

.....

BEGINNING METAL

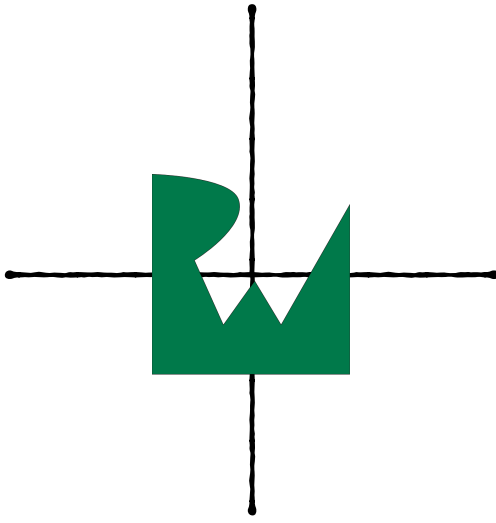
.....



PART 7: MATRICES 2D TO 3D



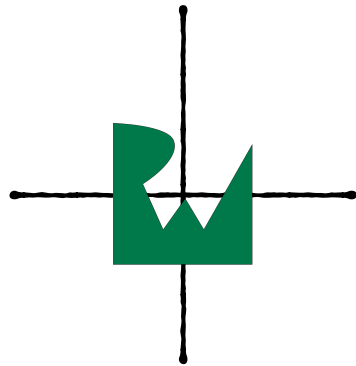
TRANSFORMS



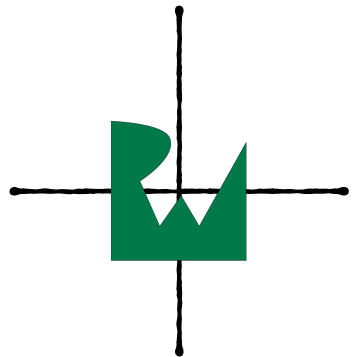
- ▶ Translate
- ▶ Rotate
- ▶ Scale



TRANSFORM ORDER



- ▶ Translate
- ▶ Rotate
- ▶ Scale



- ▶ Scale
- ▶ Rotate
- ▶ Translate



MATRICES

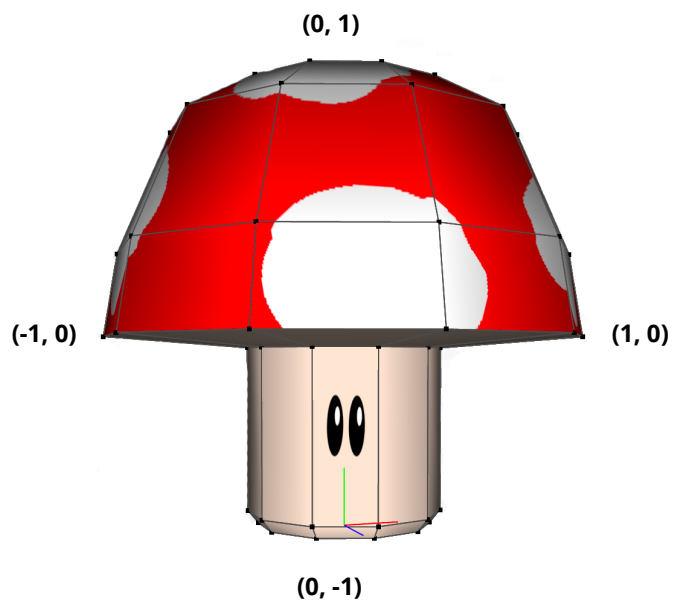
`matrix_float4x4`

m00	m01	m02	m03	m10	m11	m12	m13	m20	m21	m22	m23	m30	m31	m32	m33
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

