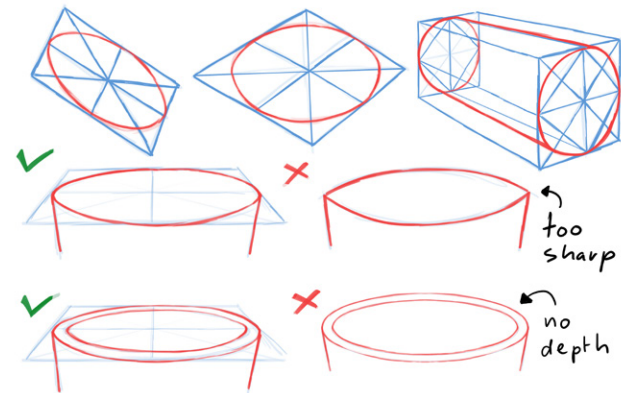
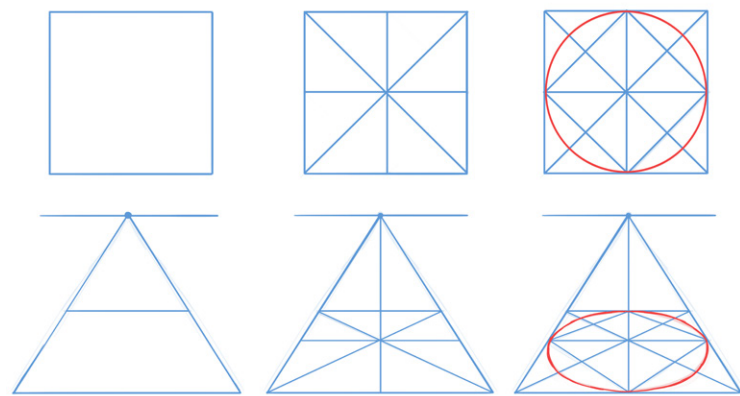
LEARN MORE!

To make it more challenging for yourself, try to draw 2, 3 or even 4 objects with different angles in perspective. Like in these examples, start with a square box and make it more complex when you get familiar with the technique.

ROW OF LANTERNS

This is a useful trick I often use to calculate the distance between objects. It's ideal to create a repeating pattern in perspective, like these lamp posts. You can also use it for buildings or a fence. This trick works vertically, as well. For example, for floors of a building.





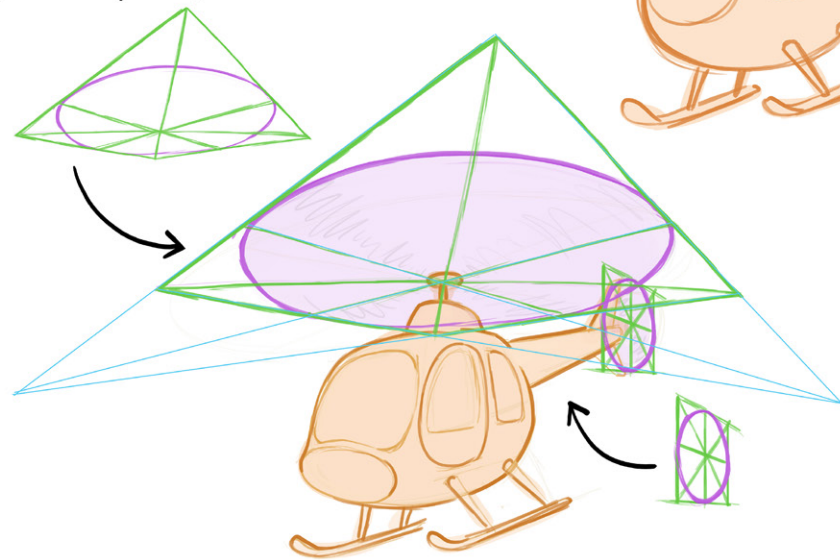
A CIRCLE IN PERSPECTIVE

Drawing circles in perspective can be quite hard. However, there is a way to calculate all points of a circle. This makes it a lot easier to figure out how distortion changes the shape.

It's really useful to practice this a lot because that way you can develop a feeling for it and it will get easier.

① start with basic shapes/rough sketch

② add perspective & fine tune



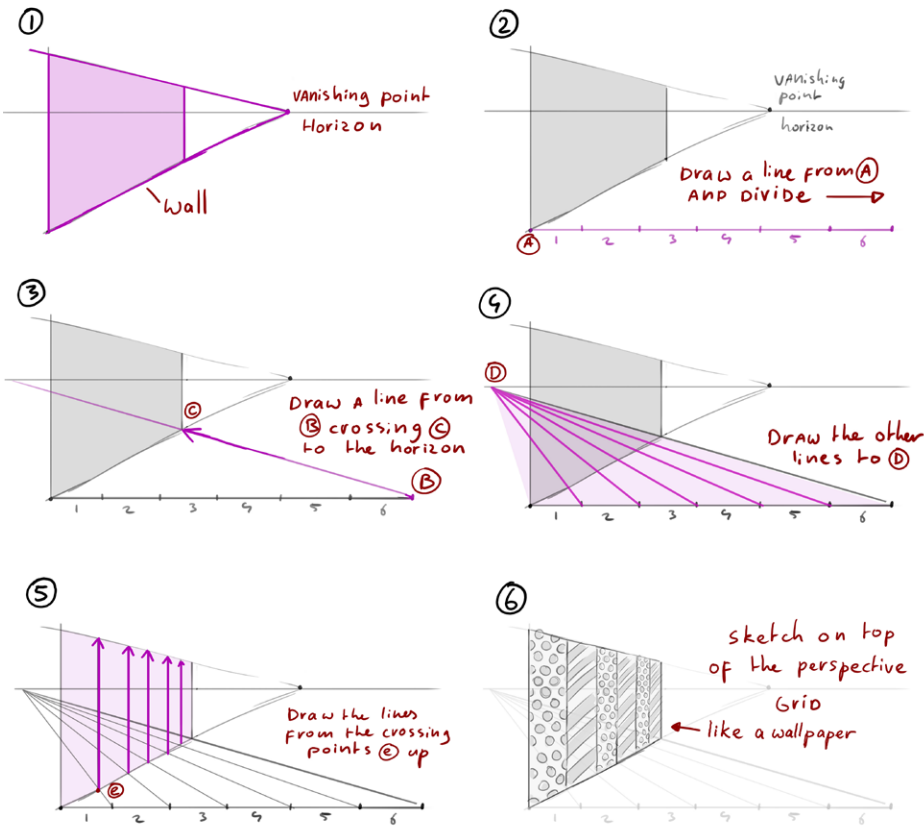
③ final sketch add details & shading



LEARN MORE!

Practise with drawing round objects by following the instructions on these pages

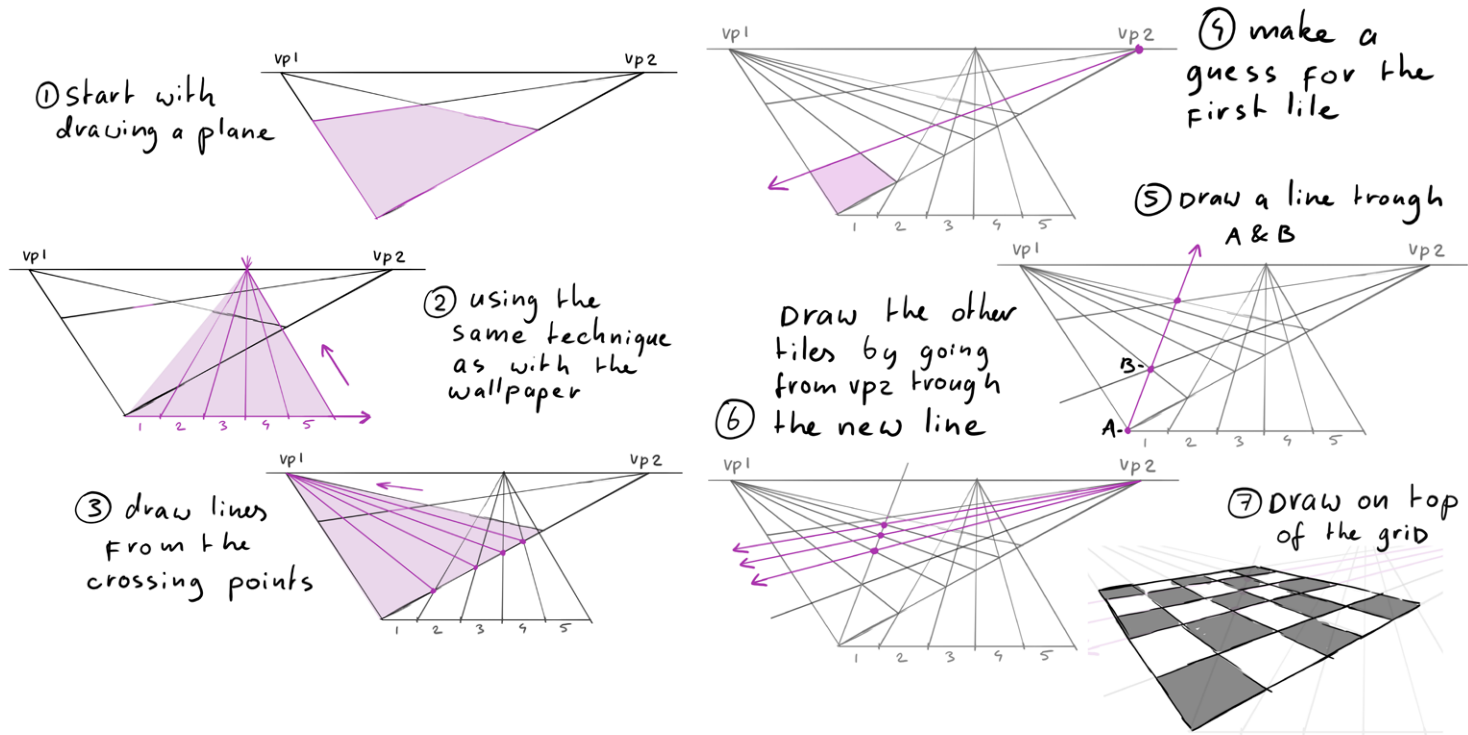
How to draw a wallpaper in perspective



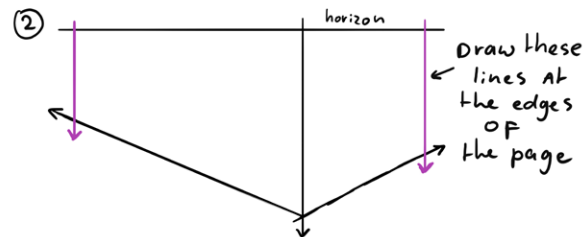
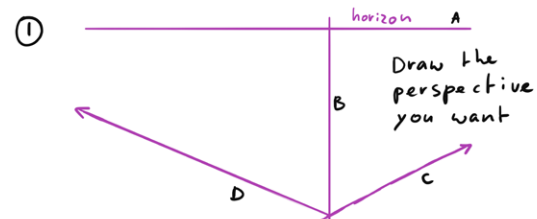
DIVIDE A WALL IN EVEN PARTS

There are multiple ways to figure out what the size of a column should be. This is very useful because you can determine beforehand how many rows you want to make.

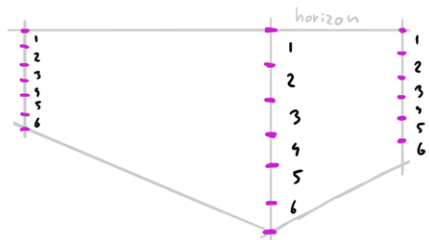
DRAW A TILED FLOOR



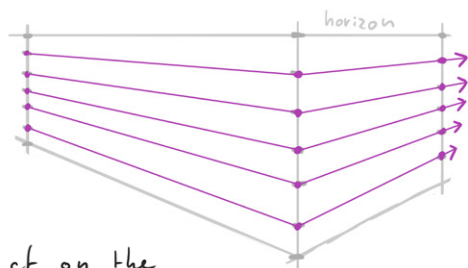
With the same method you can also make a checkers pattern.



