FOUNDATIONS OF TECHNICAL ILLUSTRATING

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My Background

Adam Bradley

Bachelor of Fine Arts (BFA) in Industrial Design

Master of Business Administration (MBA)

Pursuing a Master of Science (MS) in Information Technology — Business Intelligence & Analytics

Project Management Professional (PMP)

Adobe Certified Expert (ACE)

Employed at ManTech as a Senior Technical Writer/Graphic Artist
for the DoD

https://www.mantech.com/careers

Purpose

Lots of Different Mediums to Communicate Concepts

Writing

Physical Prototype

Photograph

Video

Technical Illustrations have Their own Advantages
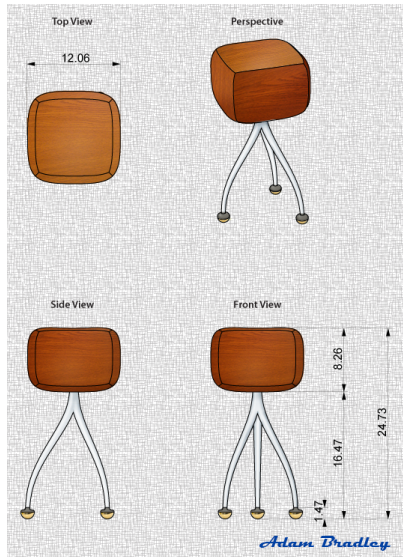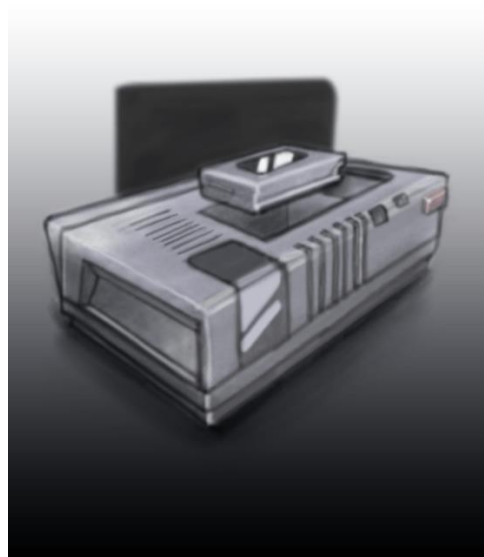

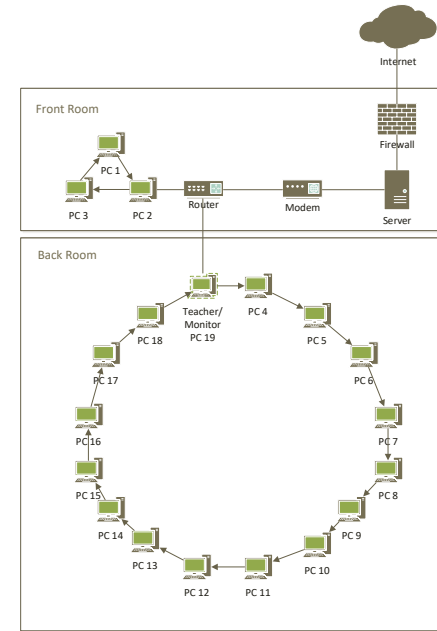2-D Drawing

3-D Drawing/CAD Model
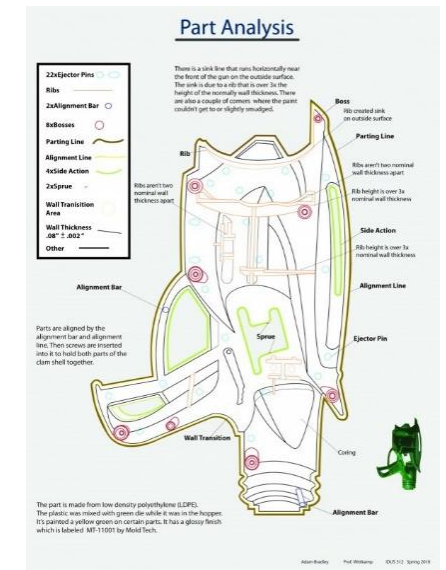
Types of Technical Illustration

Technical drawing
(four views)

Hand drawn product
with a stylus on the
computer

Wiring diagram
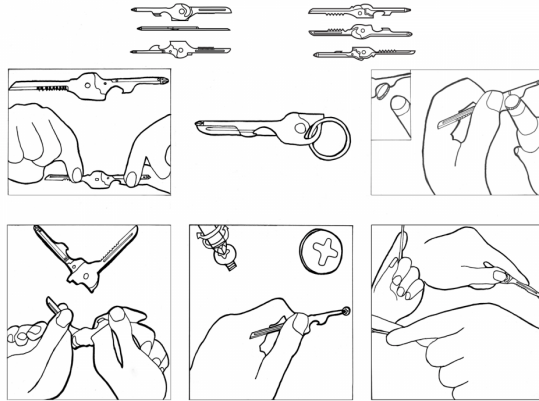

Cross section part
analysis
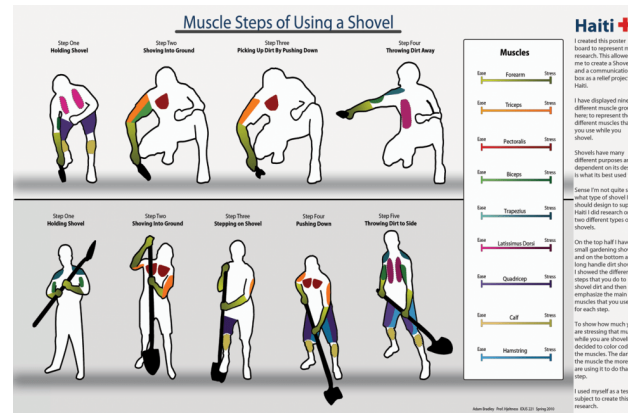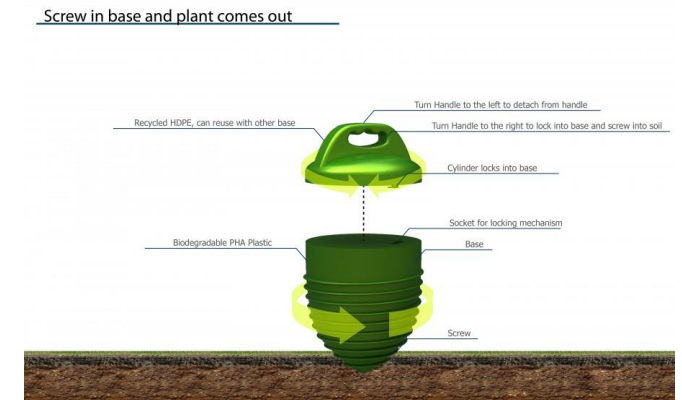
Types of Technical Illustration (cont)

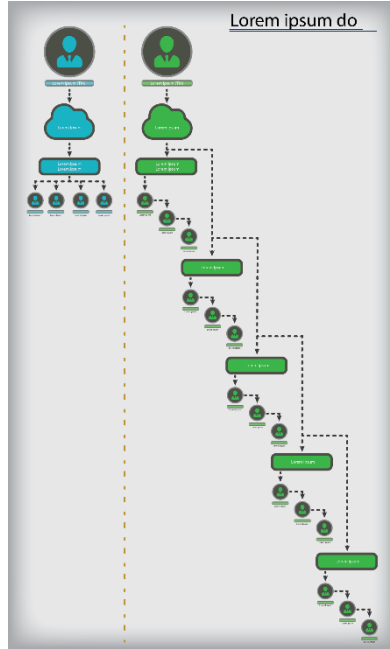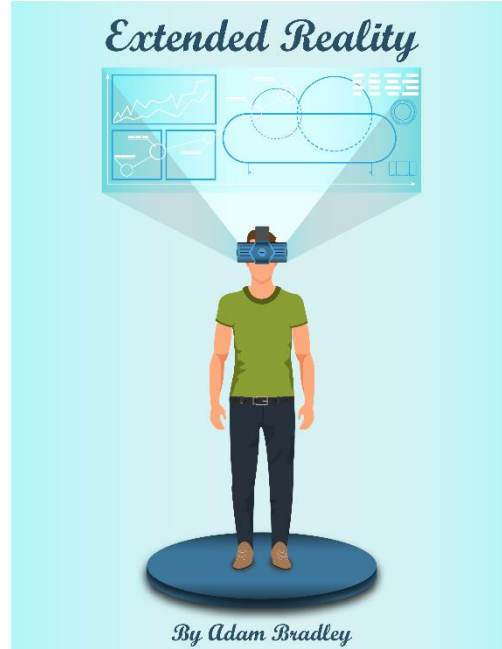Figure for procedural instructions

