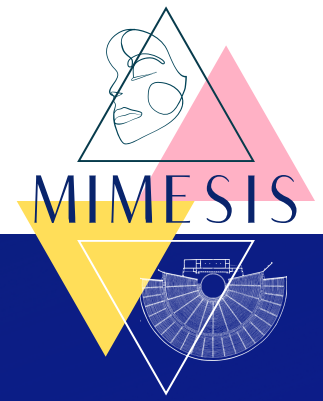


# Teacher's card



## STEAM YOUR BODY

### Learning objectives

Logical thinking & Reasoning

Symmetry & Geometry

Spatial location

Speaking & Listening

### Modalities of the activity

7- 12 years old

In the classroom

Group work

### Materials needed

- Tape
- A rope
- A measuring tape / ruler
- A stopwatch



### Printable resources attached

- Symmetrical images to be reproduced
- Dot grid



### Acts

Act 1: Mime my symmetry

Act 2: Geometrize yourself!

Act 3: The battle of geometrical figures

Act 4: Finger choreography

Act 5: Fingers Kaleidoscope

### Difficulty and targeted school level

Easy

Primary





## Summary of the activity

The 'STEAM YOUR BODY' activity is a comprehensive and engaging approach to teaching math to primary school children. It combines physical movement, creativity, collaboration, and self-expression to enhance students' understanding and engagement with symmetry and geometry.

The activity is structured like a game, with five different activities that build upon each other. Each activity focuses on a specific aspect of symmetry and geometry, allowing students to explore and deepen their understanding. By participating, students develop their math knowledge and scientific intuition through movement.

The activity is divided into 5 acts, that are complementary but can be used individually to illustrate a specific topic of the math course:

- The first activity focuses on **symmetry**. Children learn about symmetrical shapes by mimicking them. This helps them understand symmetry and its importance in different contexts. They also develop spatial awareness and coordination.
- Building upon the first activity, children are challenged to **create and mime their geometric figures**. This promotes reflection, imagination, and collaboration. By proposing their figures to the class, students enhance communication and collaboration skills while exploring spatial awareness.
- Next, students engage in a cooperative **competition** to apply their knowledge of symmetry and geometric figures. They work in teams to create a project that promotes teamwork, communication, and organization.
- The fourth activity introduces **choreography**. Students imagine and create a finger choreography set to music, developing creativity, agility, and idea exchange. They collaborate to create a cohesive and synchronized structure.
- The final activity consolidates understanding through a **hand choreography that incorporates math concepts**. Students present their choreography to the class, accompanied by their own sets and music. This activity nurtures creativity and introduces the concept of the kaleidoscope.

Overall, 'STEAM YOUR BODY' offers an interactive approach to learning math. It combines movement, creativity, collaboration, and self-expression to solidify understanding and update knowledge in a hands-on way. By embodying geometric figures and interpreting them, students engage both their minds and bodies, resulting in a deeper understanding of symmetry and geometry.





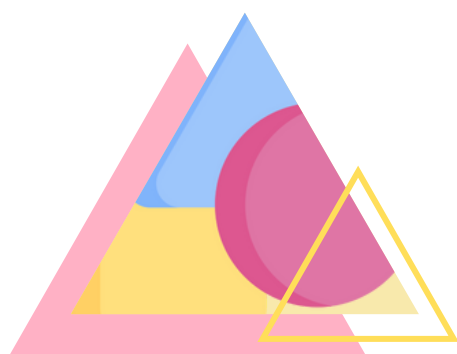
## Sequencing the activity



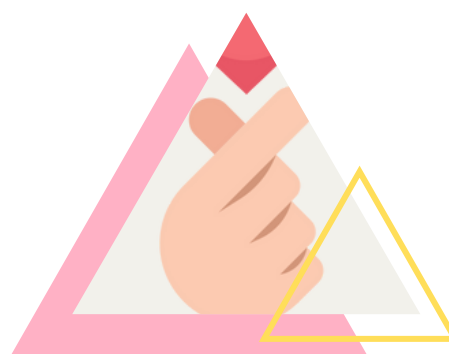
ACT 1: MIME MY SYMMETRY



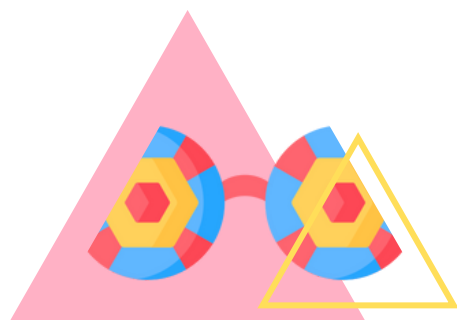
ACT 2: GEOMETRIZE YOURSELF!



ACT 3: THE BATTLE OF GEOMETRICAL FIGURES



ACT 4: FINGER CHOREOGRAPHY



ACT 5: FINGERS KALEIDOSCOPE



## Summary of the activity - Act 1: Mime my symmetry!

*In class, the teacher invites students to think about symmetry. He explains that they are going to create symmetry with their bodies. To do this, they free up space in the classroom, or they can go outside.*

**TEACHER.** - Form groups of 3 people in which one pupil will be "A", another "B" and the last one "C".

*While the groups are being formed, the teacher creates a straight line on the floor using rope or tape.*

**STUDENTS.** - *(All in chorus)* Where do we stand?

**TEACHER.** - Pupils A face the line, then pupils B face their classmates. Finally, Student C, you will be the referee, so you stand on the side of your group. Pupil C can take a ruler to check the distance of his two friends from the line on the floor to check for perfect symmetry.

*The students take their places, some laugh, and others wait for the next instruction.*

**TEACHER.** - Pupil A is going to have to think of a movement that he/she has to make with his/her body (mime a cat, a dinosaur, play an instrument, ...). Student B has to do exactly the same thing. The referee will observe if the symmetry between the two students is perfect. Then you switch roles each time.

*The pupils perform the activity with enthusiasm. They practice the art of mime and symmetry with their body movements.*



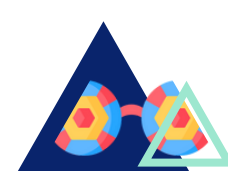
Mime



Duration of the Act :  
15 minutes



Mathematics (spe.  
symmetry)



Observation and  
reproducing

## Phases of activity

- 1 Form groups of 3 students: student A, student B and student C
- 2 Warm up: Do some warm-up exercises, stretching together to wake up the body: face, neck, arm, hand, wrist, torso, legs...
- 3 Put a rope or coloured tape on the floor and place pupils like this:  

<u>Student A</u>		Student C
Student B		
- 4 Let the pupils get to grips with symmetry and mime and accompany them.



## Learning objectives

To understand the mechanism of symmetry, there's nothing like interpreting it physically! This activity is designed to review or consolidate your knowledge of symmetry. The aim is to help students understand, step by step, the issues involved in symmetry and its representation. The use of mime enables students to grasp a theatrical genre, find their bearings in space and become aware of their bodies. Between observation, understanding, reasoning and movement, perfect reproduction is essential. This first activity therefore requires special attention to ensure accurate mimicry.

## Theatrical objectives

In this activity, the pupils will discover a theatrical genre, which is mime. They will be able to identify for themselves its main functions: to act while being mute, to act without scenery or masks, to express themselves physically, all within a limited space. Through this activity, they will become aware that the most important thing in mime is expression, attitude, body movements and gestures. Imitating one's classmate by mimicking what he or she is doing allows the pupils to develop their attention, their ability to observe, to reproduce and to become aware of the other.

## Skills developed

- Applying a mathematical concept
- Knowing how to reinterpret a lesson
- Refine their body language through their body
- Being creative
- Knowing how to find one's bearings in space
- Develop logical reasoning
- To become aware of one's body
- To refine one's observation
- Develop analytical skills



## Draw me ... Geometric and symmetrical drawing

Pupils can be asked to practise symmetry by making geometric animal models in the classroom or at home. Geometric animals are very popular in decoration and are very fashionable at the moment. You can find some simple examples below:

- <http://jeuxremuemeninge.blogspot.com/2019/02/symetrie-animaux-cycle-2-et-3.html>
- <http://cinexavier.free.fr/34AnimauxSymetrieAxialeQuadrillage.pdf>


Once your pupils have made the artwork, you can display them to decorate the classroom and have a souvenir of the activity.

## 1,2,3 .... Action! The mime

To go further, it is possible to make a brief introduction in class with the students on what mime is and explain its origins and then show some example videos:

- <https://www.youtube.com/watch?v=XEsfpRrfXf4>
- <https://www.youtube.com/watch?v=7wBF4t6rly4>

Then gradually, draw up a description of this theatrical genre and the elements that characterise it: silent, several people, alone, in a room, in the street, facial expression, comedy, etc. You can distribute a sheet (see opposite) to your students and fill it in together to keep recording your discussions. You could also mention famous people such as Marcel Marceau or Charlie Chaplin who excel in mime and focus briefly on these two celebrities.

  
**THE MIME :**

- .....
- .....
- .....
- .....
- .....



## Quiet on the set! Action ...

During this activity, it is possible to film the pupils. In this way, they can observe themselves and their interpretations and thus correct the discrepancy between "what I think I am doing" and "what I am doing". It is important to make the pupils aware that symmetry is not just a mathematics chapter, quite the contrary! Symmetry is used for staging, as in this video: [https://www.youtube.com/watch?v=c9UQmAo\\_TM4](https://www.youtube.com/watch?v=c9UQmAo_TM4), it is present in art (in painting), it is also present in nature with the reflection of water for example.



## Summary of the activity - Act 2: Geometrize yourself

During a lesson, the teacher invites the pupils to think about the geometric shapes they know. The teacher gives them some elements and explains that they will have to mime them with their bodies. To do this, they make room in the classroom...

**TEACHER.** - You are going to form groups of 5 people and propose geometric shapes that you know. You can imagine some. Each group, in turn, will make one. They must be perfectly done so that we can guess the geometric shape you are representing.

**STUDENTS.** - (*All in chorus*) But what shape should we make?

**TEACHER.** - You can make, for example, a square, or a rectangle. You have a lot of choices, think about it! Think of all the geometrical shapes you know, and above all, they must be feasible! I leave 5 minutes for each group to decide together on your shapes in a calm environment. Then, you will practice in small groups, then you will present your geometric shape to the whole class in turn. It will be up to us to guess!

