2. Types of symmetry

Now that we understand what symmetry is, let's try to think about the symmetries themselves. They seem to come in different types: the symmetries of a butterfly are different from the symmetries of a piece of honeycomb. How can we understand this from the idea of a symmetry as a transformation?

1. Compare the examples you were given. What kinds of movements do you use to find their symmetry transformations? Do they all have the same types of symmetry?

2. Group together the examples by the types of symmetry they display. Do all your examples fit neatly into a single type?

Extension Recall that our definition of symmetry depended on the space in which our object lives. We can therefore think about the types of symmetries that we can obtain when we consider objects in spaces of different dimensions. Given some of your examples, what happens if you restrict your object to living in a particular dimension? Can you get all of the same symmetries? Think of the transformations that you can obtain in dimensions 0, 1, 2 and 3. What are all the symmetries that you can obtain in each of these dimensions?