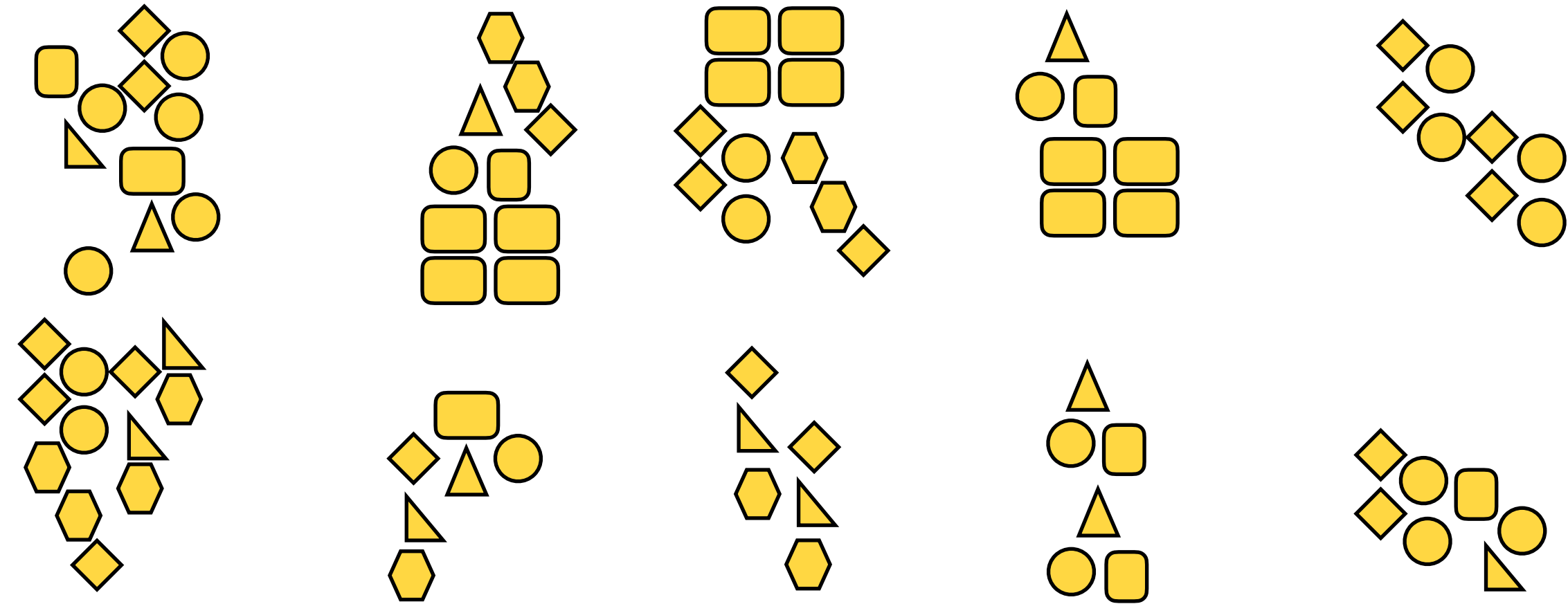


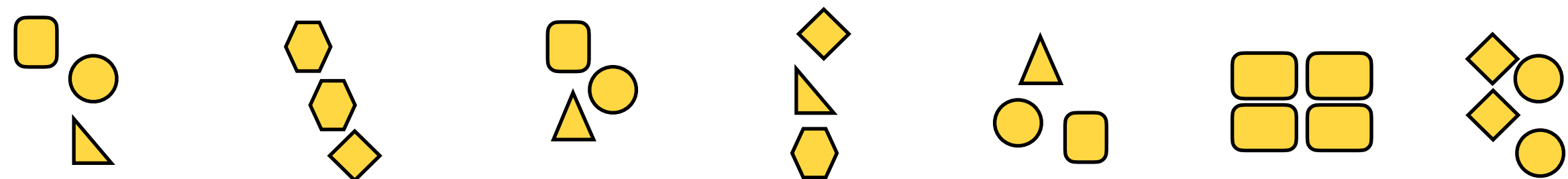


# Advantages of Hierarchical Features

### layer 3: motifs

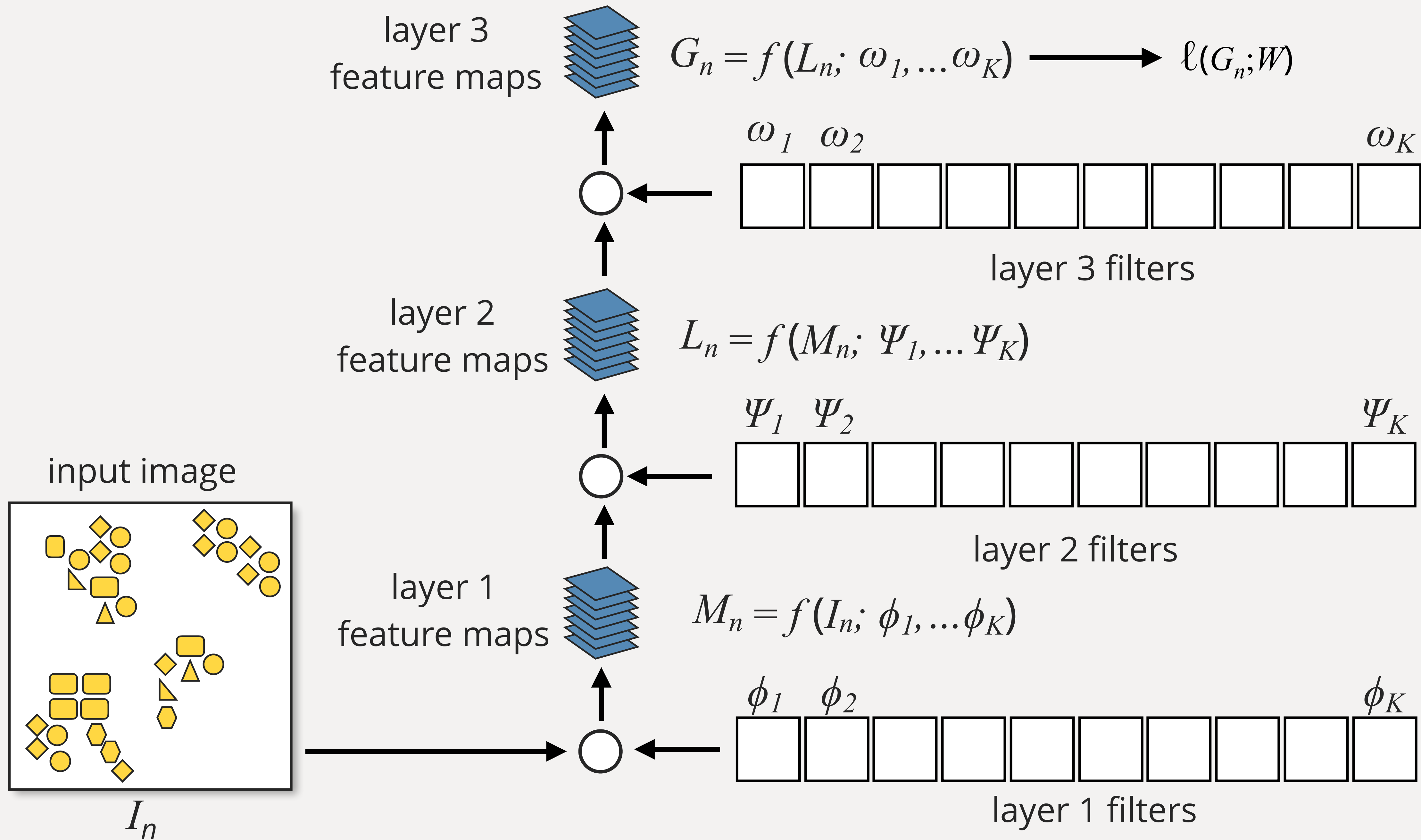


### layer 2: sub-motifs

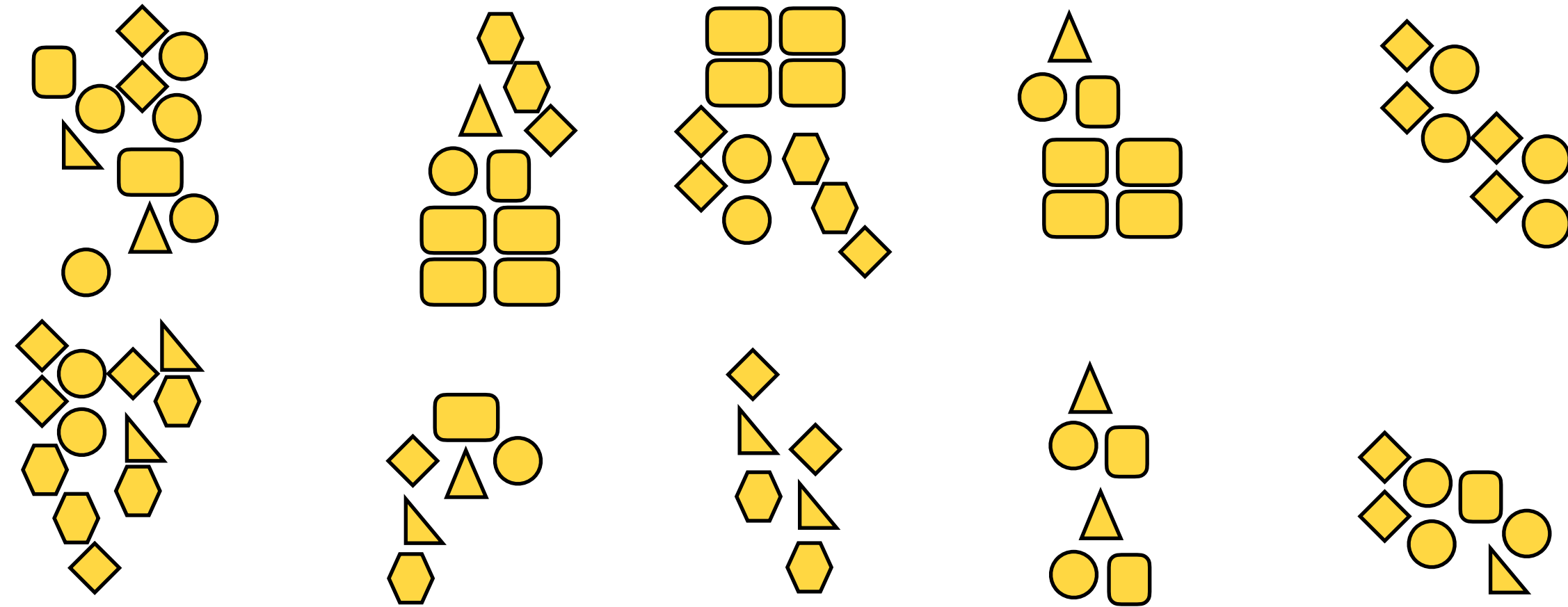