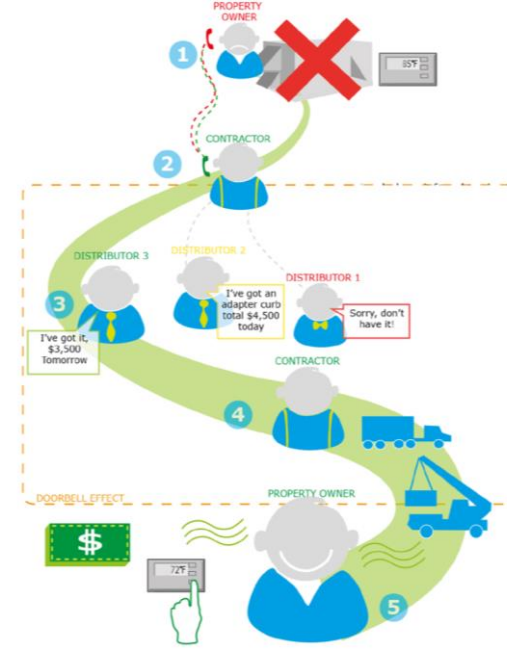Infographic

3-D model of components, parts, and operations

Types of Technical Illustration (cont)
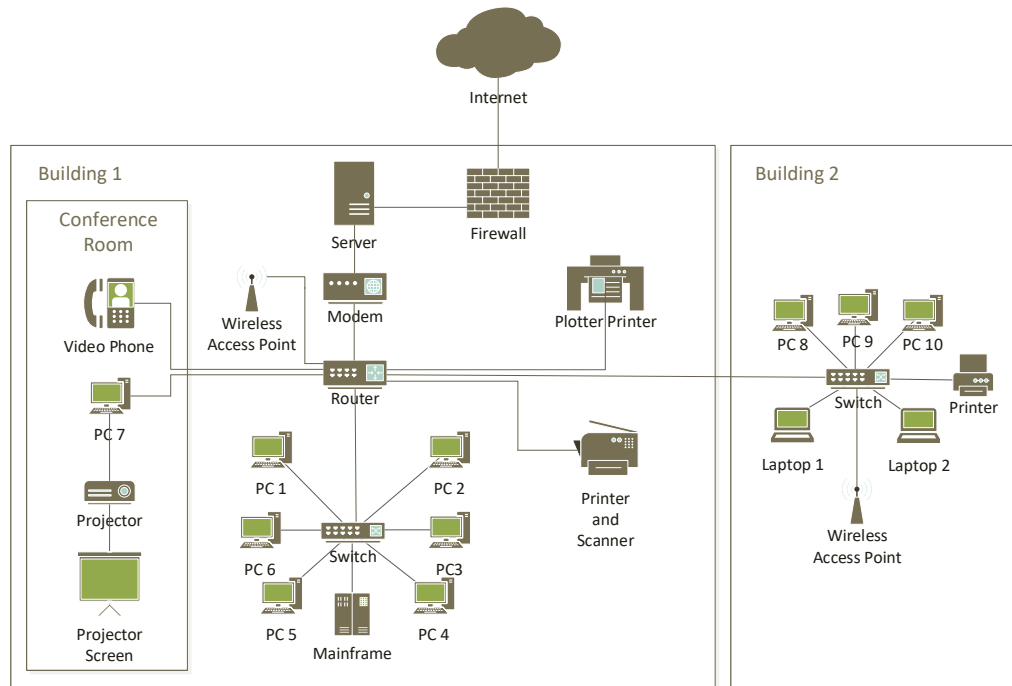

Organizational chart

Cover graphic

Journey map

Graphical user interface (GUI)
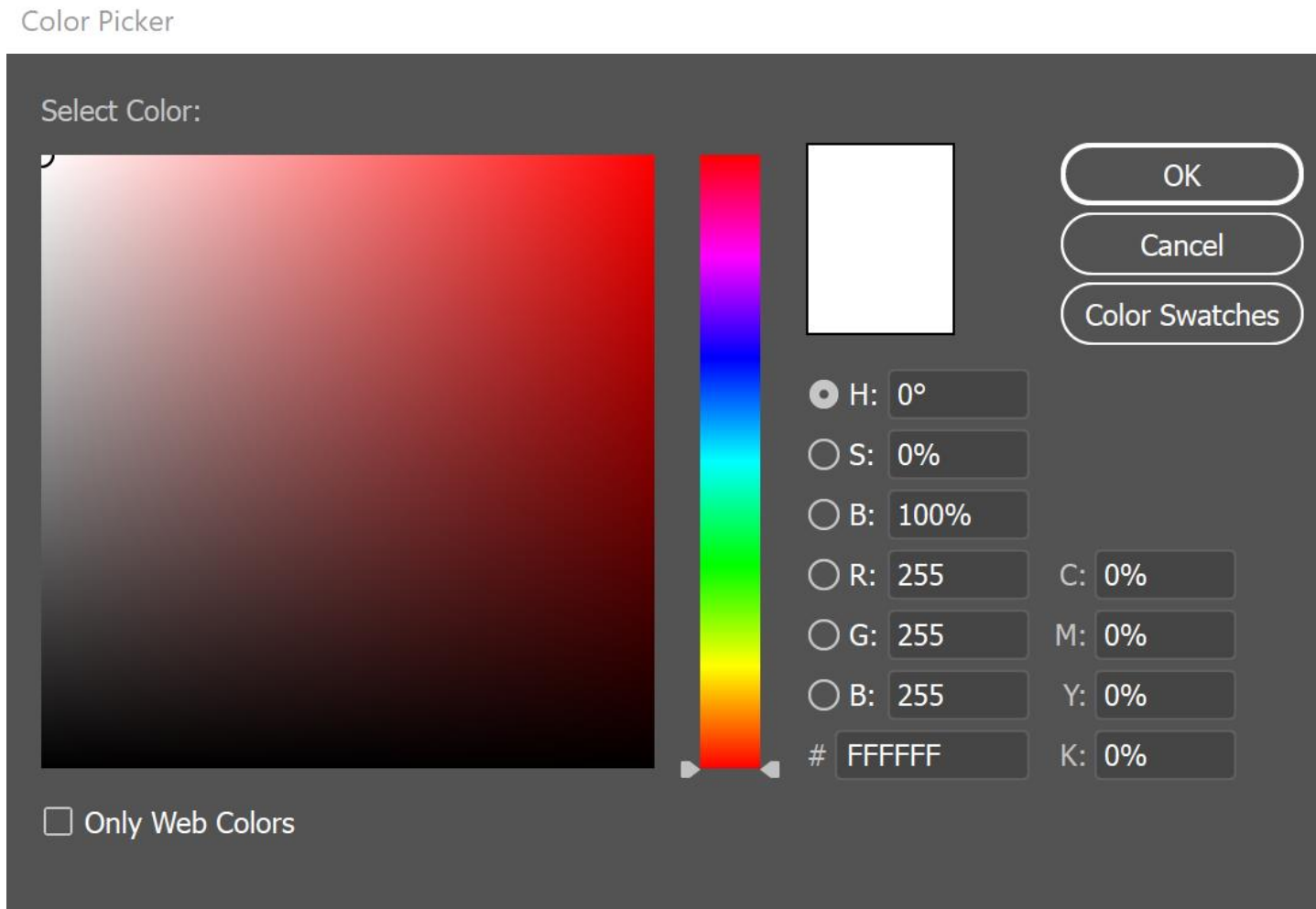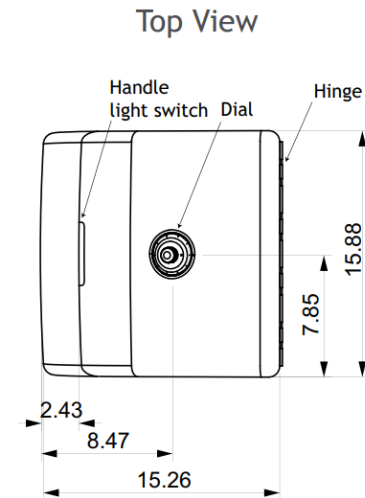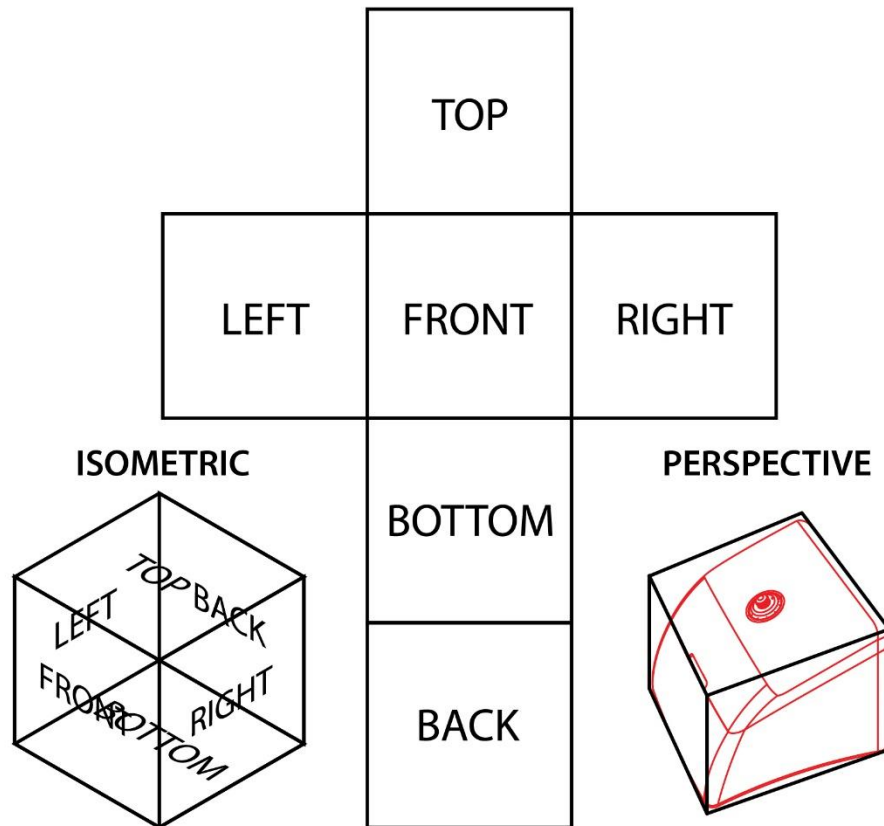
Vector vs Raster
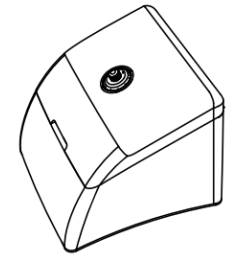
Vector