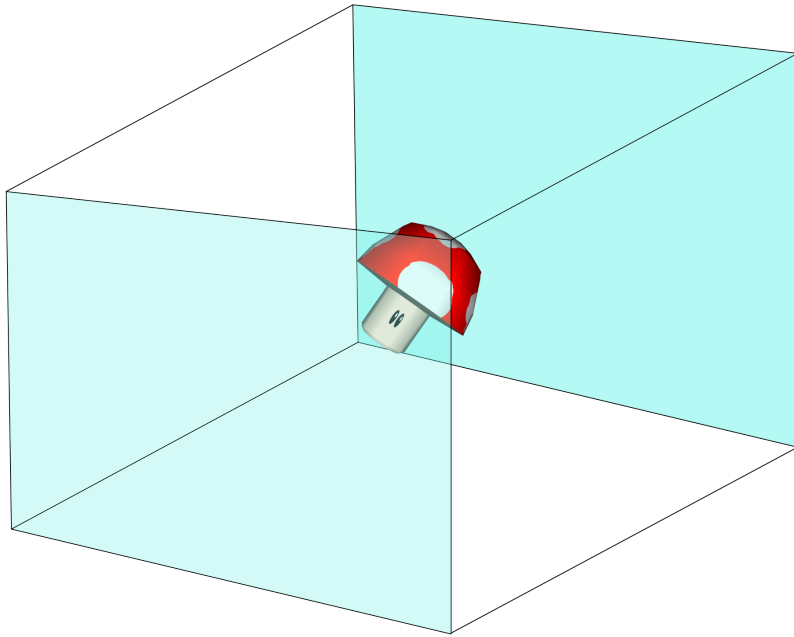
m00	m10	m20	m30
m01	m11	m21	m31
m02	m12	m22	m32
m03	m13	m23	m33



