

1 Lab 7 - Perspective via the vanishing point

Goals

The goals for this lab are:

1. Practice using variables to create multiple images
2. Practice using vanishing points in order to create a sense of perspective
3. Alter and explore the role of scale in a sketch's composition
4. Practice using transforms (such as `translate` and `scale` and `rotate`) in a sketch to control composition and perspective
5. Apply your knowledge of the 2D coordinate system in order to appropriately scale and translate a portion of your design
6. Study the role of perspective in an image
7. Apply the use of **functions** in order to easily re-draw portions of a scene

Modality

Pair or Individual (per instructors specifications)

Details

Task: You must create an image using Processing of a scene that explores **the use of the vanishing point and scale to create perspective**. You must create an outdoor scene. Your 'sketch' of the scene must:

- include a roadway, track, path and horizon line

- the vanishing point of the roadway and the location of the horizon line must be represented with variables to allow you to create multiple images of the same scene (and to infact create a scene without an appropriate vanishing point - see examples).
- include a representation of a vehicle (car, carriage, wagon, boat, etc.) - this representation must be composed of at least 3 different Processing shapes
- the vehicle code must be encapsulated in a **function** as you will render 2 different vehicles (at two different distances from the viewer). Your function should be written to take in parameters to scale, translate (and optionally rotate) the vehicle in order to place it in the correct location.
- your scene must include two vehicles
- be at least 400 x 400
- apply **translation** and **scale** (and optionally **rotation** in order to ‘play’ with the composition of your sketch via only modifying the scale and location of the vehicle (see examples of the three versions of your sketch you must create below).

To complete this lab, you must:

- first sketch your basic scene and get instructor approval for your basic design
- create a version of your scene with a vanishing point but with no scaling on the two vehicles (it should look incorrect)
- create a version of your scene with proper scaling on the two vehicles but no vanishing point (visible in the background).
- create your scene with ‘proper’ scaling and vanishing point

Be prepared to defend your final scene’s composition (scaling and vanishing point location).

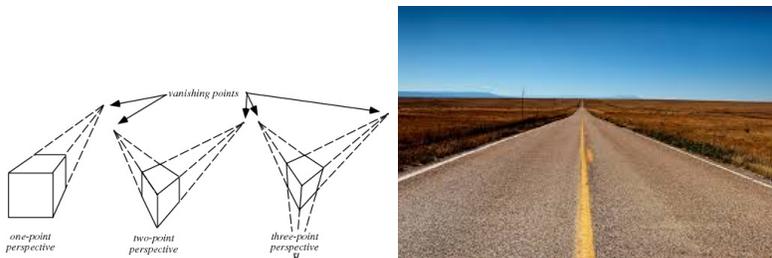


Figure 1: Some images of vanishing points.

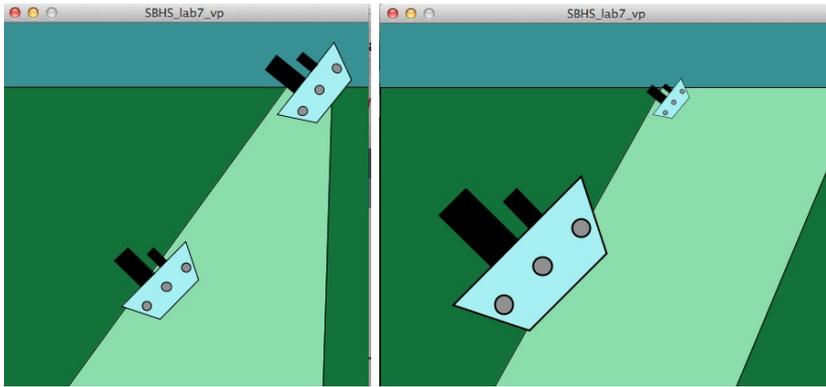


Figure 2: Output from a Processing sketch illustrating incorrect looking examples - on the right is a sketch with a background showing a vanishing point, but no scaling applied to the vehicles (both boats are the same size). On the right, the boats are scaled differently but the background has no vanishing point.

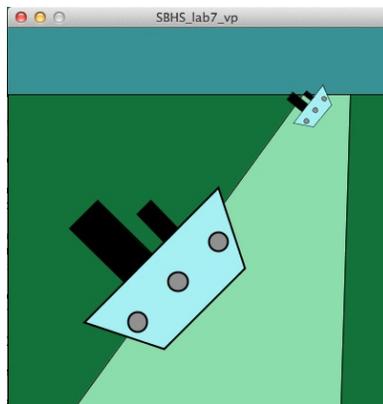


Figure 3: A 'correct' looking sketch with the boats scaled and with a vanishing point on the terrain.

Demo:

In order to receive credit for this lab, you and your partner must demo your sketch to your instructor.