Raster

Colors: RGB, CMYK, HSB, Hexadecimal
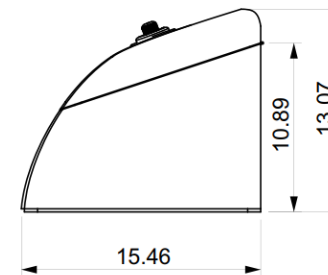
Drawing Orthographic Projection and Perspective

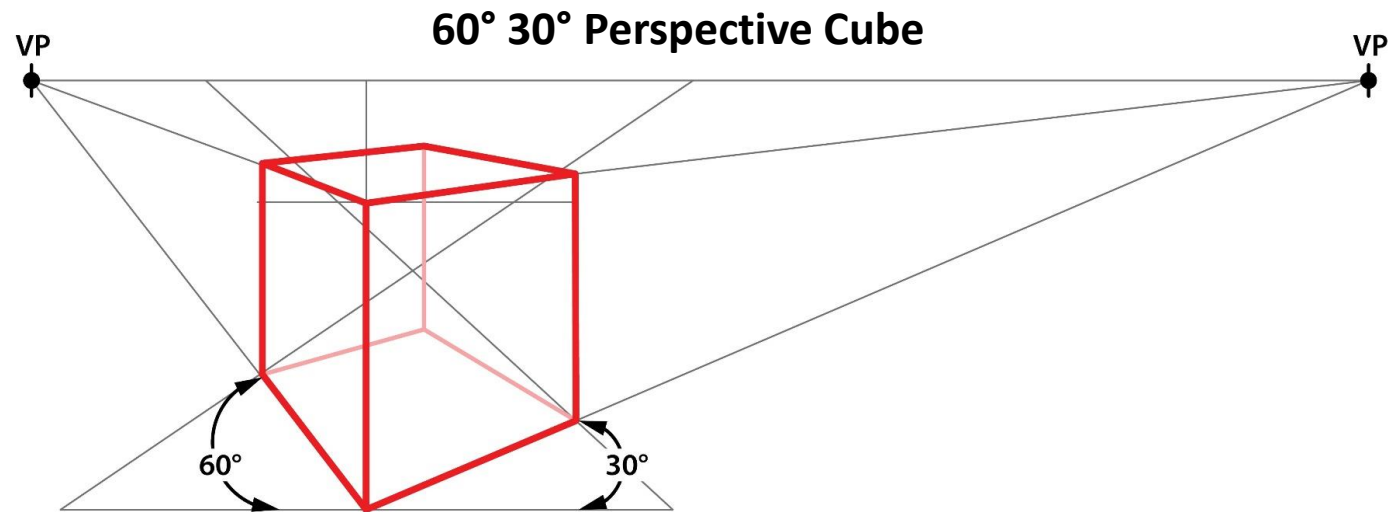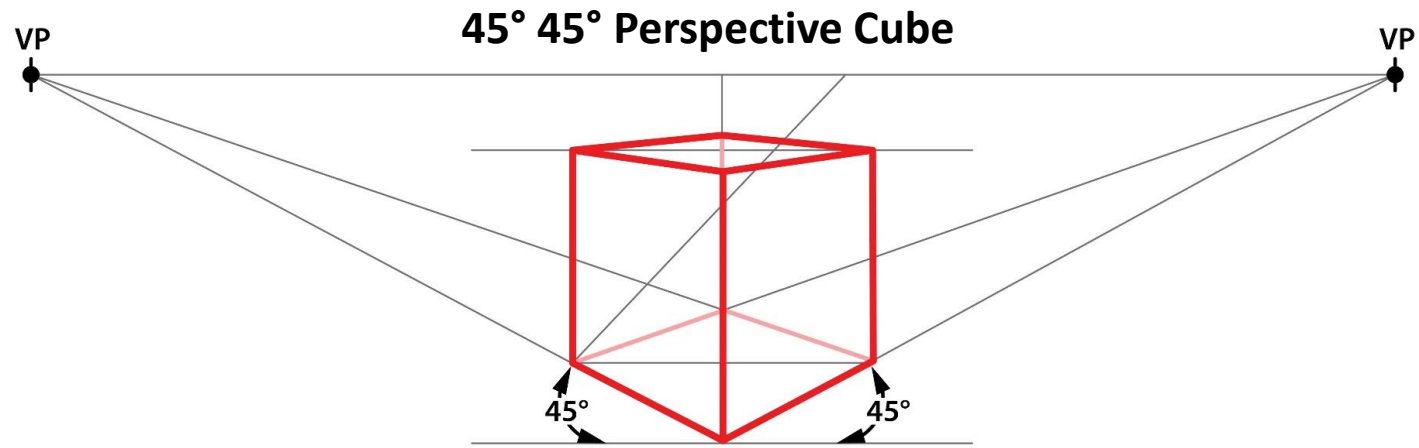# Perspective

