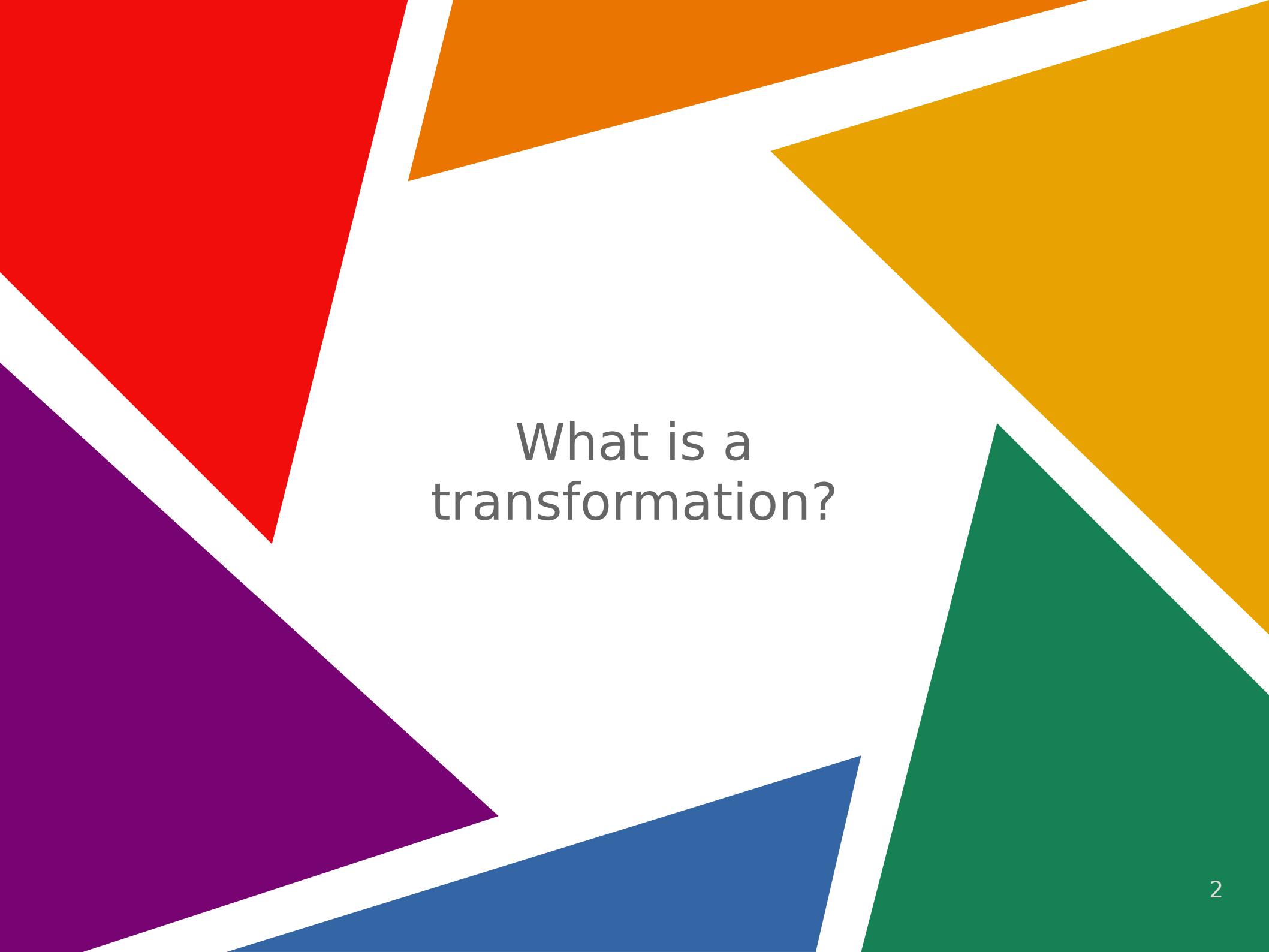


# Computer Graphics

Lecture 3  
Transformations

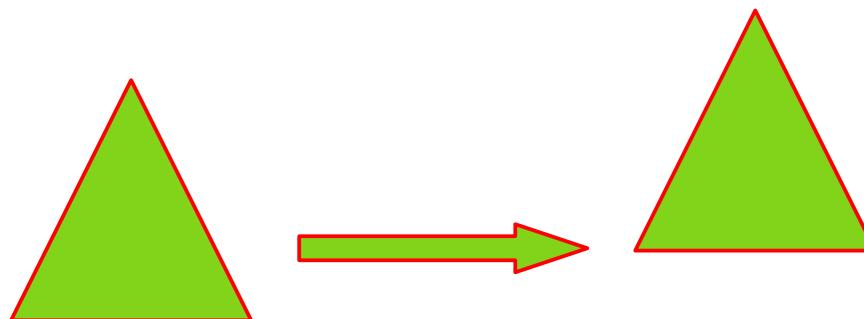


What is a  
transformation?

