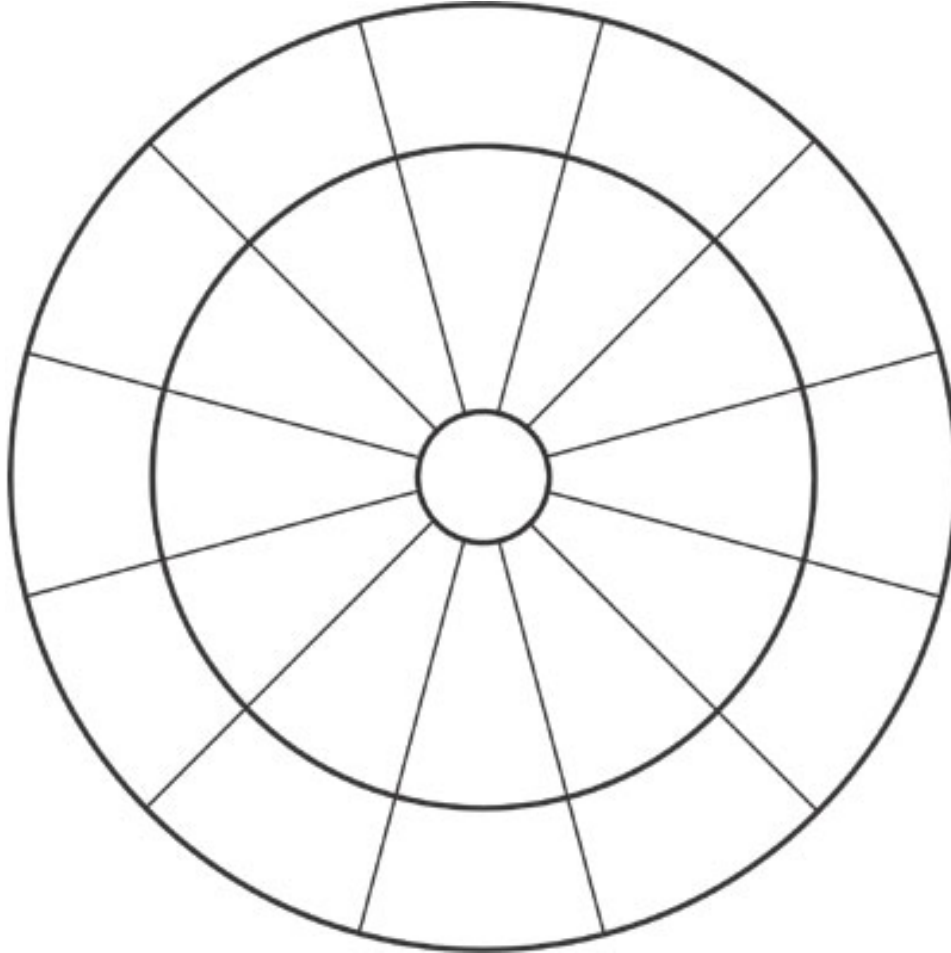


# Symmetry & Color

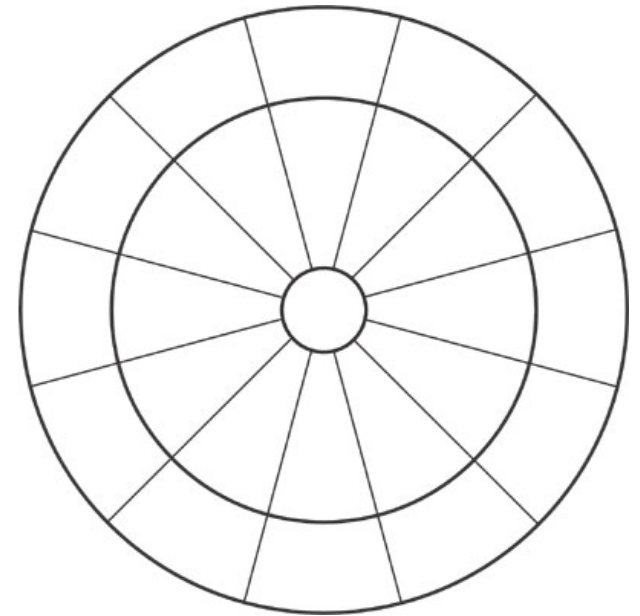
ART & SCIENCE