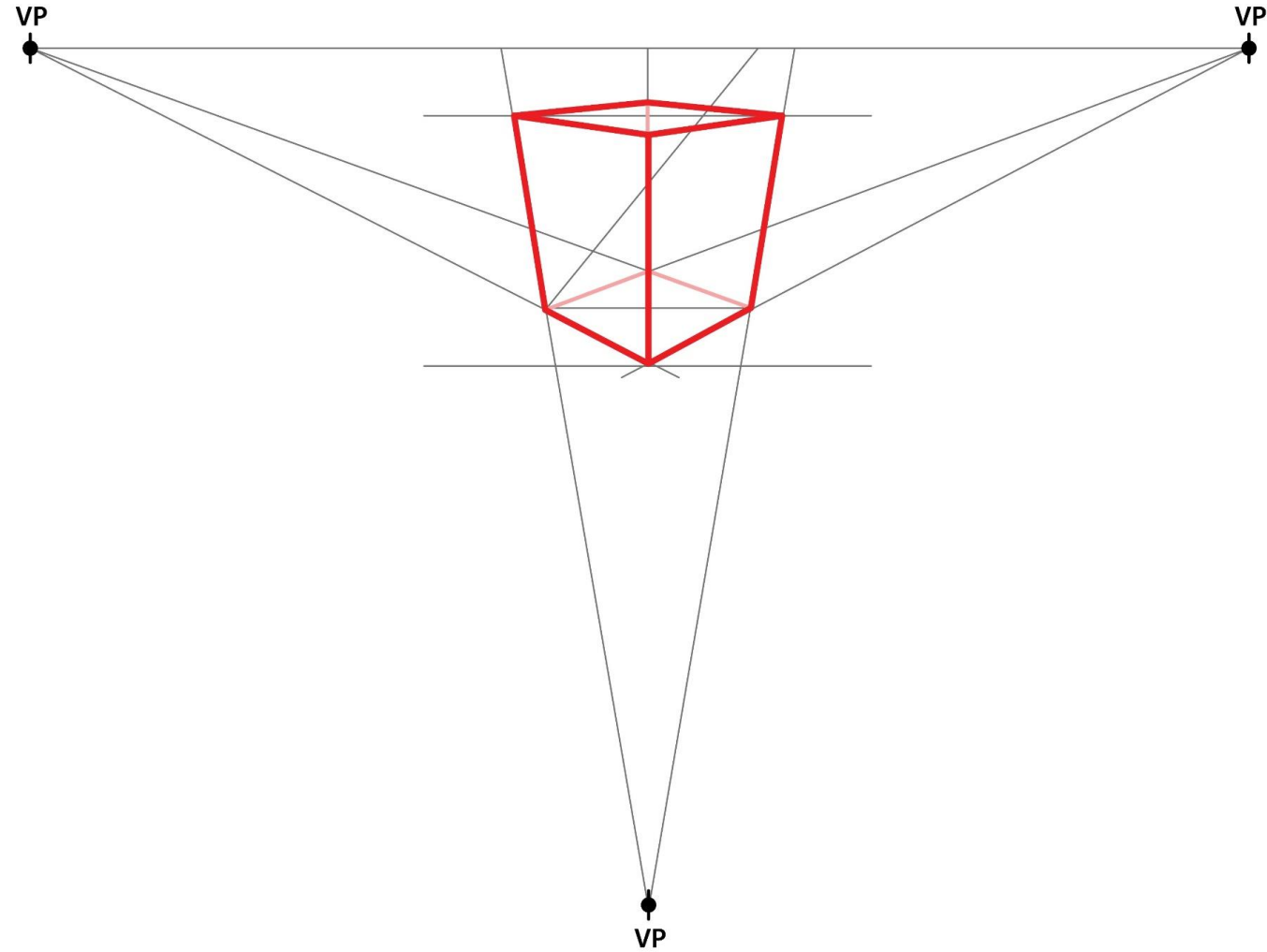
WORMS
EYE VIEW

STREET
LEVEL VIEW

VP

VP

HORIZON LINE

BIRDS
EYE VIEW
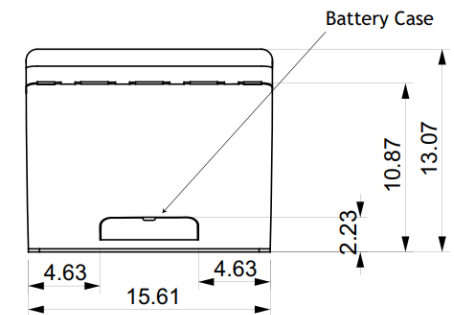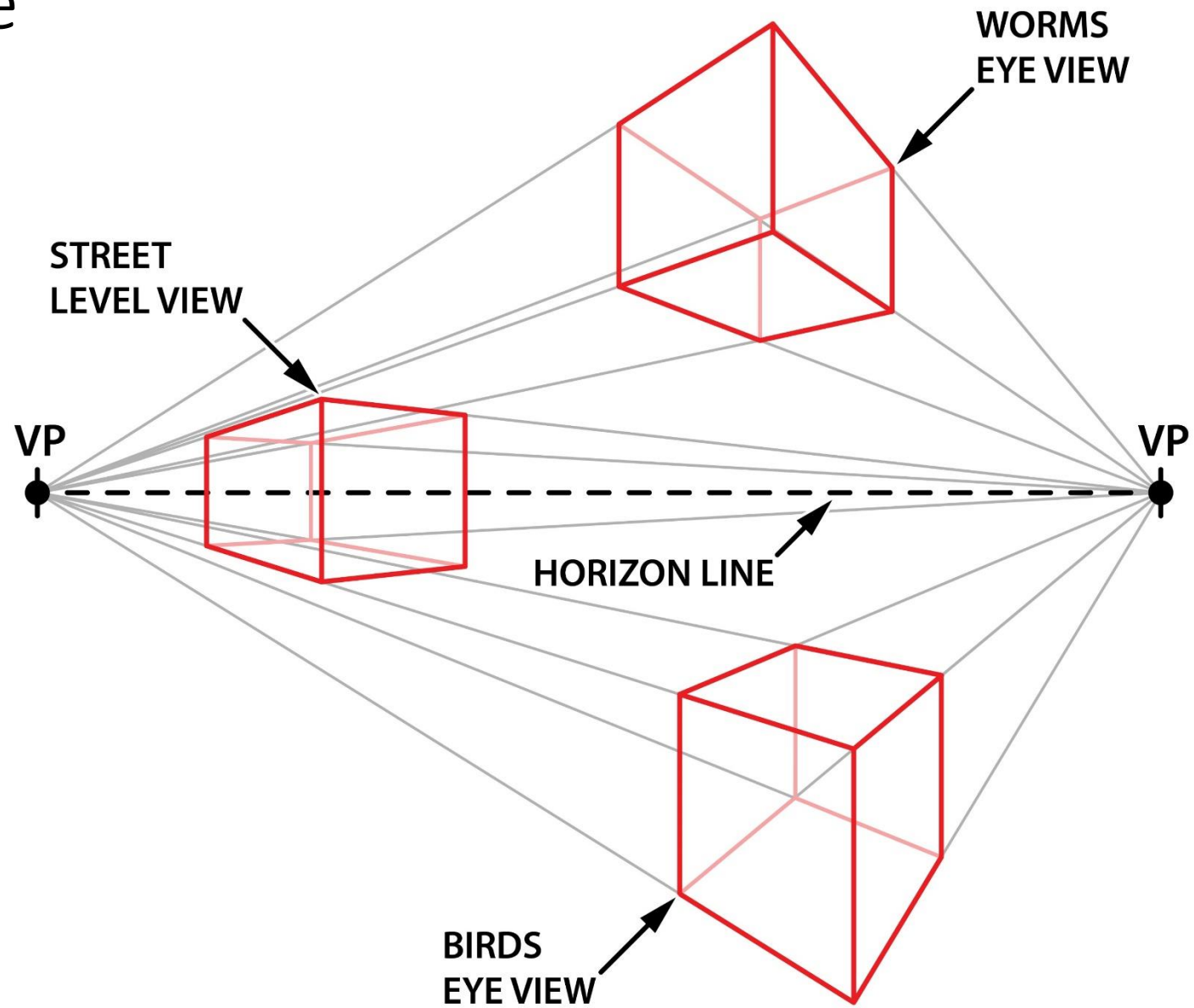
One Point Perspective

