Topics suggested by students

-sampling 1,2,3,4....unordered-configurations on imported data sets.

-Cartesian powers of finite probability spaces.

-implementing category of finite probability spaces, verifying law of
large numbers, computing Boltzmann entropies, as ~discussed~ on pp.15-60
in

Six Lectures on Probabiliy, Symmetry, Linearity. October 2014, Jussieu

available at http://www.ihes.fr/~gromov/topics/recent.html

 -implementing nonstandard-analysis philosophy to 'real-variable'
computations. i.e. implement real numbers as "infinite processes".

-i want to compute and plot/manipulate legendre-fenchel transforms for
non-symbolic convex functions (as far as i can tell, functions having
closed-forms are reserved for childrens bedtime stories).

-exploiting the geometric and random-process capabilities of mathematica,
i.e. for poisson processes.

-making movies and "manipulations" in colour.

-If SL(2,R)=KAN, then solving `equations' of the form AKAk'a' \in K, where
the AKA term is prescribed, and we seek k',a' such that the product AKA
k'a' lies somewhere within the compact K=SO(2,R).

Since I still have a hard time to understand what sheaves are good for and
you mentioned categories as a possible topic, I would vote for playing
around with categories and co/contravariant functors in mathematica.