## Step-1

$R^2$ is not a subspace of $R^3$ for the reason that its components (2-component vectors) do not even originate from $R^3$ (the set of 3-component vectors). It is not even a subset.

## Step-2

$R^2$ is isomorphic to the subset $(a,b,0)$ of $R^3$, but it's also isomorphic to considerably several other subspaces of $R^3$ (any 2 dimensional one). As such, there's no canonical embedding.