*Pupils start whispering to each other, thinking about the shape they want to make and present to the whole class.*



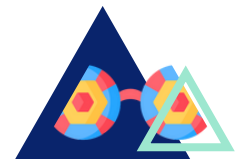
Mime & Interpretation



Duration of the Act : 30 minutes



Geometry Mathematics



Imagination, building, reproducing

## Phases of activity

- 1 Form groups of 5 students.
- 2 Do some warm-up exercises, stretching together to wake up the body: face, neck, arm, hand, wrist, torso, legs...
- 3 Each group of pupils makes the figure on the floor and presents it to the whole class. Without saying anything, the other pupils have to guess the geometric shape.
- 4 Let the pupils choose their geometric shapes. Be a companion, an observer.





## Learning objectives

This activity follows from the first one on mime and symmetry. Now it is time for the pupils to mime geometrical figures to interpret them physically. This activity allows them to update their knowledge acquired in mathematics class since the pupils have to propose figures of their own free will. Thus they will be led to reflect on the geometric shapes they know, learn to exchange and agree within the group, try to imagine the final result and propose it to the whole class to make them guess. The interest here is once again to allow the pupils to learn to find their bearings in space but also to become aware of the potential that their bodies can offer them to be able to mime geometric figures.

## Theatrical objectives

The aim of this activity is to reinforce and update the learning of mime by: playing in silence since this theatrical genre is silent, expressing oneself physically, developing one's capacity for analysis and mental and physical retranscription.

## Skills developed

- Refreshing their knowledge of geometry
- To become aware of their body
- Improving their body language
- Finding their bearings in space
- Being creative
- Communicate within a group
- Be able to retranscribe a mental image

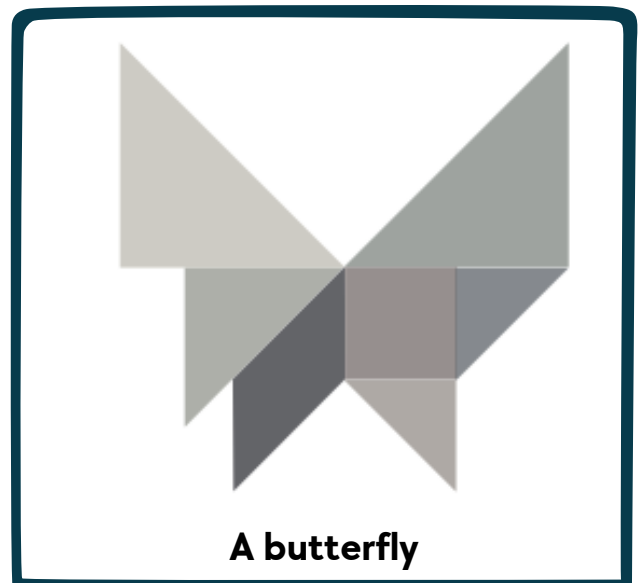
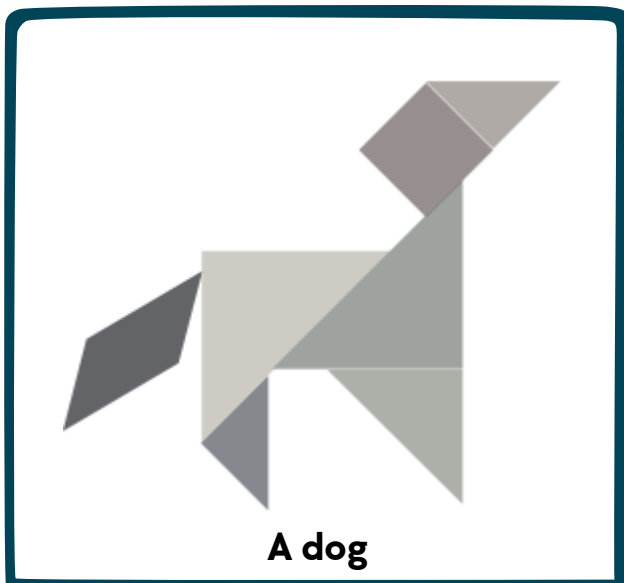


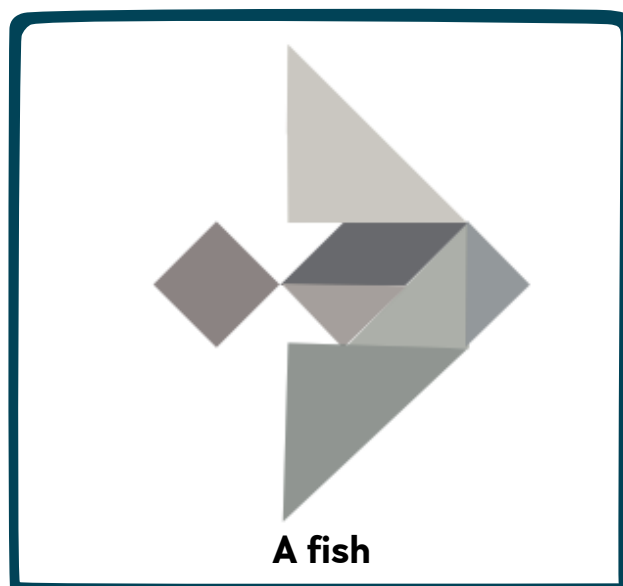
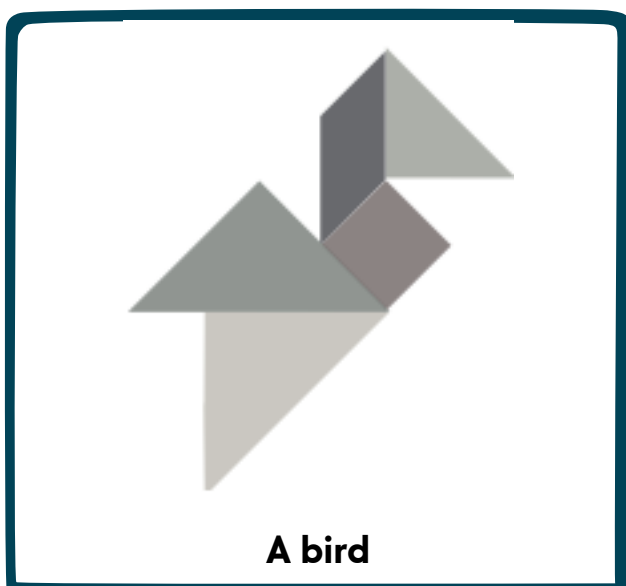
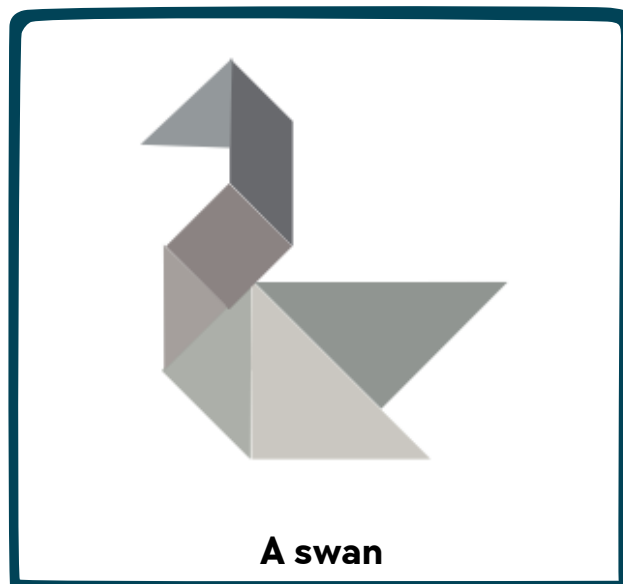
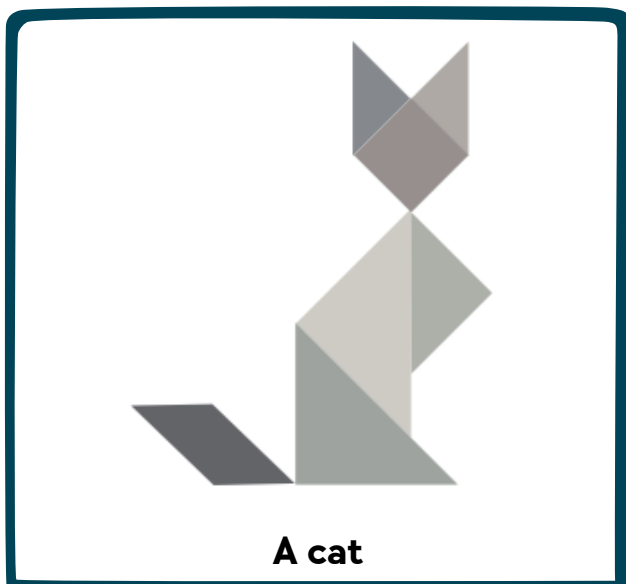
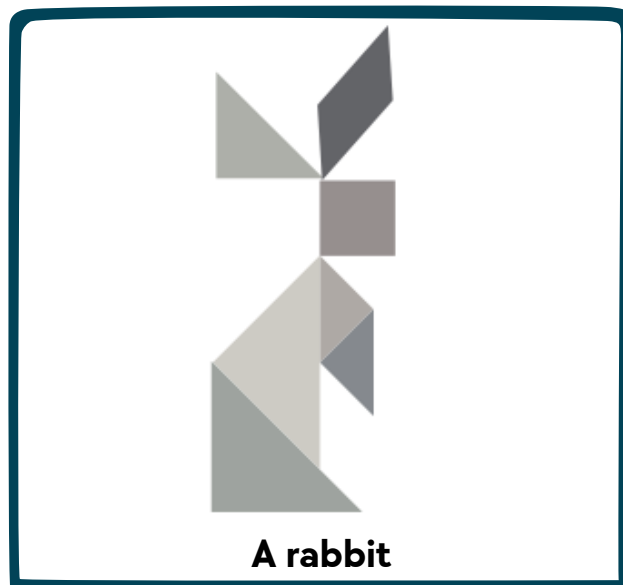
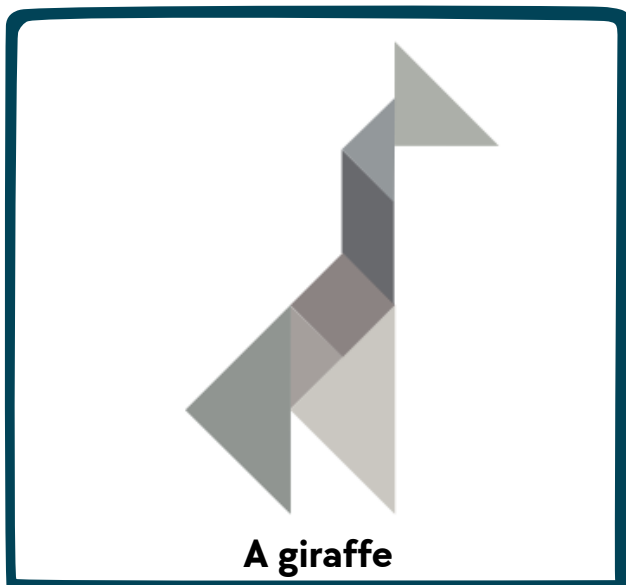
## Tangram: your animal is weird!

