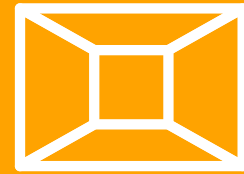




Designing
Justice+Designing
Spaces

Tool

4



**Perspective/
Montage**





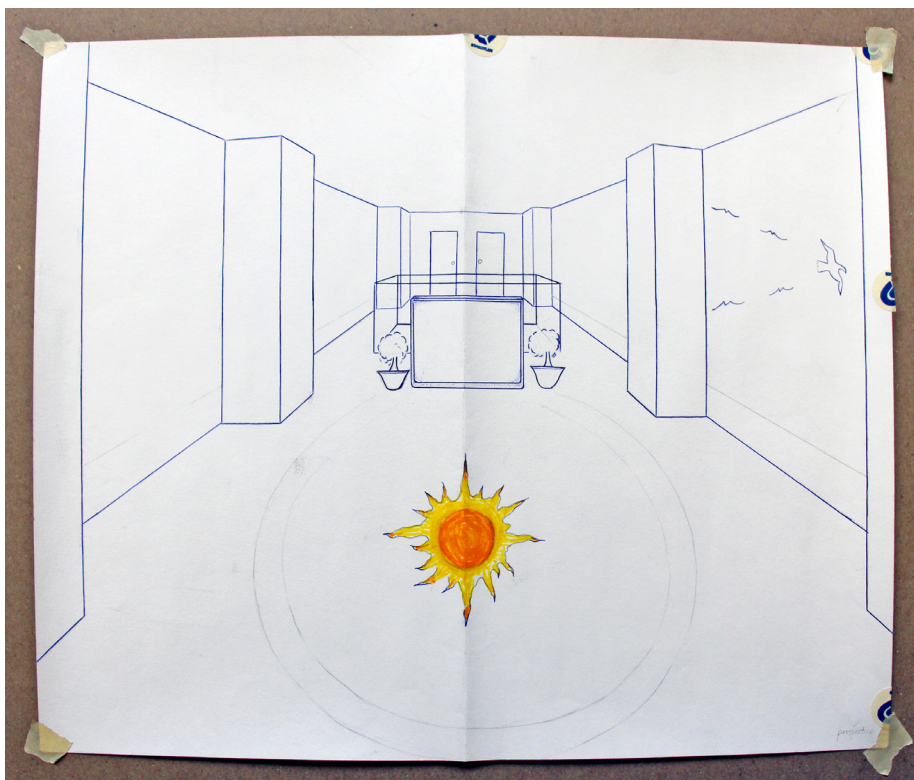
Description

Perspective Drawing

A perspective drawing is a two-dimensional drawing technique for representing three-dimensional space. Artists, architects, scientists, engineers, and designers have used this method for centuries to convey their ideas in a way that is often easier to understand than orthographic drawings, such as plans and sections.

There are several types of perspectives depending on your orientation and objects in a view. This tool and its activities use a one-point perspective, which means there is only one vanishing point along the horizon line (eye level). This is different from a two- or three-point perspective, where there are multiple vanishing points that correspond with the placement and angle of the objects in the room. You can read more about these elements in the Make and Build section of this tool.

These perspectives involve drawing or envisioning the “construction lines,” the lines that create the perspective or illusion of three-dimensional space. The activities associated with this tool use a variety of processes – working with room templates that already have the construction lines on them, drawing construction lines on images or photos, or creating one’s own spaces with construction lines from scratch. The Make and Build section includes detailed instructions on how to create these amazing images.





SAMPLE EXERCISE

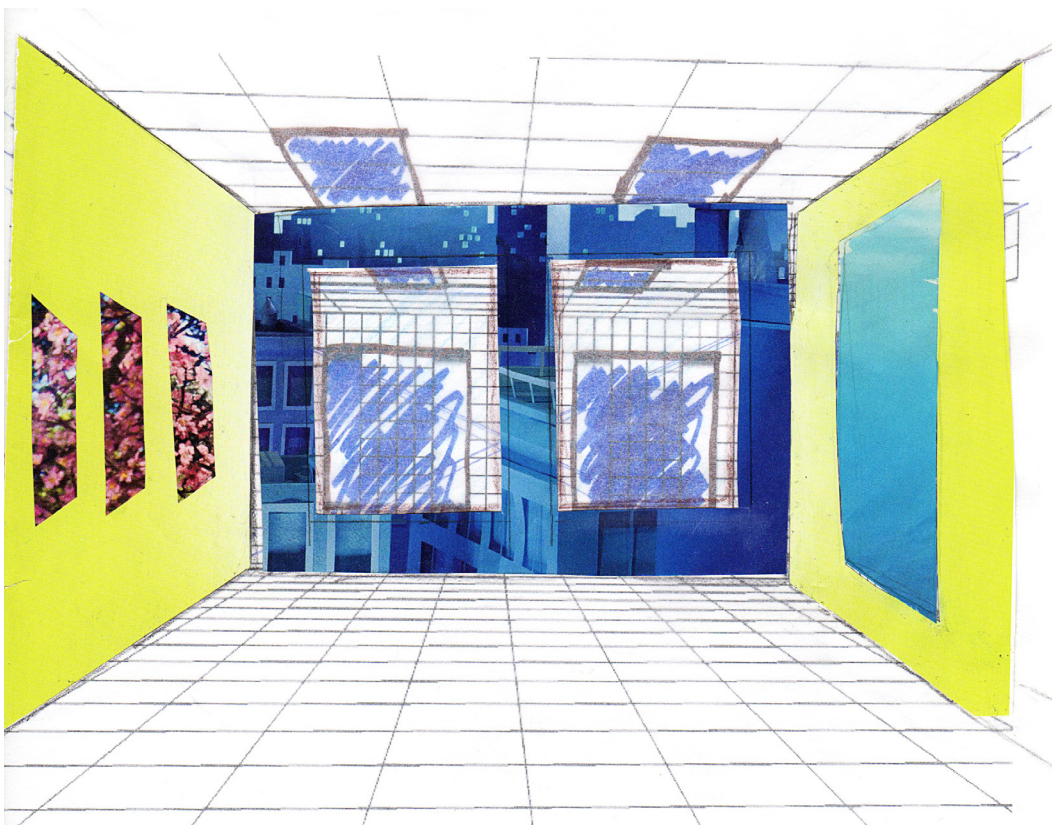
Using Templates 3 and 4 in the Make and Build section, construct a perspective that will look like Figure 5 in the Make and Build section. These templates already have some construction lines (the lines that create the perspective or illusion of three-dimensional space) drawn on the plane. This will be used to teach the basic components of a perspective and to create a room that students will add features to. See the Make and Build section for instructions on how to draw, create, or place these elements.





