**Cause and Effect (“Fishbone”) Diagram**

**Definition/Purpose:**  Graphically displays potential causes of a problem. The layout shows cause and effect relationships between potential causes. Used in the Analysis phase.

**Instructions: *To use as a template, please save a copy by clicking on the save icon.***

1. Place the effect or problem statement on the right side of the paper, half-way down; draw a horizontal line across the paper with an arrow pointing to the effect or problem statement.
2. Determine general, major categories for the causes; connect them to the horizontal line with the diagonal lines.
   1. Use five inputs of every process:
      * Person
      * Method
      * Machine
      * Materials
      * Environment
3. Note the major causes and place them under the general categories. Use brainstorming techniques as needed.
4. List sub-causes and place them under the main causes. To determine sub-causes, ask *why* five times.
5. Evaluate the diagram. Check that the branches on your cause and effect diagram are worded as possible causes and are arranged in a logical sequence.

**Effective Use:**

1. Have a narrowly defined problem or effect to start.

2. Causes on the diagram must be verified with data to confirm that they are real causes.

3. Do not use this tool as an alternative form of outlining.

4. Do not use this tool to list potential solutions.

**Environment**

**Material**

**Machine**

**Method**

**Person**

**Effect**