Two Point Perspective

45° 45° Perspective Cube

VP   VP

45°   45°

60° 30° Perspective Cube

VP   VP
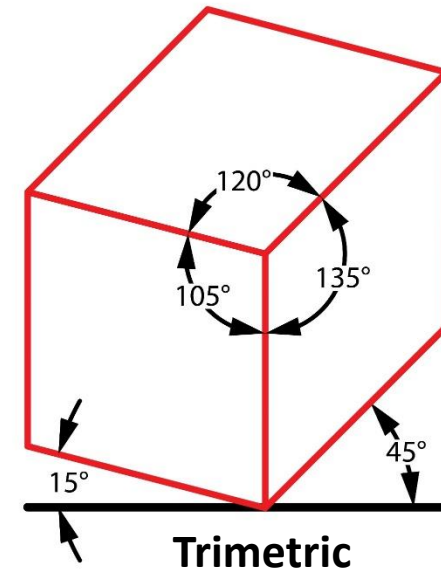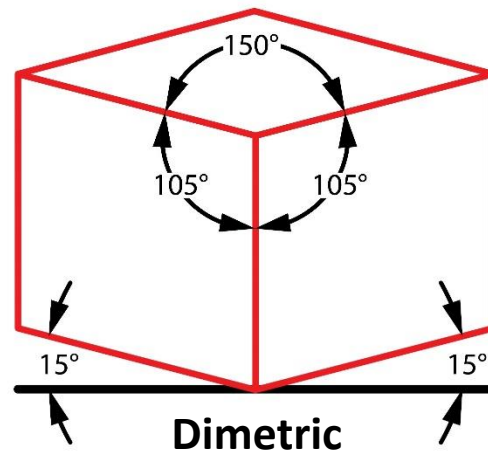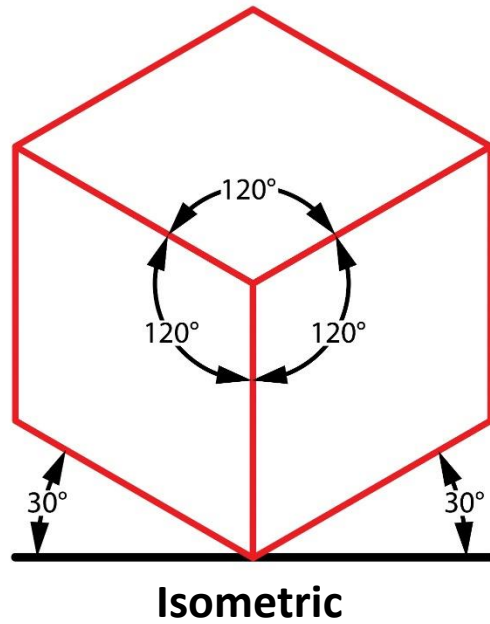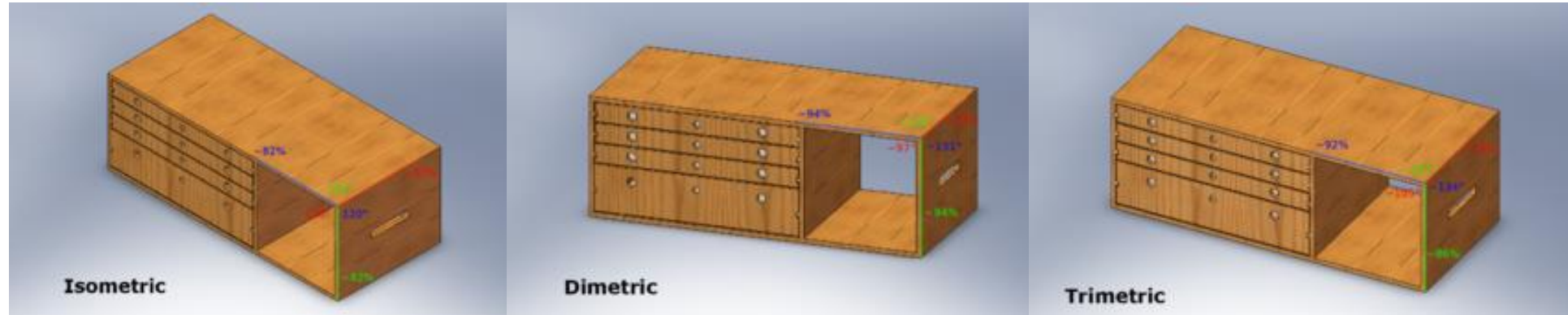
60°   30°
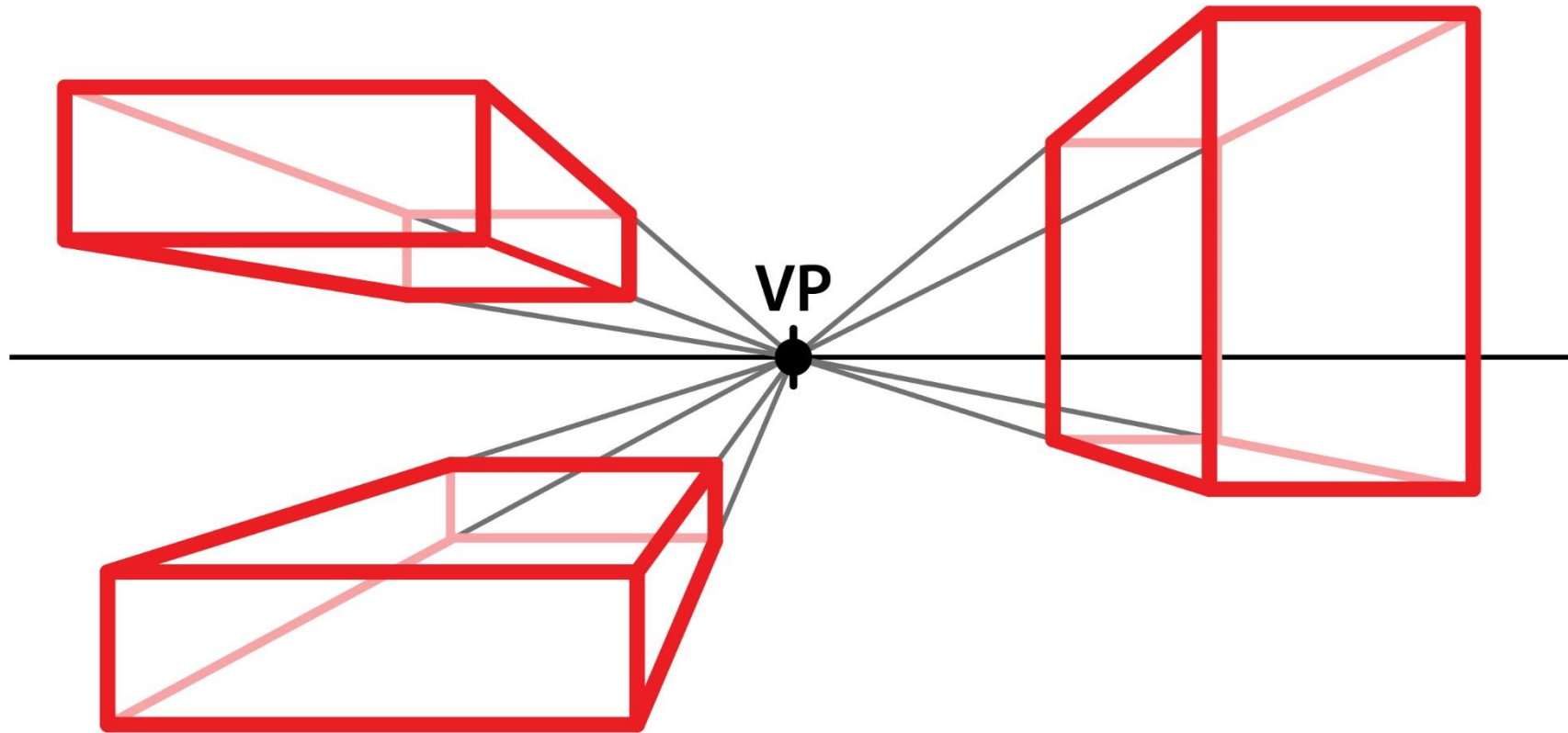
Three Point Perspective