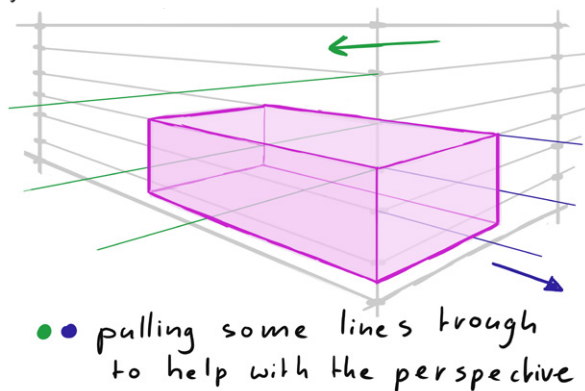
③ divide the three vertical lines in an even number



④ connect the dots



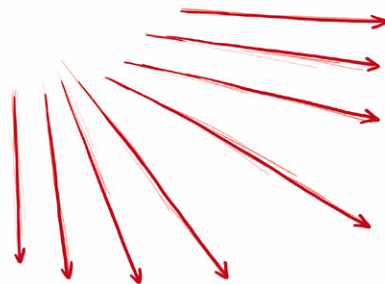
⑤ Draw the object on the grid. In this case I made some guesses on top of the grid



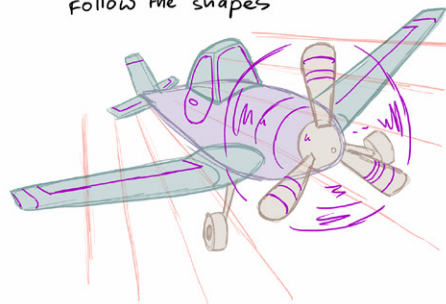
OFF PAGE VP

In some cases, there isn't enough space on the page to create all the vanishing points. This is a handy method to create vanishing points without creating an enormously long horizon and far away vanishing points.

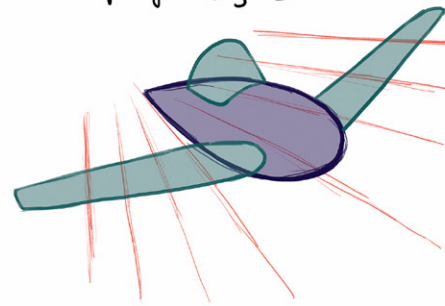
① creating a rough perspective grid



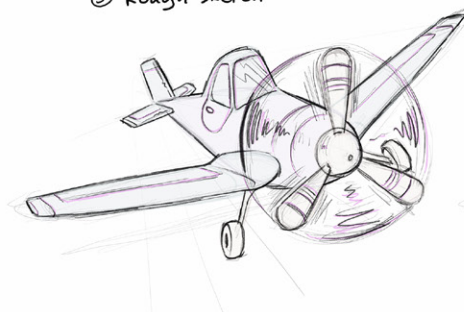
④ Adding details follow the shapes



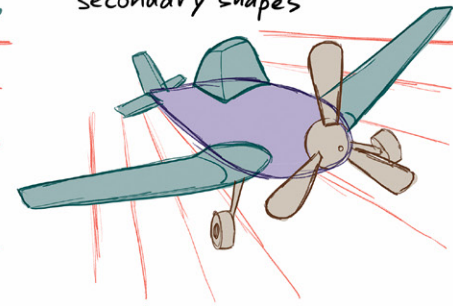
② Draw big shapes on top of the grid



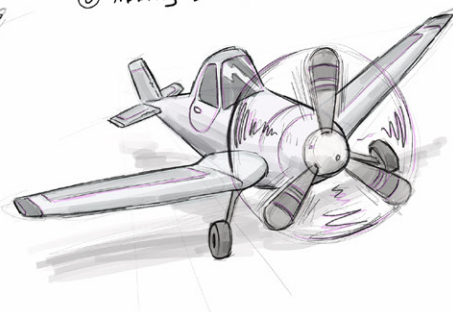
⑤ Rough sketch



③ Drawing smaller secondary shapes



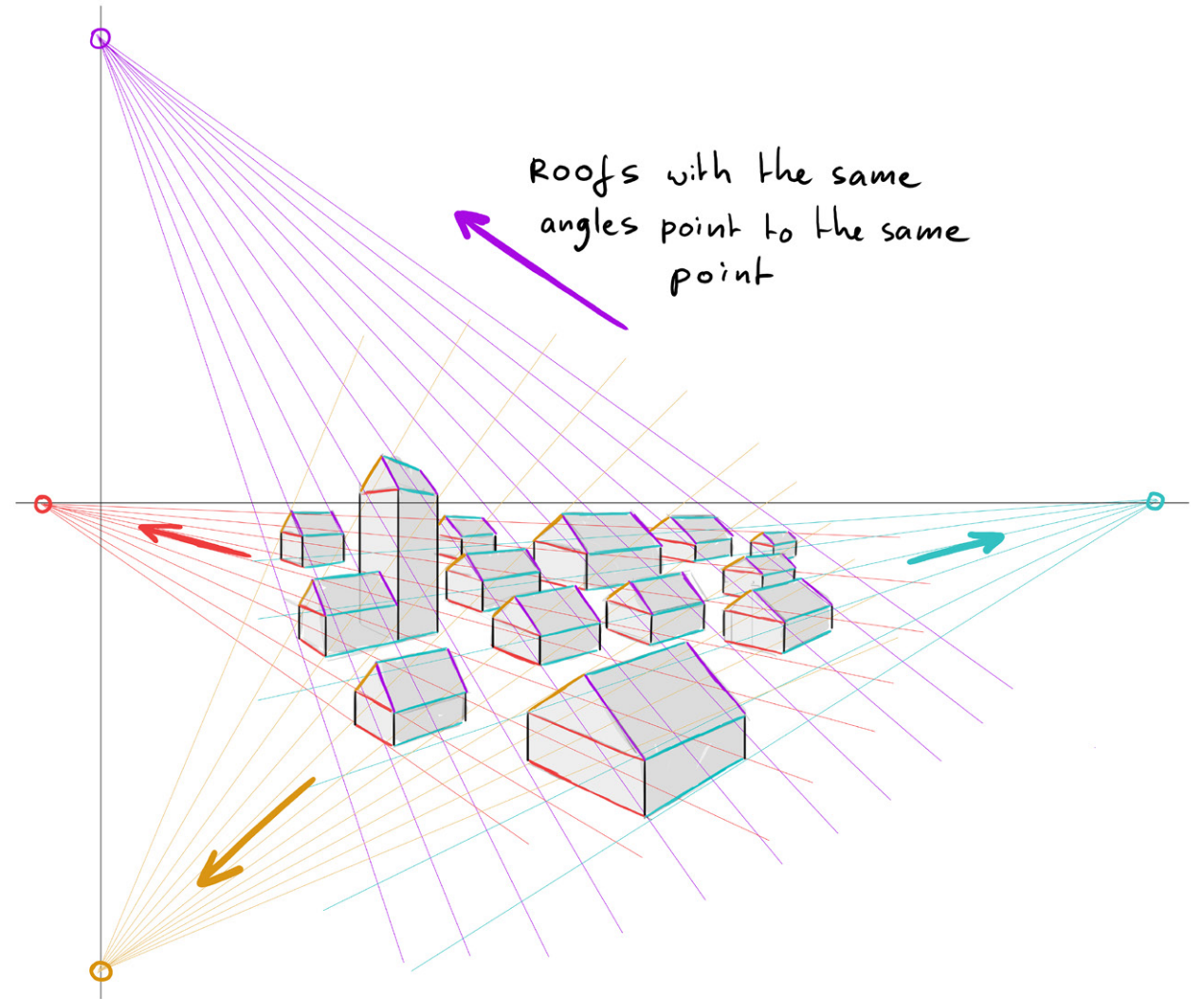
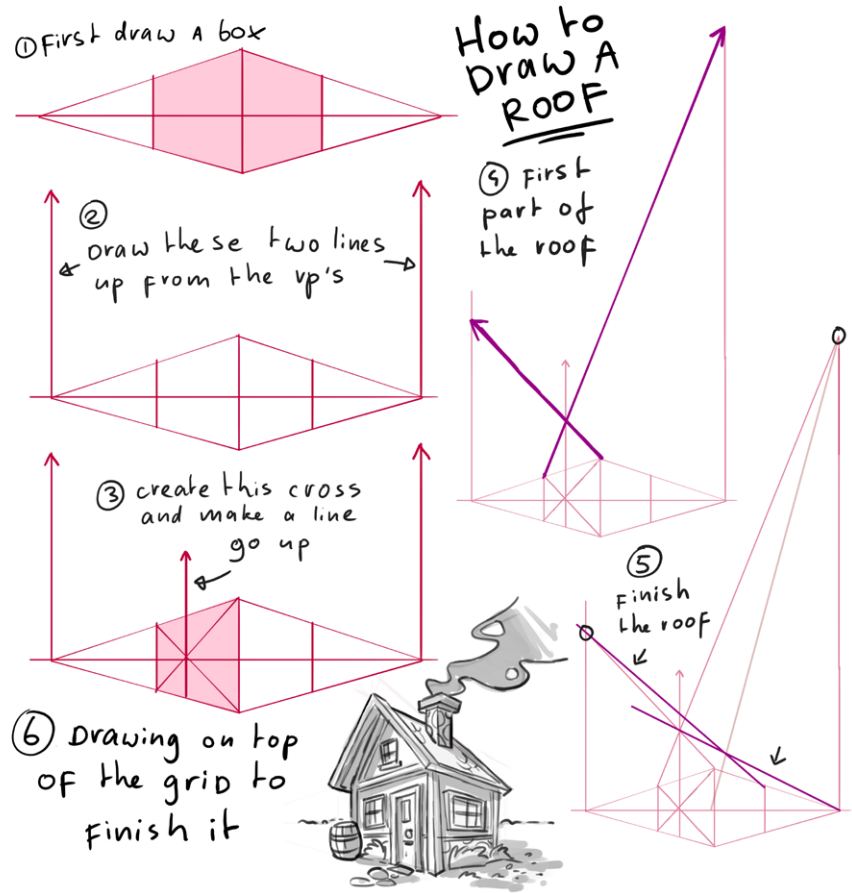
⑥ Adding shadow

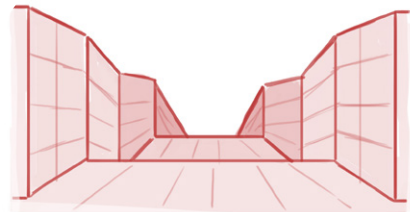
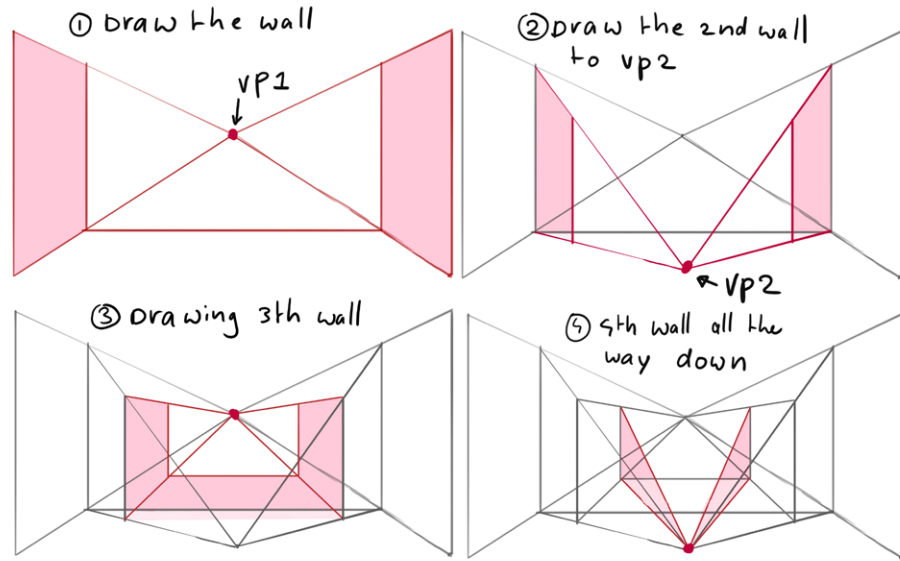


Here is an example of that you can draw the perspective lines by hand. When I draw in my sketchbook I have to draw something quick, I guess some of the lines. As like I did with this plane.