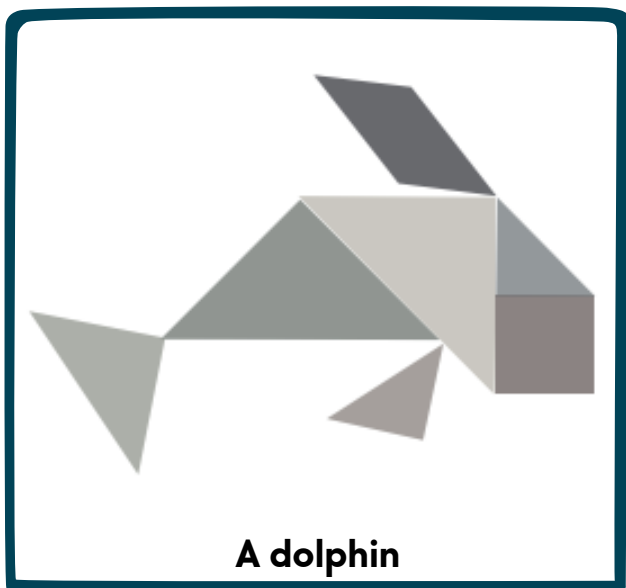
In groups of two, pupils are asked to practice using the tangram by making animals from the models provided. The first pupil makes the figure and the next reproduces it by symmetry (put a ruler on the table to separate the two pupils' tangrams and represent the axis of symmetry). The tangram completes the previous activity, enabling students to understand how geometric figures work by practicing and manipulating them. The tangram is both a puzzle and a brainteaser, with the aim of reproducing a given shape from geometric figures. The only rule is to reproduce the model with all the pieces given, without superimposing them!

This optional activity complements the main activity by getting students to think about problem-solving not with their bodies, but with their hands. It develops children's observation, analysis and transcription skills. For this activity, you can use the "Tangram animal models" worksheet.

