Here are two equivalence relations on the class of all finite groups: “There is a bijection $\alpha$ verifying the identity $\alpha(x)\alpha(y) = \alpha(xy)$”, and “There are three bijections $\alpha$, $\beta$ and $\gamma$ verifying the identity $\alpha(x)\beta(y) = \gamma(xy)$”. The first relation is the worldwide famous isomorphy relation. The second is called isotopy; it seems to yield a coarser and potentially more interesting classification of groups (since isomorphic groups are necessarily isotopic). Yet, have you ever heard of it? . . . Your answer was (most likely) no; in fact two isotopic groups are automatically isomorphic, making the latter relation useless for problems about groups. In the non-associative world, this is not true anymore. I will introduce basics of non-associative structures, and if time permits, will present two results (one by Petr Vojtěchovský and one by myself) comparing the number of nilpotent loops (or “non-associative groups”) of order $2q$, $q$ prime, first up to isomorphy, then up to isotopy.

_Refreshments will be served at 4:00 pm in the math lounge._