Montage

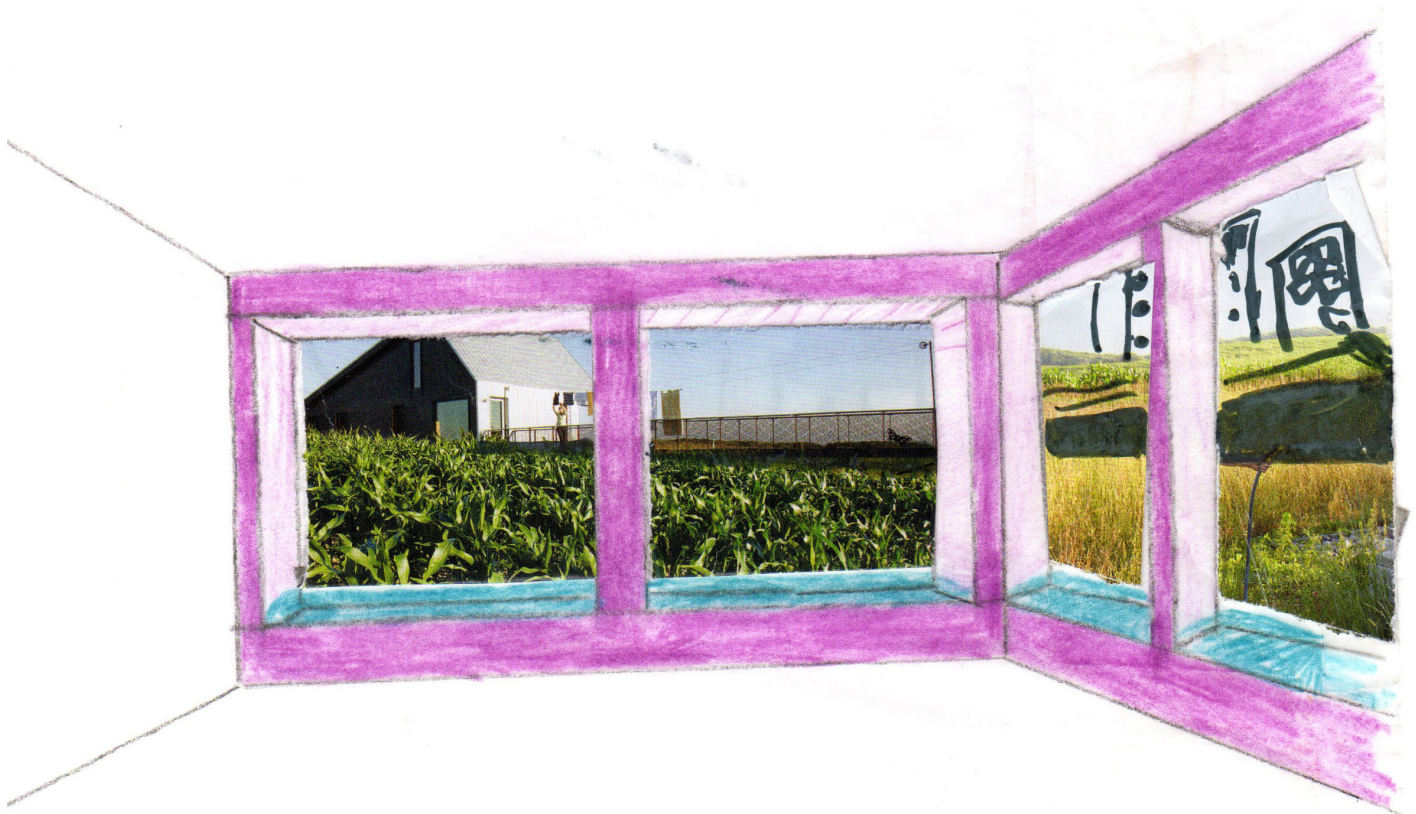
Another technique that draws on both collages and perspective drawing is montage. Montage combines multiple two-dimensional media (e.g., images from magazines, photographs) to add a richness and depth to a photo or perspective that you have drawn. For example, we can add images from magazines that support the ideas taking shape in our minds. Colored pencils, construction paper, and ink pens can also be used to add detail and color.





SAMPLE EXERCISE

Use the perspective you have drawn or take a picture of any space in your environment. Once printed out, you can cut images out of magazines and add them to your drawing or photo. Elements such as people, trees, furniture, and textures can be added to create a very rich perspective drawing that has the look and feel of a collage. It can be fun to move elements such as people around in the perspective and see how it impacts the way the space you have created feels.





Plan and Process

This tool is useful to:

- Explore the different ways people experience the same space.
- Experiment with the modification of existing spaces.
- Discuss topics related to honoring varied perspectives of the same issue.
- Offer a tool that is more technical and structured for students who prefer this type of design work.
- Visualize completely new spaces from imagination.





Modify the sample exercise

Exercise 1: Practice with photos

Take a photo of a space in your environment, ensuring that you are parallel to the surface on which you want to draw (this is necessary for practicing one-point perspective). This may be a space in the institution, building in which the workshop is being facilitated, or another space familiar to all students (e.g., a courthouse). Print out the photo, and locate and highlight the basic elements of a perspective, such as the vanishing point and the horizon line. Place a piece of tracing paper over the image and begin to re-draw these elements and then add new elements as described in the sample exercise. See the Make and Build section for instructions on locating the basic elements and creating new elements.

Exercise 2: Redesign and renovate - Create a template of an existing space

A great final project for a class is to redesign a space they all know. This is often a place inside the institution, if working with incarcerated students. If students do not want to use a space in the institution, you can select a civic building to which everyone has been exposed. For example, a local courthouse or court room can be a prototypical building or space that you can use as a project. For this modification, you will follow a similar process to the sample exercise after creating your own template. See the Make and Build section for instructions on how to create this base template.

Exercise 3: Envision a new space

Some students want to create a space that is entirely generated from their creative ideas about a new kind of building or place. In this instance, students can use the techniques they have learned in the sample exercise to draw the space they have been envisioning. If students practice perspective drawing in their visual diaries and feel comfortable with this tool, there is no reason they should not be able to envision a completely new space without using templates or photos.



Present and debrief the design tool

Since students are often working from the same base template, discussion questions include:

- How do participants experience the same space?
- What commonalities exist across the perspectives?
- What differences exist across the perspectives?
- How might other people experience the space that you created differently than you have envisioned it?
- What design elements in the room support restoration, transformation, love, and/or forgiveness?
- What might you add to your perspective to support restoration, transformation, love, and/or forgiveness?
- How do participants' identities and experiences influence how they created the space?



**Tool
#4**

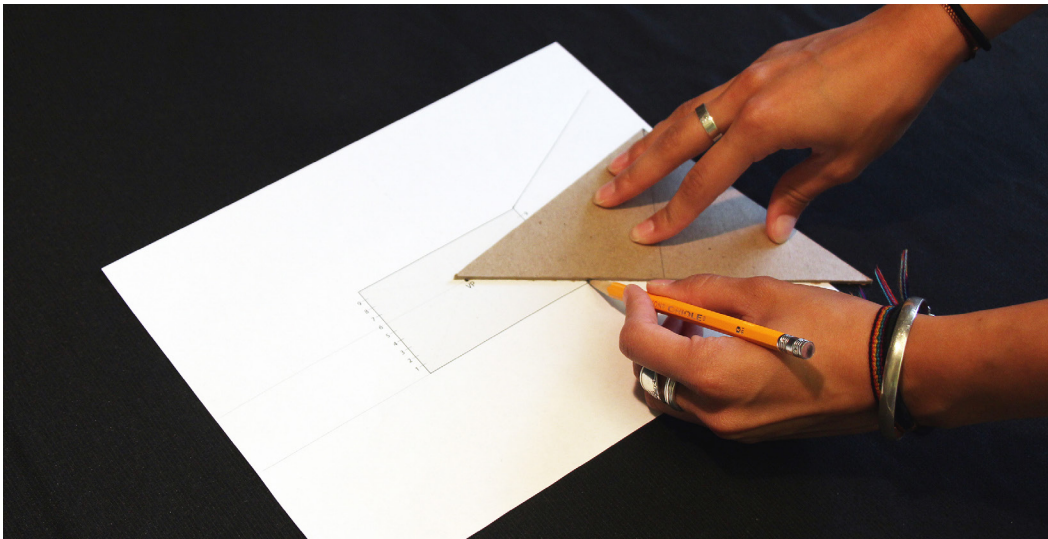


**Perspectives/
Montages**



Make and Build

Perspective drawing can be one of the more challenging tools to teach but can also be one of the most rewarding as space magically jumps out from the page. This description is by no means complete or exhaustive and we recommend practicing yourself first, using the resources we have included. Adding color and images to the perspective to create montage can also help bring it to life and utilizes what students have learned in the collage tool.



