

Form factor



Form factor is a game of modeling complex figures with basic shapes in teams' communication and cooperation. The aim of the game is to fill in a complex figure as much as possible without going outside the lines by combining simple shapes made available in advance. A collective vote at the end of the practice defines the winners.

Printable resources attached: complex shapes x 8, simple patterns x 60.

Additional material needed: scissors, watch

Total Duration: 15 min.

Player count: 4 teams

Learning objectives



Modeling



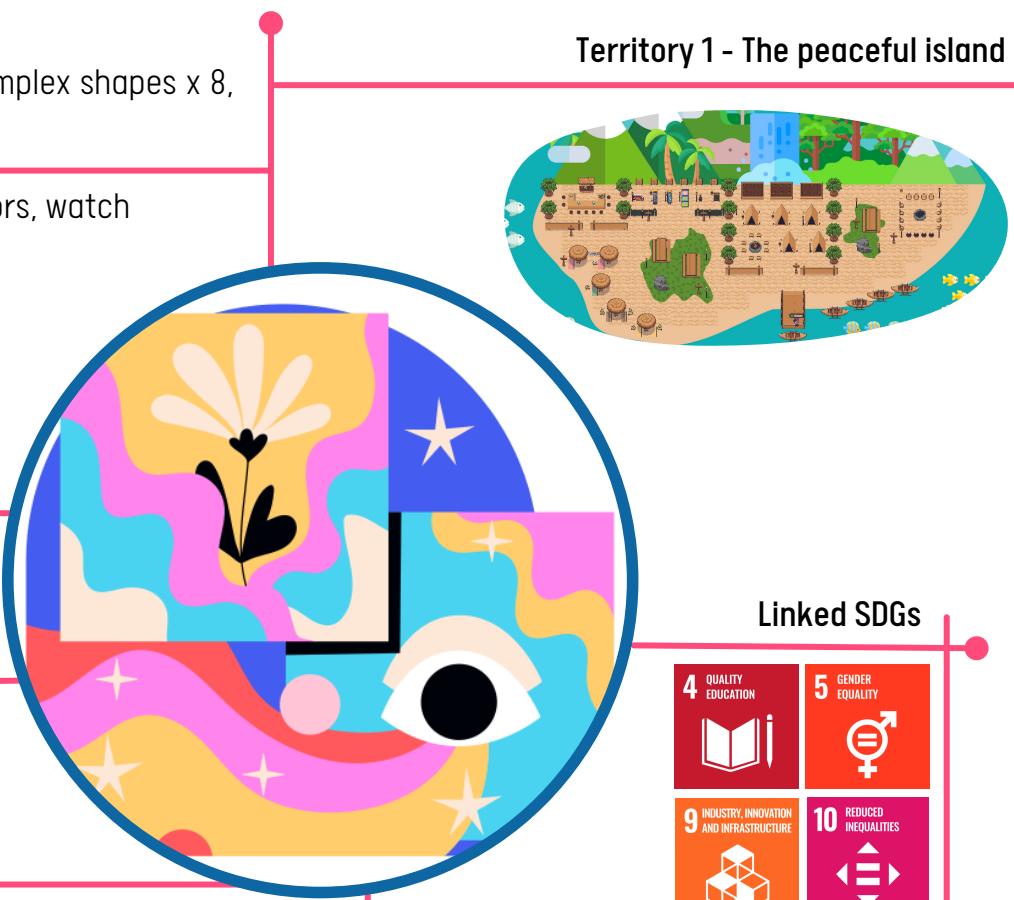
Understanding the representations of the world and human activity



Representing



Understanding the relationship between object and space



Territory 1 - The peaceful island



Linked SDGs



4 QUALITY EDUCATION

5 GENDER EQUALITY



9 INDUSTRY, INNOVATION

AND INFRASTRUCTURE



10 REDUCED INEQUALITIES

Game modalities

6 - 8 years old

indoor

in the classroom

work in group

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Pedagogical interest and topics targeted

Develops analytical ability: identification of patterns, projection and realisation of shapes and patterns' combinations. Computational skills and critical thinking are both founded on developing the ability to analyse information. The Form factor game enhances analytical and abstraction skills, allowing children to build strategies in arranging a figure.

Visual thinking and geometry: Visual memory is improved by fostering children's visual/spatial thinking. It prepares children in processing diverse knowledge, assisting efficient processing of complex or potentially confusing information.

Improves dexterity: children's fine motor skills are developed. The term 'fine motor' refers to the small muscles of the body, such as the fingers, hands, tongue, toes and eyes. Fine motor skill is the ability to control these fine muscles - especially in the hands and eyes - to accomplish movements and tasks. In early childhood, kids need to develop holistically, which includes physical, intellectual (cognitive), social and emotional development. Both fine and gross motor skill development is important because academic success relies on a child having good control of their muscles. They need a strong core and good posture to sit at a desk without tiring, eye muscles that can track while reading, a good pencil grip and finger control to form letters when writing, and lots more. In their attempt to fit the simple forms provided in the Form factor game on a complex figure, children develop their fine motor skills and precision, learning at the same time to perform fast.

Improve one's speed: be faster in thinking and executing. The Form factor game is a competitive one and suggests time in performing it within teams. Improving speed in tasks performed increases the efficiency of attentional resource allocation in young adults. Processing speed is one of the main elements of the cognitive process, which is why it is one of the most important skills in learning, academic performance, intellectual development, reasoning, and experience. Processing speed is a cognitive ability that could be defined as the time it takes a person to do a mental task. It is related to the speed in which a person can understand and react to the information they receive, whether it be visual (letters and numbers), auditory (language), or movement. In other words, processing speed is the time between receiving and responding to a stimulus.

In addition, most kids don't have the cognitive skills to organize their schedules independently until middle school. Processing speed enhancement is very much related to early adoption of time management skills. Teaching children how to plan and prioritize their time at an early stage will prepare them to be more efficient in their professional development and benefit better from their leisure activities.

Cooperate: work with a partner or a team to make a better art piece! Working in teams within the Form factor game introduces to children the opportunities and challenges of cooperation - expressing ideas, accepting and justified rejection of other ideas, and working under a time constraint.





Game rules

Game narrative

In Form Factor, children fill in / create a complex figure using simple smaller shapes. It develops their creativity and combinatorics!

This is a cooperative game in which players make their most beautiful fillings together.

Role of the teacher and game organisation

We will call the children, **players**, and the adult in charge or child elected, a **referee**.

The referee decides the duration of the game.

