# Option A - Mold Tools & Plastic Design

Mold tooling is designed around the solid model of the plastic part to be manufactured. It is important that the part be designed in such a way that it can be molded. One factor affecting whether or not a design can be molded is whether or not it can be ejected from the mold. This can be determined by using Draft Analysis.

When in the Draft Analysis tool, you will have to specify the direction of pull. This is the direction in which the mold will be pulled away from the part. You can select a line, edge, or planar face to specify a direction of pull. Because of the nature of plastic parts, many of the faces and edges available could be at slight angles. To ensure you don’t choose an incorrect edge or face, it is best to select one of the default references planes. Next you must specify a draft angle. There is an option to enable Face Classification. This will result in a face-based analysis where entire faces will be classified to fit one of the categories. If you choose this option, you can also enable the option to find steep faces. The only other option left is to modify the colors used to identify the various faces.

Solidworks color codes the faces of the model indicating their different classifications. The first classification is Positive Draft. This indicates that he faces colored in bright green meet or exceed the degree draft criteria, and a mold can successfully be pulled away in the direction of pull that was selected. Next is Required Draft, this classification indicated that the degree criteria were not met, and consequently the mold part will not easily eject from the mold. Negative Draft is similar to Positive Draft, but in the opposite direction. That is, a mold can successfully be pulled away from the part in the direction opposite of the Direction of Pull that was specified. Faces that have both negative and positive draft and called straddle faces. Another face classification is Positive Steep faces. These are faces that only partially meet the draft criteria that was specified.