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James Garrett, Natasha Jonoska* (jonoska@mail.usf.edu), **Hwee Kim** and **Masahico Saito**. *Monoids associated with DNA origami*.

We initiate an algebraic approach to study DNA origami structures by associating an element from a monoid to each structure. We identify two types of basic building blocks and describe a DNA origami structure by their composition. These building blocks are taken as generators of a monoid, which we call the *origami monoid*. Motivated by the well studied Jones monoids, we identify a set of relations that characterize the origami monoid. With the aid of a *GAP* program, we prove the finiteness of the origami monoid, and propose a normal form of the elements. We study a connection between the Green's classes of the origami monoid and the Green's classes of a direct product of Jones monoids. (Received September 15, 2020)