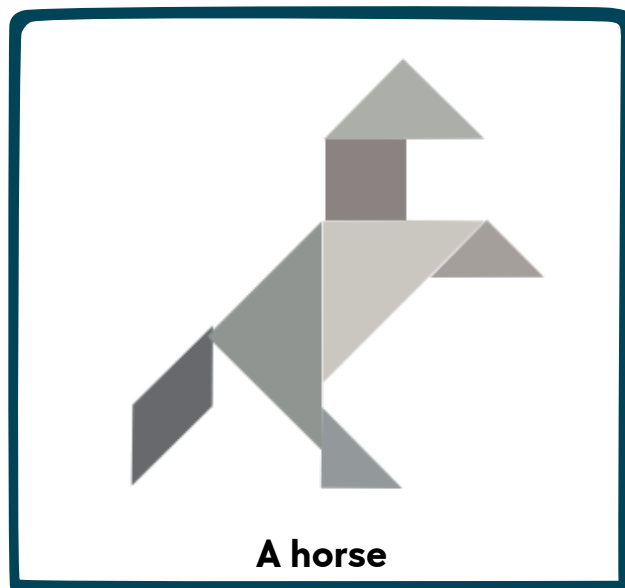
### *Tangram animal models*



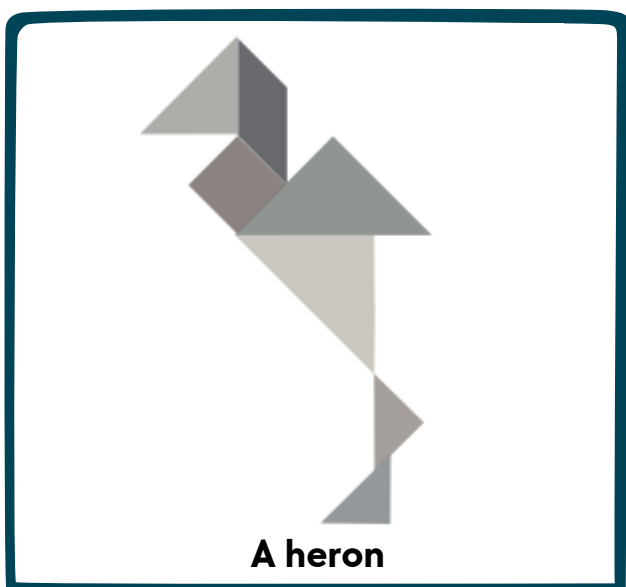




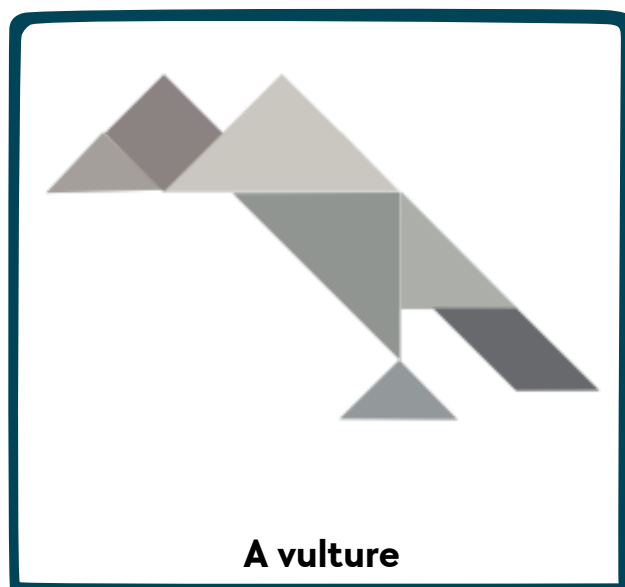
**A dolphin**



**A horse**



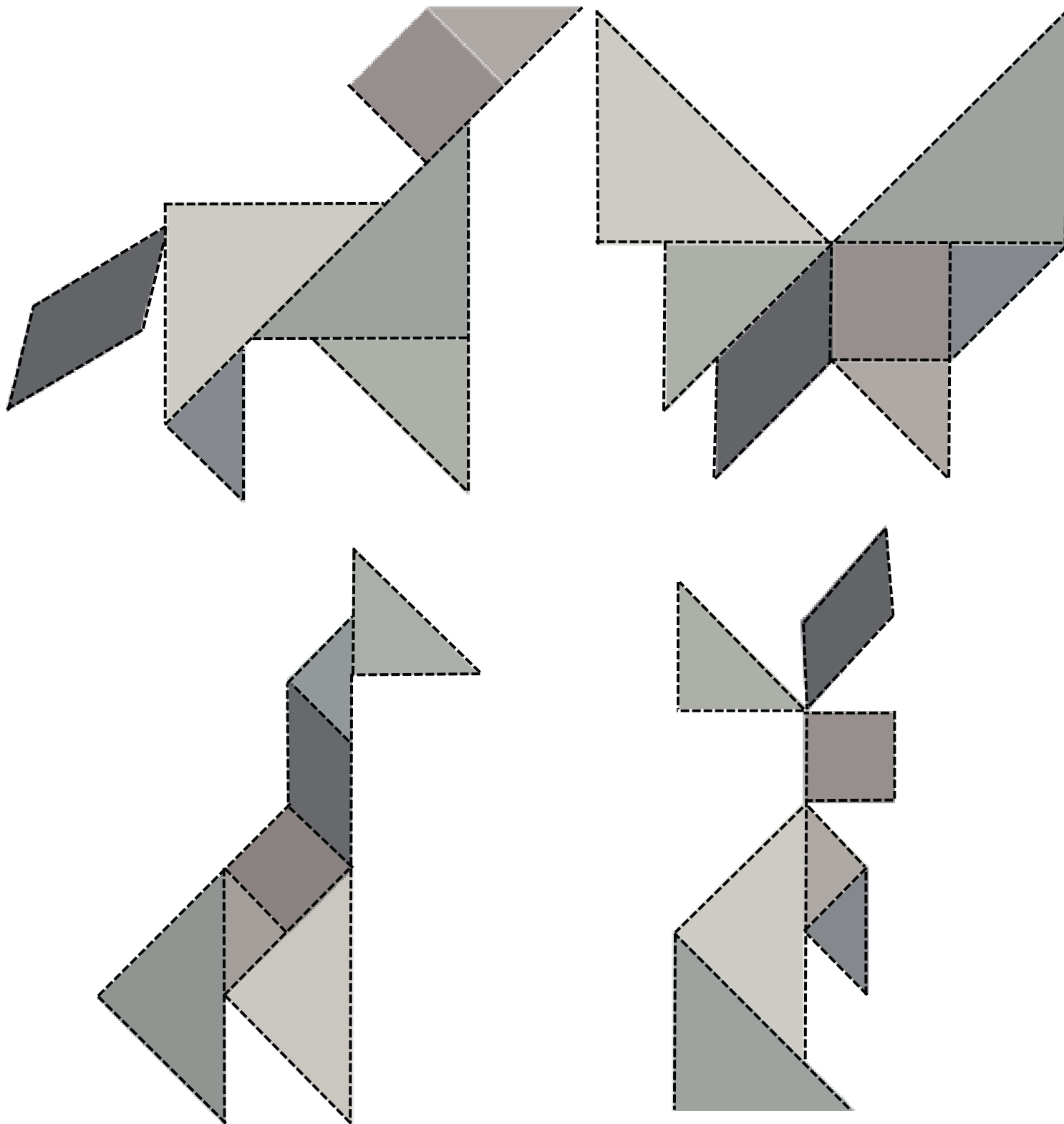
**A heron**



**A vulture**

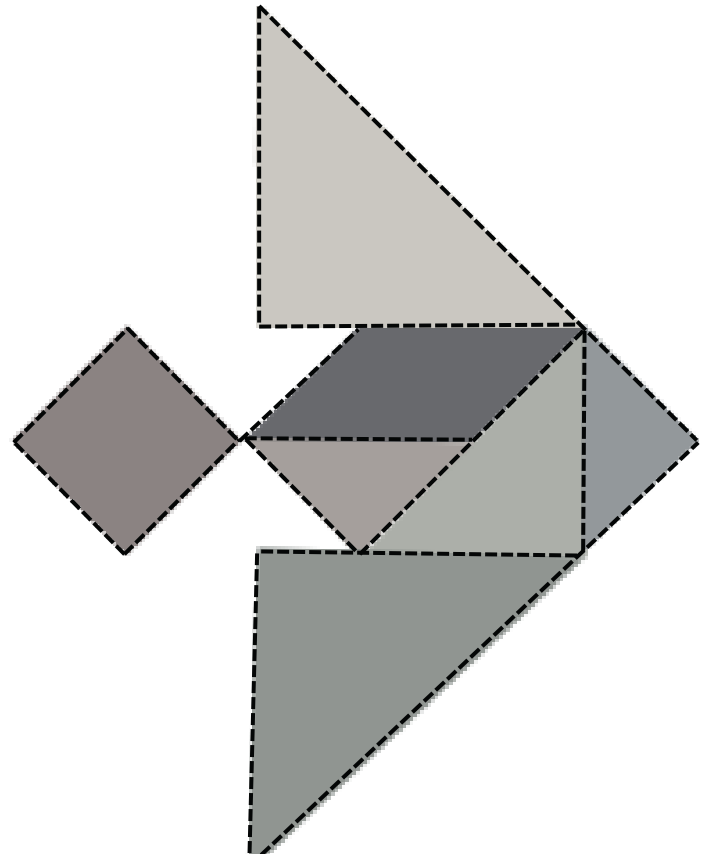
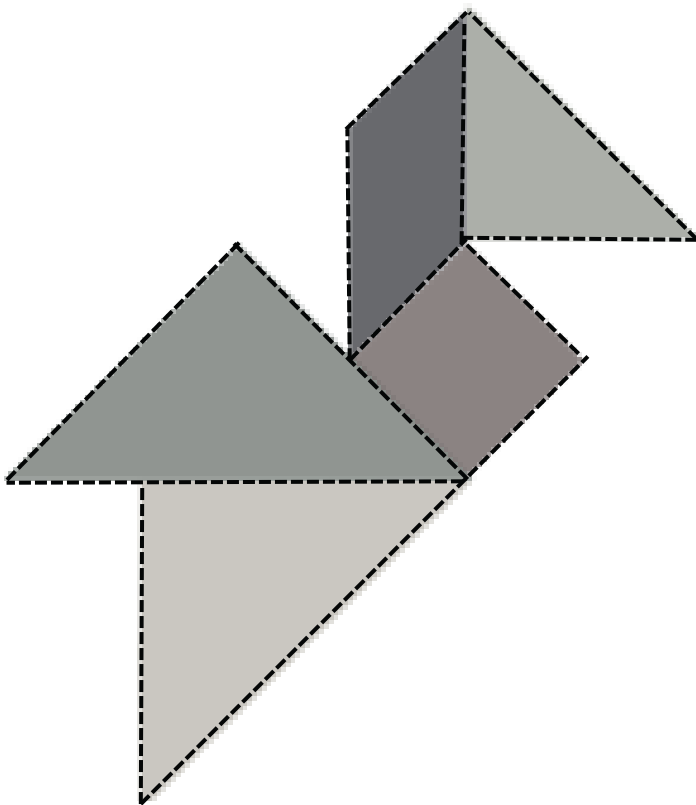
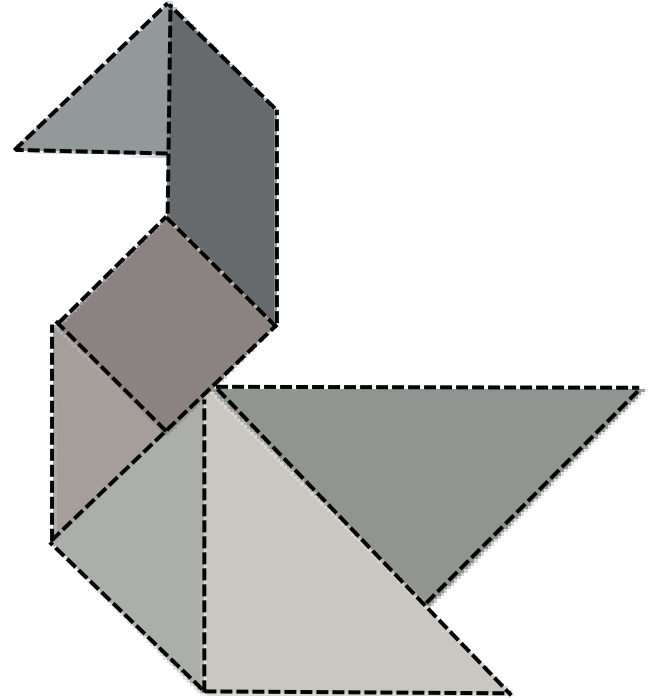
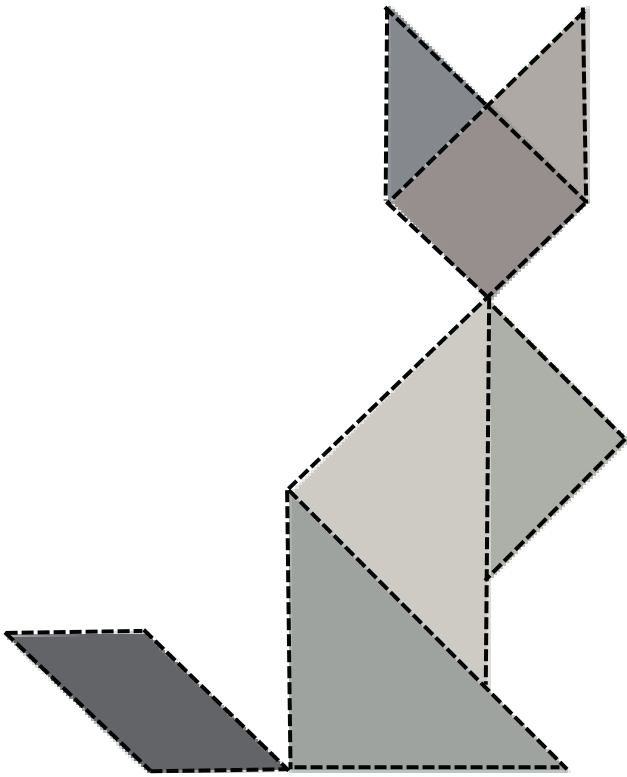