Installation:

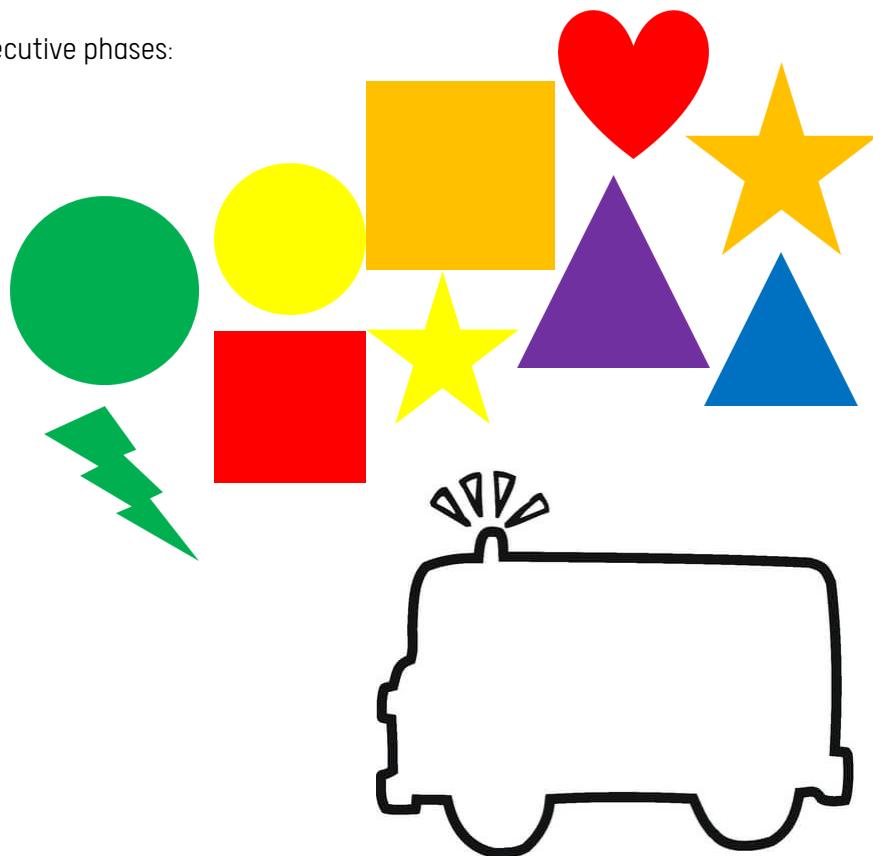
Place all simple patterns in the middle of the players.

The referee chooses the complex shape to fill, possibly after having consulted with the players.

Game rules:

Each game turn is made of three consecutive phases:

- Team assembling phase
- Artistic creation phase
- Competition phase





Game rounds

Round 1 - Team assembling phase

During this phase, players with the help of the referee divide into up to **4 teams as balanced as possible**.

The referee then gives each team a page with one of the **4 complex shapes chosen** (the same for all teams).

Round 2 - Artistic creation phase

During the artistic creation phase, all players of all teams **fill their complex shapes at the same time**. Players are free to choose **how to make the filling**, as long as they stack simple patterns on the complex shape. They can use their full creativity and stack as many (or as few) simple patterns as they want, to **create new patterns, shapes and colours**. This phase has a duration fixed and known in advance.

Round 3 - Competition phase

During the competition phase, **teams share their figures and a collective vote** is organized by the referee. Each player votes for the team that has:

- filled the shape as **cleanly** as possible (fewer gaps or protrusion)
- done the most **creative** or **artistic** filling

Votes are individual. The teams no longer truly exist, only in terms of voting.



Going further



Topic 1 - Analytical and visual skills

To train further children in developing their analytical and visual thinking you may wish to refer to other Unplugged games, among which: **Memory, Good ways, Farm in the City, Plastic continent, etc.**

To read more about the importance of enhancing analytical and visual thinking skills you may see <http://www.xplaner.com/visual-thinking-school/>



Topic 2 - Dexterity and Fine motor skills

To train further children in developing their dexterity and fine motor skills you may wish to refer to other Unplugged games, among which: **Good ways, Pop-up city in the Future, Dr. Hanoi, etc.**

To read more about the importance of developing fine motor skills you may see <https://empoweredparents.co/why-are-fine-motor-skills-important/>



Topic 3 - Processing speed & cooperation

To train further children in developing their processing speed and cooperation you may wish to refer to other Unplugged games, among which: **Brainstorming, Fantasy out there, Poverty-free game collection, etc.**

To read more about the processing speed and its relation to personal development you may see <https://www.cognifit.com/science/cognitive-skills/processing-speed>

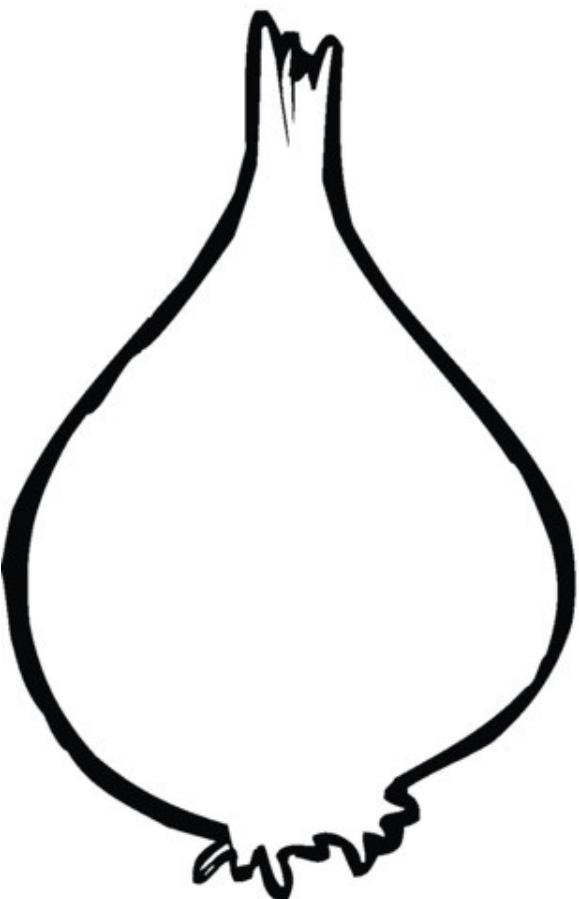
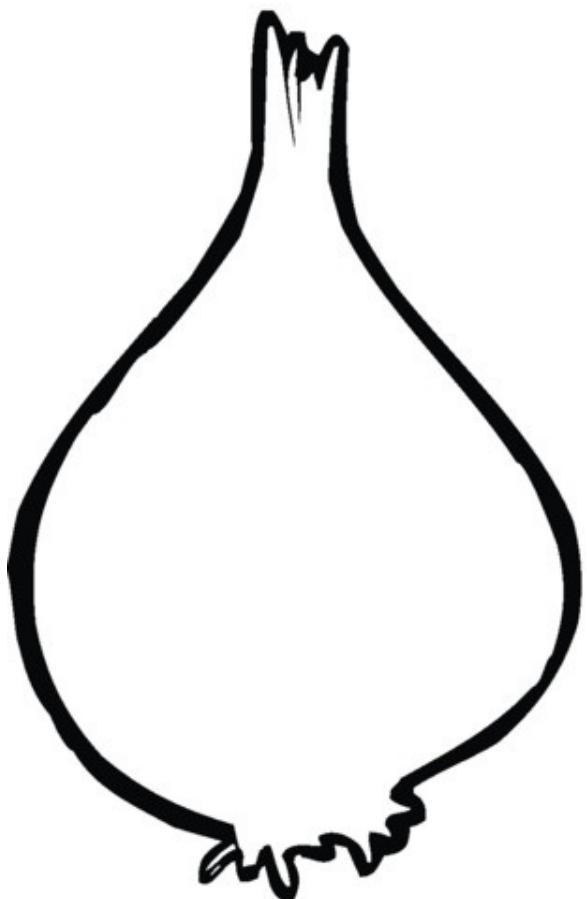
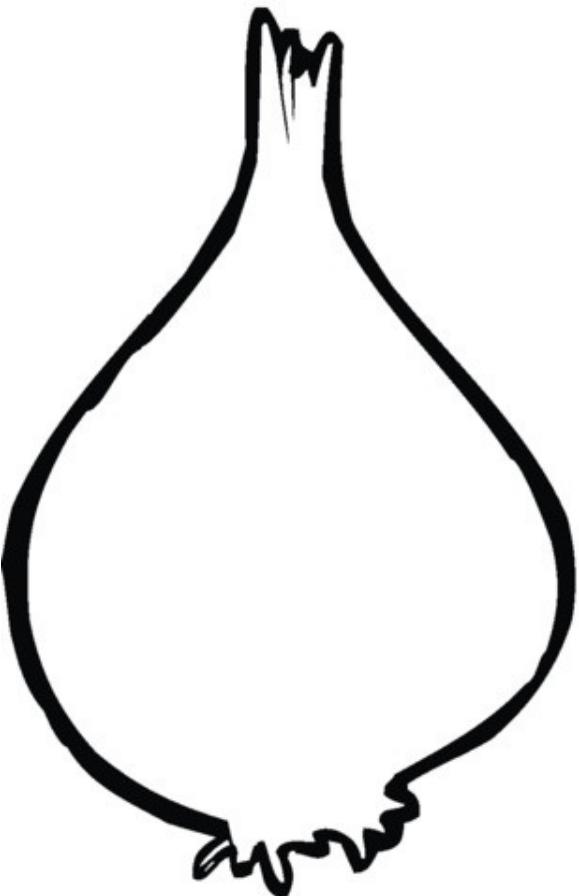
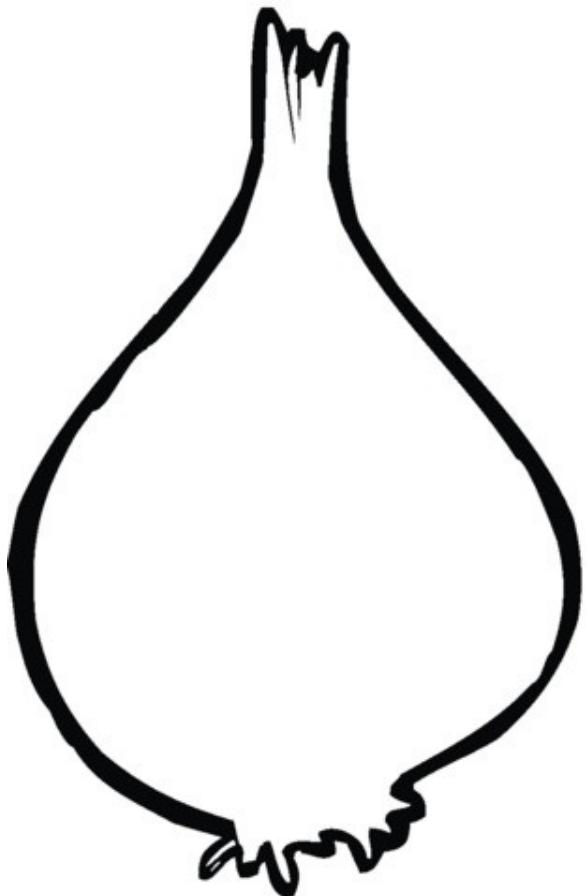
To read more about the time management for children and its relation to personal development you may see - <https://www.scholastic.com/parents/family-life/parent-child/teach-kids-to-manage-time.html>



