Matrix Representations of Linear Transformations

$$\begin{array}{ccc} V & \xrightarrow{T} & W \\ {\scriptstyle [\cdot]_B}\big\downarrow & & \big\downarrow{\scriptstyle [\cdot]_C} \\ \mathbb{R}^n & \xrightarrow{[T]_B^C} & \mathbb{R}^m \end{array}$$

Matrix representations of linear transformations,
well they ease the complications that arise
when uninviting spaces with their imposing bases
get mapped to one another before your eyes.

Coordinate representation allows the vector to hasten
into a friendlier space like $\mathbb{R}$ to the n.
The mapping turns into a matrix that you multiply using your old tricks
by the vector, and you can see that we're nearing the end.

Cause the product is a vector in m-space (isomorphic as we know in this case)
to W where results of our T reside.
And since we have a bijection, it's a W-$\mathbb{R}^m$ connection,
and the vector uniquely ends up on the W side.

(fading)
Matrix representations...
of linear transformations...
Coordinate representations...
and linear transformations...