## Tangram animals to cut out





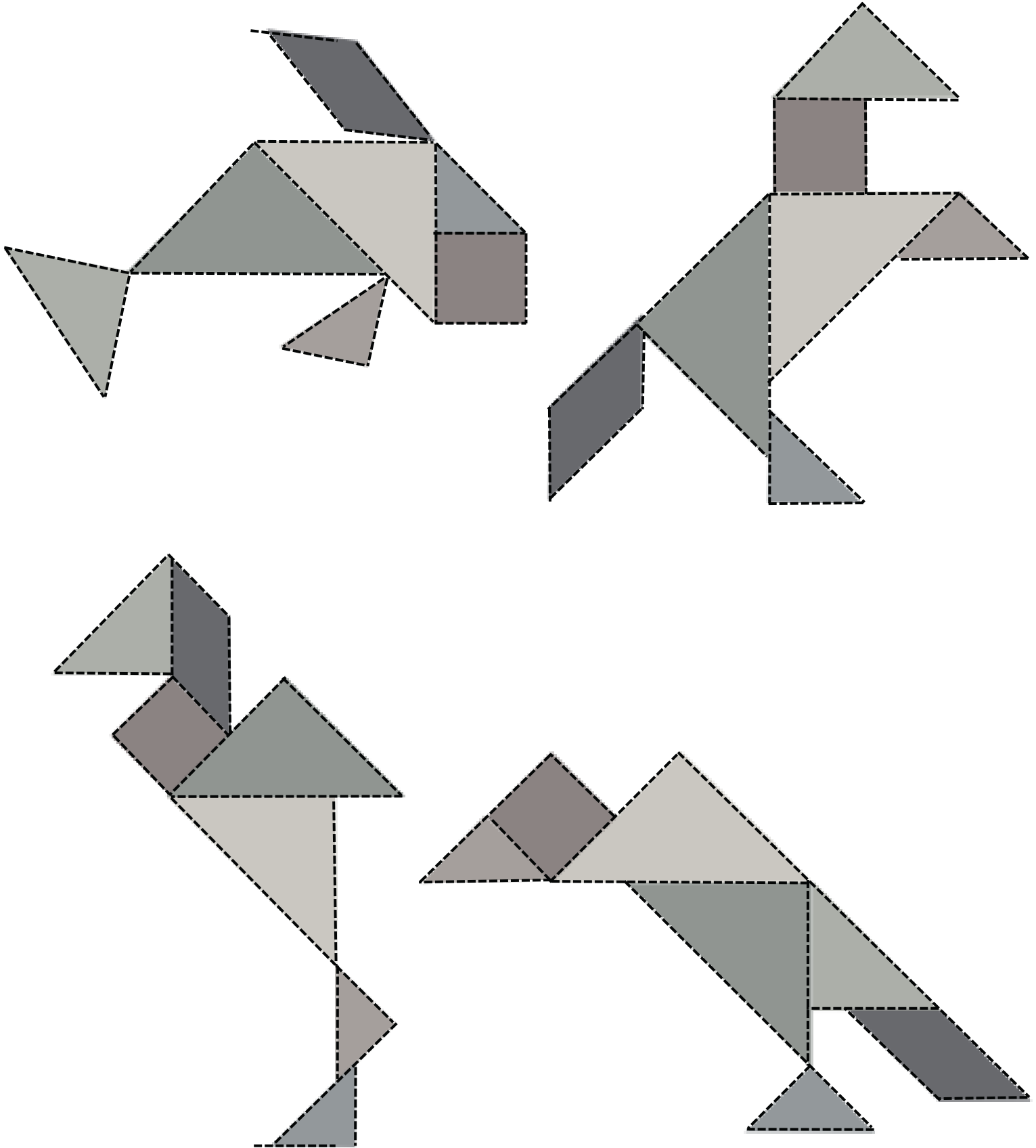
## Tangram animals to cut out





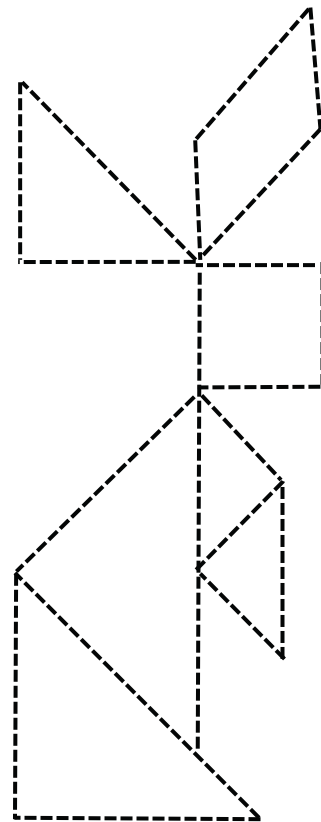
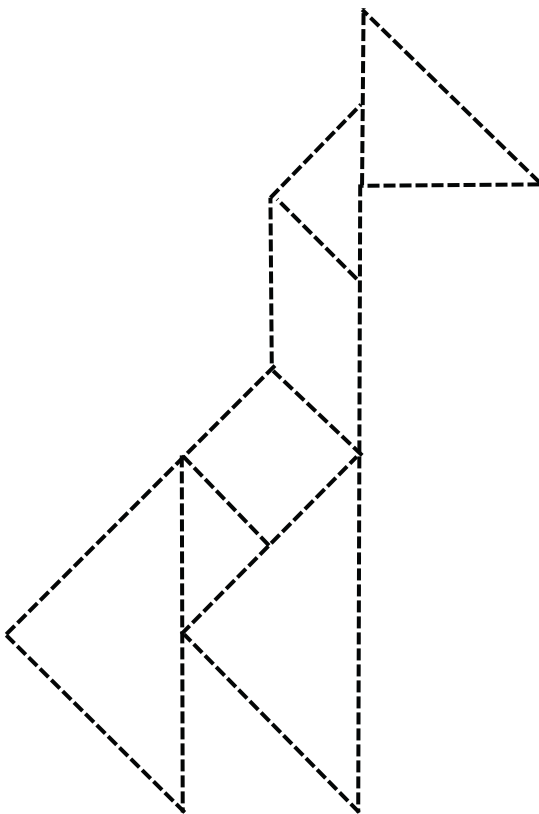
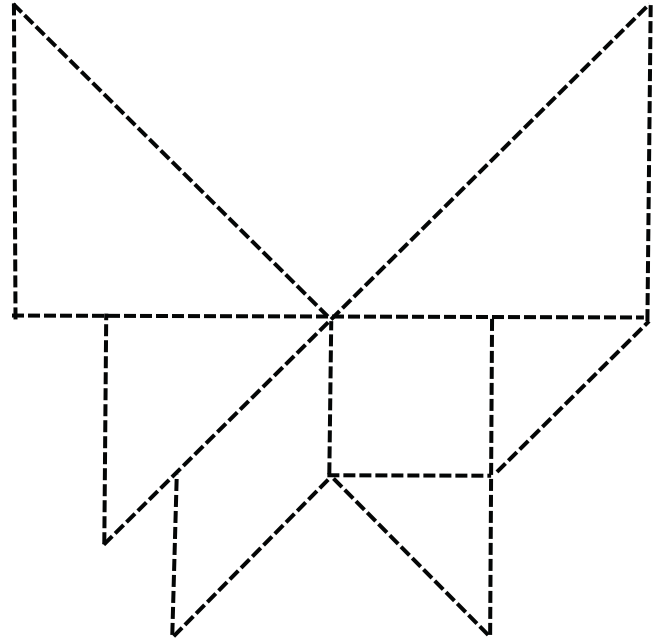
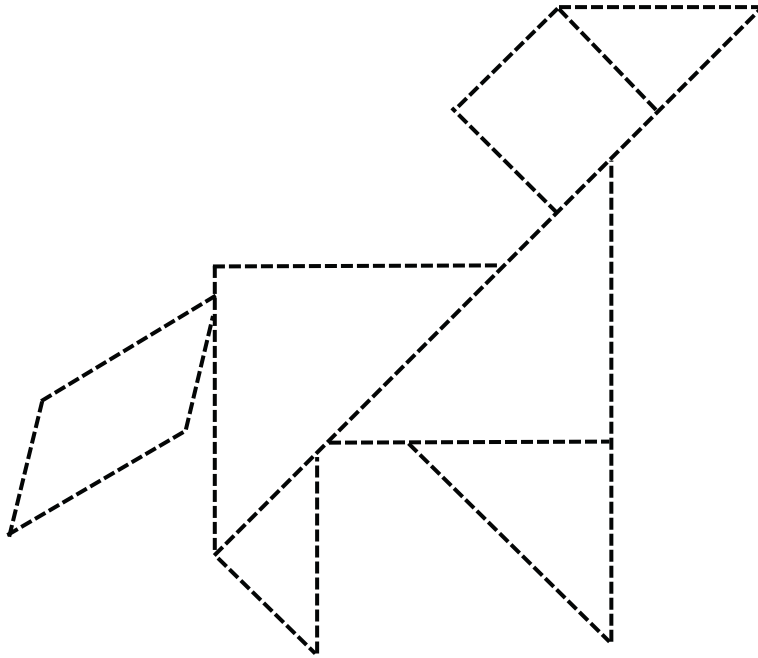


## Tangram animals to cut out



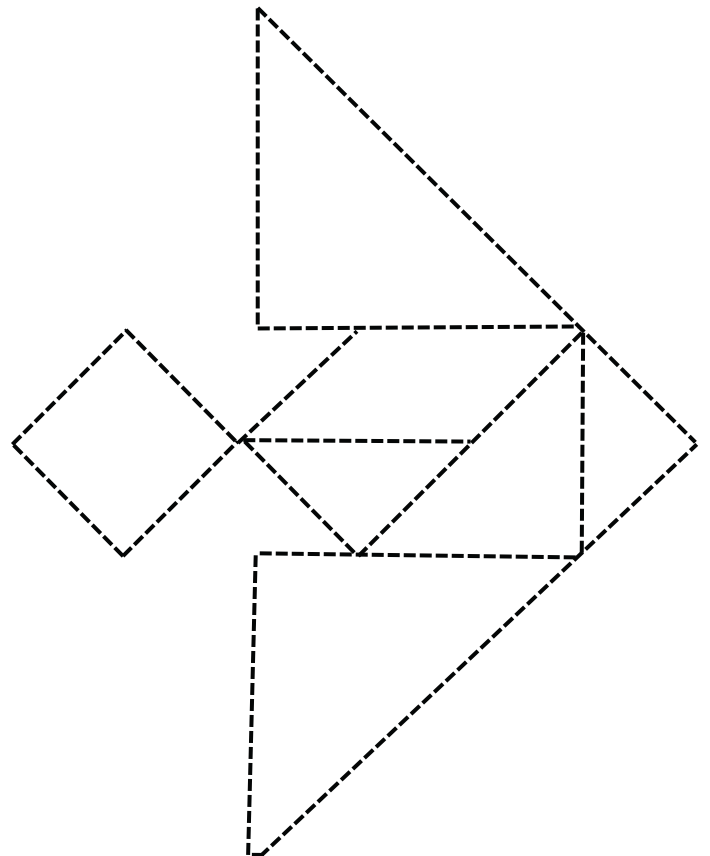
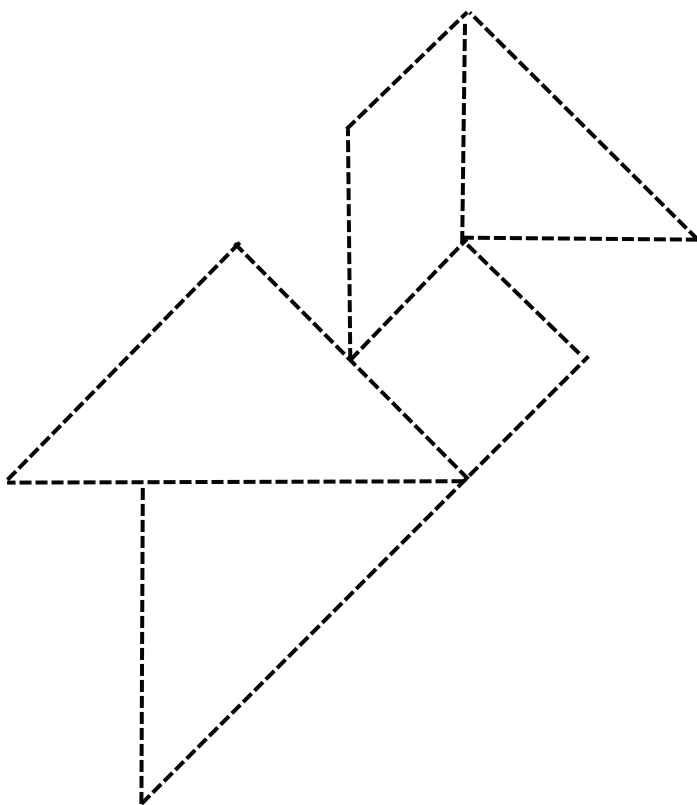
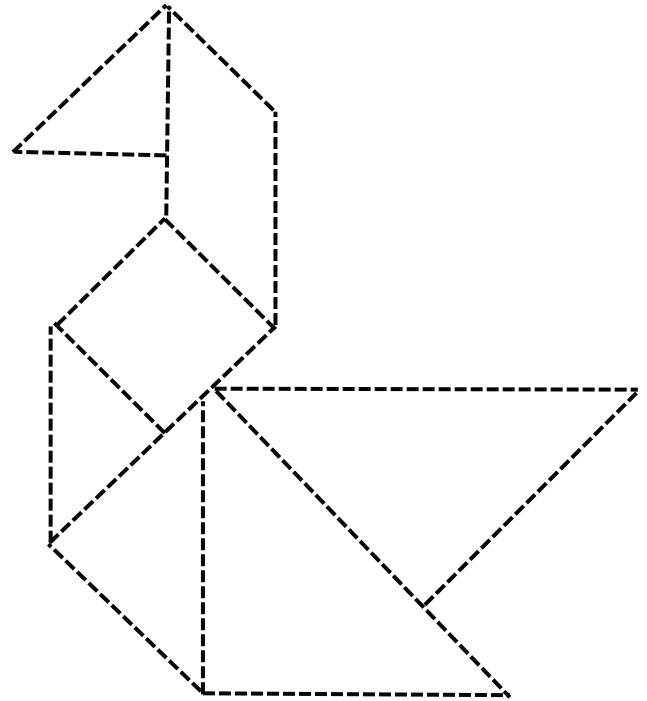
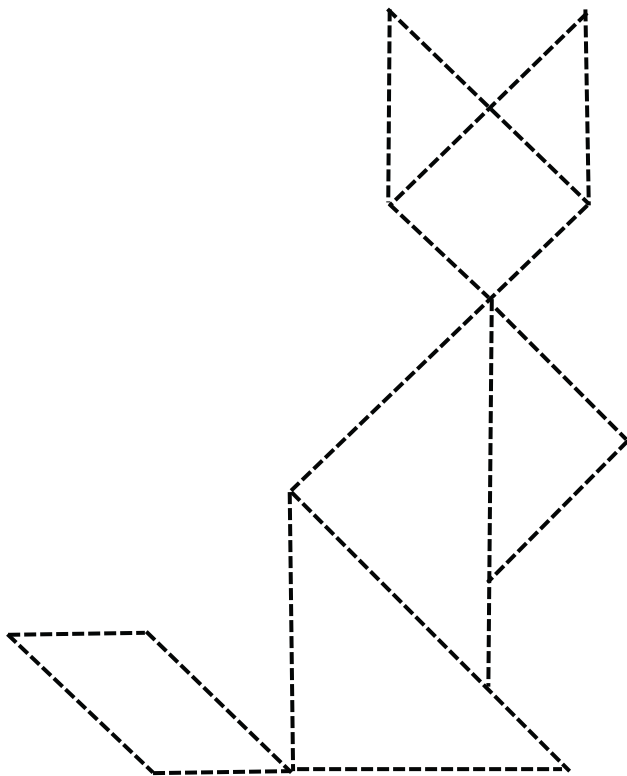


