Gram-Schmidt Process

Given n linearly independent vectors that form the subspace W, you can use the Gram-Schmidt Process to find the orthogonal basis for W.

2 Vectors

We take one of the 2 vectors and find its 'z' using the other vector. Now this new vector and 'other' vector are the new orthogonal basis. As math:
Given the linearly independent vectors: $\vec{v}, \vec{u}$ the orthogonal basis is $\{\vec{v}, \vec{u} - \mathrm{Proj}_{\vec{v}}\vec{u}\}$.

More formally, given the linearly independent vectors: $\vec{x_1}, \vec{x_2}$,

$$\begin{aligned}\vec{v_1} &= \vec{x_1} \\ \vec{v_2} &= \vec{x_2} - \frac{\vec{x_2} \cdot \vec{x_1}}{\vec{x_1} \cdot \vec{x_1}}\vec{x_1}\end{aligned}$$

Then the set $\{\vec{v_1}, \vec{v_2}\}$ is the orthogonal basis.