DRAWING A ROOF

Usually, I draw roofs freehand because most of the time, it works if those lines are parallel. But with this trick you can quickly get the roof right





⑤ Big shapes first

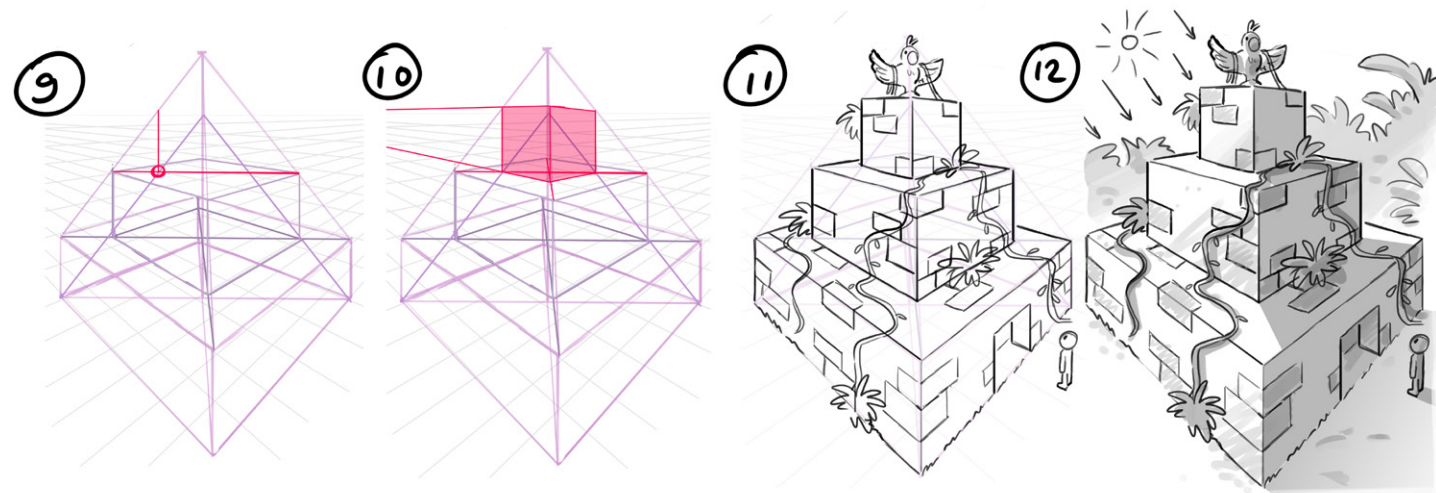
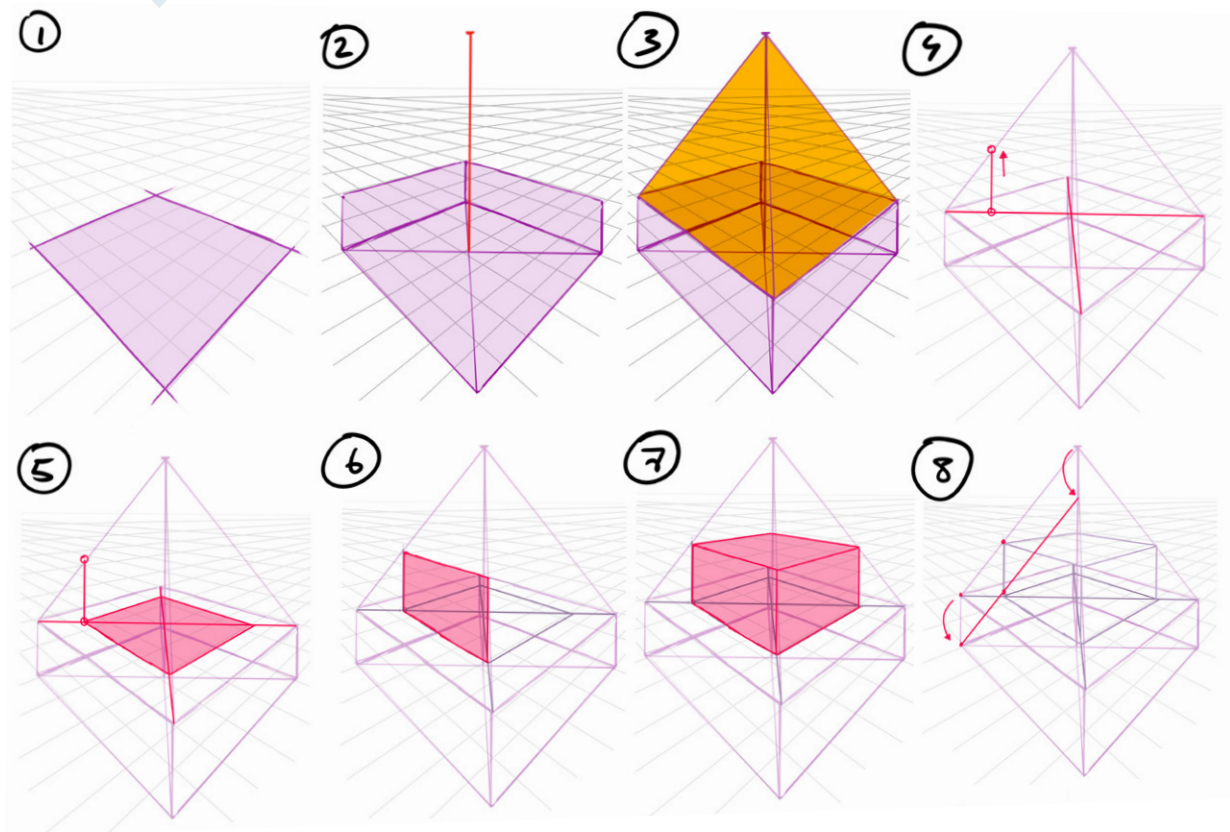
A DOWNHILL STREET

Drawing a street cascading downward is a great way of making an interesting composition. Drawing it in these steps will make it easier to do. Notice that it's still a one-point perspective.

sketch on top of the grid ⑥




DRAW A PYRAMID

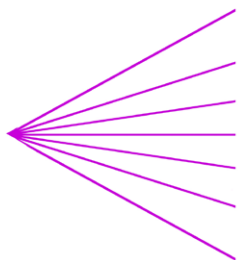


This method is useful when you're drawing a pyramid or anything that consists of smaller blocks stacked on top of bigger ones. Like a pile of clothes, birthday cake or kids' wooden play blocks.

DRAW A BANANA PAN

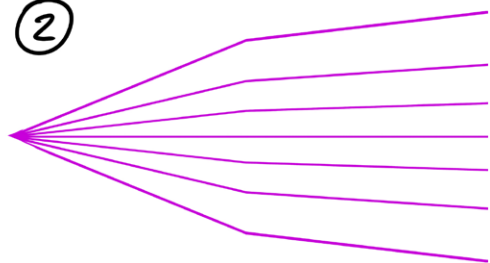
 ← Transform tool in photoshop
press ctrl+t or Cmd+t

①



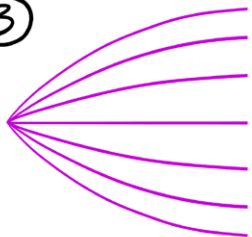
start with 1
point perspective

②



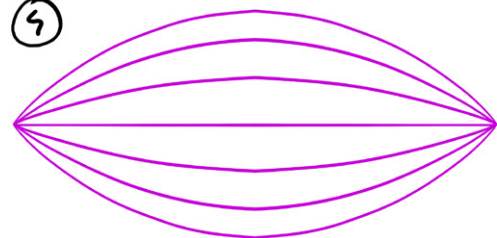
use transform
to make it like this

③

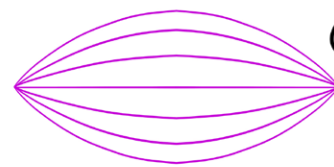


keep
transforming

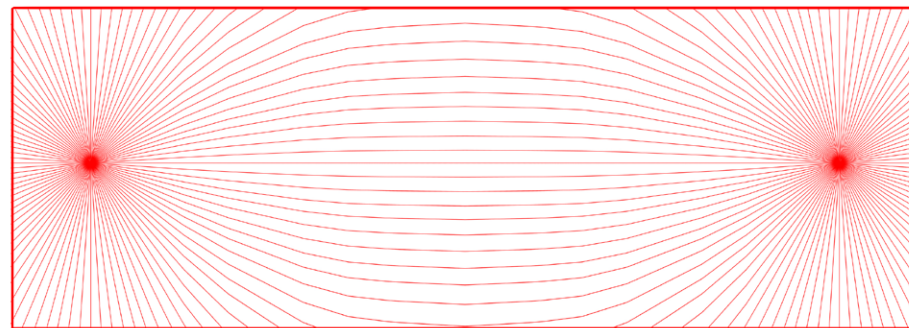
④



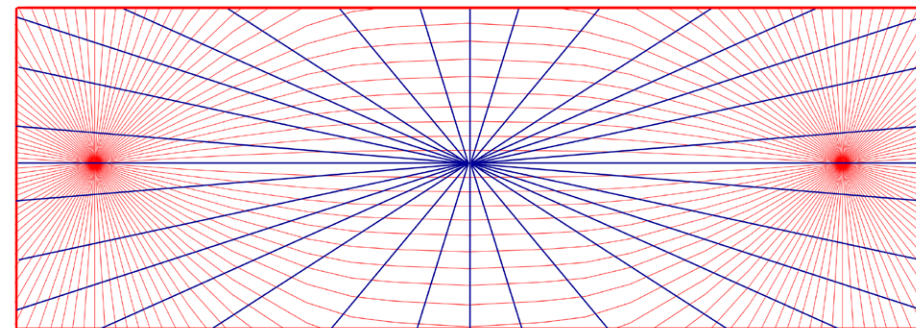
Duplicate and
mirror



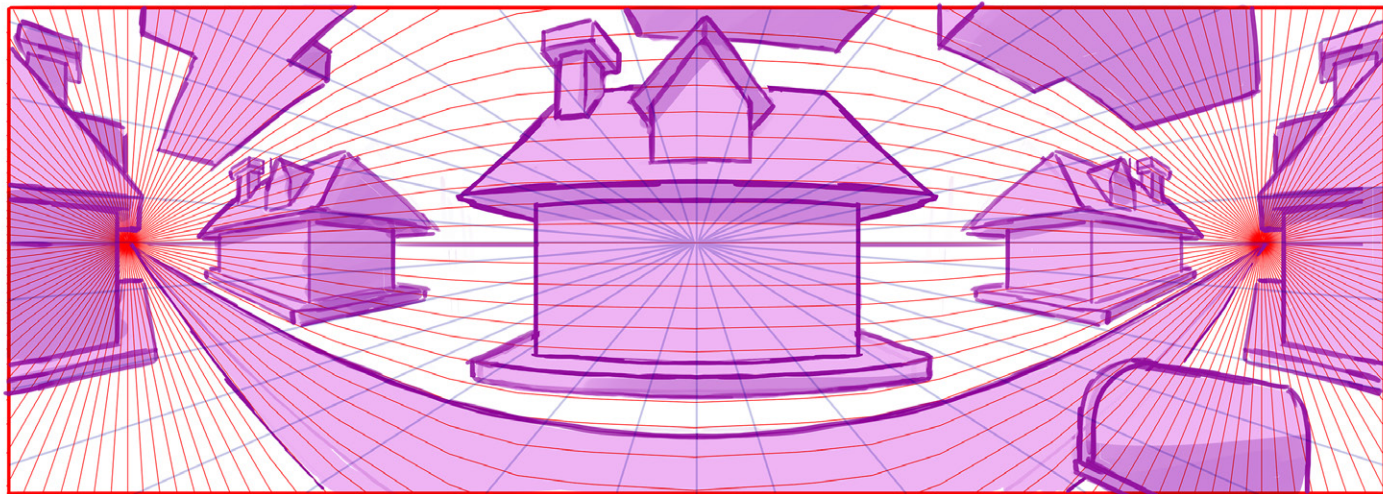
⑤ using the same
technique on a
more complex grid
↓



⑥ add perspective in the middle

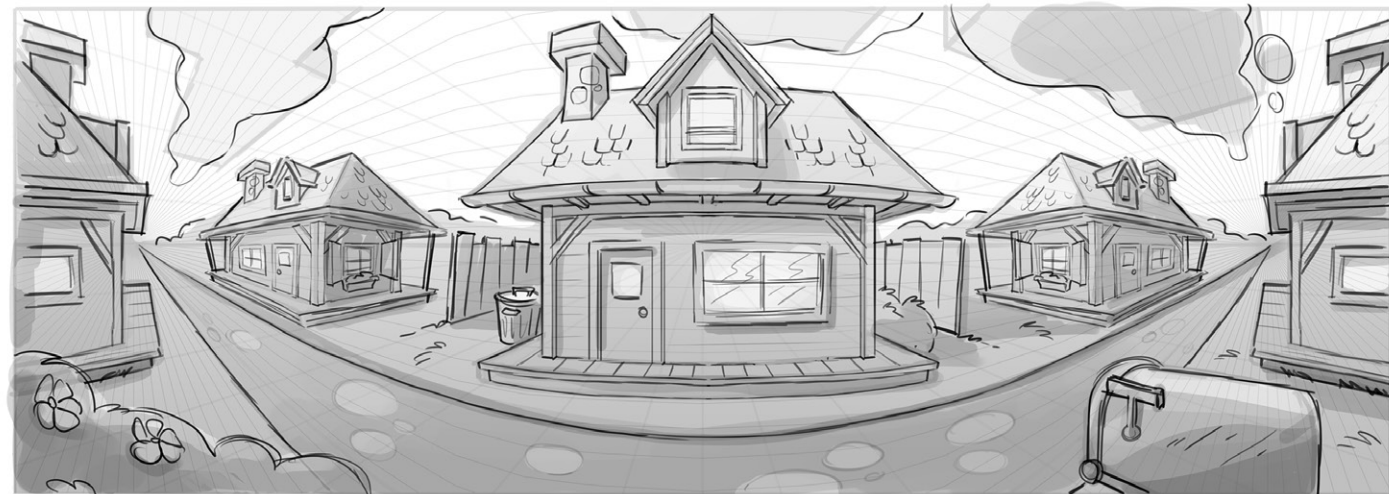


⑦ Draw the big shape first on the grid

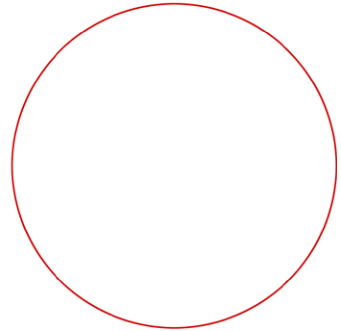


This is called a banana pan. These kinds of backgrounds are often used for a horizontal pan. A pan is when the camera horizontally moves from one point to another.