*Tangram animals to colour and cut out*



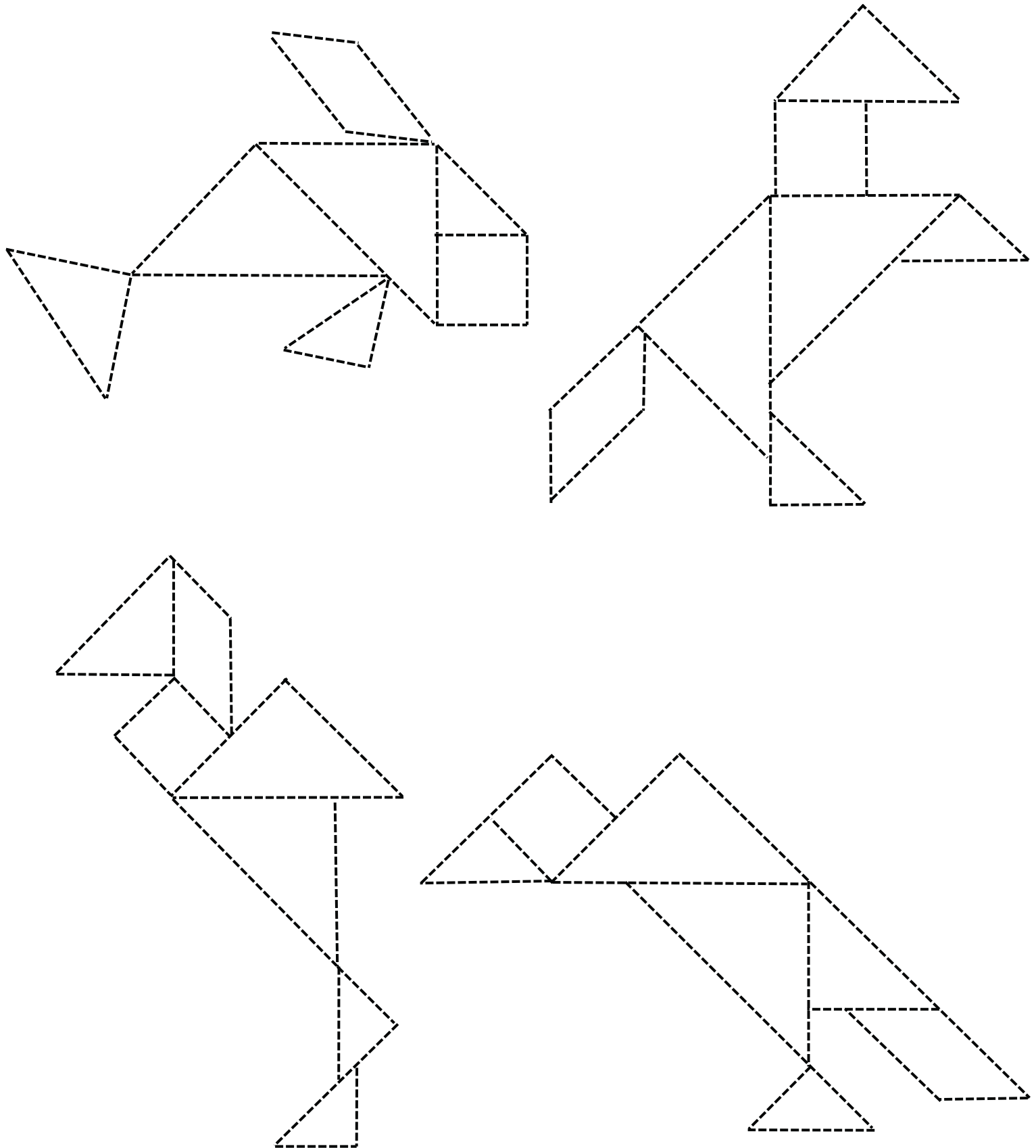


*Tangram animals to colour and cut out*





*Tangram animals to colour and cut out*

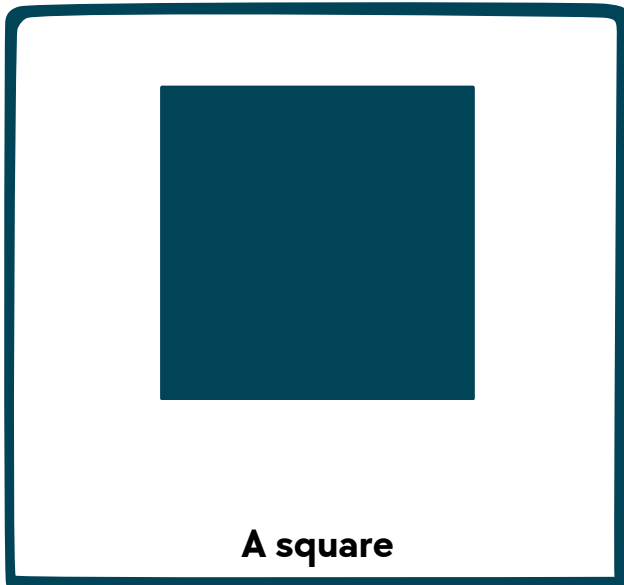




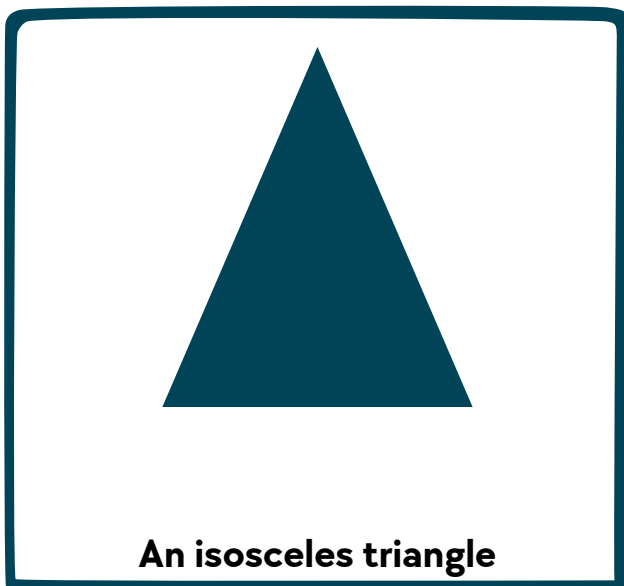
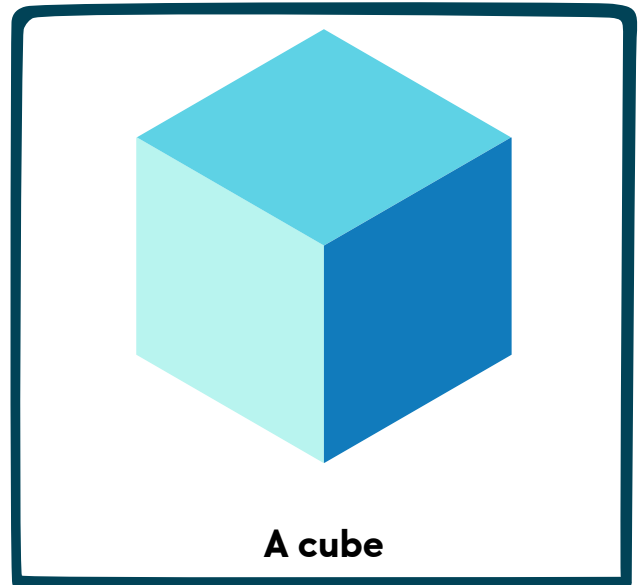
## Geometrical figures are solid!

In this activity, the concept of geometry can be further explored through observation and manipulation. Pupils have so far worked with flat geometric shapes, now it is time to explore the solids and volumes of the shapes with cards, modelling clay and toothpicks. For this, please refer to our geometric shapes sheets. The aim here is to gradually get pupils to construct a flat figure such as a square and to make its solid double, i.e. a cube. Through observation, they will be able to understand the differences between the two: a flat figure remains flat, whereas a solid can be manipulated! In addition, they will be able to develop their geometry vocabulary.

