Example Stress Calculation

Use this stress calculation of a circular column as an example calculation for the *Feel the Stress* activity.

**Given:**

- \( F = \text{Force} = 1000N \)
- \( D = \text{Diameter} = 1.0m \)
- \( \pi = \text{pi} = 3.14 \)
- \( A = \text{area} = \pi \cdot r^2 \)
- \( \sigma = \text{stress} = \frac{F}{A} \)

**Calculate the area of the column**

\[
A = 3.14 \cdot \left( \frac{1.0}{2} \right)^2 = 0.785m^2
\]

**Calculate the stress in the column**

\[
\sigma = \frac{1000N}{0.785m^2} = 1273.9N/m^2
\]

*Suggestion:* After this calculation is performed, change the diameter of the column or the force applied, so students can see how it changes.