

Construct both an 3D cube unfolded into two dimensions and an "unfolded" hypercube (see Exercise 13 in Section 6.2). By "unfolded hypercube", please note that I mean unfolded into a 3D creation, not something that's been unfolded again into 2 dimensions. First, for the cube unfolded into 2 dimensions, color edges that attach the same color so that we can see by looking at it unfolded which edges go where. Then for the unfolded hypercube, figure out which faces would connect to which if we were able to fold it back into the hypercube, and color-code those faces which would connect to each other. You will probably find that looking back at your analogous unfolded cube and those matching edges is helpful.

Write a page or so explaining the basic idea of the hypercube, why the way you constructed it is what it looks like "unfolded", and how you figured out which faces would connect to which.

Possible points: A 3D unfolded hypercube constructed neatly out of paper, cardboard or similar material, with the faces correctly colored but also with some creativity, and accompanied by a clear, cogent, and substantive discussion could earn up to 25 points. Something more elaborate, out of a more creative material, could of course earn more if it is still correct, as could something that is both correct and in some way artistic.

Note: A hypercube submitted without a corresponding analysis will be returned ungraded.