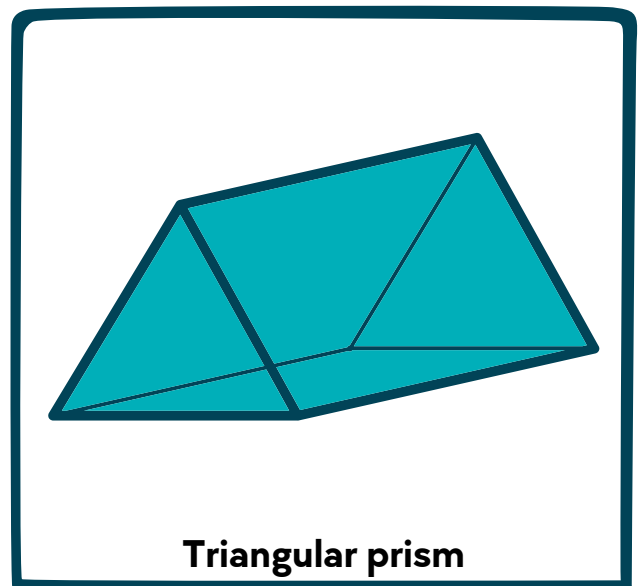
### *Plane geometric figures to Geometric figures in volume*

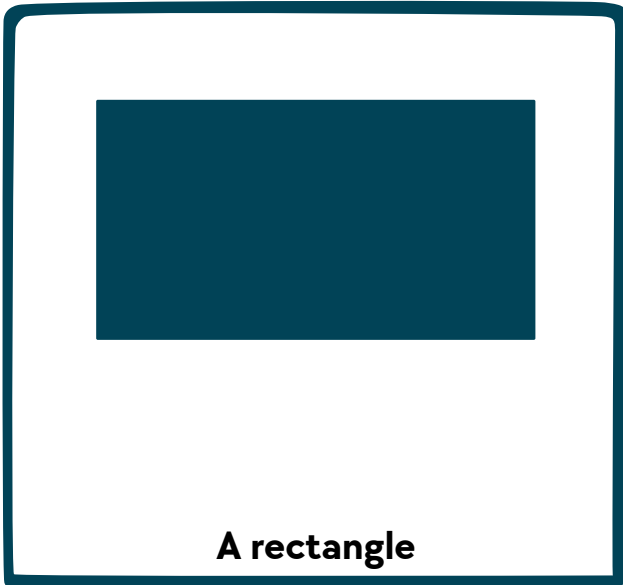


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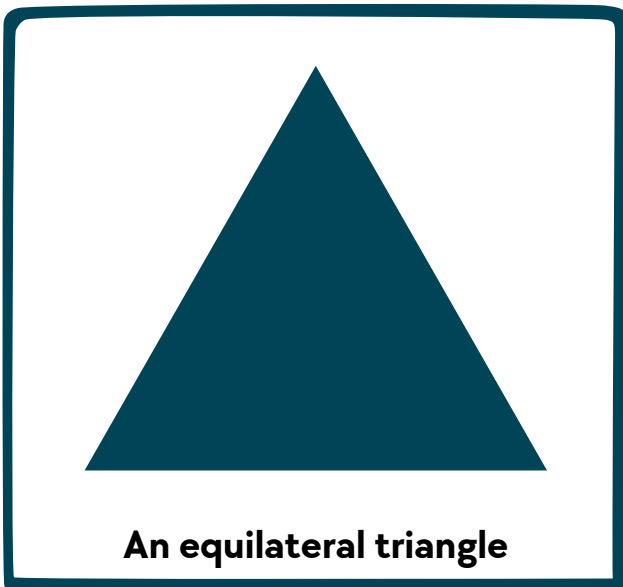
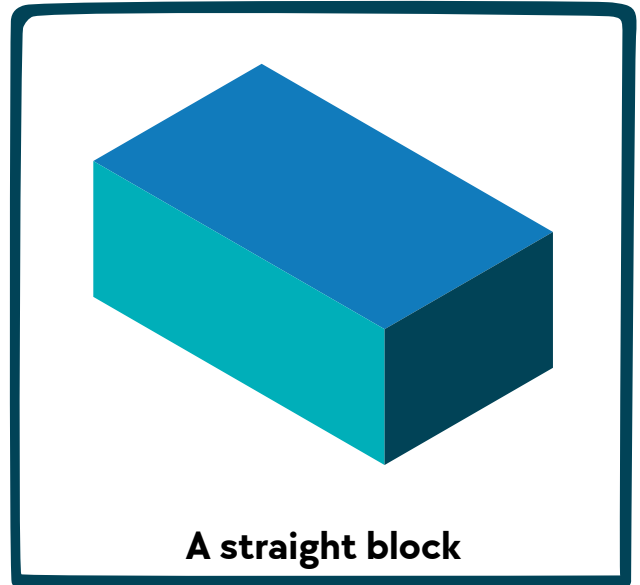


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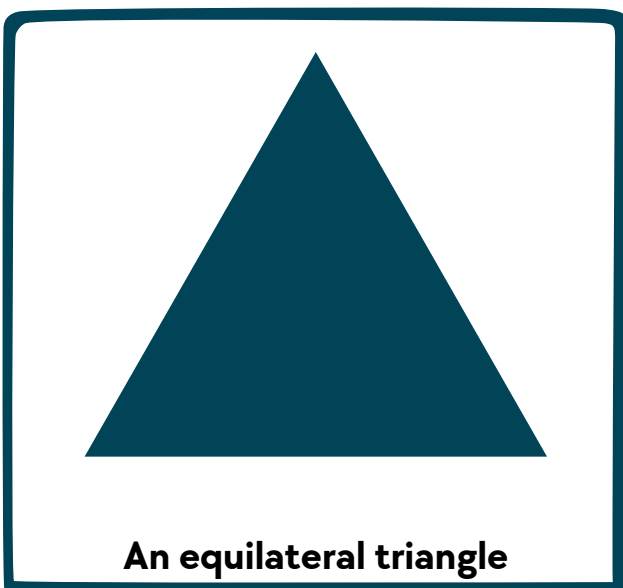
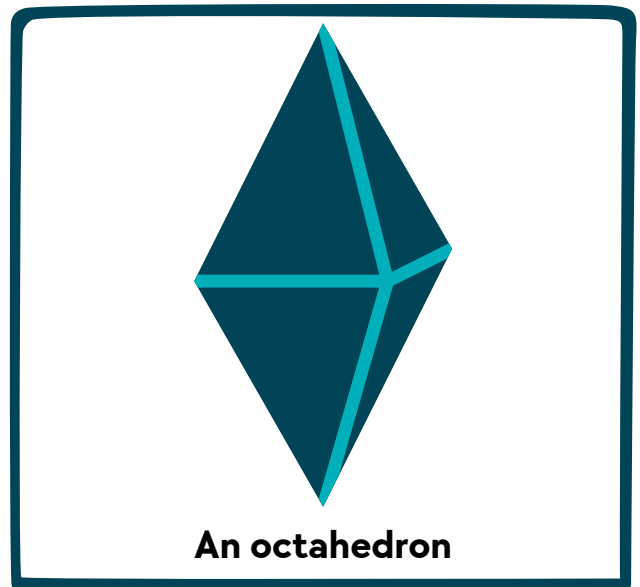




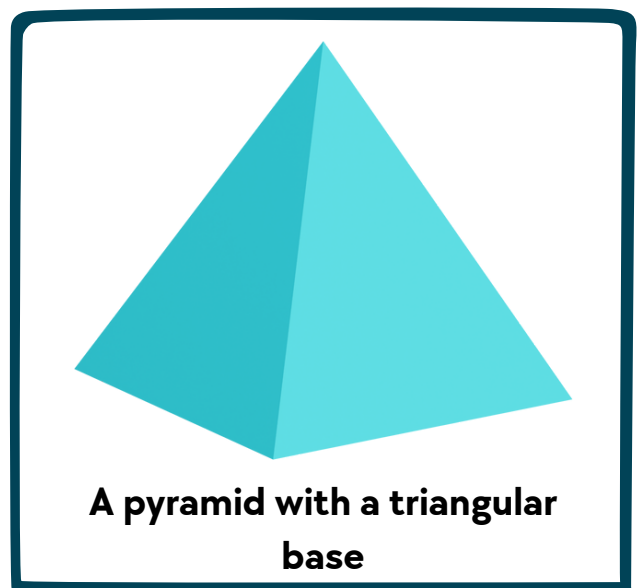
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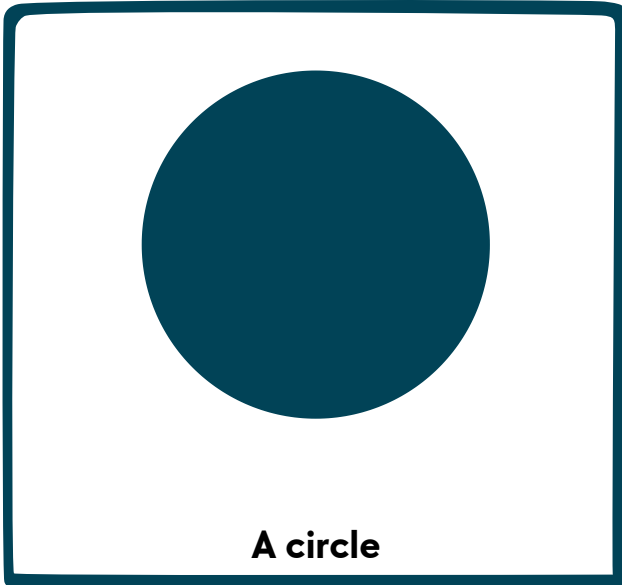
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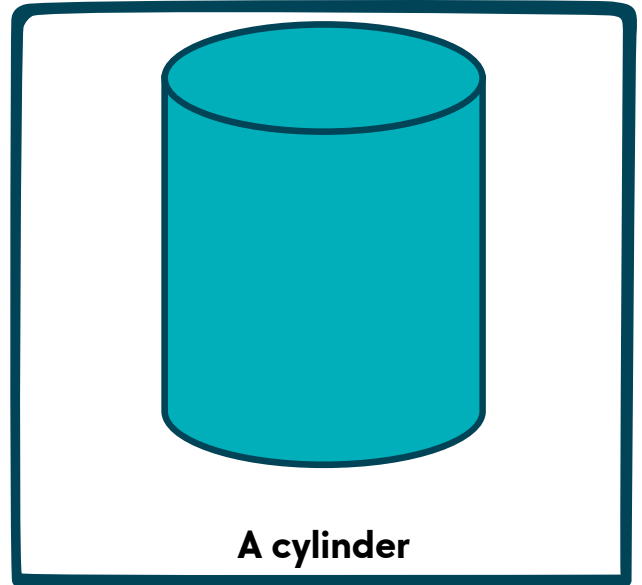