Materials

The materials for perspective and montage drawings are simple and can be done free hand with just a pencil and paper once students get more familiar with the process. In the beginning, use the following drafting tools:

- Pencil sharpeners.
- Erasers.
- Ruler and triangle: Rulers and triangles are used as guides to draw straight lines. As rulers may not be allowed into high security settings, use the ruler and triangle in Template 1. These should be cut out of two-ply chipboard so that you have a solid edge against which to draw.
- Paper and trace: If you are creating a perspective from scratch, paper of any kind will do but a thick paper such as a smooth two-ply Bristol board works well with pen or pencil. If you are working over a photo as a base then you will need trace (or tracing paper) to overlay on the image. This can be purchased at many art stores on rolls. We recommend 12" or 18" width.
- Magazines for cutting or ripping out images to add to the perspective, in order to create a montage.



Process

The following pages introduce how to create a perspective and include five figures with corresponding instructions. This section starts with an introduction to the basic elements of a perspective drawing, several rules for creating perspectives, and finally the instructions.

Basic elements of perspective

- Vanishing point: A point somewhere on the horizon line where receding lines (planes) converge.
- Picture plane (or elevation): A plane corresponding to the surface of a picture, perpendicular to the viewer's line of sight. It is the place to which all lines extending to the vanishing point are drawn. It is the plane off of which the heights of doors and windows in the perspective are taken.
- Horizon line: Line across the picture plane representing the horizon. It is always at eye level. Its placement determines where we seem to be looking from - a high place or from close to the ground. Elements in perspective above the horizon line are seen from below, and those below the horizon line are seen from above.
- Ground line: The line parallel to the picture plane at the base of the object or room being depicted.
- Station point: Represents the eye of the observer. It is the camera in a photograph.

Rules

- Surfaces of the room in the plan that are parallel to the picture plane do not extend to the vanishing point. For example, see the window on the picture plane in Figure 1 and the depth of the doors and windows in Figure 4. Elements and surfaces parallel to the picture plane, such as the tops and bottoms of the window and door on the left and right side of the room in Figure 3, need to extend to the vanishing point.
- All vertical lines in one-point perspectives are drawn straight up and down.





Creating a perspective over a plan

1

To begin, tape the plan image (Template 3) over the picture plane image (Template 4) so it looks like Figure 1. The plan is just a reference image to help you locate windows, doors, etc. in your perspective. For this perspective drawing, you will be adding elements to the picture plane image (Template 4). Lay a piece of trace over this assembly and follow these steps to begin your perspective.

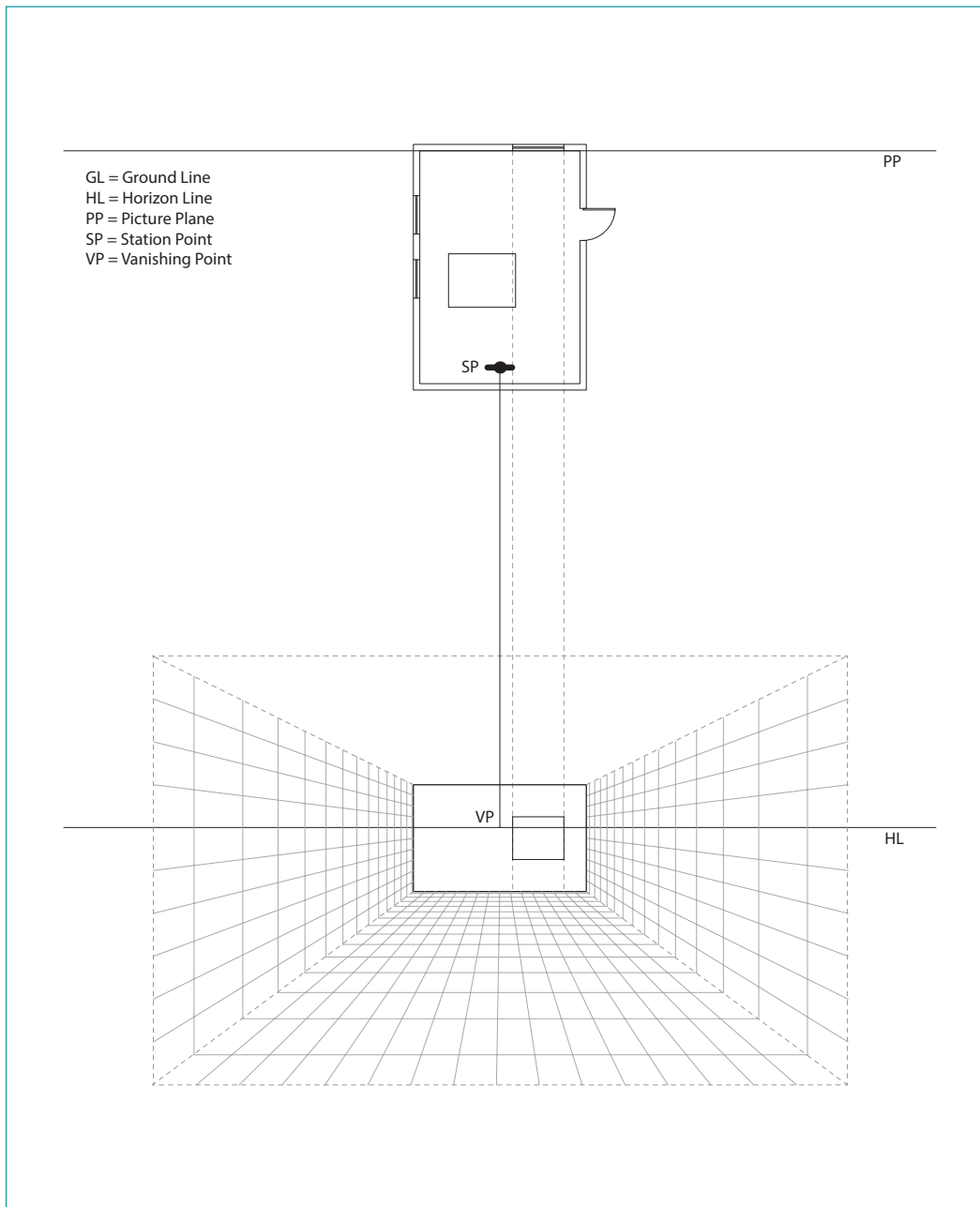


Figure 1



2

The second step is to draw in lines that will form the walls, ceiling, and floor of the picture plane. On Template 4, notice how there are dashed lines that form an “x” over the vanishing point (VP). When extended beyond the picture plane, these lines create the two side walls, ceiling, and floor of the room (see Figure 2). You can imagine yourself standing at the back of this “room,” looking toward the wall with the window.