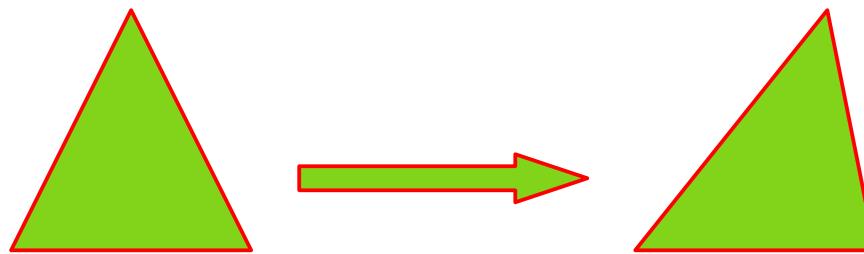
# Transformation types

# Vectors & Positions

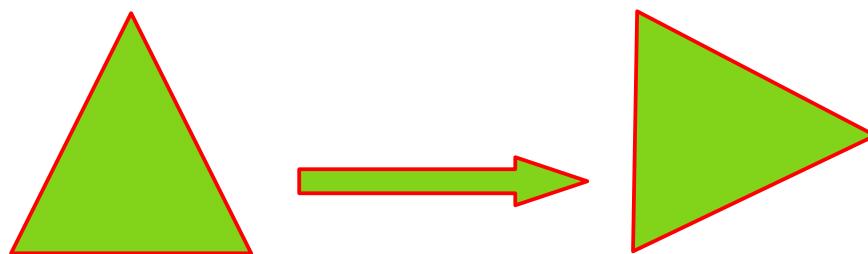
# Translation



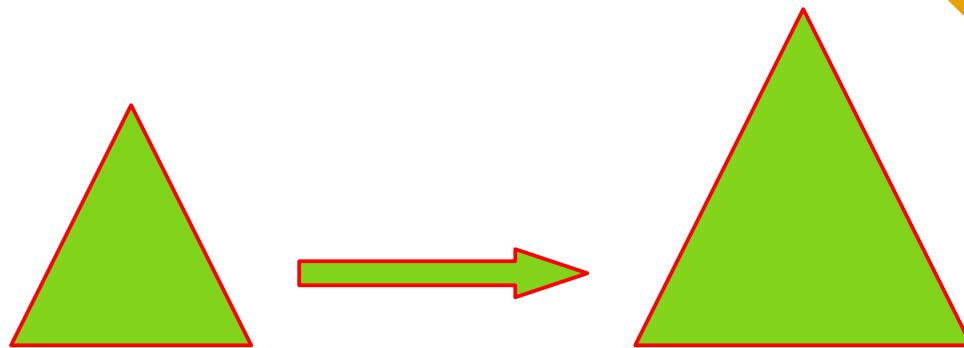
Skew



# Rotation

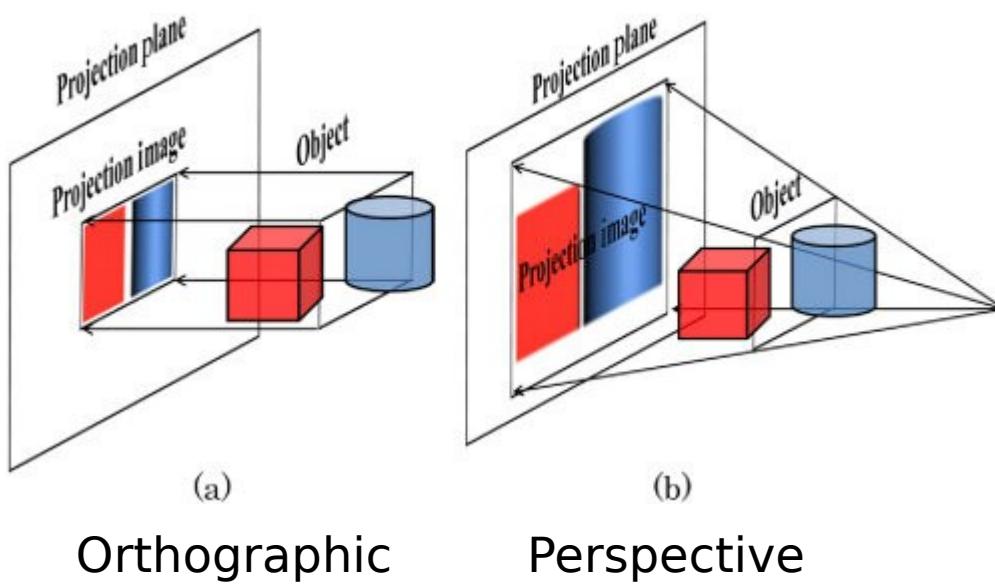


# Scaling



# Camera/View

# Projection



# Matrices Multiplication

# Shaders Uniforms



Thank You !

# Useful Links

- [https://en.wikipedia.org/wiki/Affine\\_transformation](https://en.wikipedia.org/wiki/Affine_transformation)
- [https://www.youtube.com/watch?v=Ahe\\_aTd\\_l5Is](https://www.youtube.com/watch?v=Ahe_aTd_l5Is)
- <https://www.youtube.com/watch?v=g7Pb8mrwcJ0>
- [https://learnwebgl.brown37.net/08\\_projections/projections\\_introduction.html](https://learnwebgl.brown37.net/08_projections/projections_introduction.html)