Printables

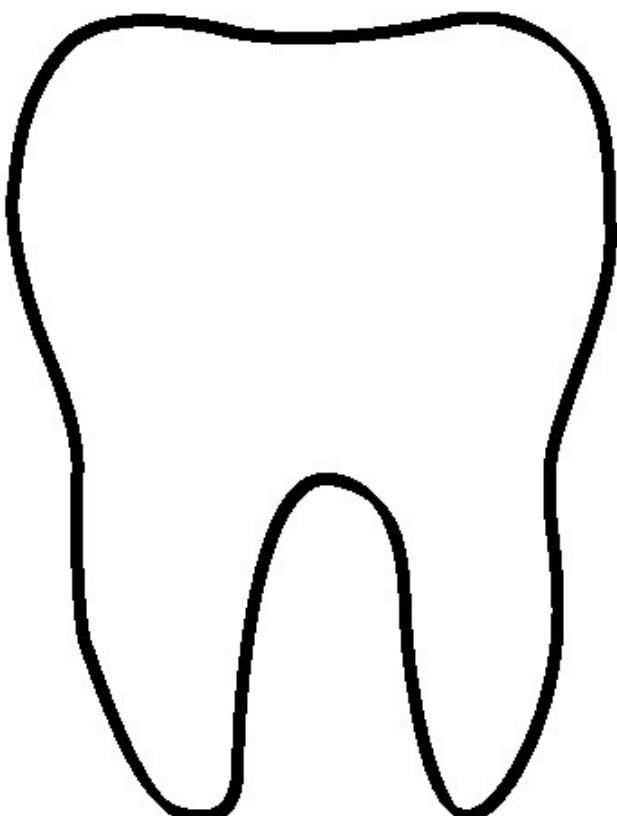
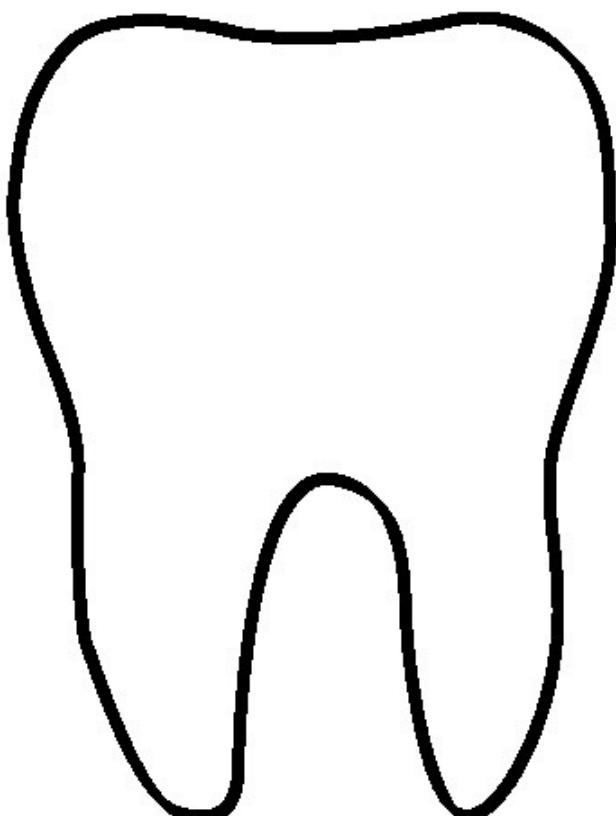
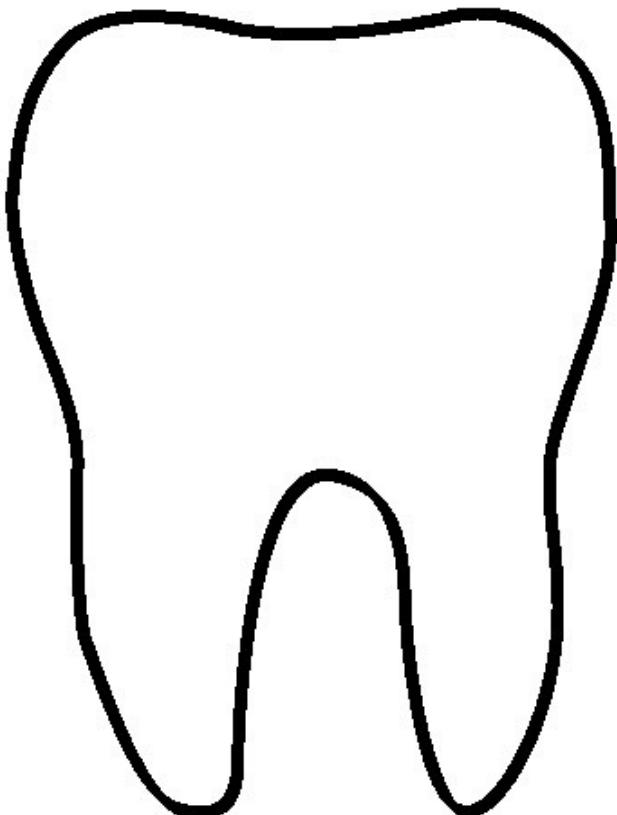
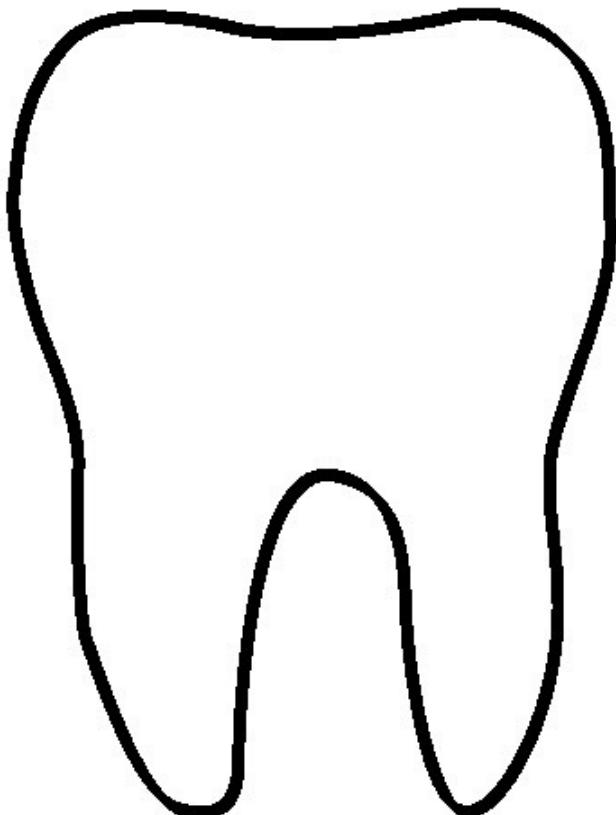