## TRADITIONAL COLOR WHEEL

YELLOW

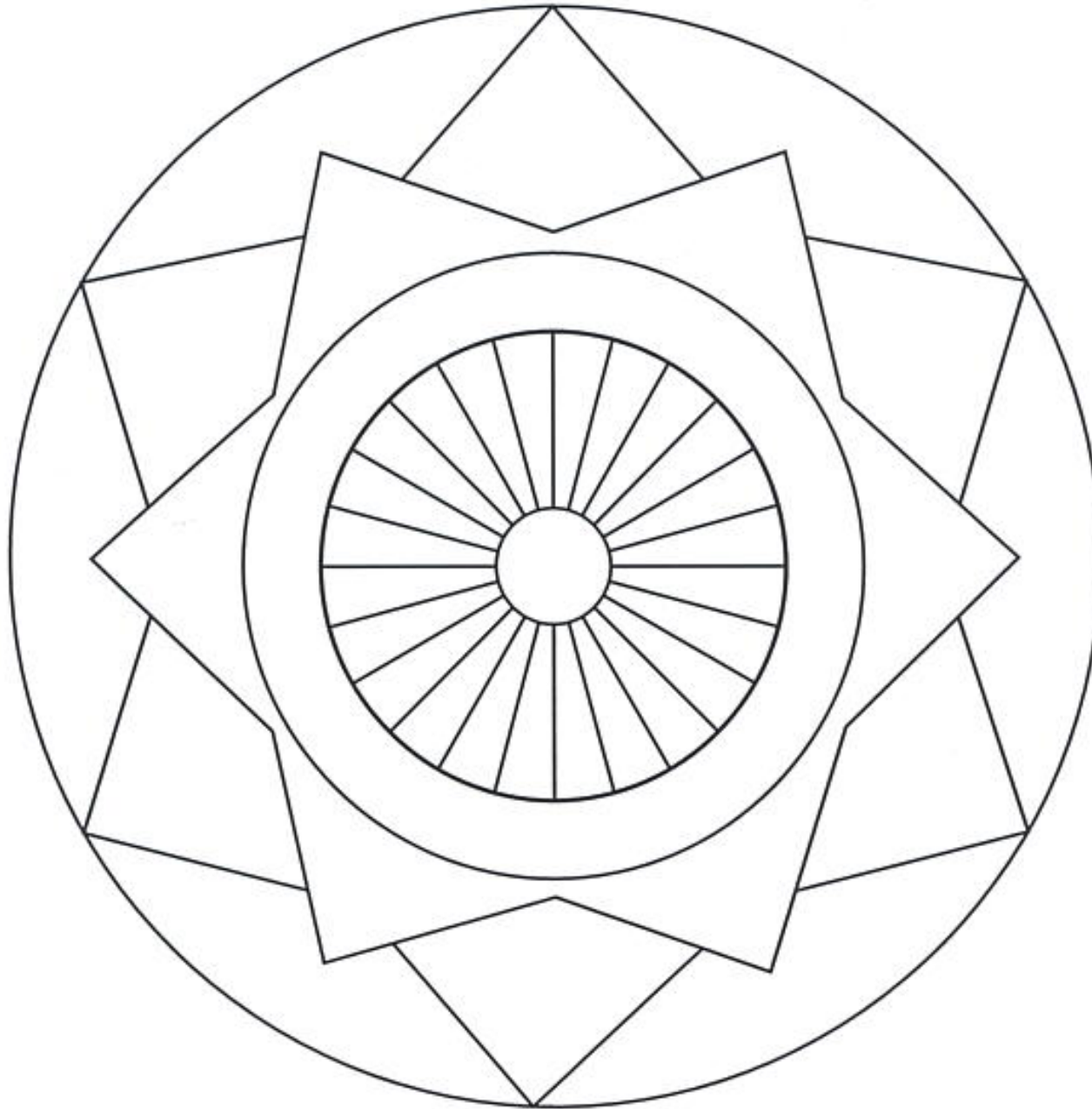


*Warm vs. Cool*



*COLORING BOOK*