Projecting Cubes

14
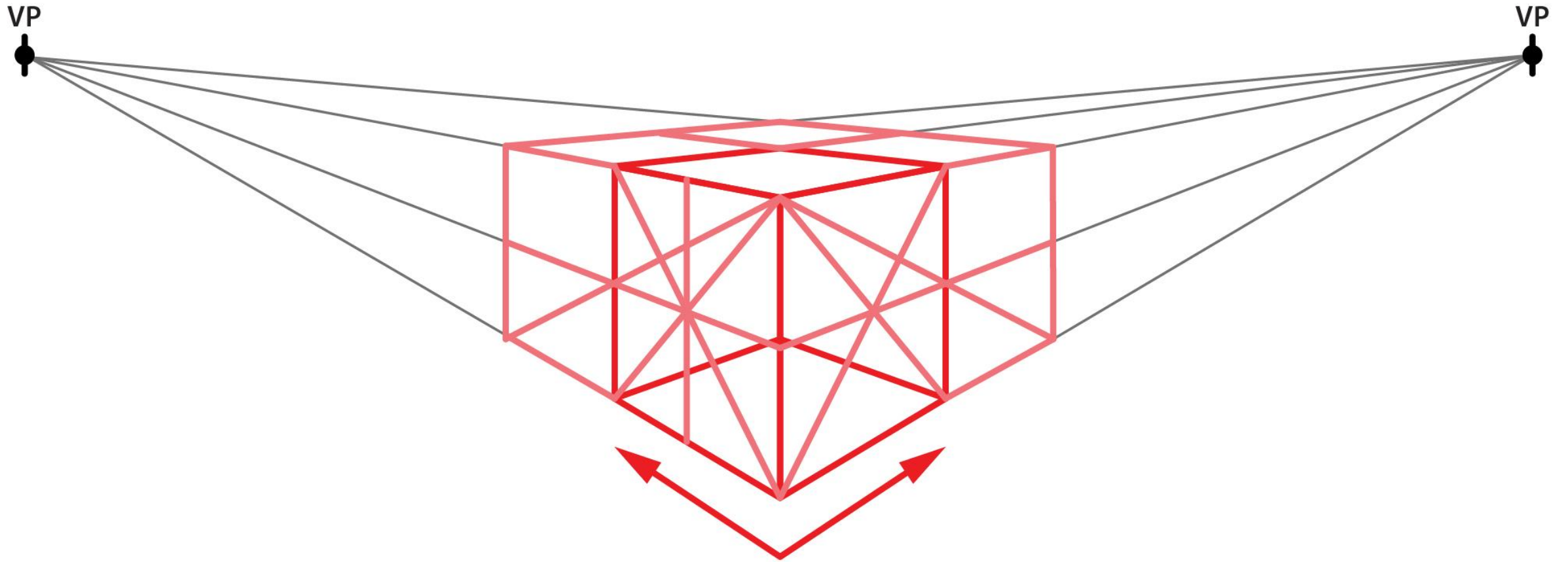
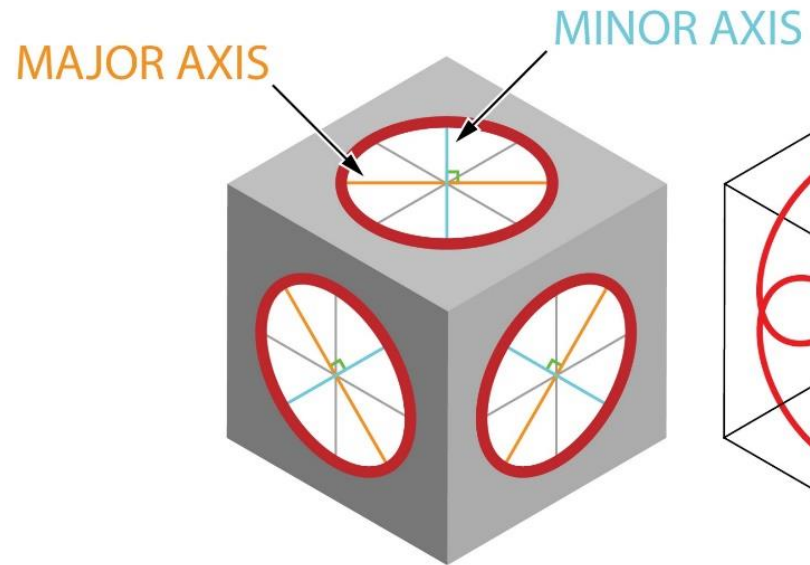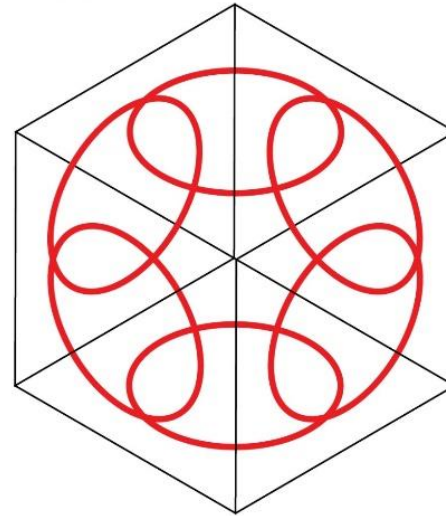# Axonometric

Isometric Example

SimCity

Ellipses

Ellipses (cont)

MAJOR AXIS

MINOR AXIS
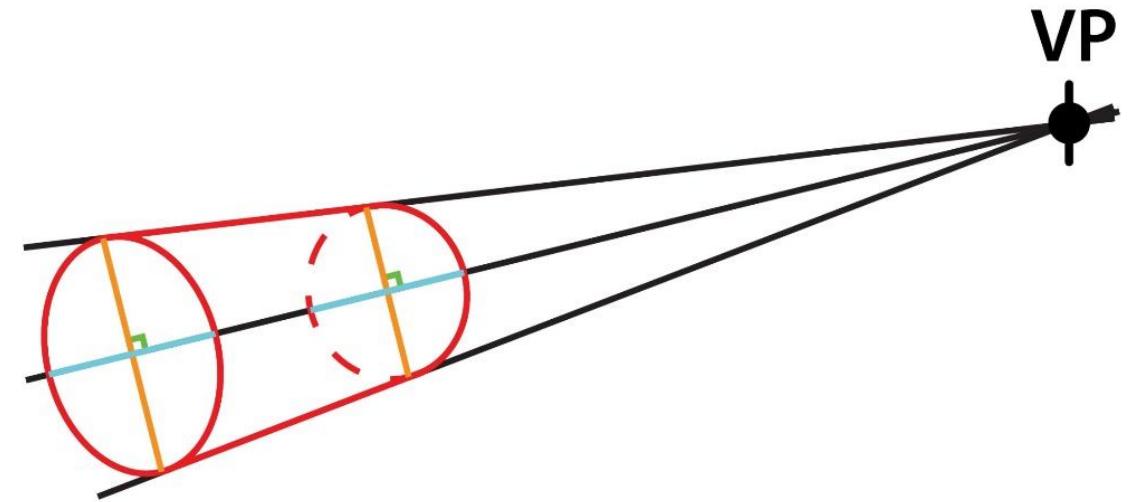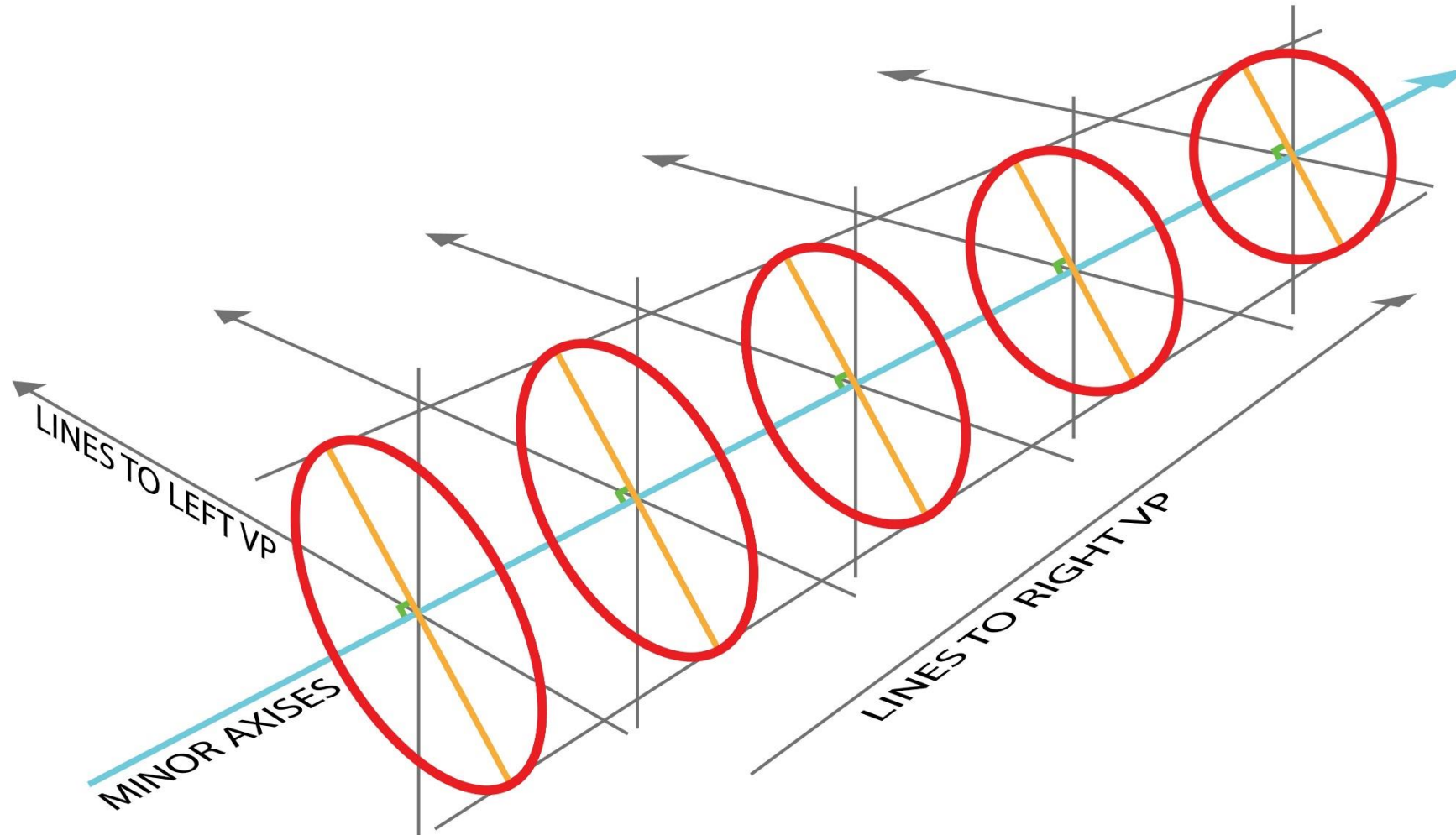
VP

