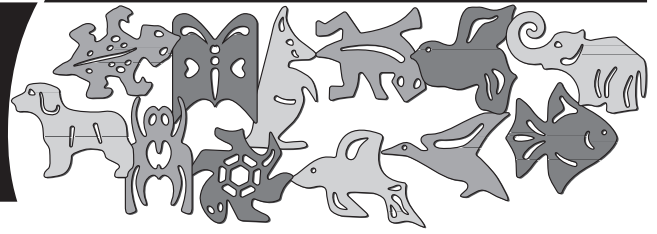


No. 5863

Tessellations Animal Stencils



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Learn about tessellations, symmetry and patterns with Tessellations Animal Stencils! Each stencil is cleverly designed so that it can be repeated over and over again. We've removed sharp points so there are tiny gaps, but for the most part, the stencils are a fun and authentic way to introduce patterns to young children.

A tessellation is created when a shape is repeated over and over again to cover a flat surface in a symmetrical way without any gaps or overlaps. The art of tessellation began with stonemasons using small stone cubes to make-up "tessellate", the mosaic artwork that formed the decorative patterns on floors of ancient Roman buildings. M. C. Escher (1898-1972), a Dutch mathematician and artist, created unique designs and extended tessellations into works of astonishing and puzzling beauty. Known as the Father of modern tessellations, Escher designed 137 superbly crafted tessellations. For more information, research Escher on the Web or at the library.

We've created 12 tessellation designs in five categories of animals. Discuss the categories with your students. Here are quick definitions along with the designs we've created:

Mammals have a four-chambered heart that pumps warm blood throughout the body which is generally covered in hair. Milk is produced in the mammary glands and infants are nursed. We've created designs for the elephant, dog and kangaroo.

Reptiles are cold blooded and have a three-chamber heart. Their skin is covered in scales or plates. Young are hatched from eggs. Our two reptile designs are the turtle and gecko.

Birds are warm blooded and covered in feathers except their legs and feet. Their forelimbs are wings. Young are hatched from eggs. The dove and stock represent bird tessellations.

Fish are cold blooded, live in the water and breathe through gills. They have a backbone. Young are hatched from eggs. Our angel fish and flying fish represent the fish category.

Amphibians are a class of animal between fish and reptiles. Young are born underwater and have gills. Adults have lungs and live entirely or partly on land. The salamander is our tessellation design.

Insects and spiders are the last category. Neither insects nor spiders have lungs and both are cold

blooded. Our butterfly is typical of an insect in that it has wings and three body parts. Most insects have antennae and two legs. The spider has eight legs and four eyes.

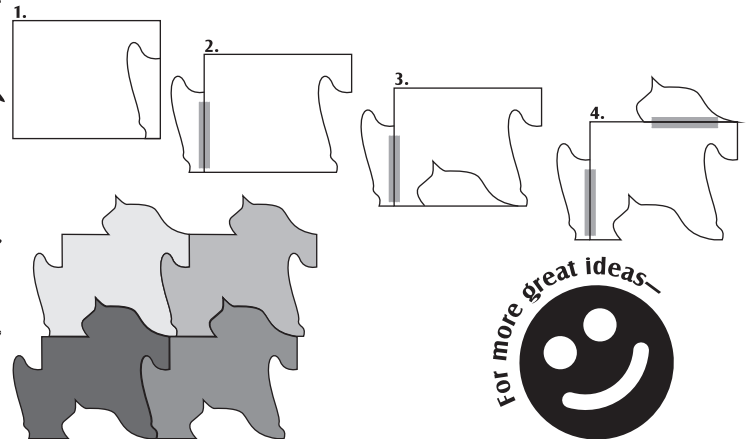
Activities:

1. Discuss patterns with your students. A pattern is an orderly sequence of repeated or complementary elements. Use the stencils to make patterns. Choose one of the animals and trace the outline on a large sheet of paper with crayons, marker or pencil crayons. Move the stencil so it "interlocks" the first outline and retrace. Continue tracing the stencil until the entire sheet is covered. Once you have your outline pattern, students can color in each animal according to an overall scheme or make each one unique.

2. Further explore patterns with a group project. Group your students in 4, 6 or 8. Tip: The whole class can work on this project. Choose one stencil for each group. Working independently, each student traces and colors in their animal. Once complete, students cut out their animals. As a group, arrange and rearrange the individual elements to create a pleasing pattern. Tip: You can turn this activity into a giant puzzle by laminating the individual designs before cutting them out.



3. Create your own tessellation designs! Start with an index card. Cut out a section from one of the short sides and tape it on the opposite side in the same position. Cut a shape from the bottom of the card and shift its position before taping it to the top of the card. Trace your "stencil" onto a large sheet of paper, move it so it interlocks with the first outline and retrace. Continue shifting and tracing until the entire sheet is filled in.



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