# Mock Exam Q4 Part C-2

Environment or reflection maps are a texturing technique that creates the appearance of reflections on an object. Research and implement environment or reflection maps

Basic Idea

* Assuming the environment is far away and
* the object does not reflect itself
* The reflection at a point can be solely decided by the reflection vector

Diagram

Description automatically generated

One common way is to assume that the object is in a sphere.

A picture containing aircraft, balloon, transport, colorful

Description automatically generated

And the colour value of that fragment can be obtained by the reflection vector onto the environment map.

Diagram

Description automatically generated

As such we need a “formula” to get the uv value on the texture based on the reflection vector

Such formula is:

Text

Description automatically generated

<https://www.clicktorelease.com/blog/creating-spherical-environment-mapping-shader/>

Then we can implement it in the fragment shader.

Table

Description automatically generated with medium confidence

See EnvironmentShader code.

Diagram

Description automatically generated with low confidence