### layer 1: motifs

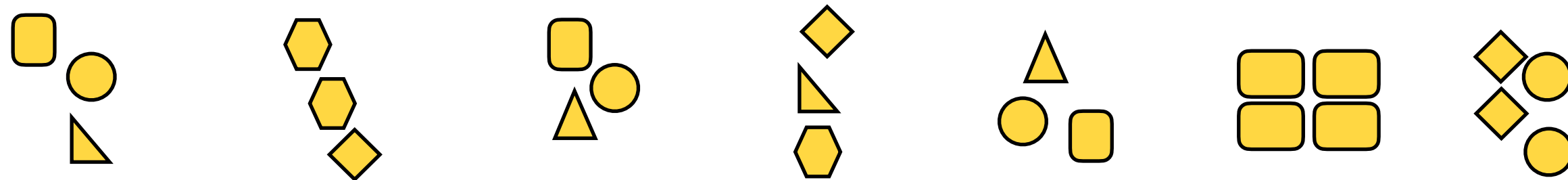




layer 3: motifs



layer 2: sub-motifs



layer 1: motifs



## Advantages of Hierarchical Features

- Top level motifs would be learned independently if we do not use hierarchy
- Sharing similarities allows more effective data use





Learning is manifested by taking  
large quantities of labeled data



Learning is the concept of estimating the model parameters so the predictions are consistent with true labels