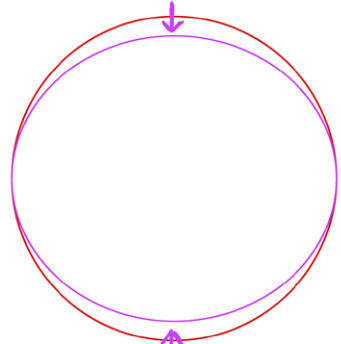
⑧ sketch on top of those shapes and add shadow



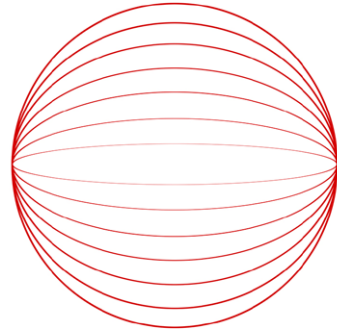
SPHERICAL PERSPECTIVE



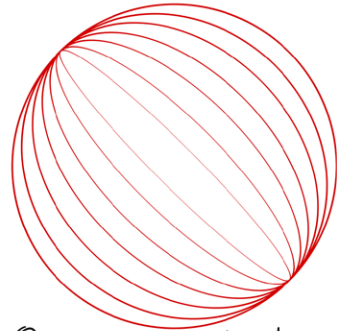
1) start with a circle



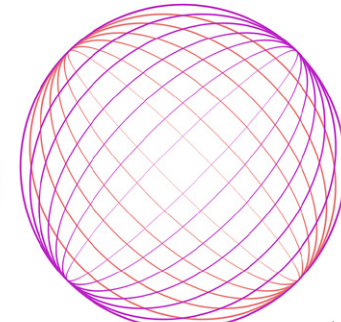
2) Duplicate the circle
And make it smaller



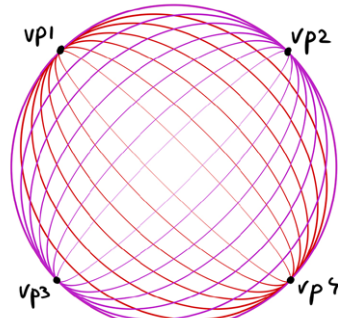
3) Repeat it until it
looks like this



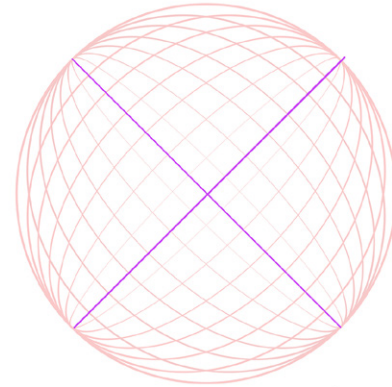
4) you can rotate it
30°



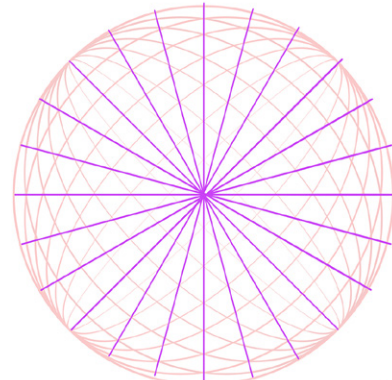
5) duplicate it and flip it



6) now you have four
vanishing points



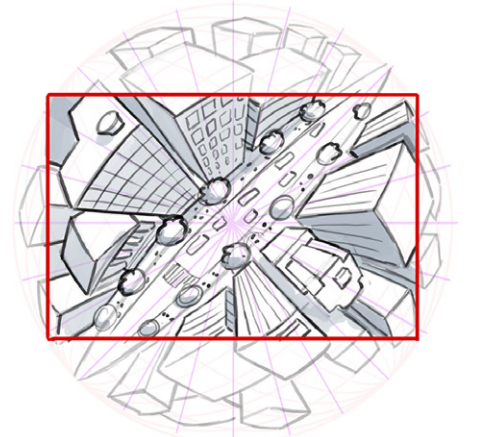
7) connect the vanishing
points with a cross



8) duplicate AND rotate the
lines to make a web



9) sketch on top of the
grid



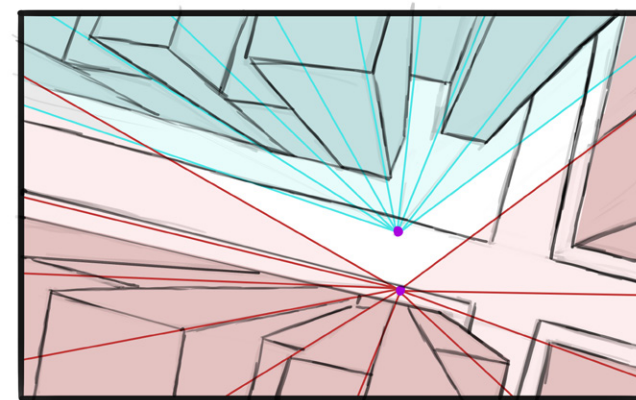
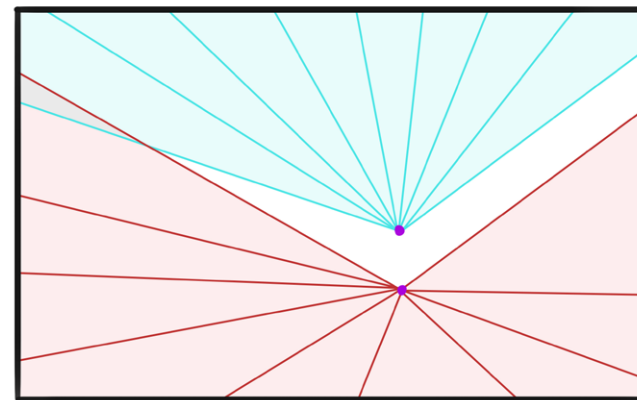
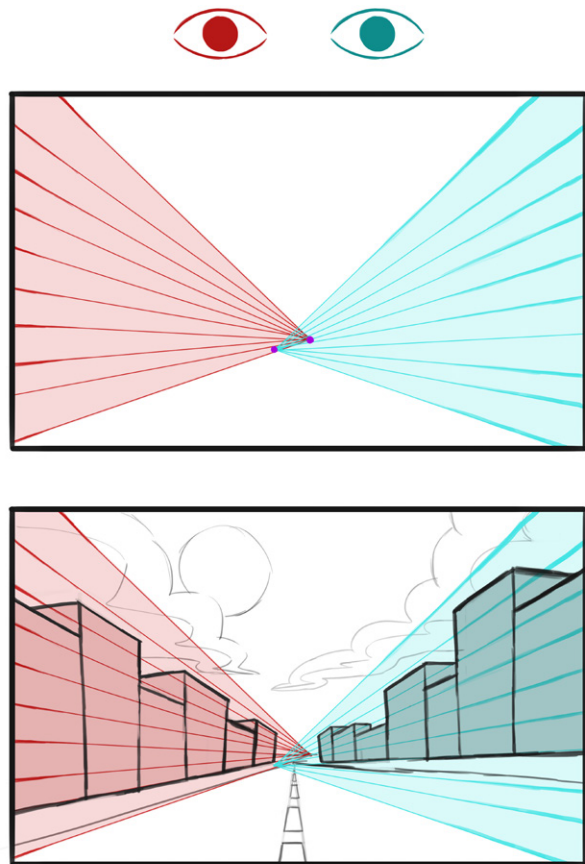
10) choos a frame
add details & shadow

You rarely see this perspective but it would make a great opening shot. You can use it to achieve a suggestion of extreme heights.

MULTIPOINT PERSPECTIVE

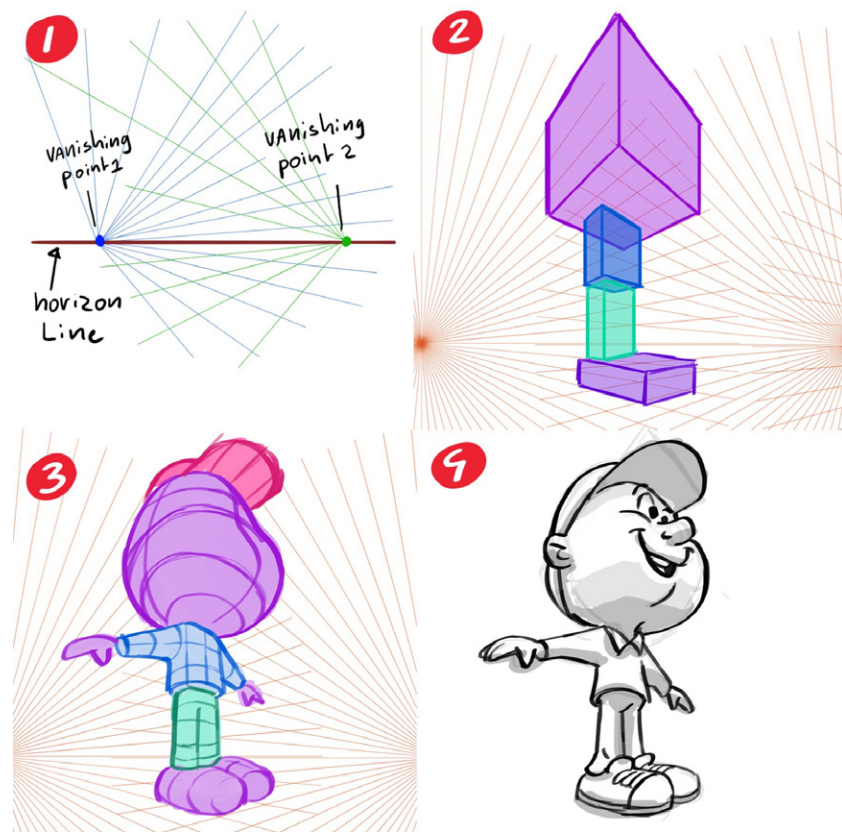
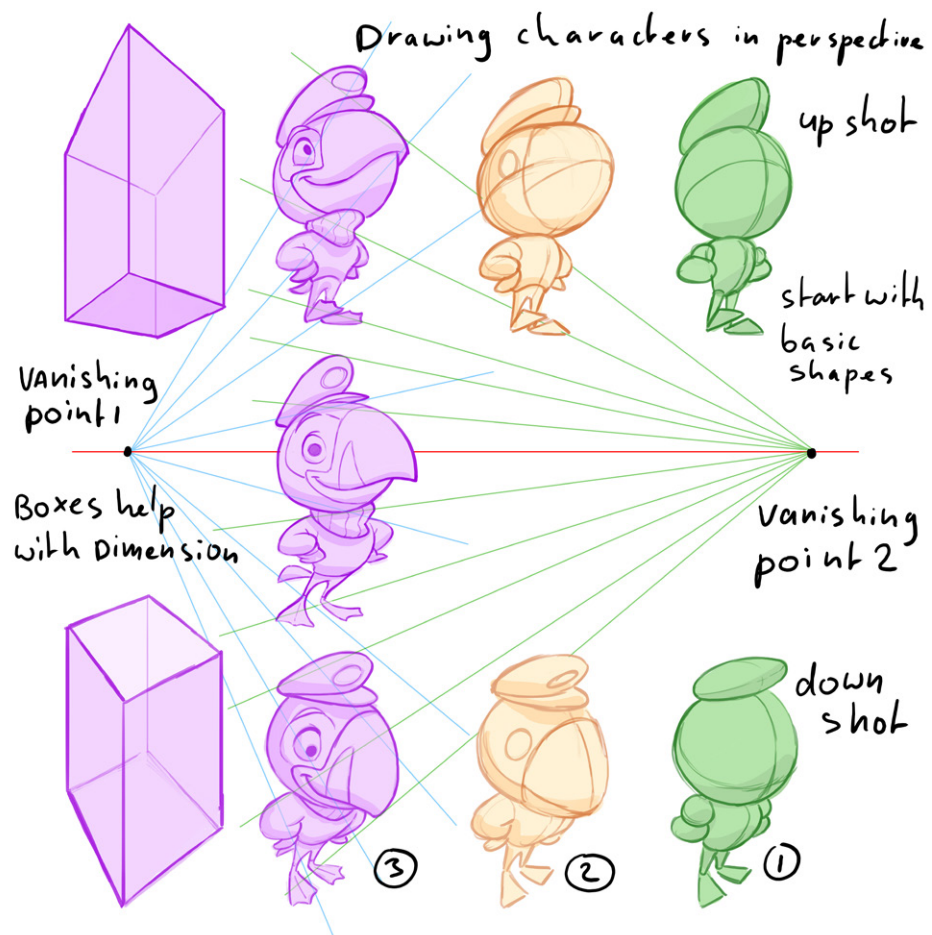
Most people see the world through two eyes. When you look at something and you switch between your left and right eye, you can see their vanishing points are slightly different. You can use this technique to add a bit more depth to your drawing.