**Major and
Minor Axis**

**Ellipse on
Every Side**

**Ellipses Towards
Vanishing Point**

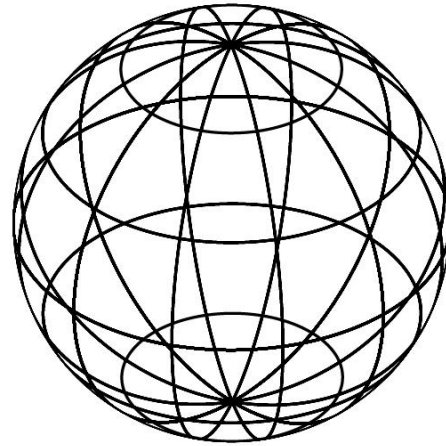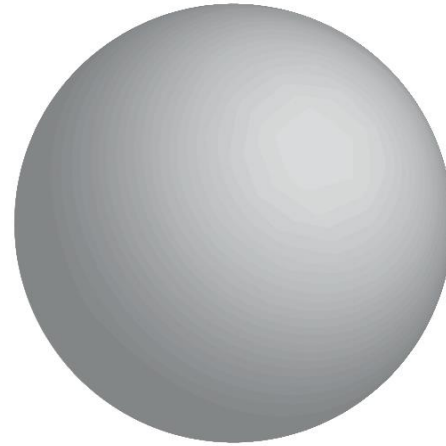# Ellipses (cont)

LINES TO LEFT VP

LINES TO RIGHT VP

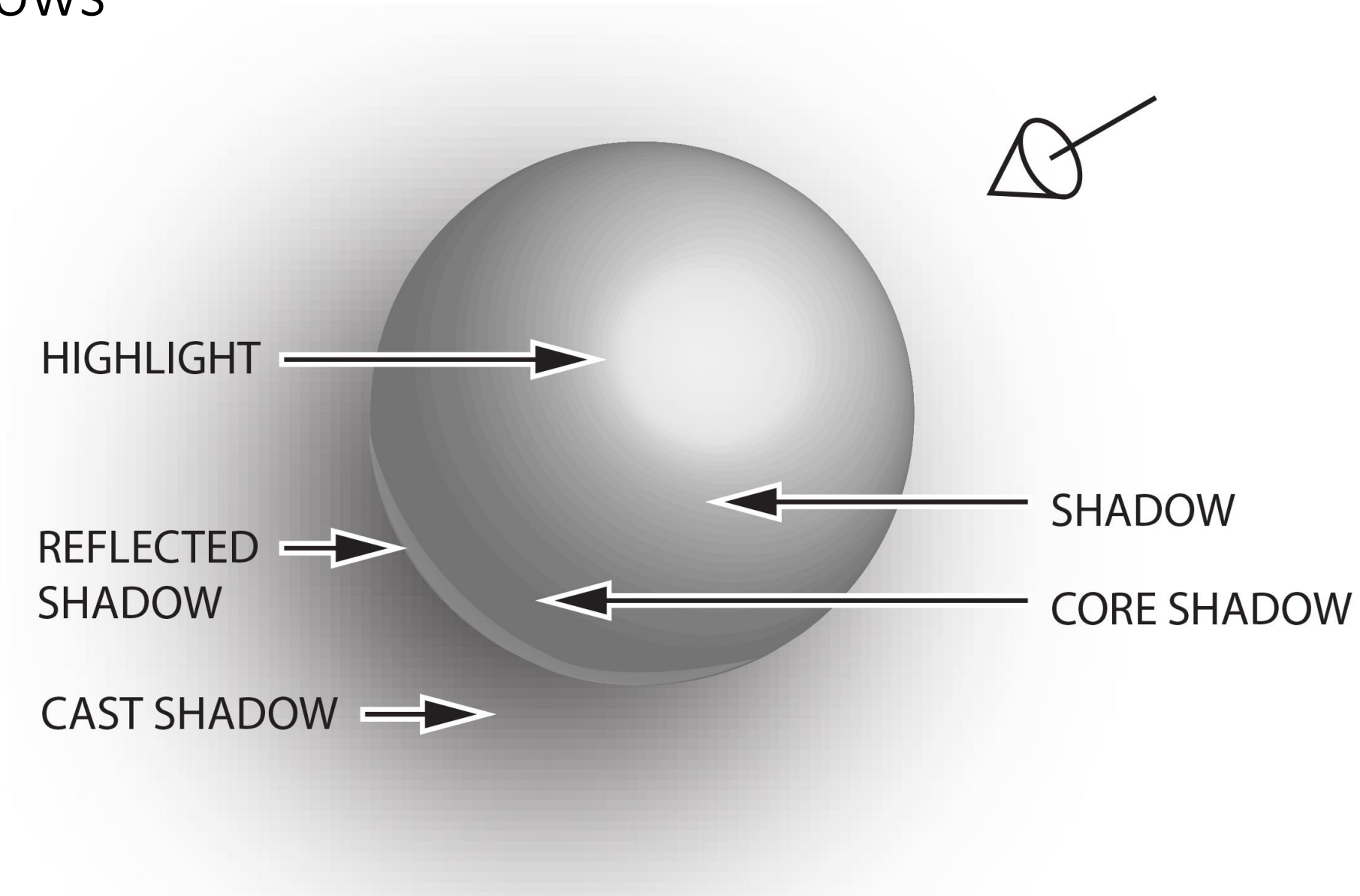MINOR AXISES
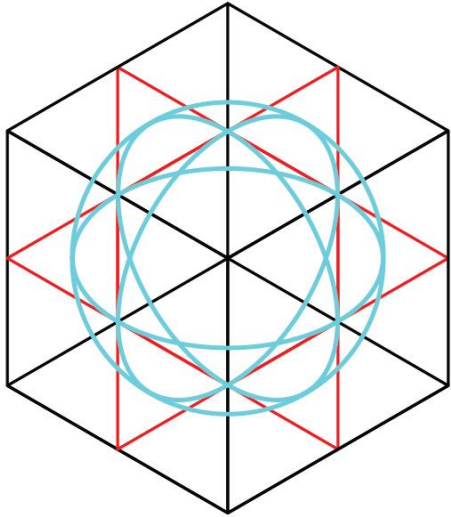
Sphere

Constructing Sphere   **Sphere Wireframe**   **Rendered Sphere**

Rounded Edge Box

Shadows

HIGHLIGHT →

SHADOW

REFLECTED SHADOW →

CORE SHADOW

CAST SHADOW →

Shadows (cont)

Regular Shading

Shading with Applied Gradients for Flat Surfaces

Line Weights

REFLECTION (0.216 PT)

CONTOUR (0.292 PT)

SIDES (0.35 PT)

OUTLINE (0.65 PT)

SIDES WITH DEPTH (0.5 PT)

GROUND HEAVY LINE WEIGHT (0.85 PT)

