One of the most challenging concepts for general chemistry students will become more approachable and understandable. The primary benefit of this design is to improve student understanding of the basic principles of pressure. Additionally, the majority of the instructional work done on this topic can be incorporated into future course offerings so that the unit can be improved in subsequent years and not redesigned.

There is a gap in student knowledge of gases that must be addressed. Students enter the topic with a basic understanding of gas behavior. While many students will have prior academic experience with gases, most will have only an understanding of those relationships that can be seen as “common sense.” For example, many students know that pressure increases with temperature (i.e. exposure of a can to flame, a blown out tire). At the high school level, the underlying principles are often not covered; instead focus is placed on the most basic macroscopic connections. Therefore, a primary goal of this unit is to explain the microscopic relationships and how they affect the macroscopic behavior of gases.

The goal of this unit is to provide students with an understanding of the underlying reasons for gas behavior. They will be able to apply this knowledge of the microscopic world to the macroscopic properties that we measure. Furthermore, they will be prepared for more advanced topics in future courses and have a working knowledge so that they can work safely in their future experiences with gases.