Using your ruler and/or triangle from Template 1 and a pencil with an eraser, first draw in the four lines radiating from the corners of the vanishing point. The four lines represent where the walls meet the ceiling and the floor.

Next, you will create a grid. To do so, you will add more lines radiating from the vanishing point to form a grid. These lines will become reference points for adding in other elements in the room (e.g., windows and doors). To create these lines, align your ruler so it touches the vanishing point and the number or marks along the side of the picture plane and draw a line, extending out from the picture plane. Do this on both sides of the picture plane and do the same thing to create the ceiling and floor grid lines. Lines created on the ceiling or floor can later help you add ceiling features, such as lights or sky lights or carpets, tables and chairs.

The first element of the room that you will add is the window at the front of the room. Since this is not in perspective and is easy to understand, it is a good first feature to add. To do so, align your ruler vertically with the edge of the window in the plan image (Template 3) and draw a line straight down to the picture plane. In doing so, the edge of the window on the plane will now be at the same place as it is in the top image. Position the ruler on the other side of the window in the plan image and draw another line down into the picture plane. You can make the window height any dimension, using the height markers along the edge of the elevation/picture plane. Simply draw two lines connecting the two side lines and voila, you have a window. You and participants can add additional features to this back wall, if you are more advanced.

By now, you should be able to see the room taking shape.



3

You will now begin to add features to the side walls, using the perspective view. The first feature will be the door on the right wall. Lines on the plan in Figure 2 help guide you on how to project lines for this step.

The first thing to do is to determine where the door in the top image will fall on the picture plane (see Figure 2). To do this, follow the dotted lines that indicate where to position your ruler. For example, in the top image, position your ruler so it runs from the station point (SP) to the top of the door and draw a line extending onto the picture plane line. Do this for both sides of the door.

Where these two lines intersect the picture plane is where you will draw two vertical lines down to your perspective to locate the door as in Figure 2.

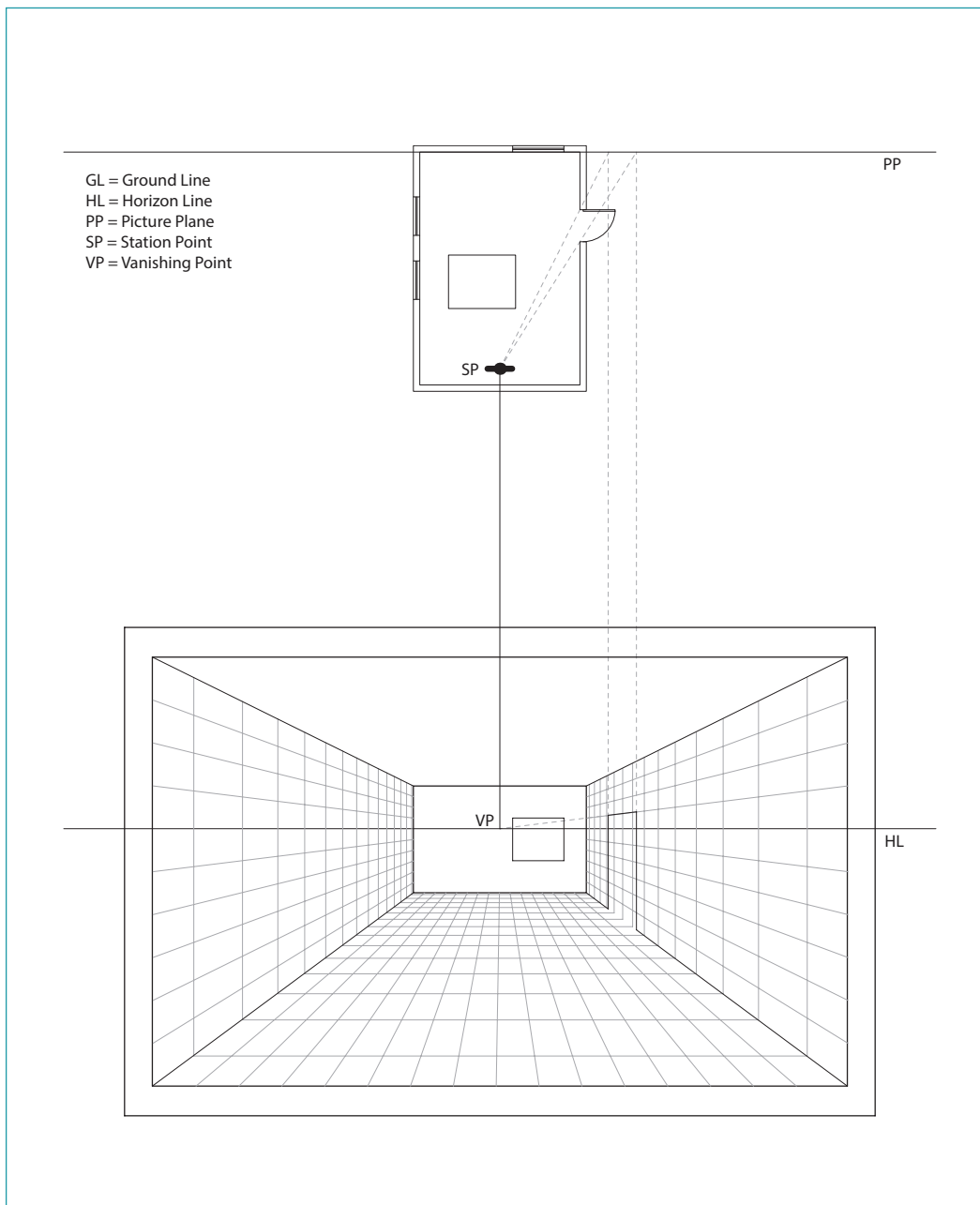


Figure 2



4

Using the same process you used for drawing the door, add the windows on the left side to the perspective (see Figure 3). Start again by drawing a line from the station point to each corner of the window until it hits the picture plane. Then, to create the sides of the windows, draw vertical lines like you did for the door down from the picture plane onto the left wall of the perspective. In your perspective, draw in the top and bottom of the window using lines radiating out from the vanishing point, at a height of your choosing.