Because the two eyes both have a different vanishing point, we see depth. That's also the purpose of those blue and red glasses you see at old 3D theatres.



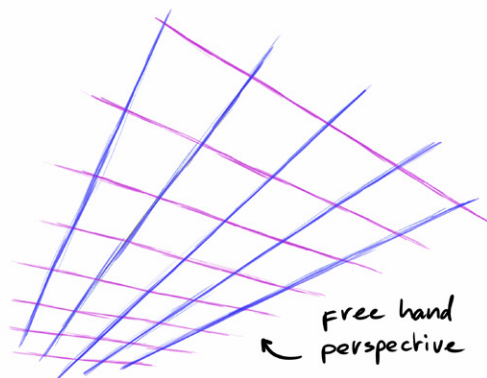
CHARACTERS IN PERSPECTIVE

Drawing characters in perspective is basically the same as drawing objects. To make it easier, I start by drawing blocks and then draw the more organic shapes inside of them. For drawing characters, I use cubes, cylinders and spheres.

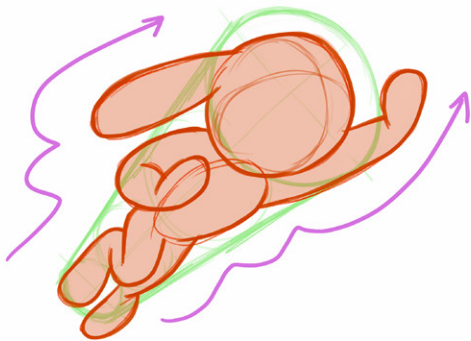


Steps of drawing a character. I first draw cubes so I can then draw bodies and other organic shapes inside those cubes. Cubes are easy shapes to draw in perspective.

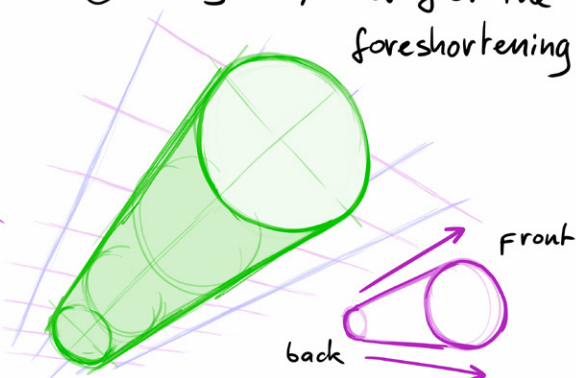
① using a grid to draw on



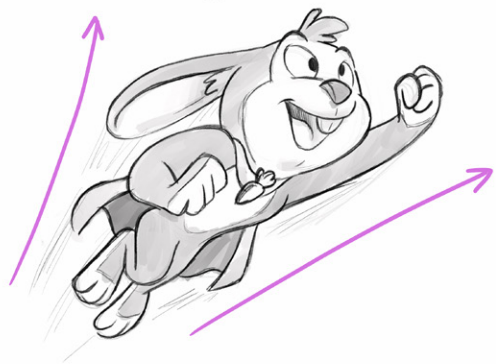
③ Drawing organic shapes following the cylinder



② using a cylinder for the foreshortening



④ Final sketch on top of the guides



CHARACTERS IN PERSPECTIVE ON A BACKGROUND

① pick a character to determine the size



② Draw a line to the horizon line from the feet



③ Draw a line from the head to the horizon



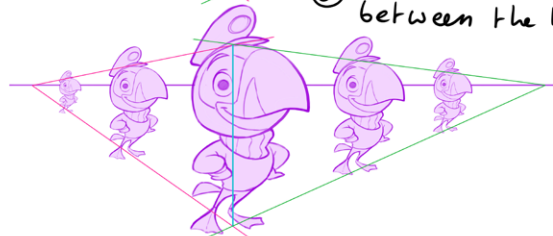
④ Draw a character in the front or back between the lines



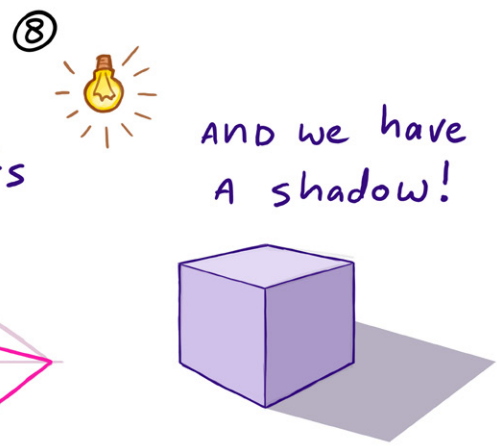
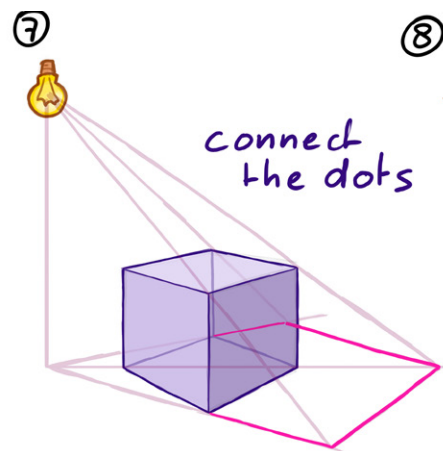
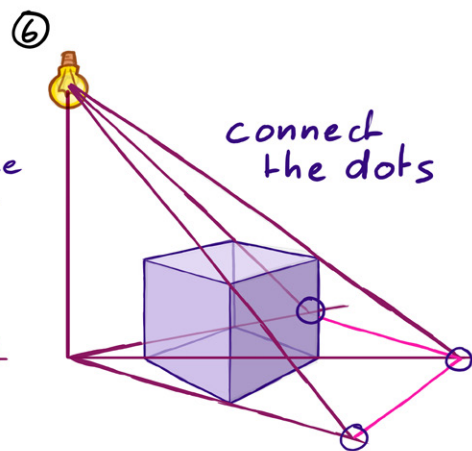
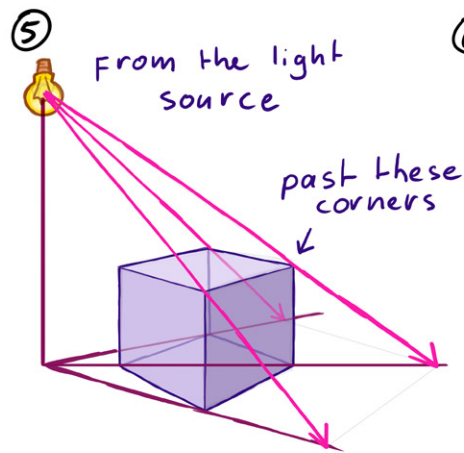
⑤ create another VANISHING point create lines from head & feet



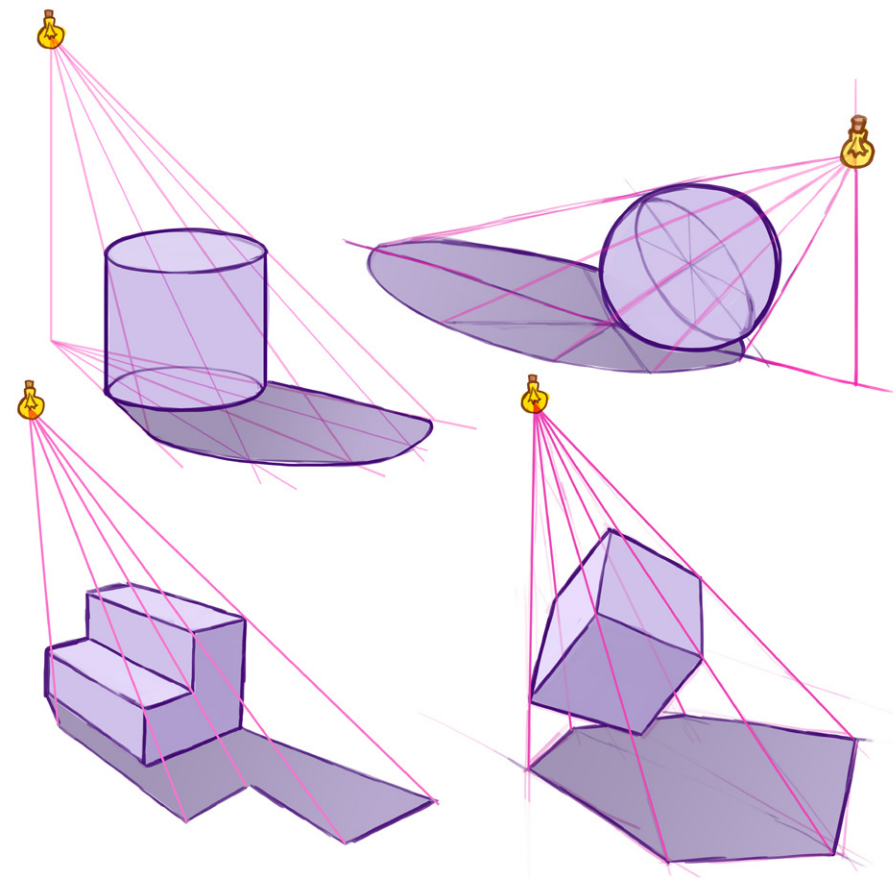
⑥ ADD characters between the lines







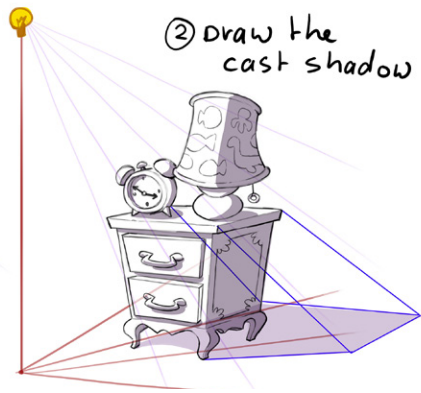
Remember that the shadow always follows the shape of the object, like in these examples.



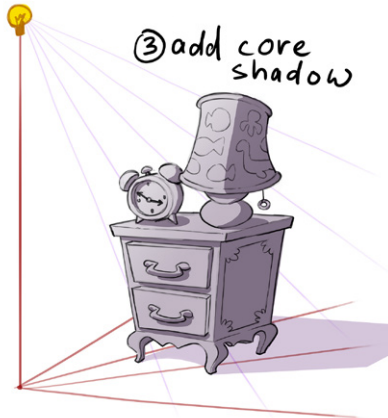
① set up the light



② draw the cast shadow



③ add core shadow



④ add colors



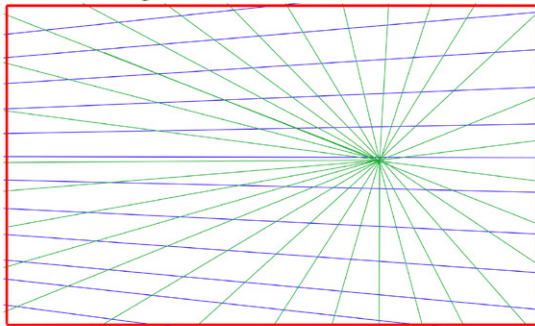
Here you can see how the lighting is used on an object like this. Basically, it works the same as with a cube. Of course, you can go as accurate as you want with it. Normally, I only apply it to the big shapes and make educated guesses for the smaller shapes.



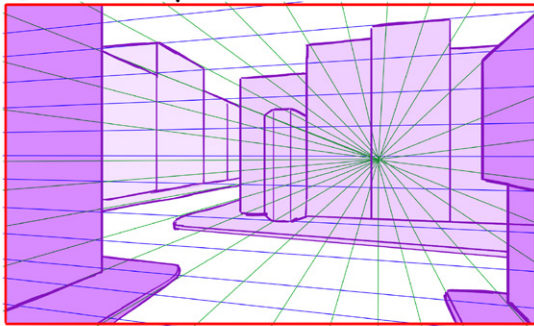
DRAWING STREETS

Drawing buildings and streets is a great way to start using perspective. Buildings have a lot of straight angles, like blocks. Conveniently, blocks are the easiest things to draw in perspective.

