# Rna def

RNA is made up of strands of four different bases that match up in specific ways.
The bases are elements of the set $B = \{\mathtt{A}, \mathtt{C}, \mathtt{G}, \mathtt{U}\}$.

**Definition** The set of RNA strands $S$ is defined (recursively) by:

| | |
|---|---|
| Basis Step: | $\mathtt{A} \in S, \mathtt{C} \in S, \mathtt{U} \in S, \mathtt{G} \in S$ |
| Recursive Step: | If $s \in S$ and $b \in B$, then $sb \in S$ |

where $sb$ is string concatenation.

Examples:

To define a set we can use the **roster method**, the **set builder notation**, and also ...
**New! Recursive Definitions of Sets**: The set $S$ (pick a name) is defined by:

| | |
|---|---|
| Basis Step: | Specify finitely many elements of $S$ |
| Recursive Step: | Give a rule for creating a new element of $S$ from known values existing in $S$, and potentially other values. |

The set $S$ then consists of all and only elements that are put in $S$ by finitely many (a nonnegative integer number) of applications of the recursive step after the basis step.

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