Complex figures



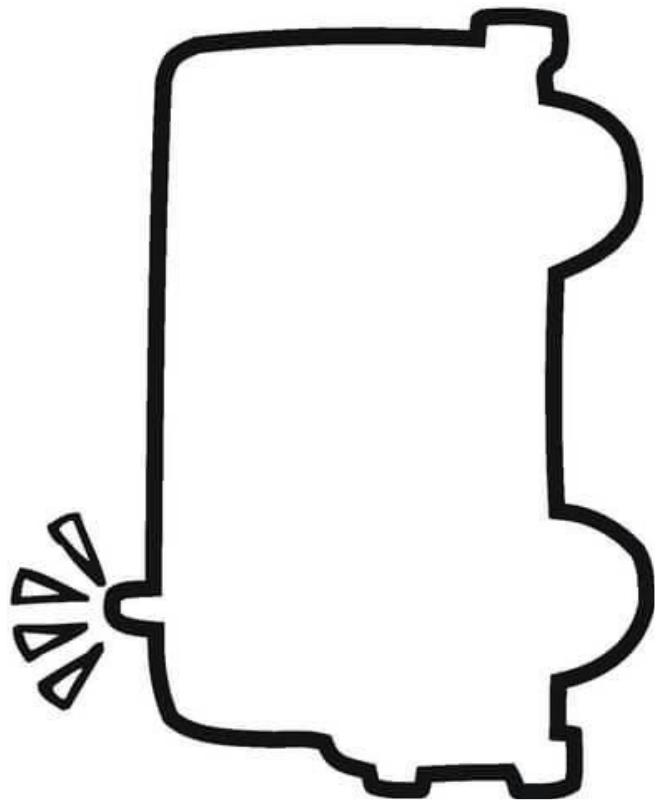
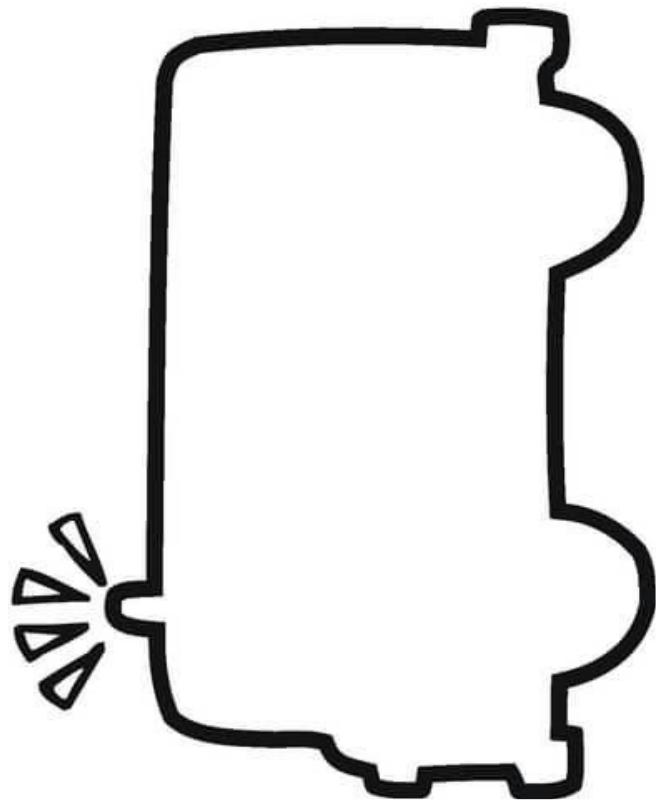
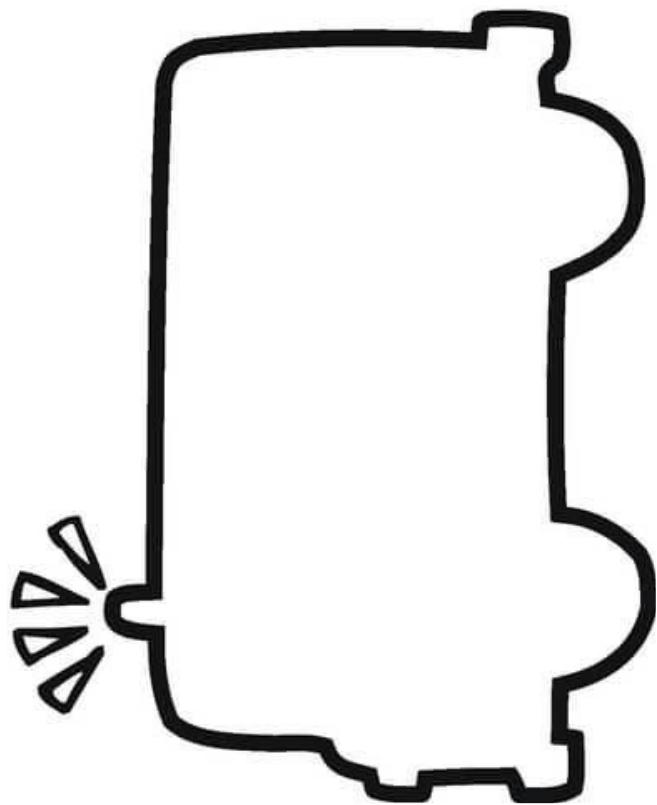
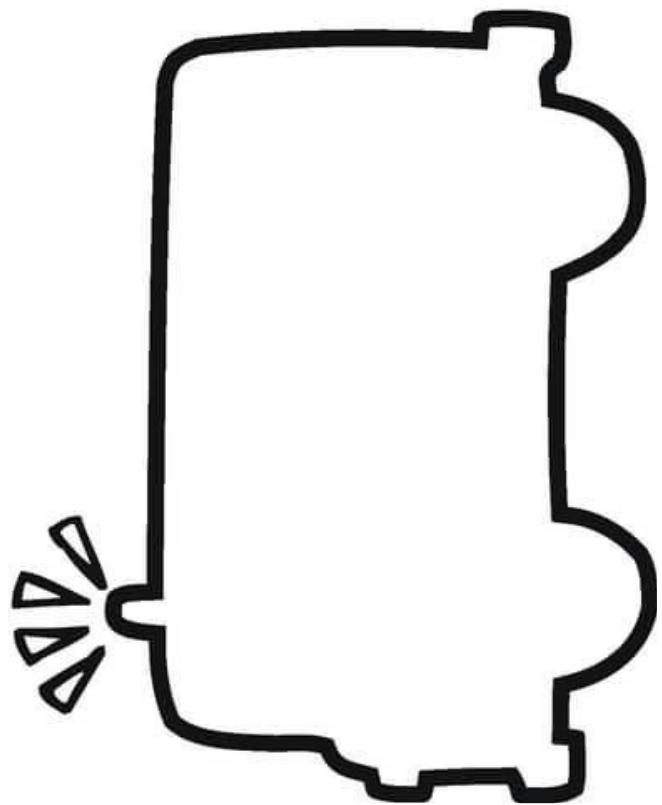


