I have extracted this almost word for word from a chapter on sets while finding out about quotient spaces . In this bit on vectors I can visualize exactly what is meant but keep arriving at line segments in W..

Given a vector space V and a subspace W, $W \subseteq V$ we want to construct a quotient space V/W in which the vectors in W get identified with the zero vector. By analogy with modulo arithmetic we define a relation of " congruence mod W " on V by stating that

$$\mathbf{v} \equiv \mathbf{w} \Leftrightarrow \mathbf{v} - \mathbf{w} \in W$$

The equivalence classes are the AFFINE SUBSPACES also called flats $\mathbf{v} + W$

For example if $V = R^2$ and W is a one dimensional subspace of V, a line through the origin, then the equivalence relation partitions R^2 into a family of parallel lines.

I think I misunderstand what is meant by $\mathbf{v} + W$, that is adding a vector to a subspace. Also I may mistakenly identify the zero vector in some way with an origin.
There are other queries such as the bit about identifying with the zero vector but the first problem is basic to understanding vector quotient spaces.

Thanks Matheinste.