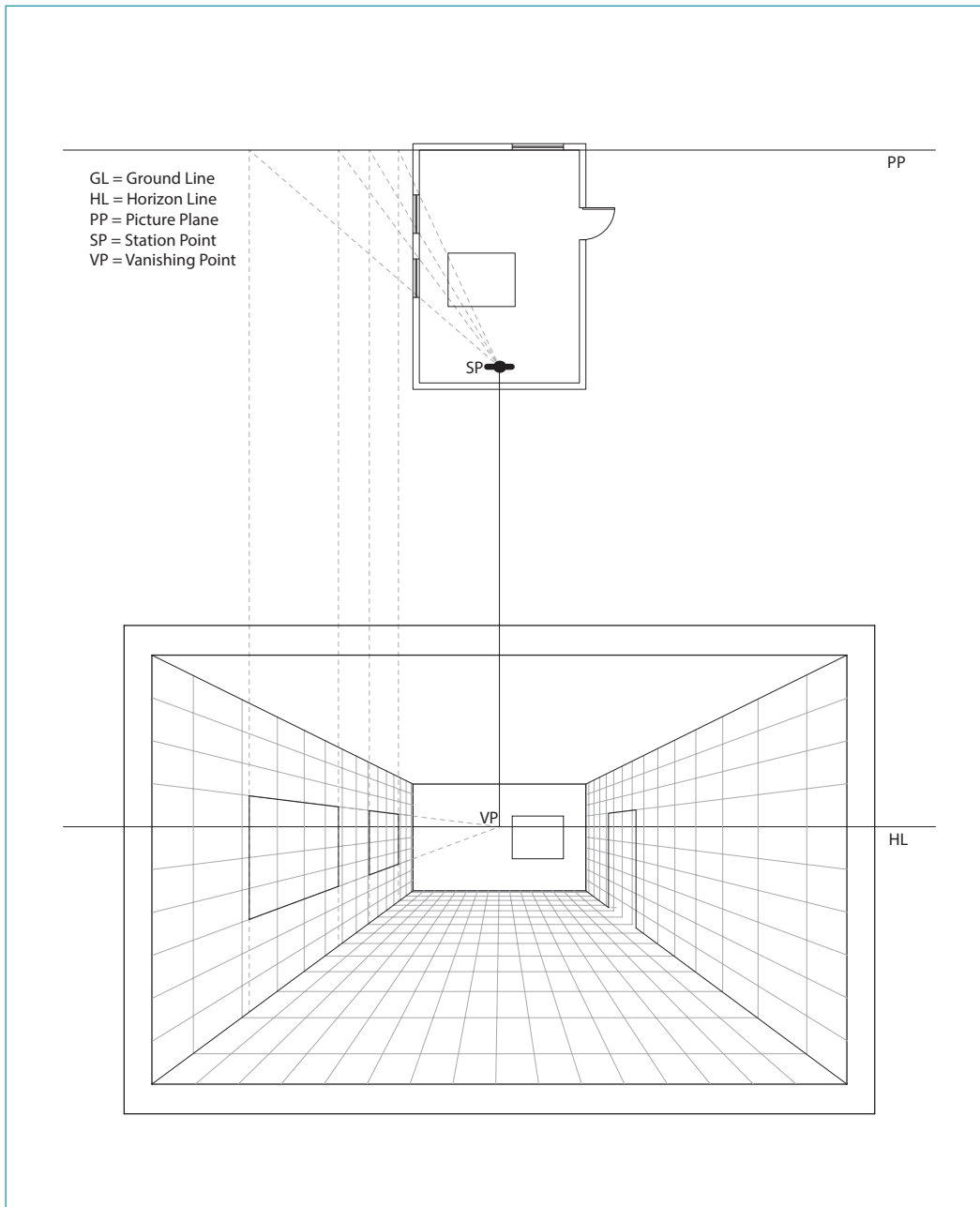


Figure 3



5

You are now ready to add depth to the walls, a more challenging task for people who are not architects/designers.

Remember that planes parallel to the picture plane have top and bottom edges that are aligned with the horizon line. See this element in Figure 4. To create depth for a window you will need to draw a shorter horizontal line that represents the width of a wall in the corners of your window. To do so, try aligning your ruler with the horizon line and slide up or down to the corner of the window and draw a line to the left away from the center of the room. The length of this line is the depth of the window.

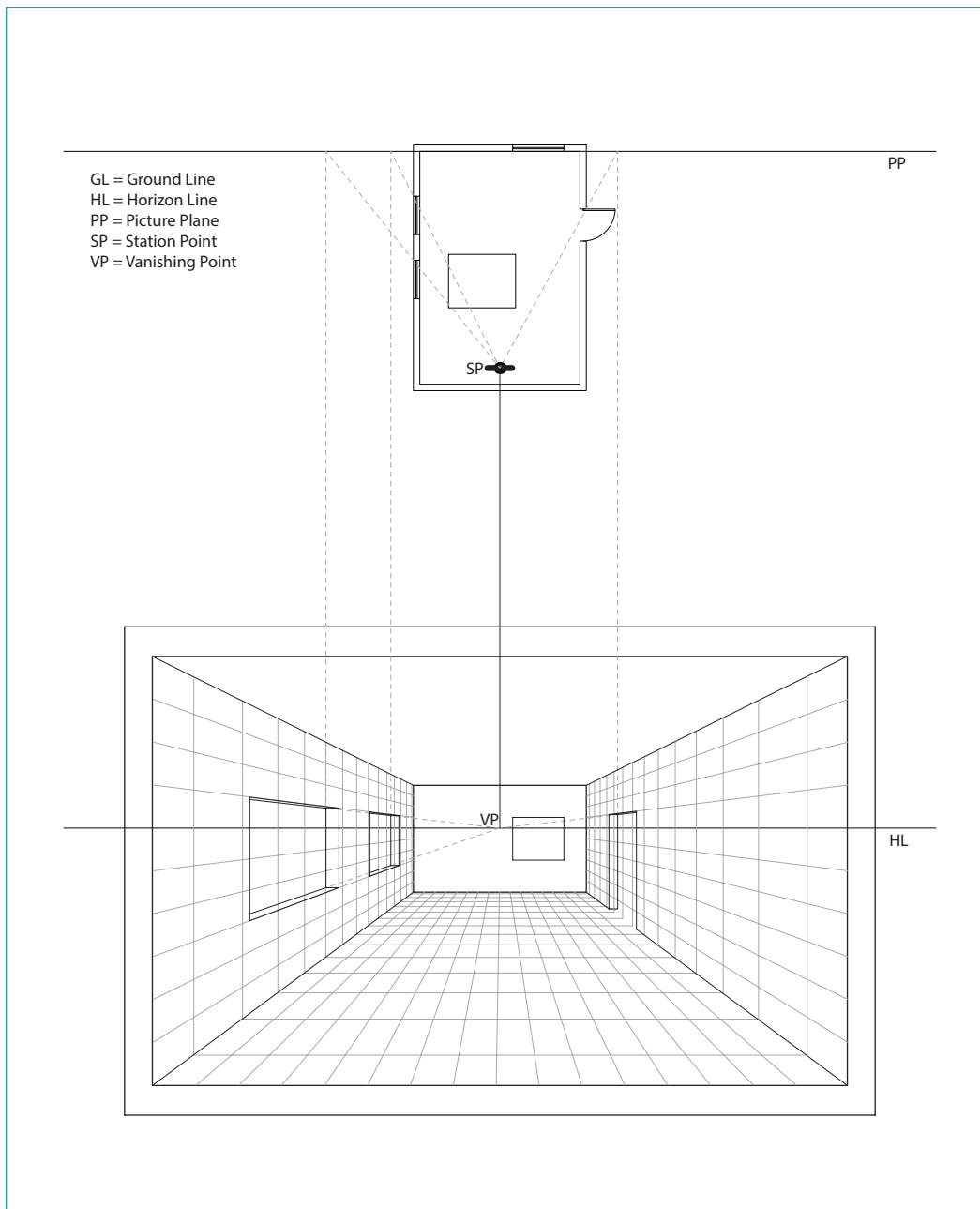


Figure 4

You can estimate the depth that feels right to you or to get the exact depth of the window you see in the plan, you can again project a line from the station point to the interior corner of the window or door that you will see in the perspective and follow the same steps as in 2 and 3. When you pull the line down from the picture plane, it will tell you where to stop this horizontal line and you will have a rectangular plane that represents the wall depth at the window or door.

