Assignment 2: Create Procedural Shader in Blender
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Steps:

1. I used a geometry based on a cylinder with Extrude and Insert Faces.
2. I activated Node Wrangler which provides various tools that help you to work with nodes quickly and efficiently.
3. To create the peppermint texture, I started by setting up the shader nodes. I used the Node Wrangler add-on for convenience. I added a gradient texture, changed it to radial, and used object coordinates for better placement. Then, by manipulating a math node set to fractions and adding more stripes using multiplication, I achieved the desired stripe count and arrangement.
4. To incorporate the swirl, I duplicated the gradient texture, set it to spherical, and connected it to rotation. To address the texture's offset when the object isn't flat, I adjusted the object coordinates and added a combined XYZ node. Using the multiply node, I controlled the swirl intensity.
5. **Colouring and Material Adjustments:** I then connected the stripe texture to the base colour and used a colour ramp node to adjust colours, creating the classic red and white peppermint candy appearance. Adjustments to roughness, subsurface scattering, and subsurface colour were made to simulate the candy's characteristics.
6. **Adding Texture Detail:** For a subtle imperfection, I added a noise texture converted to normal data using a bump node. This detail added a slight bump to the material, enhancing realism.

Nodes Used:

- **Mapping Node:** The Mapping node transforms the input vector by applying translation, rotation, and scaling.
- **Texture Coordinate Node:** I used as inputs for the Vector input for texture nodes.
- **The Gradient Texture**: Generates interpolated colour and intensity values based on the input vector.
- **The Math Node**: performs maths operations. I used Multiply and Fraction.
- **Noise Texture:** node evaluates a fractal Perlin noise at the input texture coordinates.
- **Bump node:** generates a perturbed normal from a height texture, for bump mapping.
- **Color Ramp:** It's used for mapping values to colours with the use of a gradient.
- **The Principled BSDF (Bidirectional Scattering Distribution Function) Shader:** is the default shader for materials in Blender. It's an extremely versatile shader and is based on the "Principled" shader used by Disney, which is known for its accuracy and consistency across different lighting conditions.