Complex figures



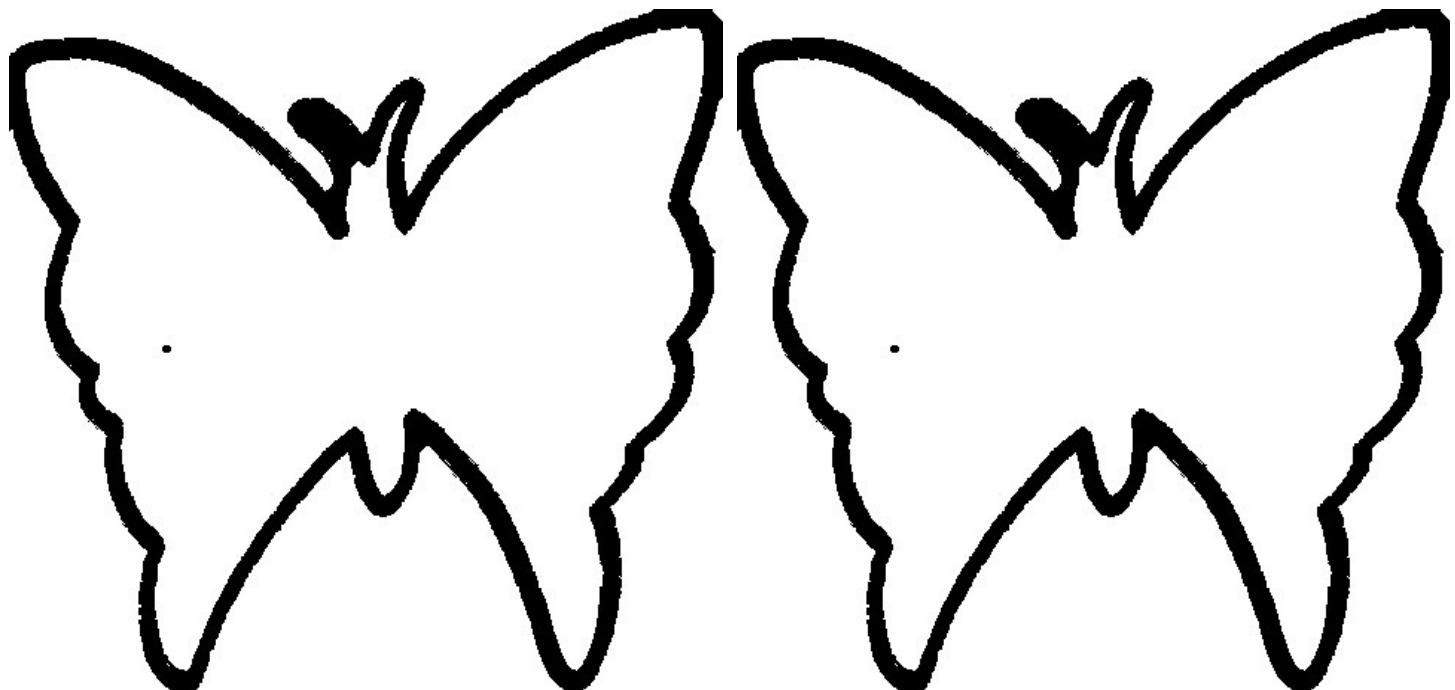
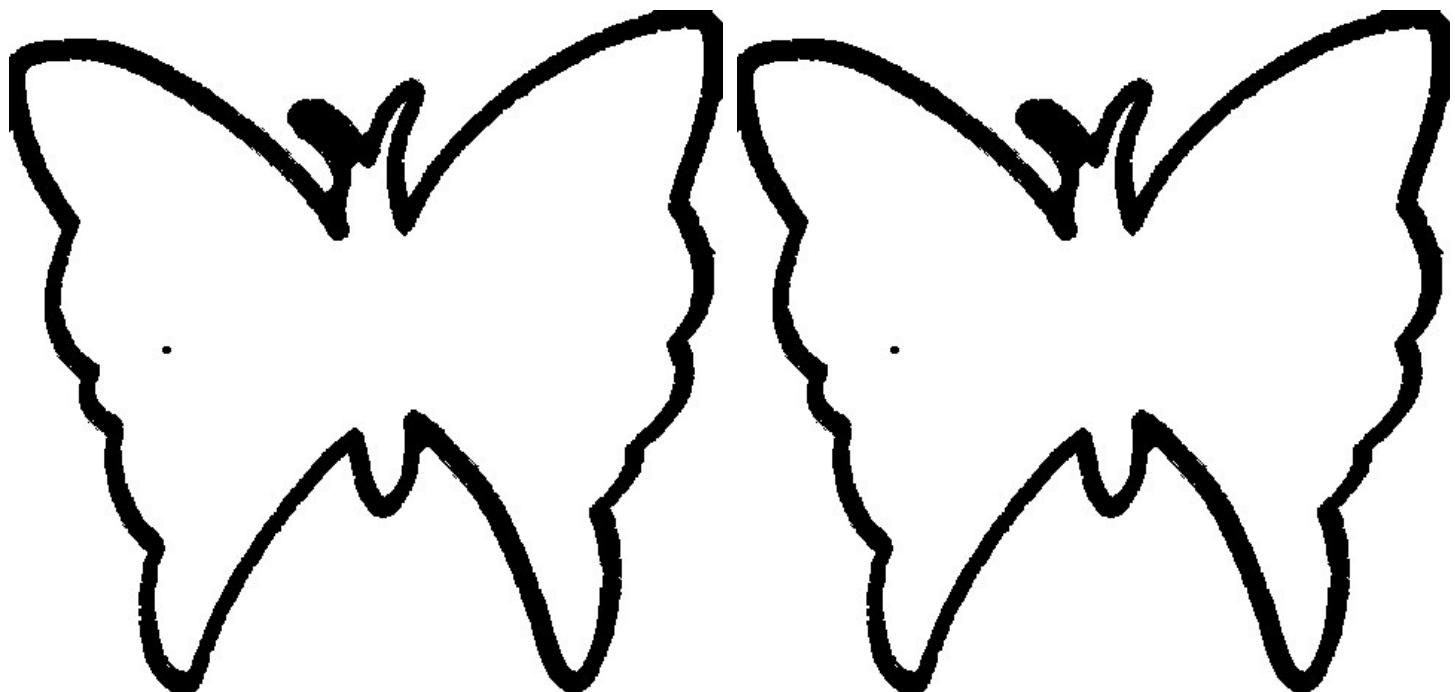