MODEL SPACE



WORLD SPACE



Model Matrix



CAMERA SPACE



View Matrix * Model Matrix

= Model View Matrix

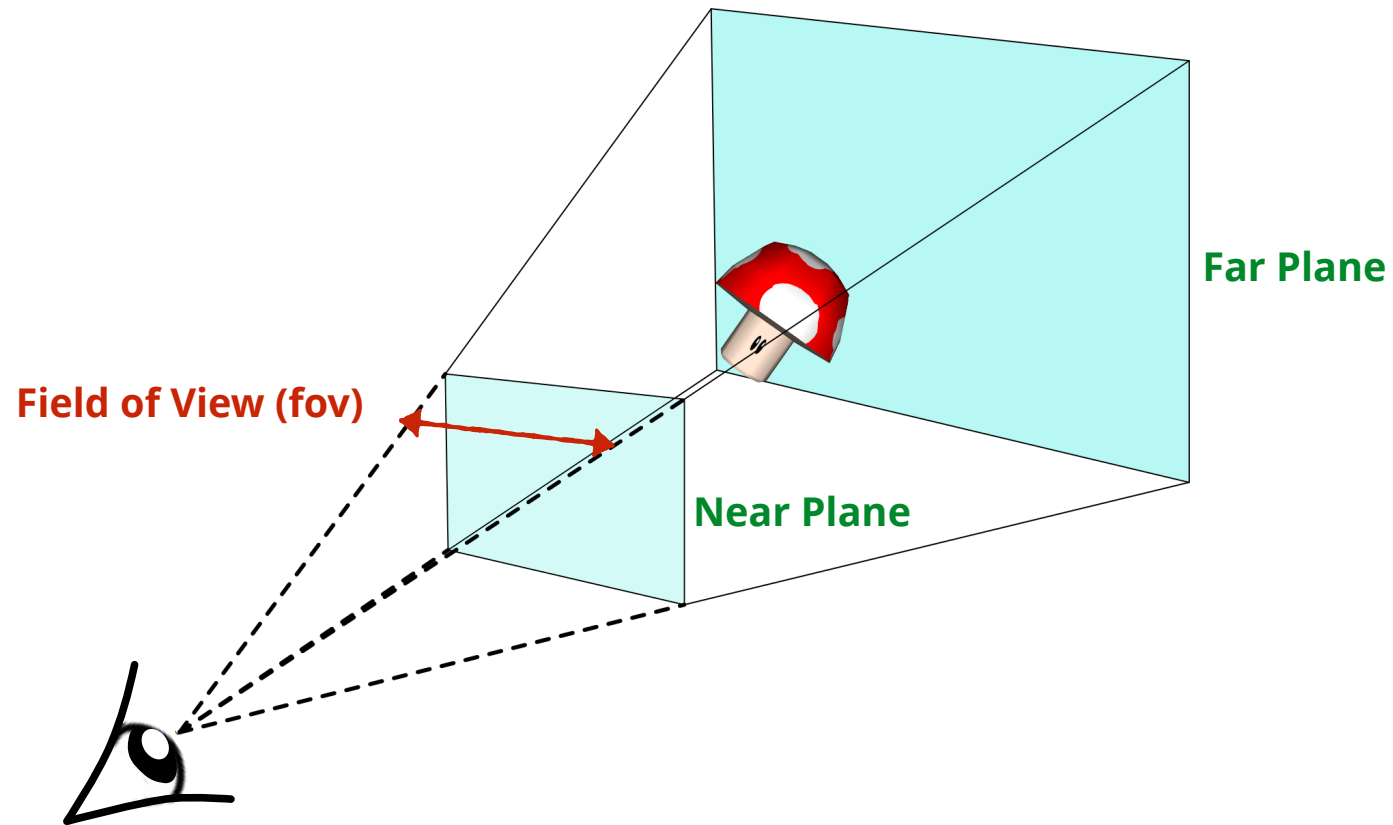
View Matrix



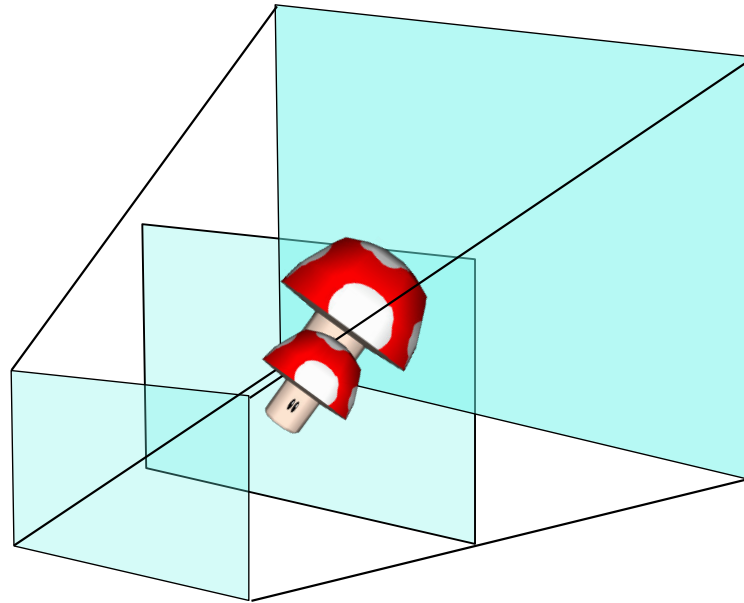
PROJECTION



PROJECTION



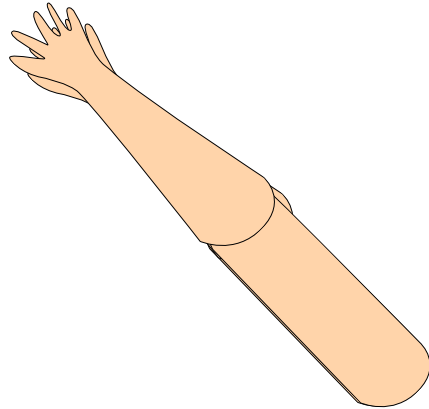
PERSPECTIVE DIVISION



DEMO



CHALLENGE TIME!



CHALLENGE TIME!

