The purpose of this research were (1) to find out how the investigation group learning model can improve the students' mathematical communication ability, (2) to determine whether students' mathematical communication ability increased after following the investigation of learning with group learning model.

The type of his research was belongs to Classroom Action Research (CAR), which is implemented in SMP Negeri 11 Medan. The subjects in this research were students of class VII-6 in 2014/2015 that have total of 47 people consisting of 20 men and 27 women. The object of this research were the students’ mathematical communication ability and group investigative learning model.

Instruments used to collect the data were mathematical communication ability test, observation sheet, and documentation. The research consists of two cycles and for every end of cycle given students’ communication ability test. Before given, at the first tests must be validity. Validity test done is contents validity where expert as validator.

Repairs done to increase the communication mathematic ability is to make students actively involved in the learning process and can be communicated, is coordinating the state of classroom teachers, changing the group. is expected to make increase of cycle 1 is no change cycle 2.

The results of this study can be seen: (1) The results of tests of mathematical communication ability of students in the first cycle known average value of 65.39, complete 4 people, 43 incomplete, 8.51% classical completeness and mathematical communication ability of students categorized very low. (2) The results of tests of mathematical communication ability of students in the second cycle known average value of 86.81, complete 45 persons, 2 persons incomplete, classical completeness 87.50% and mathematical communication ability of students are middle categorized. And (3) Learning by using the group investigation learning model can make students’ activity were good categorized in learning.

From the results of this research can be concluded that the implementation of the group investigative learning model can increase the students' mathematical communication ability. The suggestion that given for teachers is to be able to implement the group investigative learning model as an alternative in the learning process that can increase communication skills.