Line Types

VISIBLE LINE — THICK LINE

HIDDENLINE — DASHED LINE

CROSS SECTION — HATCHED LINE

CENTER LINE — THIN LINE

DIMENSION LINE — THIN LINE 20.5

CUTTING PLANE — THICK LINE

SHORT-BREAK LINE — THICK LINE

LONG-BREAK LINE — THICK LINE

PHANTOM LINE — THIN AND FADED LINE

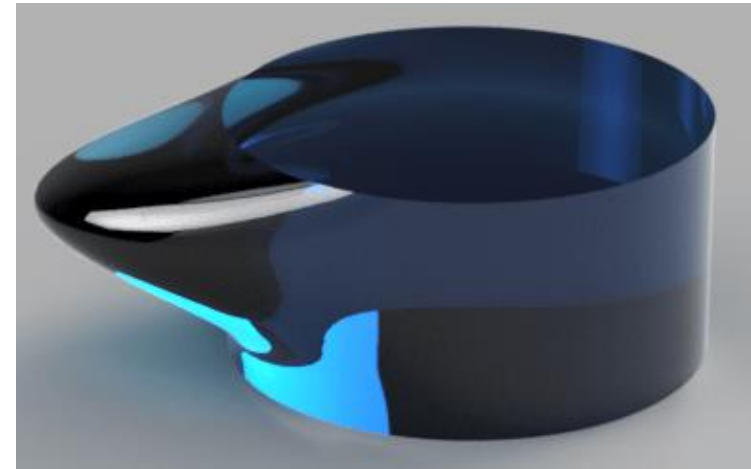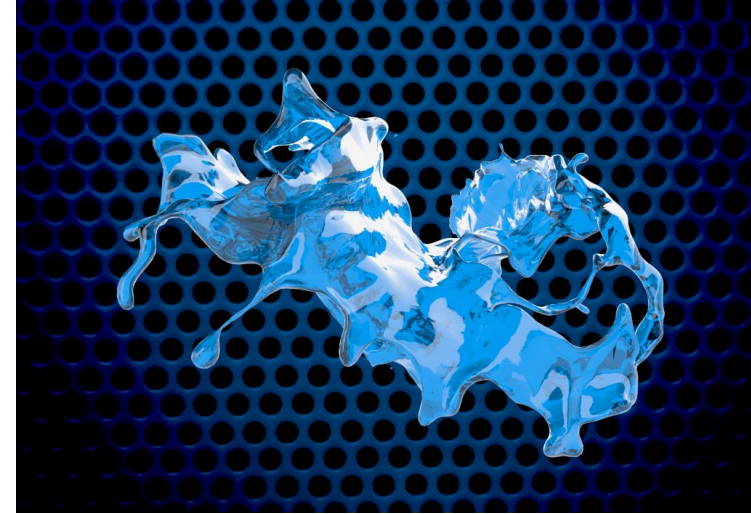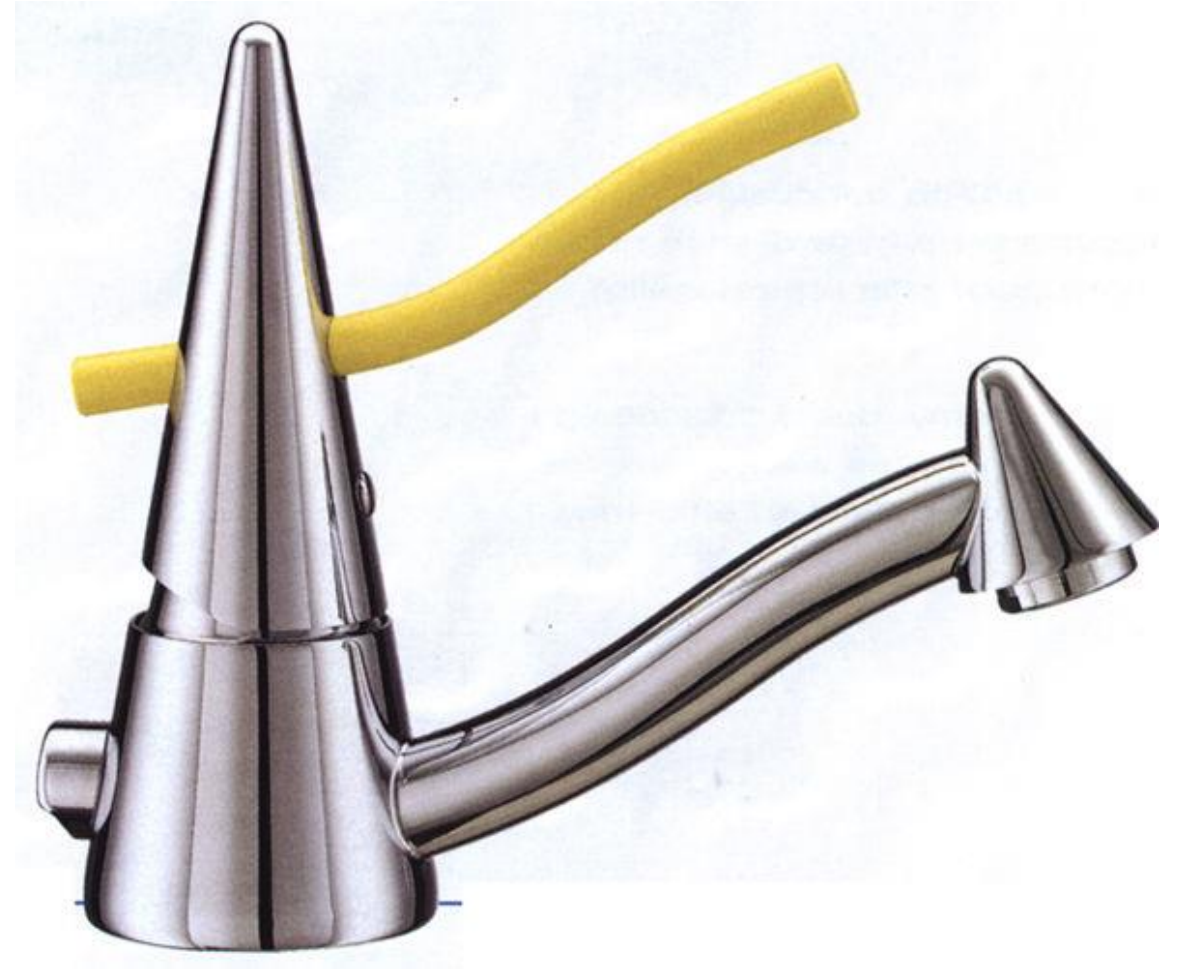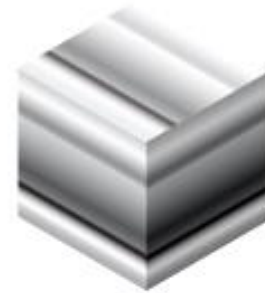LEADER LINE — THINK LINE

Drawing Examples

Rendering Glass and Liquid
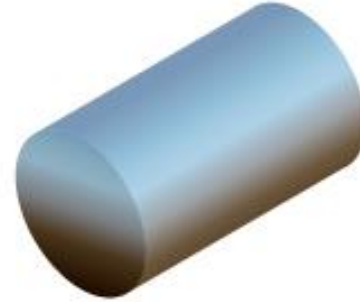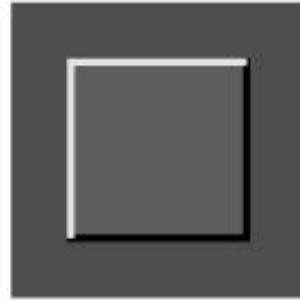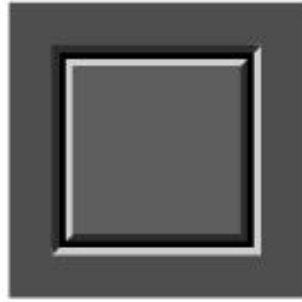
Rendering Screen

Rendering Chrome and Steel
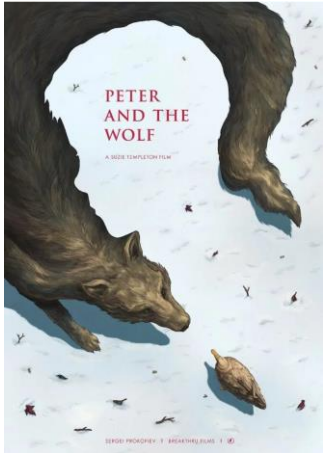
Rendering Matt Finish

Additional Rendering Techniques
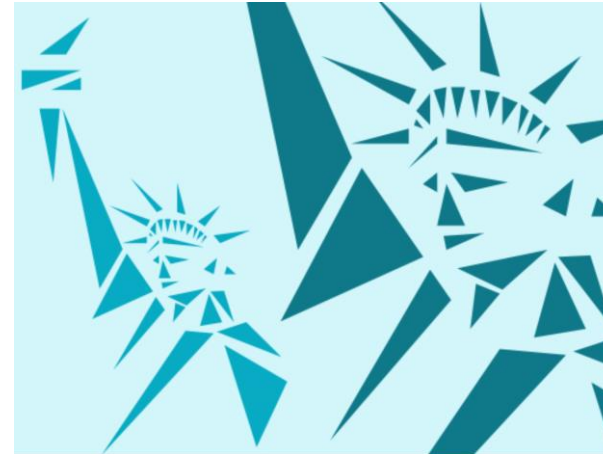
Gestalts Principles of Design
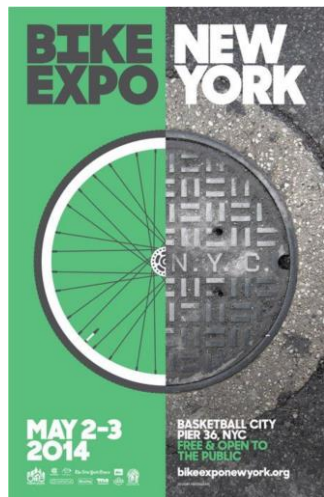

Figure/Ground

Proximity

Similarity

Similar Fate

Symmetry

Parallelism

Continuity

Closure

Thank You
Any Questions?

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