6

You can now use the grid of lines across the walls, floor, and ceiling as guides to add new elements to the floor, ceiling, and walls or to create objects in the room, like the box in Figure 5.

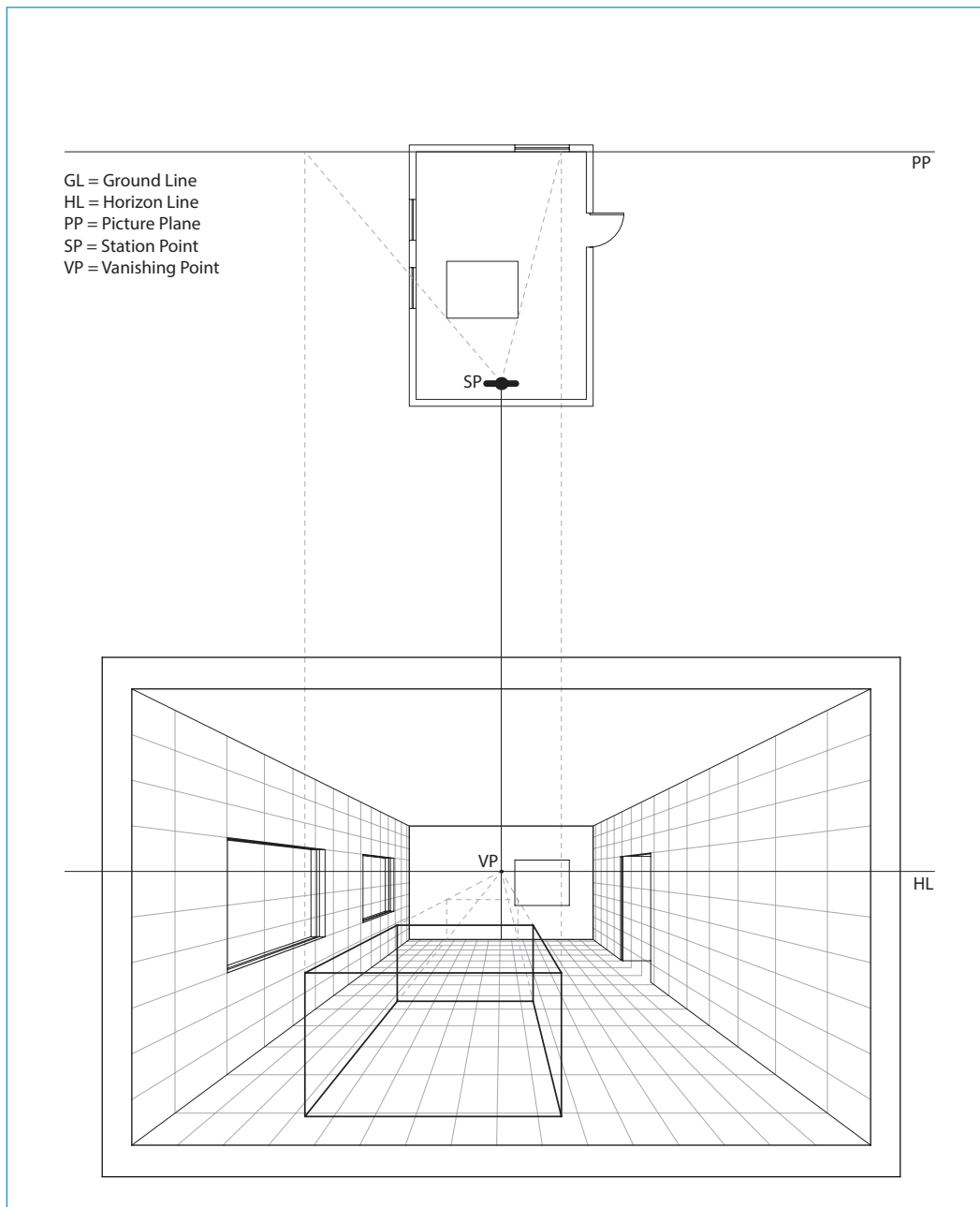


Figure 5



Practicing perspectives with photos

Drawing over a photo is another way to expand one's understanding of the elements of a perspective using a space that may be familiar to participants. It is still helpful to use the templates to help identify the elements in the photo.

1. Tape the image onto a flat working surface or rigid paper/board.
2. Locate and outline the basic elements: vanishing point, picture plane, and horizon line in a thick pen so you can see them through the trace paper overlay.
3. Lay the trace over it and outline the key elements again in pencil or pen before you begin adding new features or making design changes to the image.
4. Just like the perspective template, it is helpful to create a series of lines along the picture plane to create a grid guide that you can use to locate elements in the space and on the walls.

Create a template of an existing space

This process requires a bit more preparation and is primarily geared toward designers but can be very effective at helping participants to revision a space that they know inside the institution or without the confusion that can be created when a photo is below the image.

1. In order to create a base template of an existing space for you to work from, you will need to measure the entire space, locating the overall dimensions including the ceiling height and locations of doors and windows. If developing a space inside the institution, one way to do this is to pace or walk the space to get these measurements since you can't take photos or get a tape measure into most institutions. Typical techniques for measuring height, length, and depth that designers use is counting wall and ceiling assembly units. For example, most rooms have acoustic ceiling tiles that are often in a 2" x 2" grid. The walls are usually concrete, masonry units, or bricks, and while they can vary, bricks are usually 4" and concrete masonry units are 8" x 12". If you are not able to get a rough measurement of the space itself, you may ask participants or jail staff to get them for you. This is a helpful technique to provide your stakeholders with if they are incarcerated as you may not be able to access spaces that they can. However, one should understand that in doing so this activity could be considered a security breach.
2. For designers, this base information can be drawn up by hand using an architect's scale, modeled in a three-dimensional software like Sketch-up or digitally drafted. Either way, you can use this information for both perspective drawing and model making.

Envisioning a new space

Often, once participants understand the basics of perspective drawing, they can create their own perspectives quite easily. Sketching by hand in visual diaries is a good place to practice and doesn't require the ruler or triangle once participants become comfortable with this technique.



Process for montage

Turning the perspective into a montage is easy and helps participants understand what they are seeing. It can be done over a perspective you have created or a photo you have taken that you would like to enhance or change.

1. For this phase of the design you can use the ruler or scissors to cut out images from magazines that will roughly fit into the size of the perspective you have drawn. Various pieces of furniture, people, lighting, or plants are great choices.
2. Once you have cut them out, move them around the perspective until they feel like they fit within the image in terms of size. For example, a person should not be a giant in the room. Use your window or door to test this.
3. Next, cutouts of outdoor scenes or sky can be dropped in behind windows to show that there is an environment outside of the room.
4. Finally, you can add color to walls, floors, or ceiling with colored pencils. Pens often overpower the image.