Complex figures



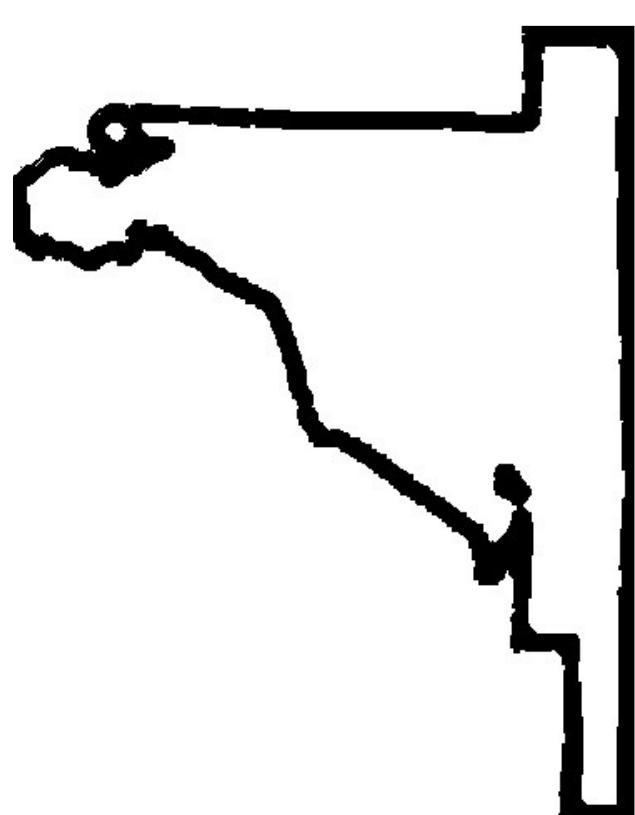
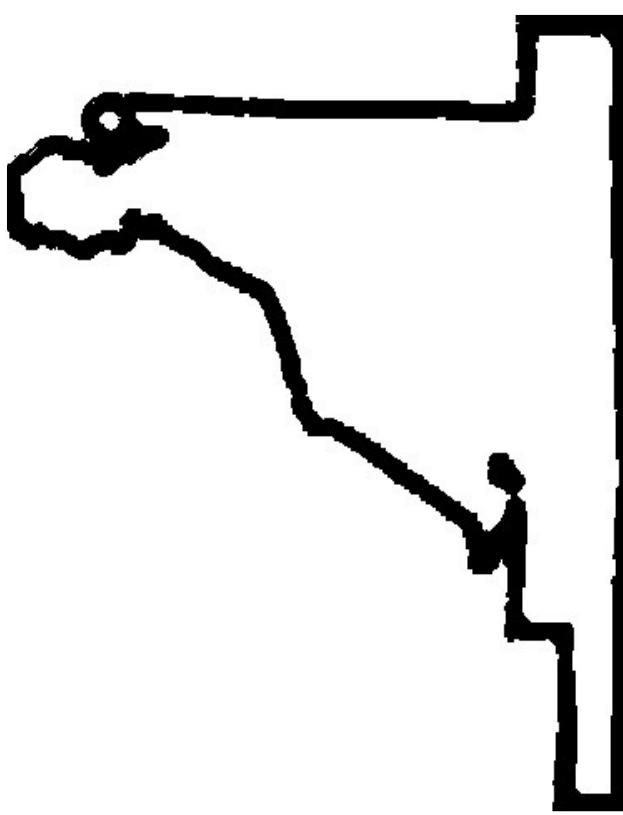
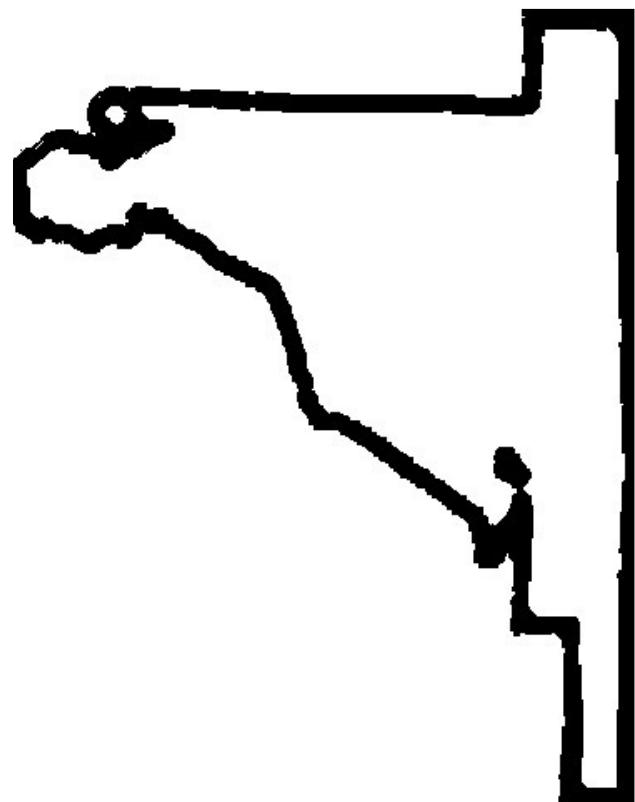
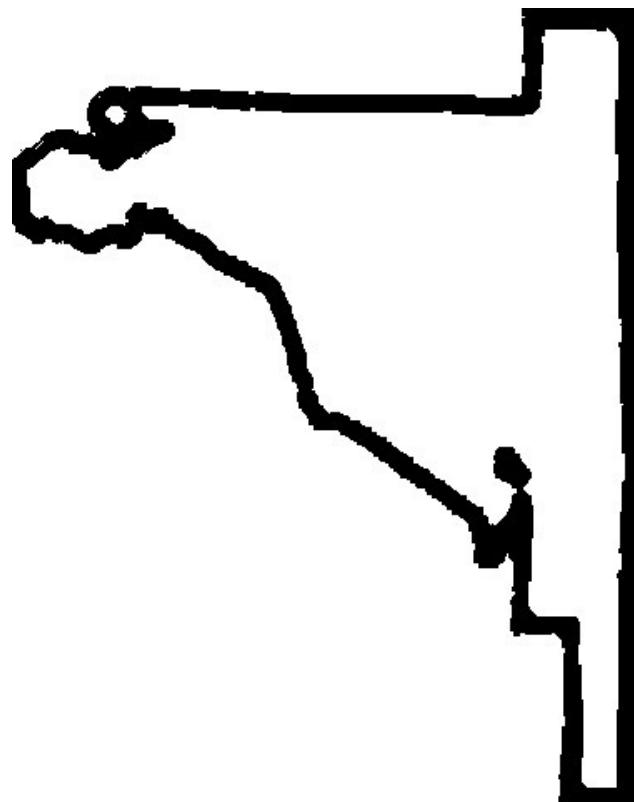