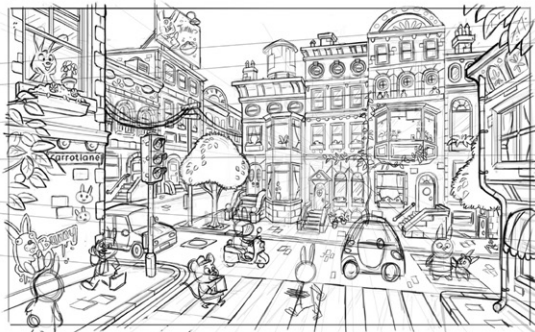
① setting up perspective



② Big shapes first



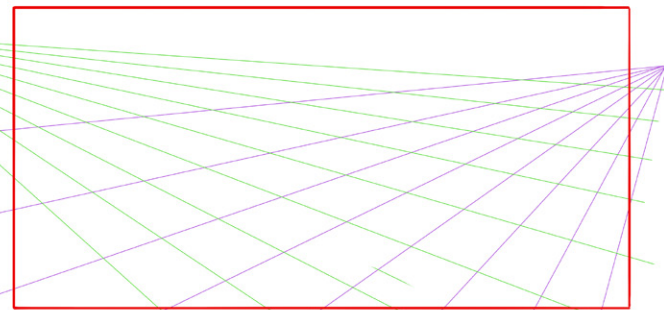
③ rough sketch



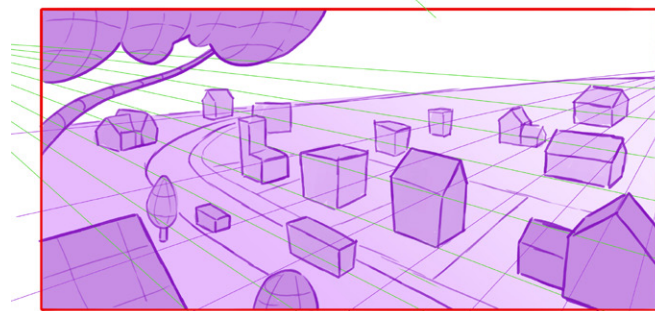
④ clean up and adding values



① Set the perspective

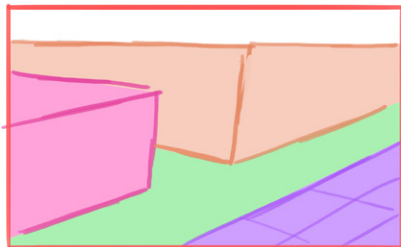
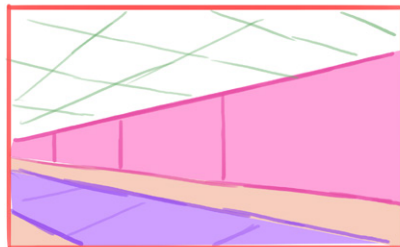
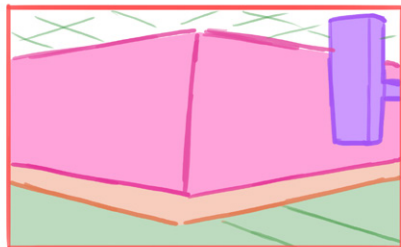
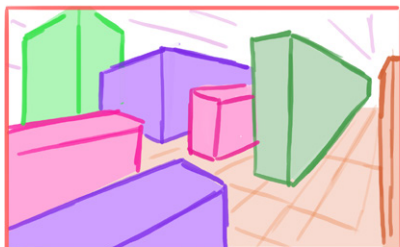
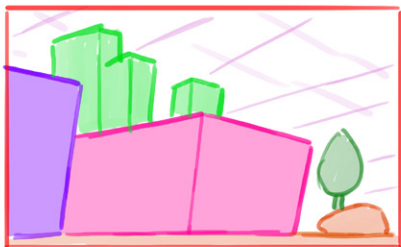


② big shapes first. Leave space for garden & vegetation



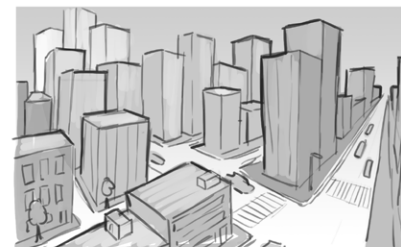
③ First sketch rough on the big shapes





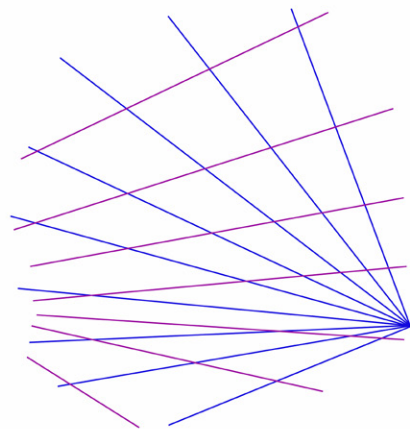
When I draw a street or a part of a city, I start drawing blocks like these. First the big shapes and after that I add smaller shapes.

Next step is adding the smaller shapes and details on the buildings.

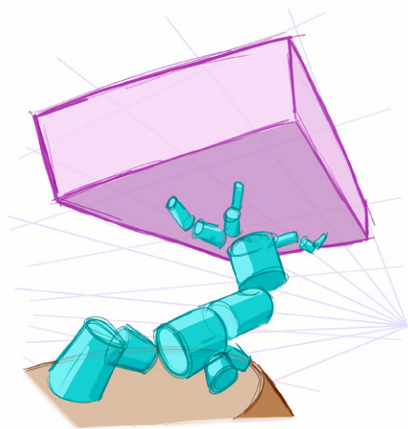


ORGANIC SHAPES

In these examples I show how to draw organic shapes like a tree. It helps to start by drawing boxes and cylinders and draw more organic shapes on top of it.



① Drawing perspective guides



② Drawing basic shapes on the guides

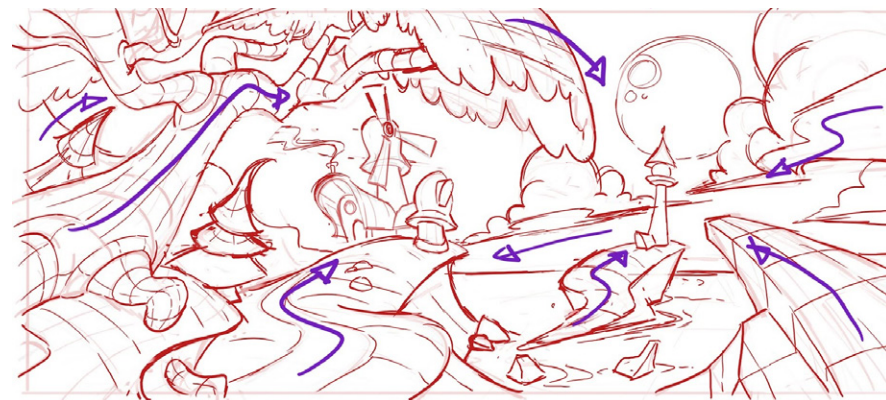
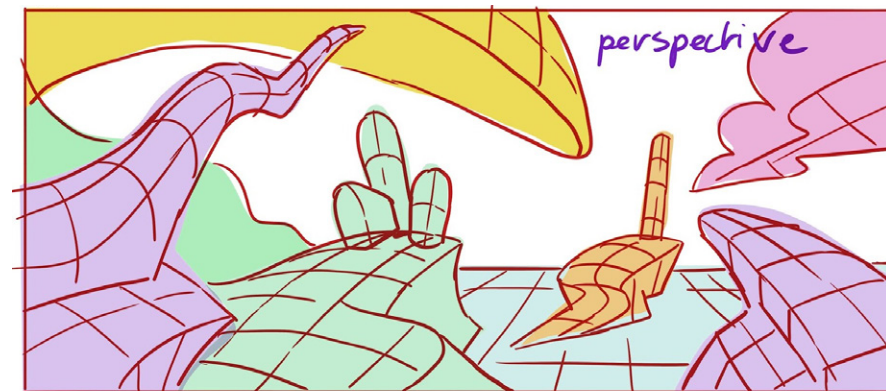


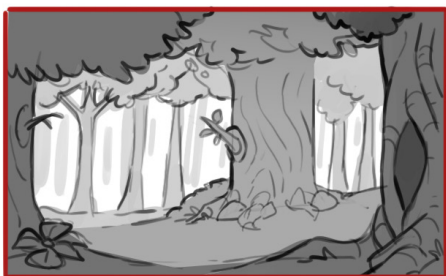
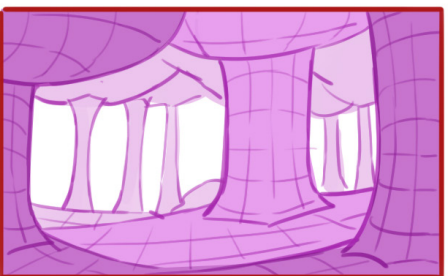
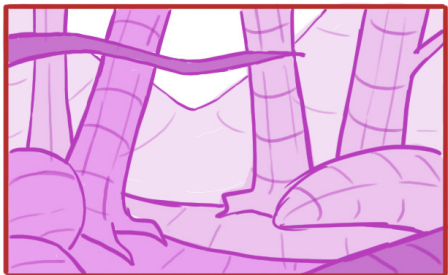
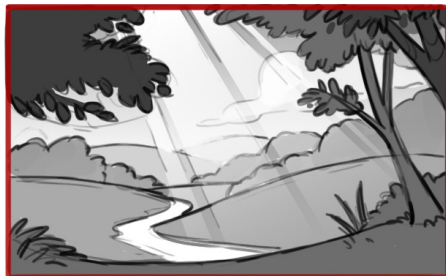
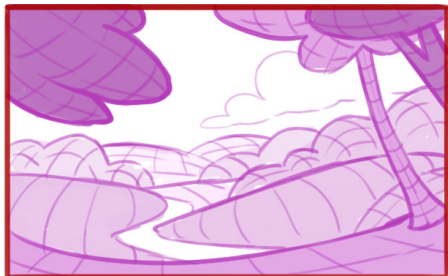
③ Drawing organic shapes on top of it



④ final sketch with values

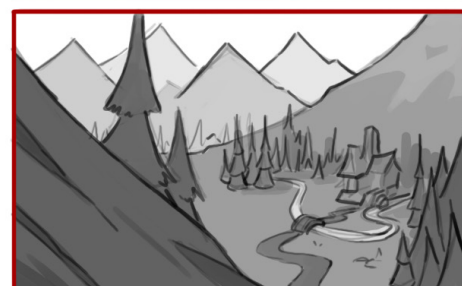
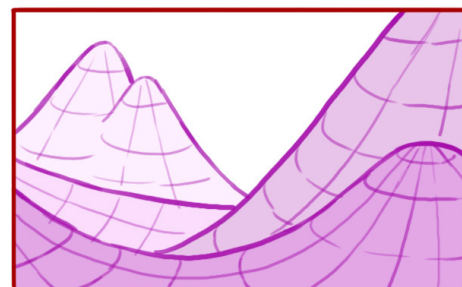
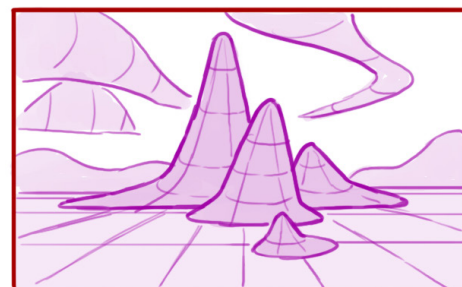
Another example of how to draw organic shapes in perspective. It's important to find a good mix between solid shapes that work in perspective and get shapes that are fluid and organic.





DRAWING A FOREST

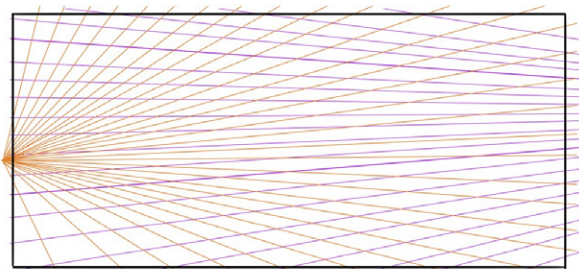
Drawing a forest is different from drawing a city because you are drawing all these organic shapes. Still, it's good to think of those shapes in 3D and try to get a lot of depth in these drawings. That's why I draw these grids on top of it.



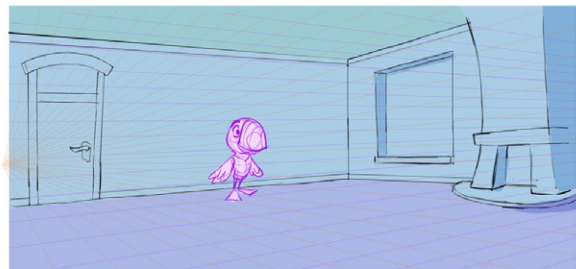
DRAWING MOUNTAINS

You can draw mountains in many different ways. When you are drawing a scene, try to come up with different compositions and choose the one you like most.