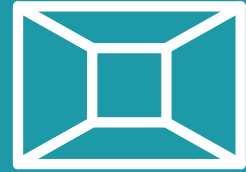
References

Basic Perspective Drawing: A Visual Approach by John Montague, John Wiley & Sons, Nov. 8, 2011 and includes access to online tutorials.

Video: How to Draw a Room with a One Point Perspective: www.youtube.com/watch?v=yEymlyLbiAI

Tool

4



Perspective/
Montages

Participant Handout



Perspective

A perspective drawing is a two-dimensional drawing technique for representing three-dimensional space. Artists, architects, scientists, engineers, and designers have used this method for centuries to convey their ideas in a way that is often easier to understand than orthographic drawings, such as plans and sections.

There are several types of perspectives depending on your orientation and objects in a view. This tool and its activities use a one-point perspective, which means there is only one vanishing point along the horizon line (eye level). This is different from a two- or three-point perspective, where there are multiple vanishing points that correspond with the placement and angle of the objects in the room.

These perspectives involve drawing or envisioning the “construction lines,” the lines that create the perspective or illusion of three-dimensional space. You can use a variety of processes with this – working with room templates that already have the construction lines on them, drawing construction lines on images or photos, or creating one’s own spaces with construction lines from scratch.

Perspective activity

Using the templates and instructions provided, construct a perspective that will look like Figure 5 (on next page). These templates already have some construction lines (the lines that create the perspective or illusion of three-dimensional space) drawn on the plane. If desired, add images to the drawing to make a montage (see Montage handout).