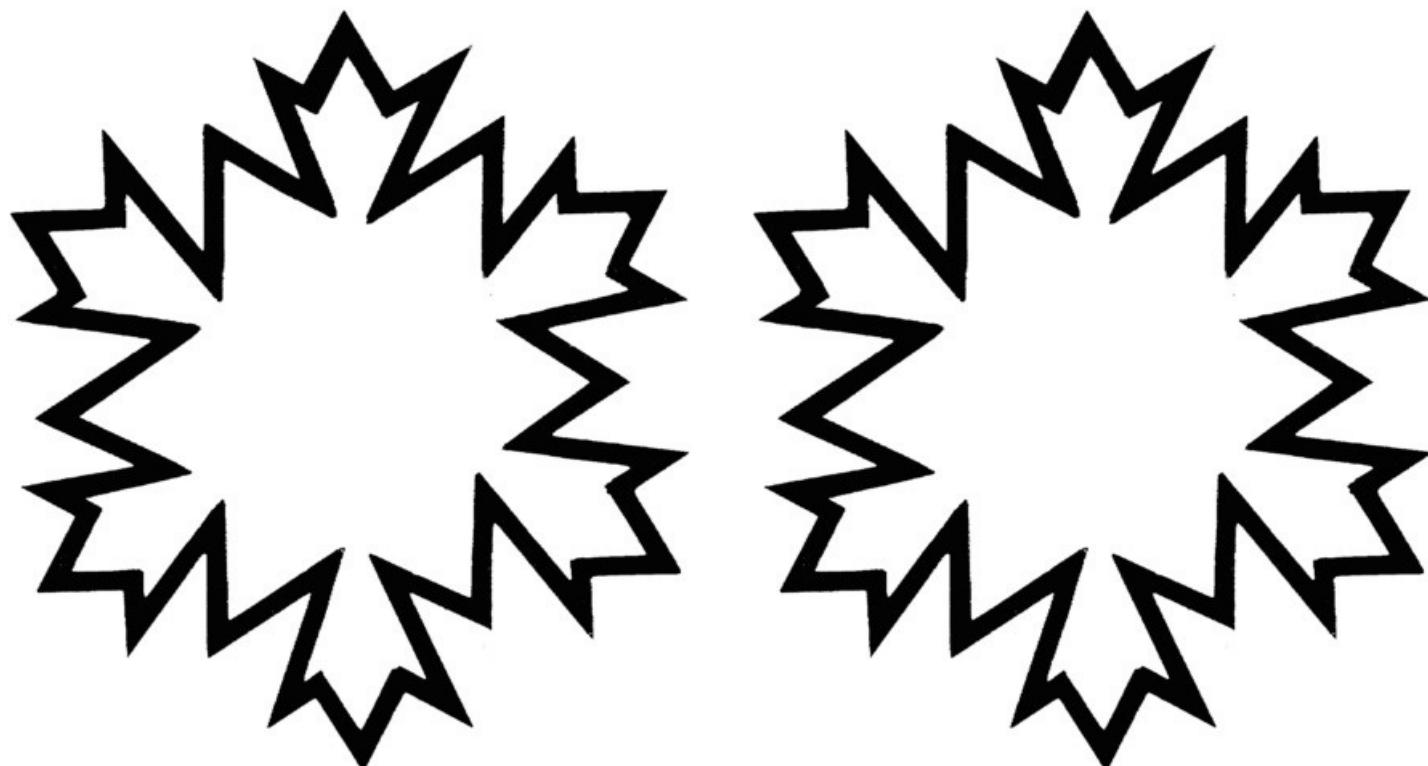
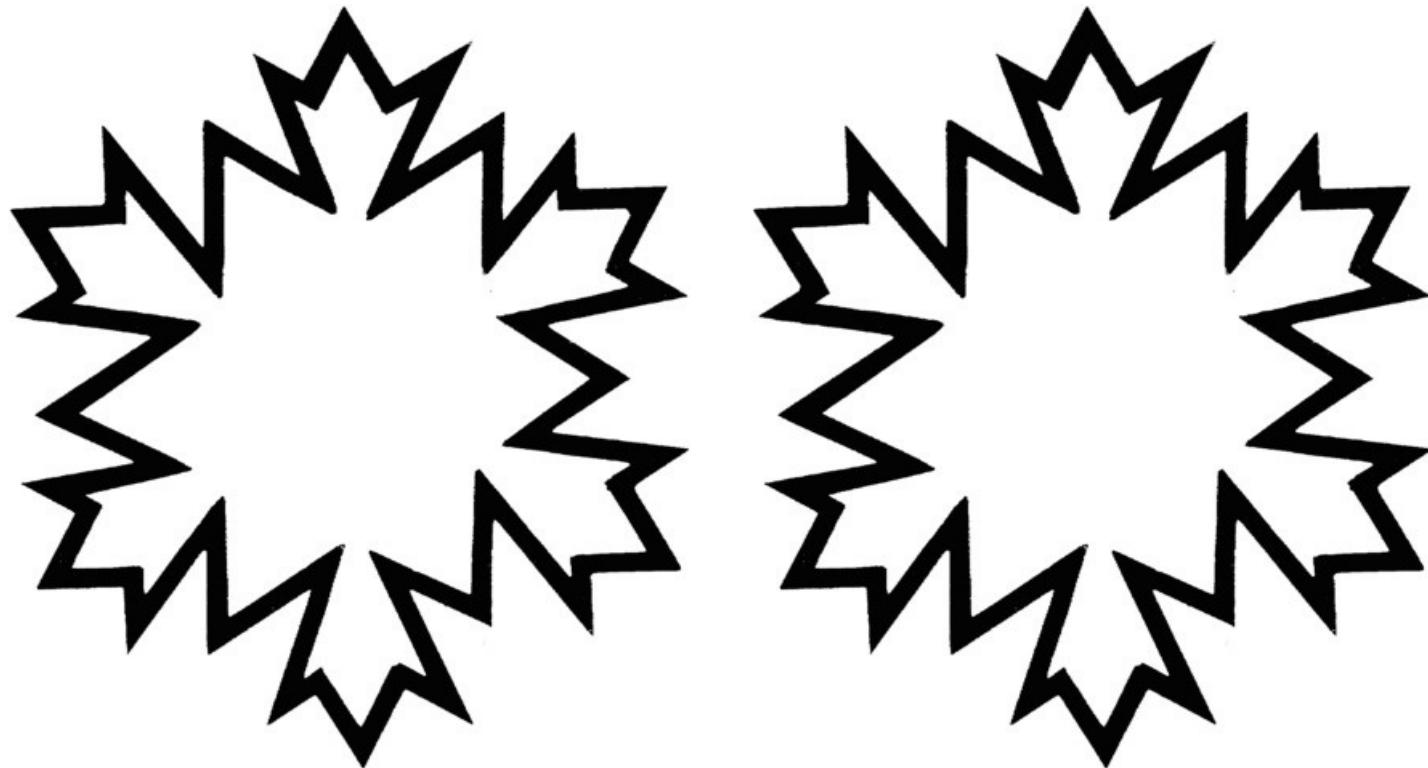
Complex figures