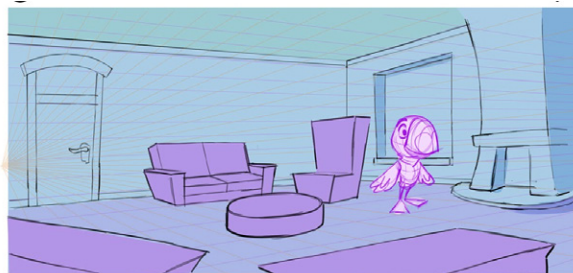
Before you start on your final drawing, you can draw thumbnails. Thumbnails are quick little drawings that are quick to make and will save you time before you start working on the final drawing.



① create grid



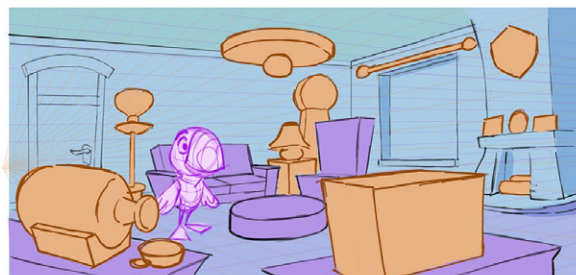
② draw the room. Draw the character as size ref



③ draw furniture

DRAWING INTERIORS

When drawing interiors, you draw the walls and the furniture. So, mostly square-shaped objects. I often start with a rough thumbnail to get an idea of what I want to draw. Once I have that, I make a grid that fits that thumbnail. After that, I can start drawing all the objects in the drawing.



④ smaller objects



⑤ draw over shapes



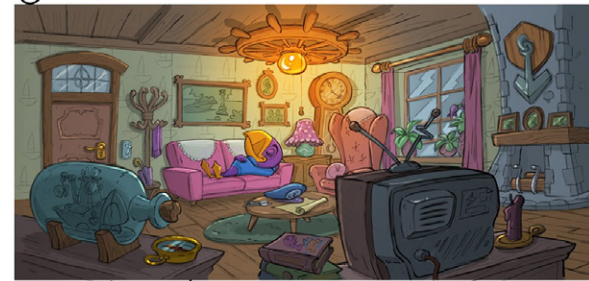
⑥ add values



⑦ draw in character to add life

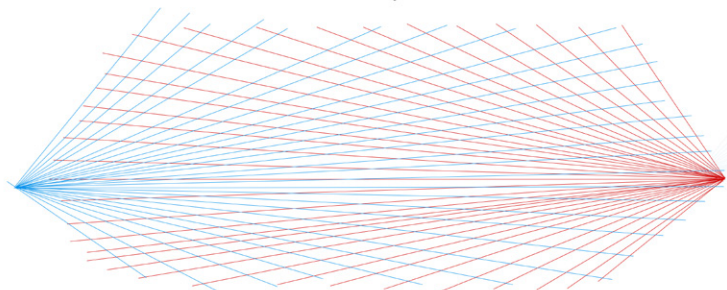


⑧ add colors

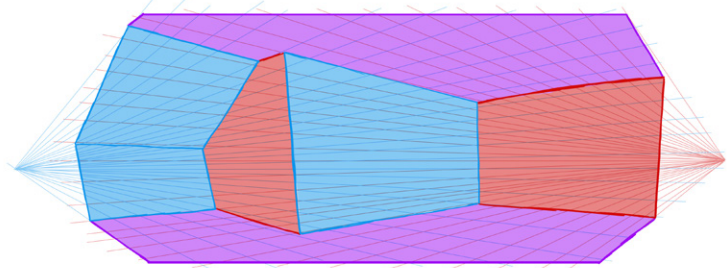


⑨ final touch

① starting with a perspective grid



② drawing the walls



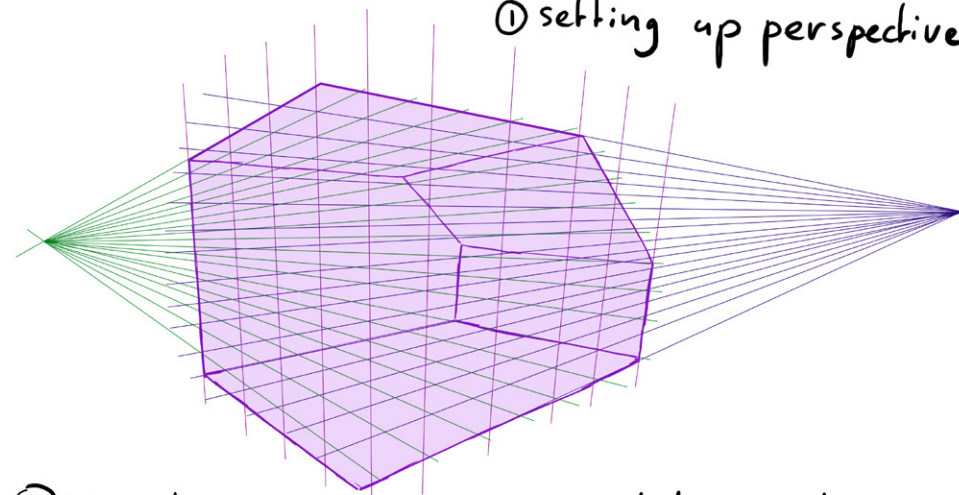
③ adding the props in perspective



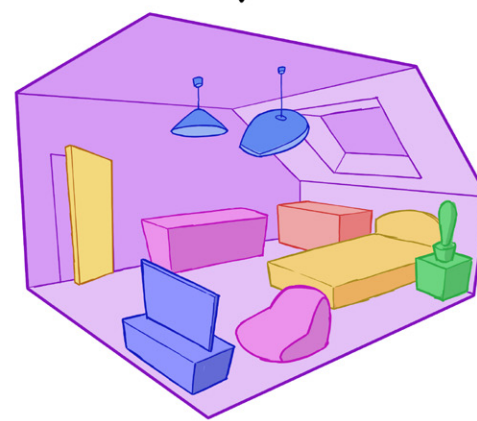
④ adding details & values



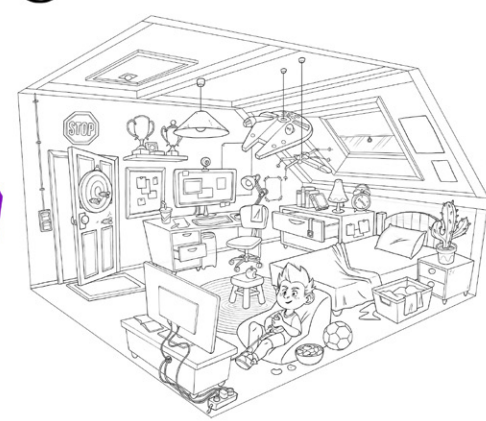
① setting up perspective



② Big shapes first

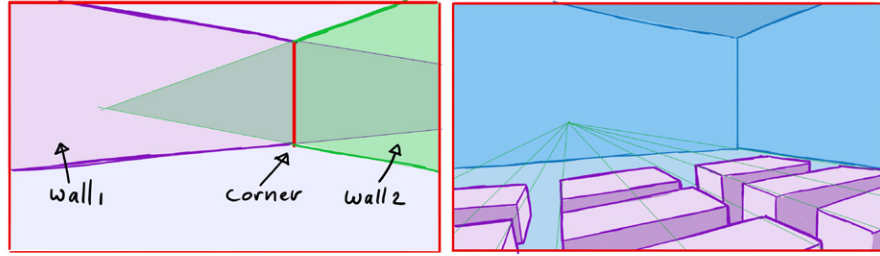


③ final line art



For this drawing I didn't use a frame or aspect ratio. I drew a box and put the room inside of it. This can be useful for production. For example, when they want to create a 3D environment. This way you can see most of the walls and get a good overview of the room.

Also, take notice of how I first drew all the furniture as big shapes first.



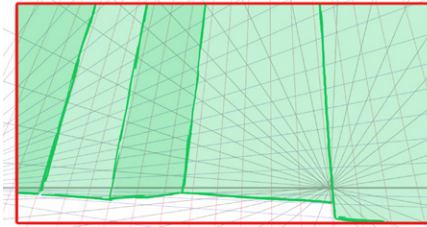
① draw the room first

② Drawing tables as cubes

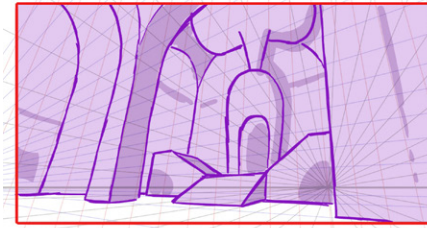
③ final sketch



2 more examples of drawing interiors and how I draw the walls. First, I draw the longest wall (wall 1 in the picture) and then add the smaller walls to it.

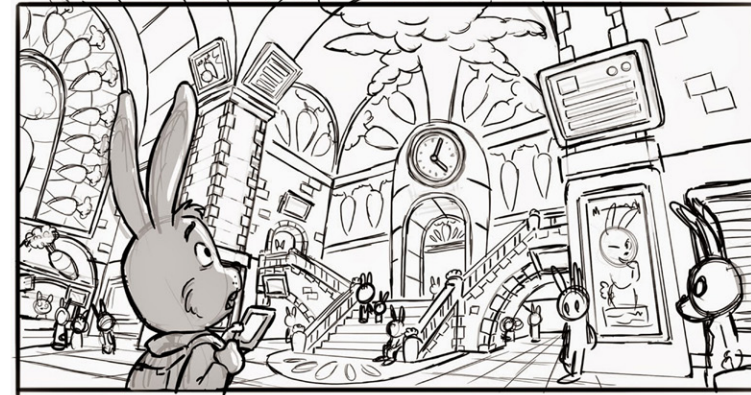


① start with the perspective and create the big walls first



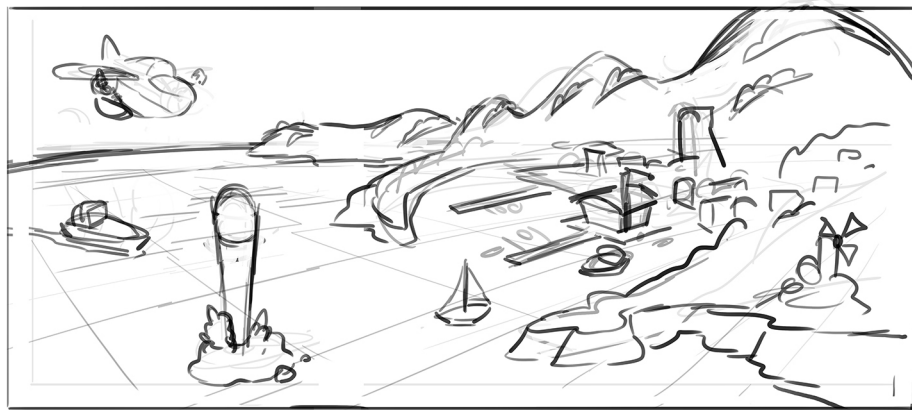
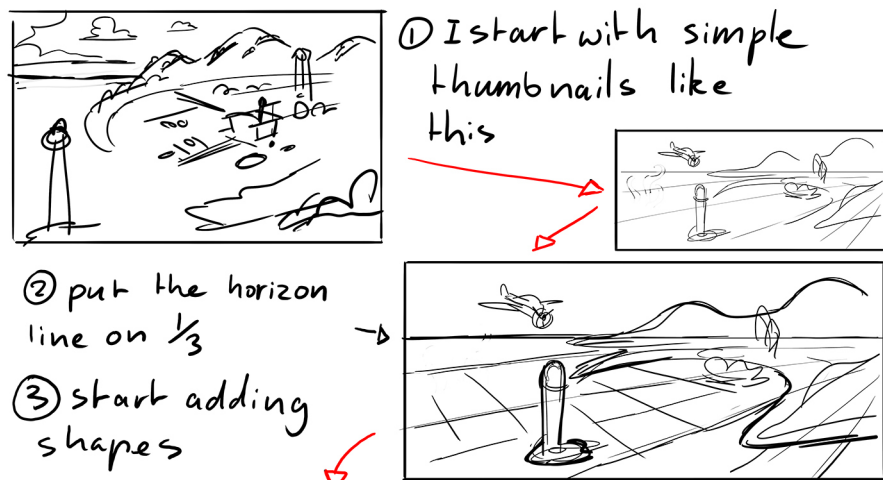
② build the smaller shapes

③ details & characters

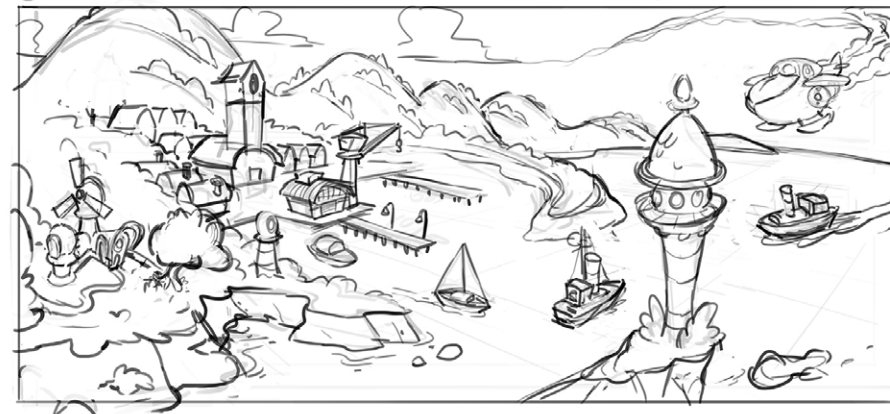


DRAWING A HARBOR

These are my first thumbnails that turn into a sketch. I start really simple - almost abstract - and add more details along the way. At this stage, I eyeball the perspective.