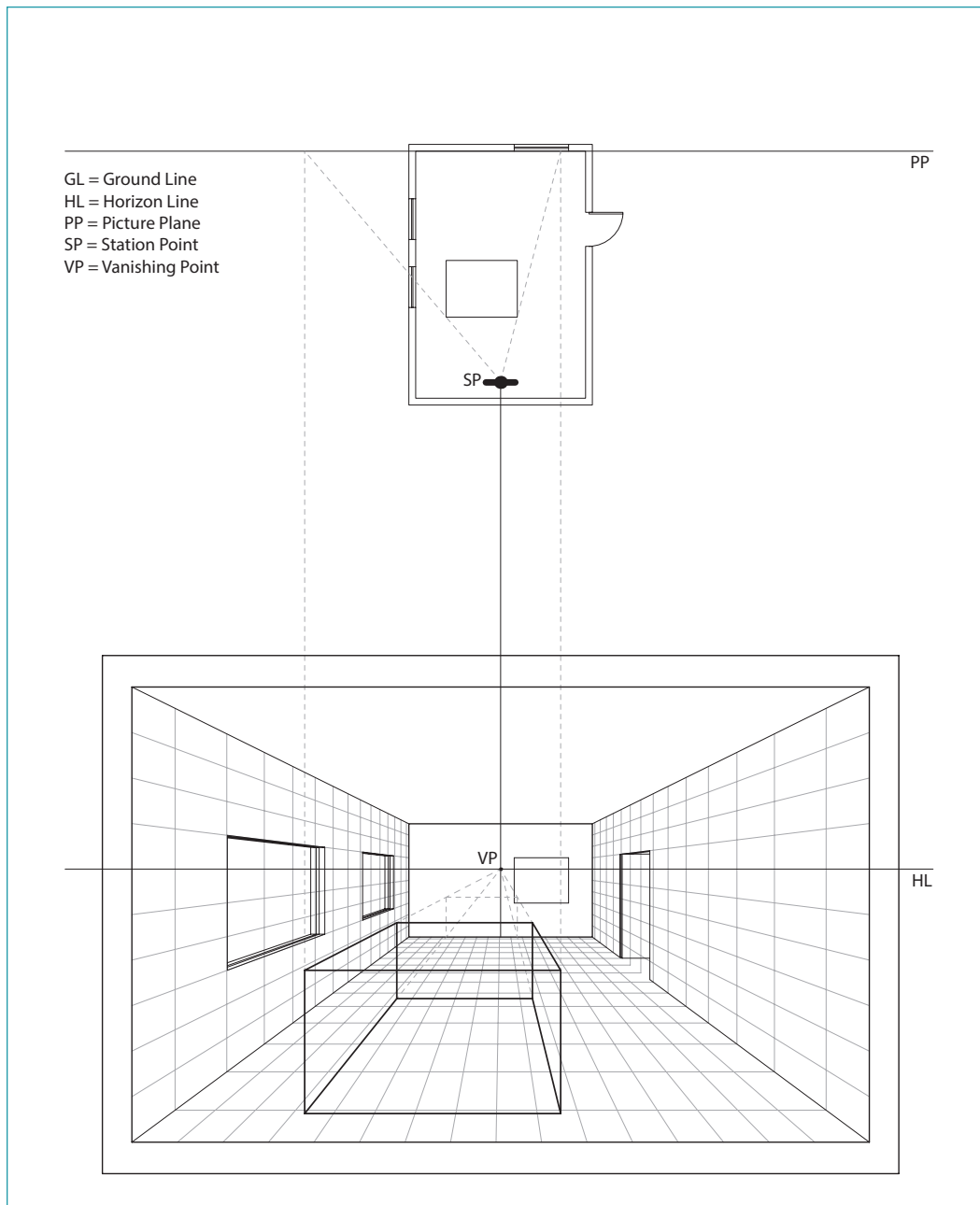


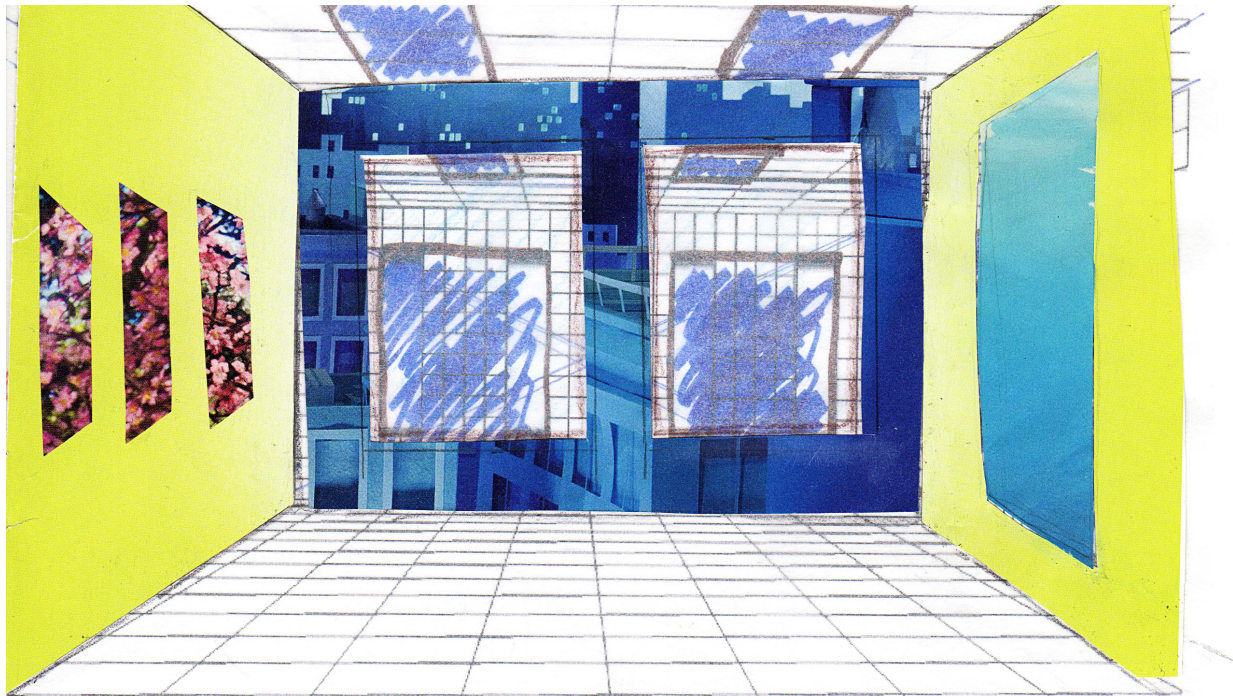
Figure 5

Montage

Another technique that draws on both collages and perspective drawing is montage. Montage combines multiple two-dimensional media (e.g., images from magazines, photographs) to add a richness and depth to a photo or perspective that you have drawn. For example, we can add images from magazines that support the ideas taking shape in our minds. Colored pencils, construction paper, and ink pens can also be used to add detail and color.

Montage activity

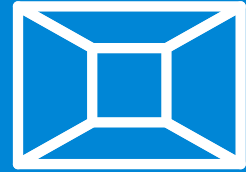
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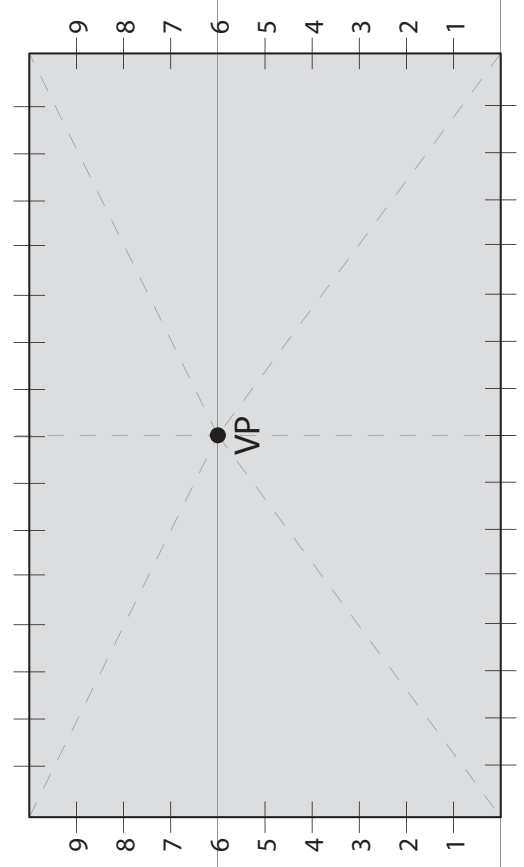
Tool

4



Perspective/
Montages

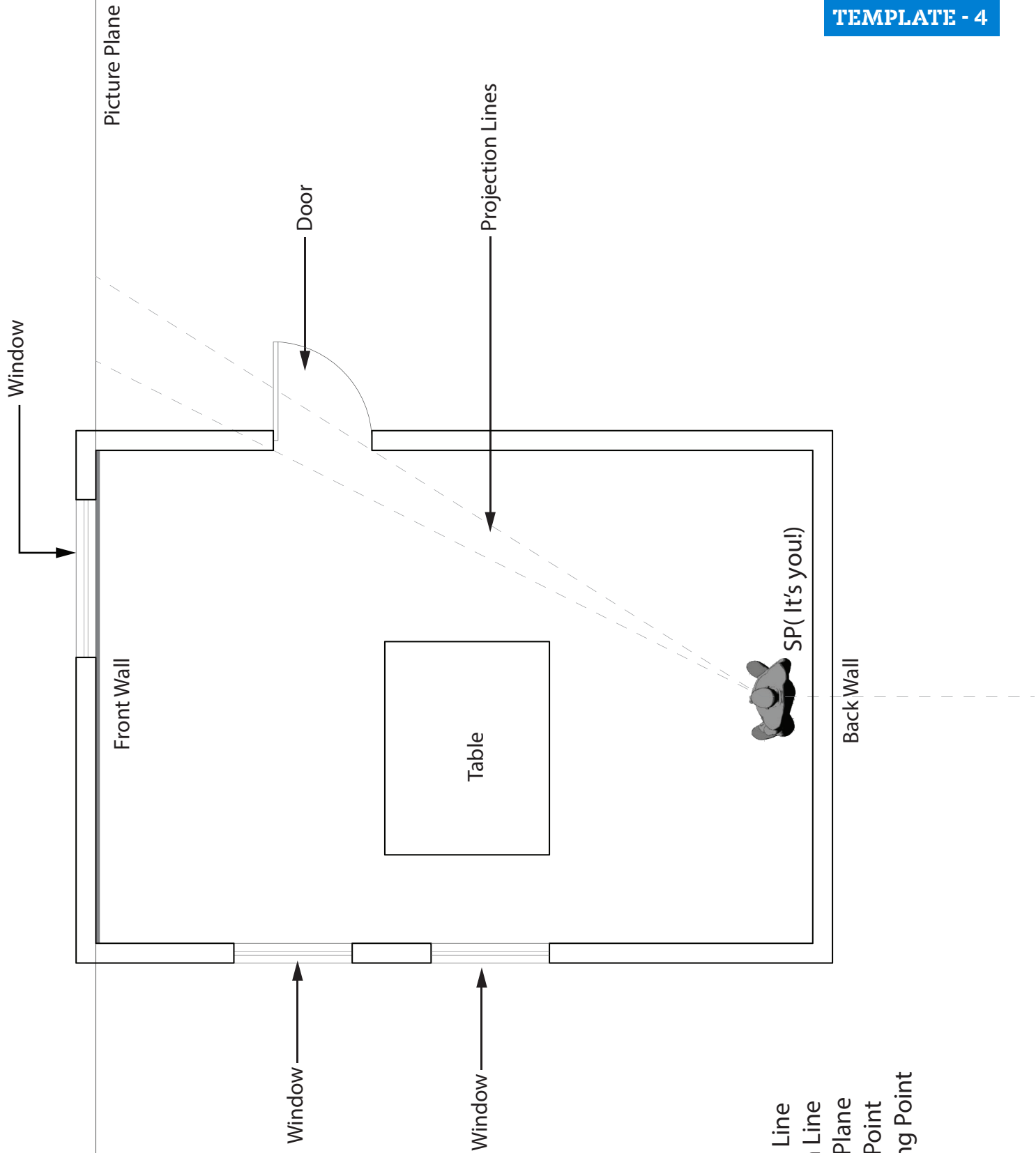
Templates



Horizon Line

Ground Line

- GL = Ground Line
- HL = Horizon Line
- PP = Picture Plane
- SP = Station Point
- VP = Vanishing Point



- GL = Ground Line
- HL = Horizon Line
- PP = Picture Plane
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