The quinazolinone scaffold is a chemical framework found in many bioactive molecules such as anti-bacterial and anti-fungal compounds. To explore the effectiveness of quinazolinone compounds against such infections, several different derivatives must be synthesized in sufficient quantities to allow testing. We sought to optimize the synthesis of 3N-alkylamino quinazolinone derivatives using sequential substitution reactions. We identified a reliable method for 3N-alkylation of quinazolinone using 1,3-dibromopropane. While investigating the viability of synthesis of our final products, we discovered two variables that can have inhibitory effects on yield: reaction conditions and the time to completion. Reaction of 3N-alkylated quinazolinone with aniline generated the desired product in low yield, but reactions with other primary amines did not generate the intended product, instead returning unreacted starting material or forming side products. Increasing reaction time improved conversion of starting material, enabling exploration of other reagents and optimization of reaction conditions, efforts which are ongoing. Together, our efforts provide insight into the reactivity of quinazolinones and provide access to derivatives for further study.