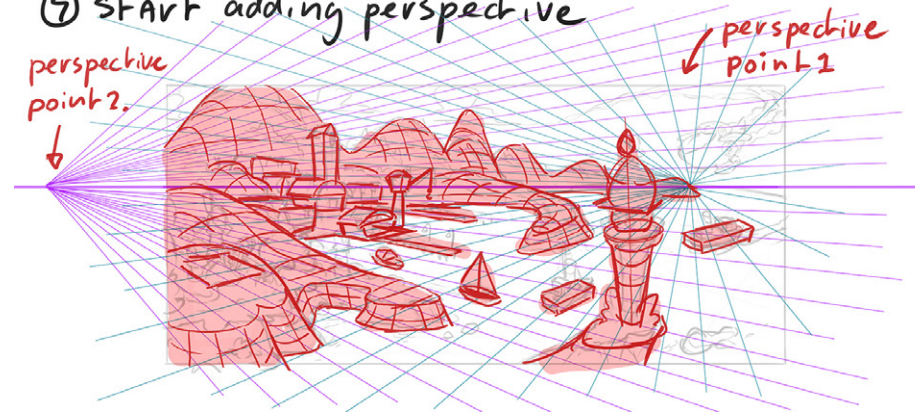


③ DRAW over the sketch loosely

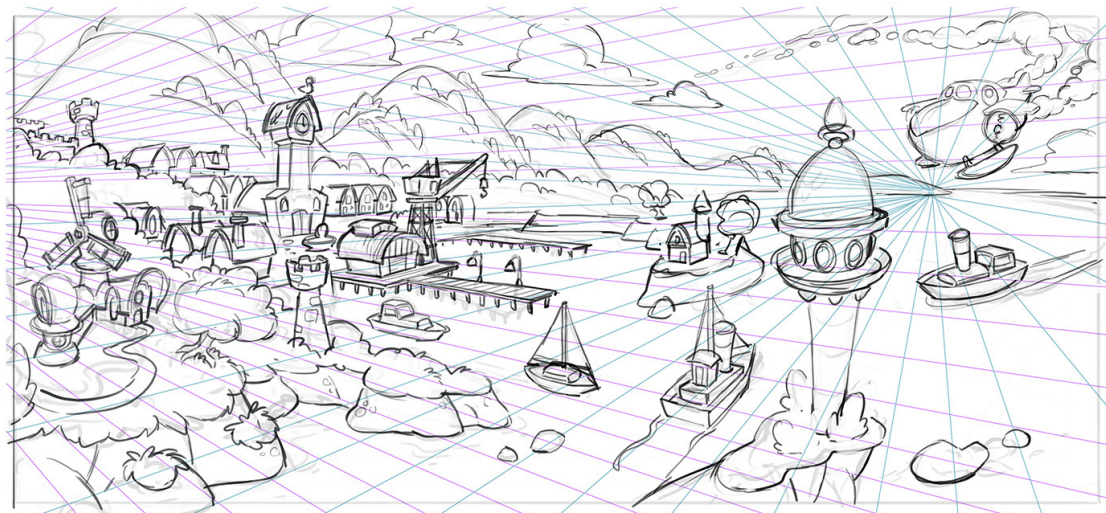


Once I've put down the first sketch I put the perspective on top of it. I change some things to optimize the perspective and I fix any mistakes I made while eyeballing the perspective. Be careful at this stage, if you focus too much on getting the perspective right, it can start looking stiff.

④ start adding perspective



⑤ sketch details



Here you can see what the sketch looks like in perspective. I tried to add perspective that is right and solid, but I also wanted to keep the energy of the sketch.

Once I'm happy with the sketch, I start inking. Inking can be hard because it can totally ruin a good sketch, but it can also save a bad sketch. It is important to take your time for this stage.

⑥ Final linework





1. start with a rough sketch (15 min)



2. add on top of the rough sketch a two point perspective (5 min)



3. draw the final linework on top of the perspective lines (20 min)



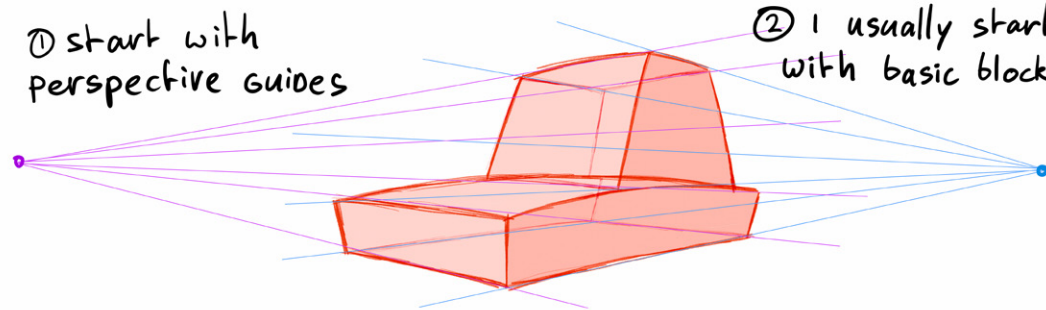
4. ink the lines and add color on it (20 min)
total time 60 minutes

DRAWING VEHICLES

In this illustration I show a step by step process of drawing a car. I start with a rough drawing and when I like that, I start adding perspective on top of it and work on the final sketch.

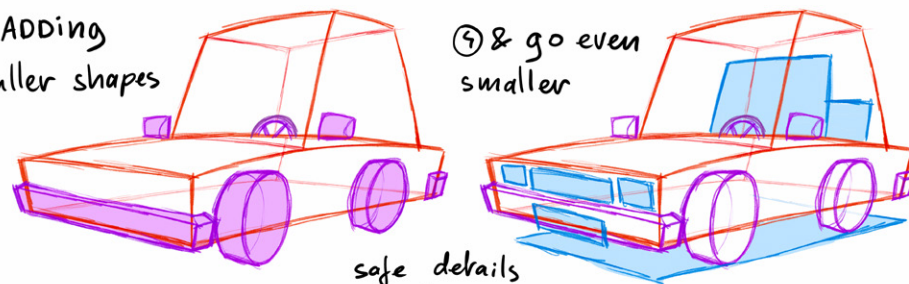
① start with perspective guides

② I usually start with basic blocks



③ Adding smaller shapes

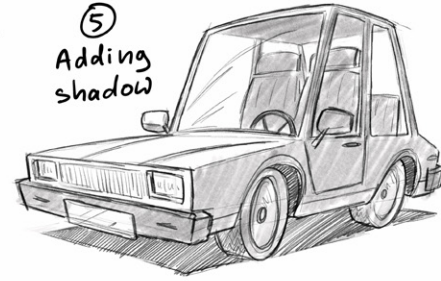
④ & go even smaller

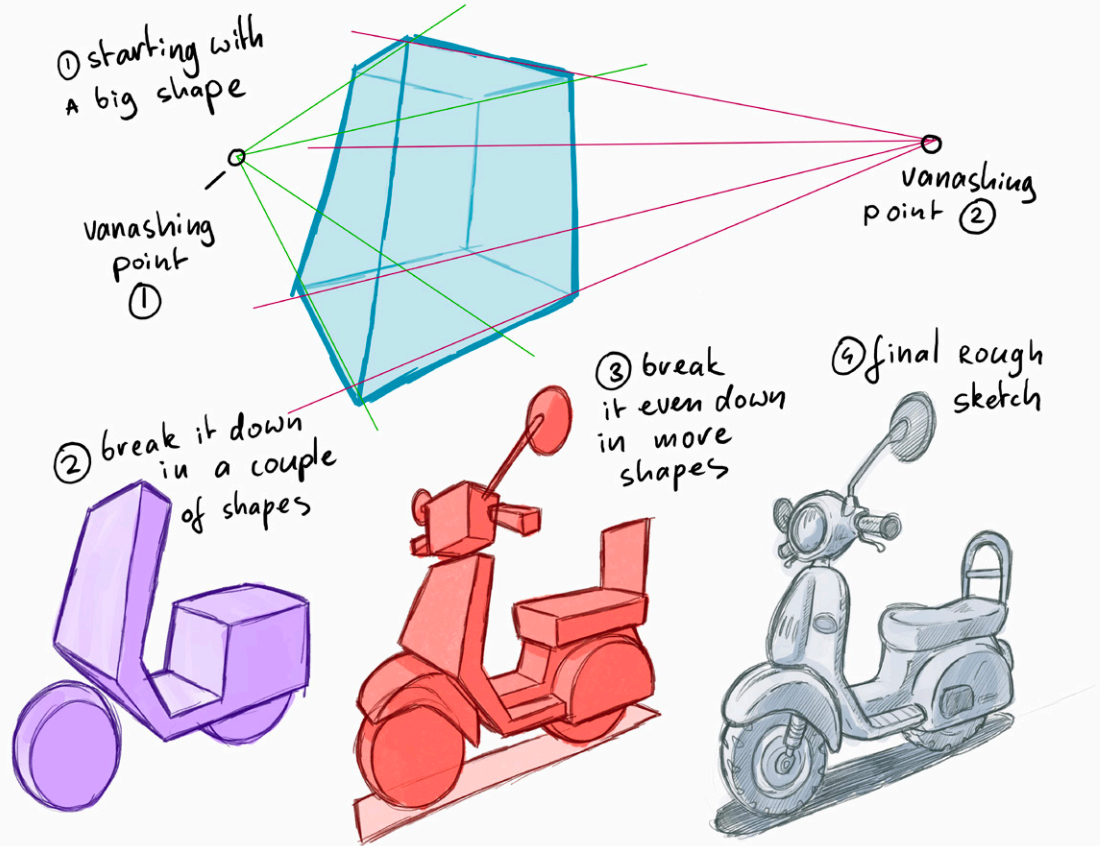


safe details for last

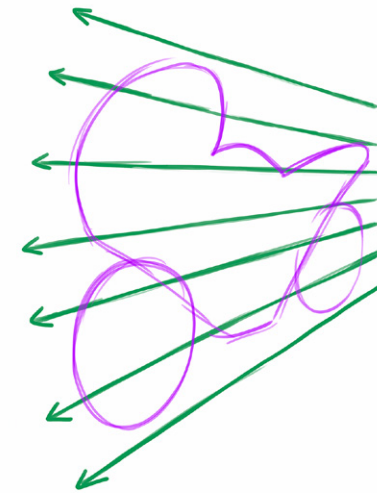
⑤ sketch on top of those shapes

⑤ Adding shadow

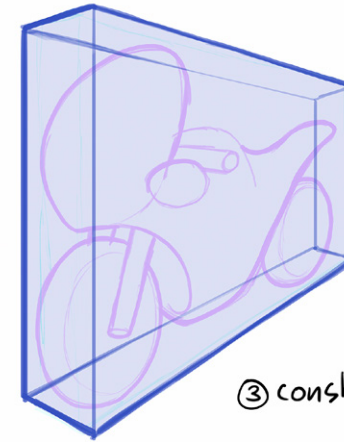




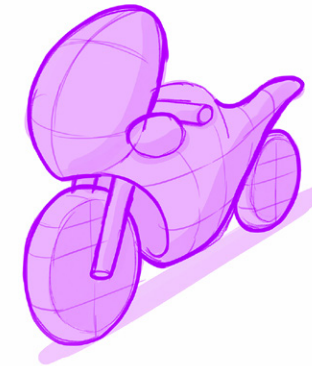
① setting up the perspective



② drawing a box



③ constructing shapes



④ final sketch on top



The same tricks apply to other vehicles like a motor cycle or a scooter. You can try this for yourself with other vehicles!

CONCLUSION
& THANK YOU

THAT'S IT!

Thank you for reading this book. I hope you've learned something from it and had fun using it. Like I said at the beginning of this book, there is currently a big need for environment artists. So, if you like to draw environments it could be a perfect career path for you. It maybe takes a long time to get to the level you can get hired, but once you get to a certain level you can start finding work. And it's mostly about hard work.

Some people tend to think it's all talent. But talent can only help you get so far. The most important thing is hard work. If you are talented but are lazy you'll have a hard time to

get to the next level and learn new things. But if you're a hardworking person and motivated to get there then this is your chance to grow and become an environment designer rock star.

People tend to overestimate what they can achieve in a short amount of time, but they underestimate what they can achieve in a big amount of time.

Best,
Mitch Leeuwe

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