Filippo Brunelleschi

Linear Perspective
Who is Brunelleschi?

- Was born 1377 in Florence, Italy and died on April 15, 1446
- An amazing and skilled architect during the Italian Renaissance
- Best known for Cathedral of Santa Maria del Fiore (The Duomo) in Florence.
- The first modern engineer and an innovative problem solver
- He specialized in gothic and medieval architecture
How is he connected to Math?

Brunelleschi used math and rediscovered the principles of linear perspective, known to the ancient Greeks and Romans.
What is the math that is used?

- Geometry
- Brunelleschi uses planes, points, angles, and shapes to perfect architecture and balanced paintings.
- This same math is used in Computer graphics which helps build shapes by plotting points on a grid and connecting them.
The
importance
of Linear
Perspective
What is linear perspective?

A system for creating a three dimensional space on a two dimensional surface.
How did Brunelleschi use linear perspective?

- Brunelleschi painted an exact replica of the building he wanted to make and then drilled a hole on a small mirror and blocked it with another mirror. This reflected his painted version on the original mirror and you could see where the building will be.
Example of Brunelleschi’s linear Perspective.

Santo Spirito Drawing vs Real building
Different forms of Linear Perspective

- One-Point Perspective
- Two-Point Perspective
Terms to know

- **Horizon Line** – Where the land and the sky meet
- **Vanishing Point** – Where everything on the ground seems to disappear
- **Orthogonal Line** - Lines that connect to the vanishing point
- **Transversal lines** – Lines that cross orthogonal lines and help create depth.
Delivery of the Keys
You Try !
The Last Supper – Leonardo Da Vinci
His simple and genius ideas on linear perspective helped artist, mathematicians, and architects throughout history!

The study of a Chalice (not computer)
The Duomo in Florence
Florence Cathedral
Basilica of Santa Croce in Florence