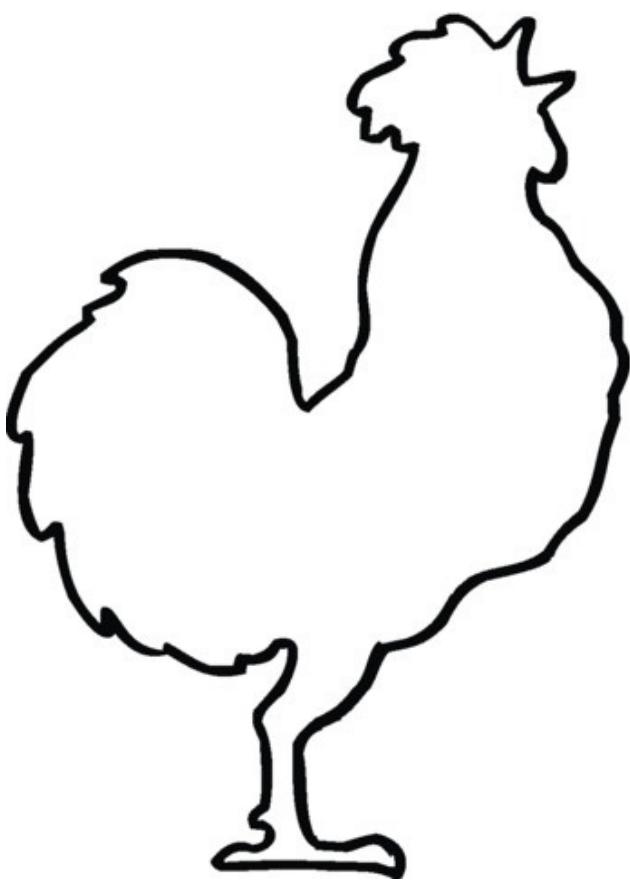
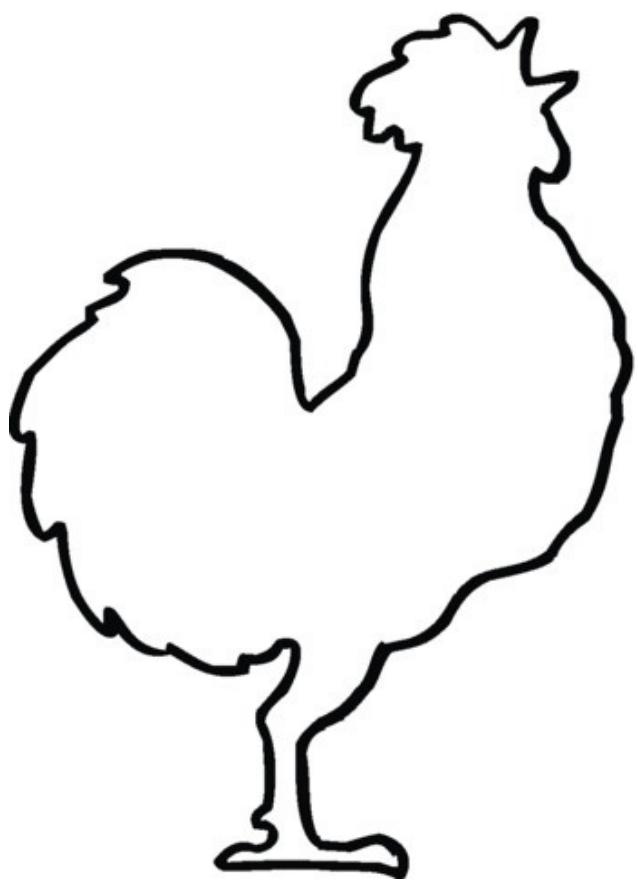
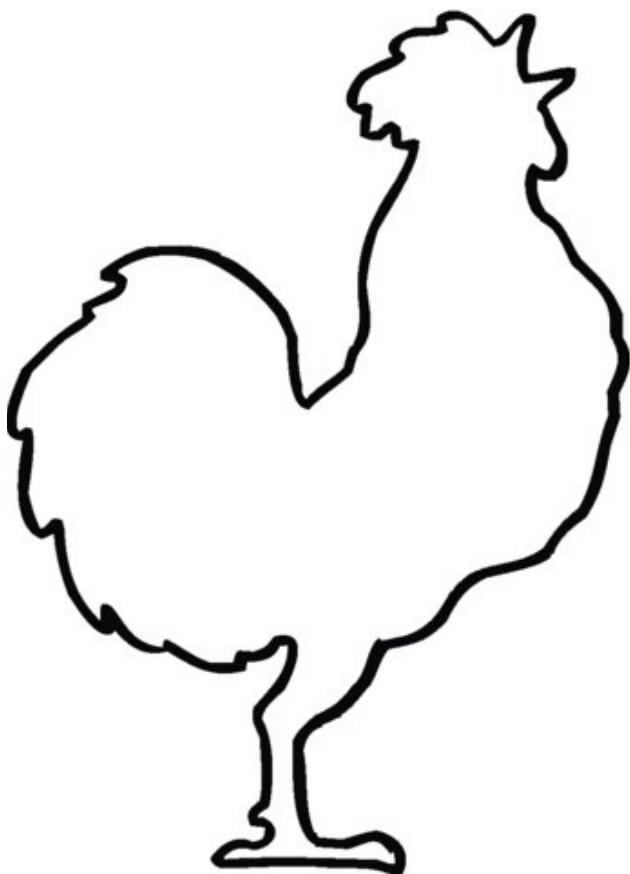
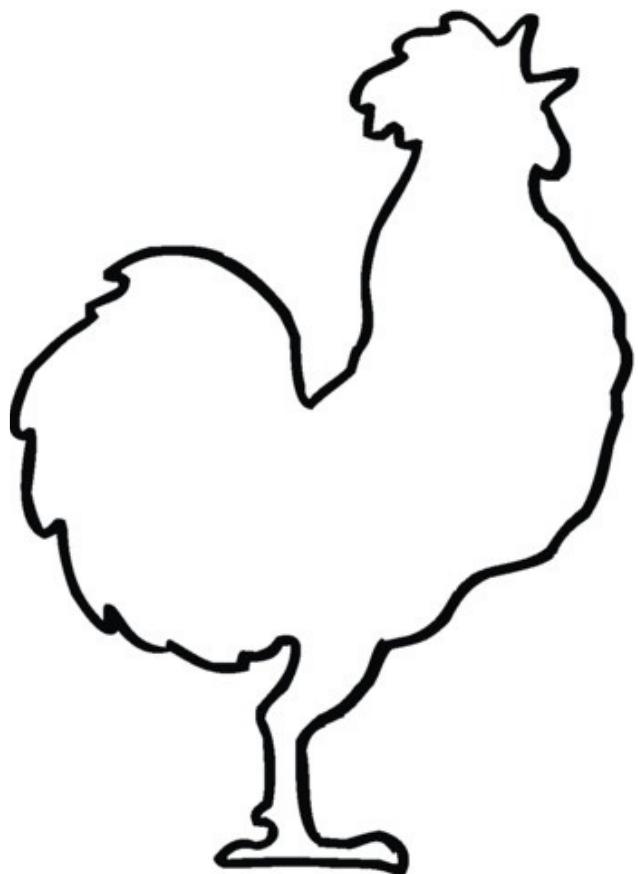
Complex figures







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