# RADIAL SYMMETRY

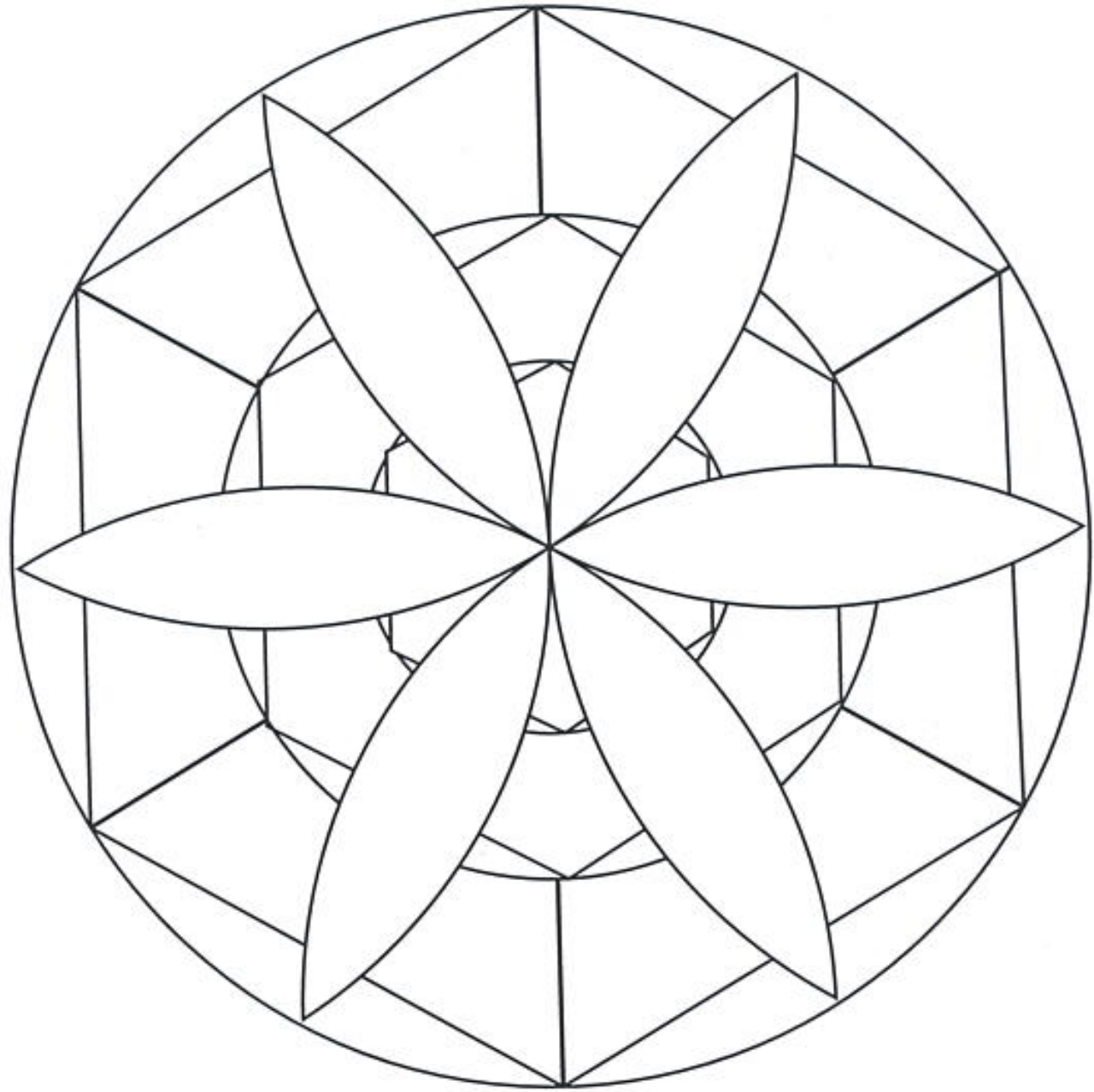


Elements of art:

- *color, shape*

Principles of art:

- *contrast, balance*

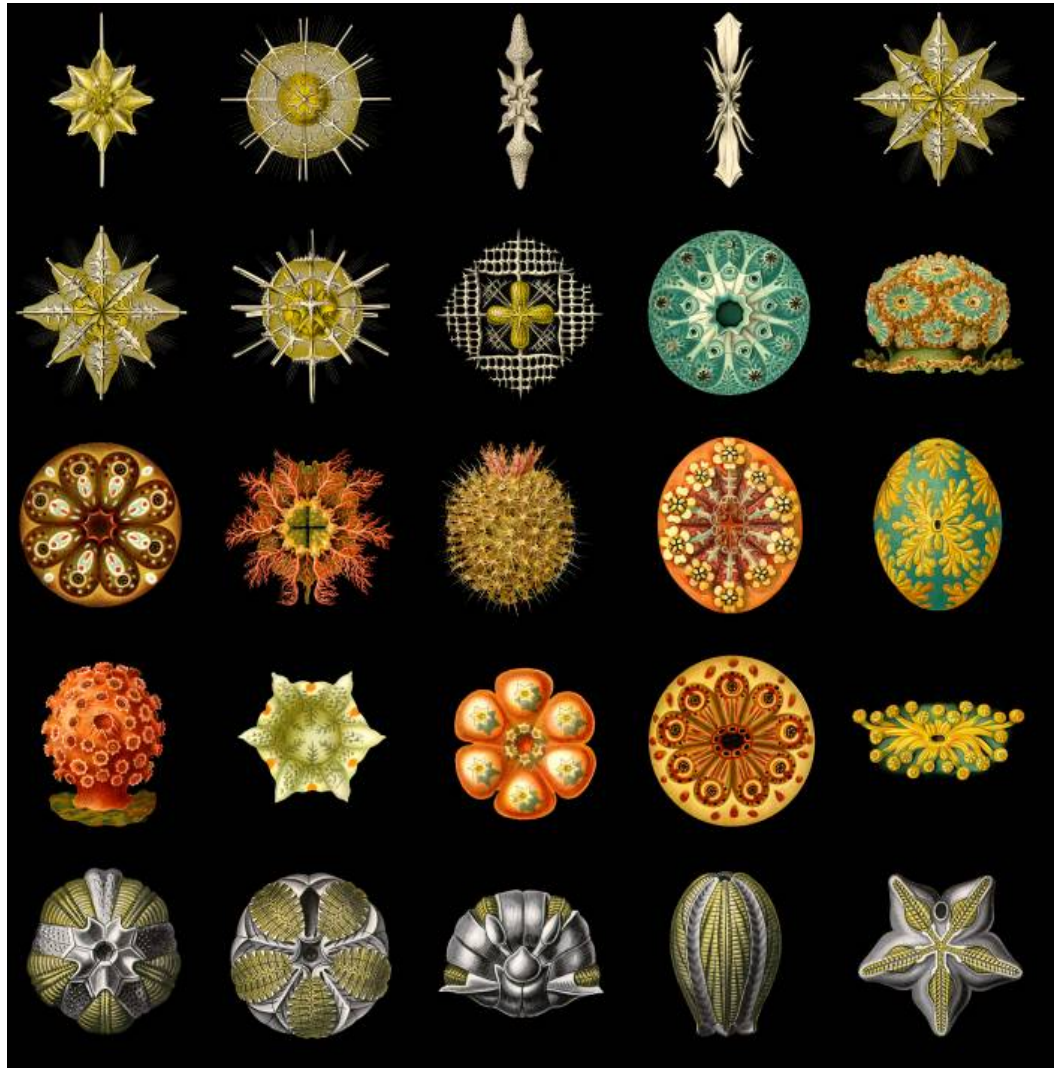


**Symmetry in biology** is the balanced arrangement of body parts or shapes around a central point or axis. That is, the size, shape, and relative location on one side of a dividing line mirrors the size, shape, and relative location on the other side.

*Symmetry* essentially reflects *order*. Despite the fact that there are infinitely more ways to construct an asymmetrical body than a symmetrical one, few organisms exhibit an asymmetrical body plan. Bilateral symmetry is so common— fossil evidence showed it had taken hold in animals as early as 500 million years ago—that many scientists think that it cannot be a coincidence. Scientists also recognize that an object's symmetry relates to its aesthetic appeal, and that we are particularly attracted to symmetry.

In biology, symmetry is approximate. For example, leaves, while considered symmetric, will rarely match up exactly when folded in half. Furthermore, symmetry may refer only to the external form and not the internal anatomy.

The book *Art Forms of Nature* by Ernst Haeckel, was "not just a book of illustrations but also the summation of his view of the world." The over-riding themes of these works is symmetry and organization. The subjects were selected to embody organization, from the scale patterns of to the spirals of to the perfect symmetries of jellies and microorganisms.



# S Y M M E T R Y R E V I E W Q U E S T I O N S



1. Is symmetry perfect in nature?
2. What was Haeckel's goal producing his *Art Forms in Nature*?
3. What is the most common form of symmetry?
4. Are humans symmetrical?
5. In terms of symmetry, how is our insides different from our outsides?