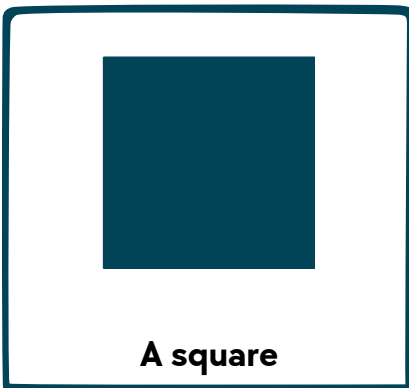
**A circle**

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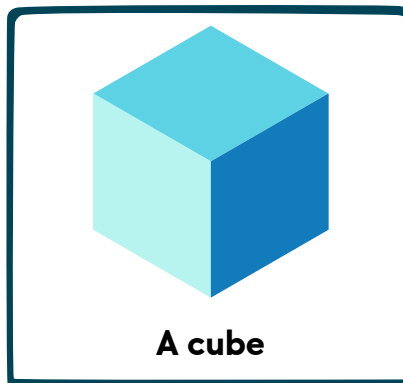
**A cylinder**

*A step further*



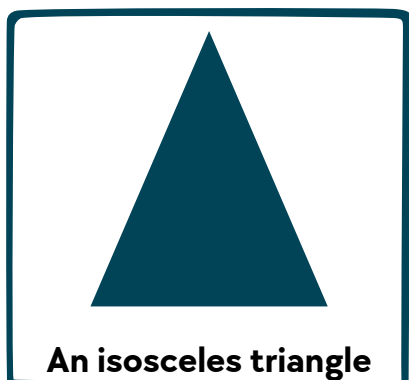
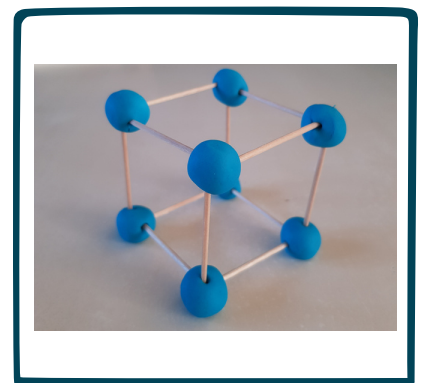
**A square**

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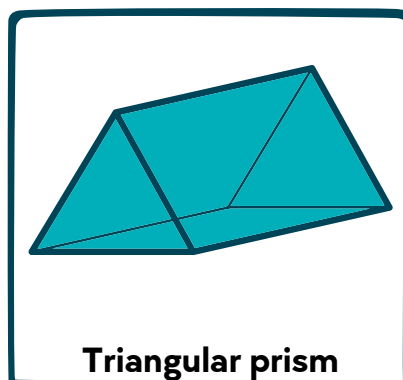
**A cube**

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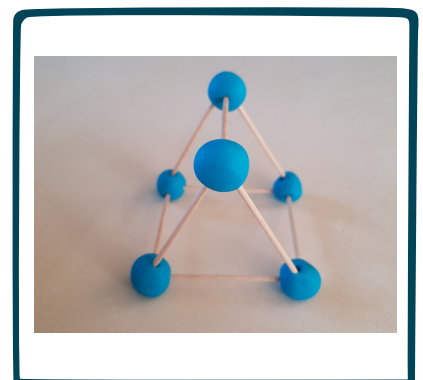
**An isosceles triangle**

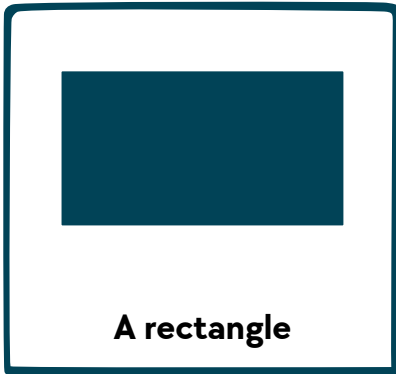
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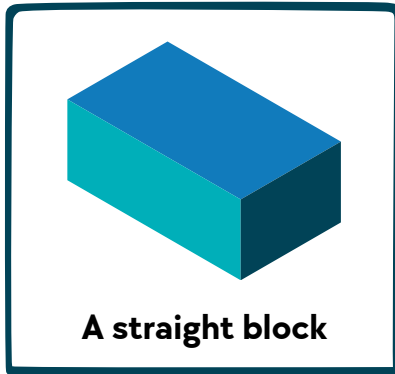
**Triangular prism**

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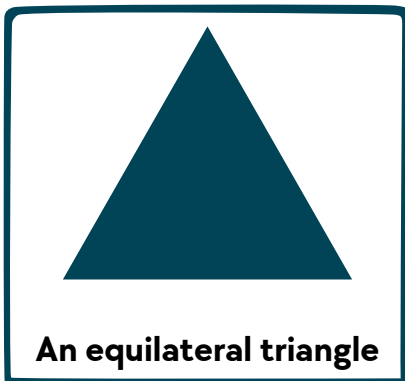
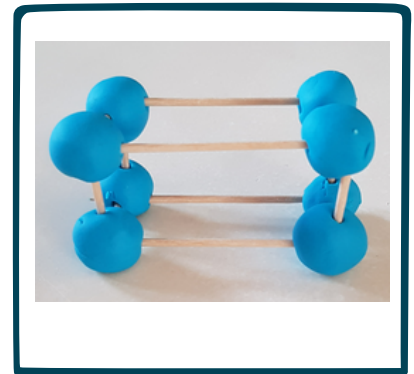




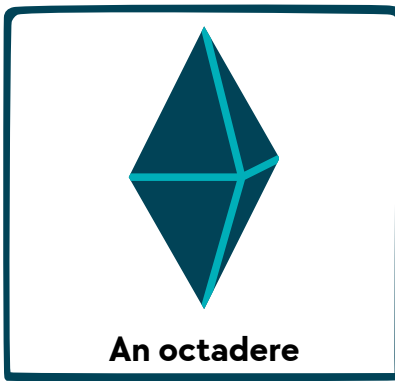
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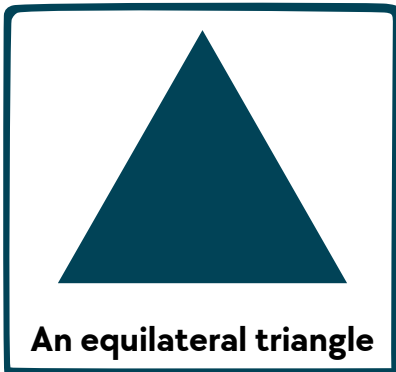
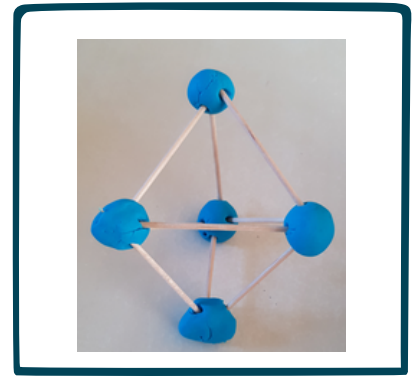
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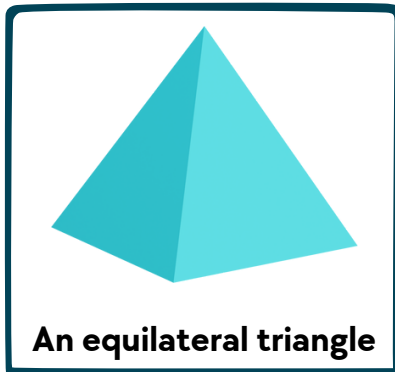
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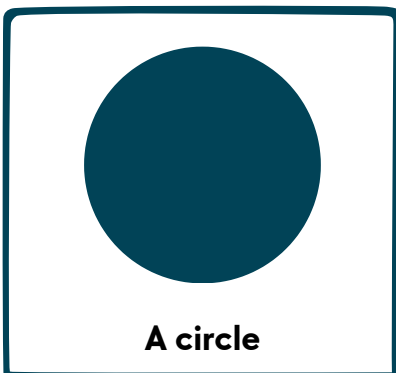
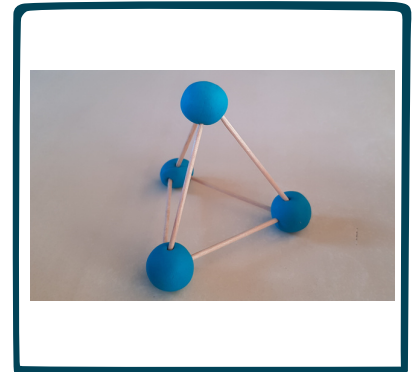
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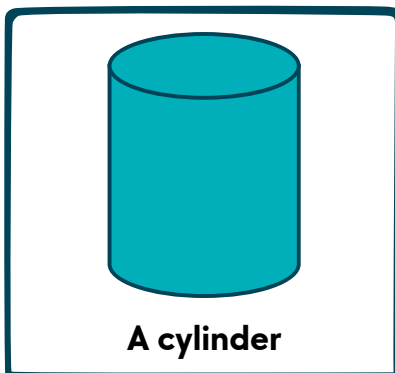
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### The body in all its states: dance and geometry

To go further, discover the dance group Variable Geometry whose choreographer and group leader Sadeck Waff composes and imagines geometric dances with bodies, music and figures, by watching some videos:

- <https://www.youtube.com/watch?v=JfDVVJgls34>
- [https://www.youtube.com/watch?v=U26jnb3kd\\_Y](https://www.youtube.com/watch?v=U26jnb3kd_Y)

Let your students discover what body performance and geometry can achieve, a choreography on stage: creating visual effects, telling a story in a captivating, mesmerizing and hypnotic way!



## Summary of the activity - Act 3: The battle of geometrical figures

After seeing Act 2, it is time for the students to put their mime skills to use! The teacher invites the students to form two groups. The teacher explains that they will have to compete in a mime competition by reproducing geometric shapes with their bodies. Students help the teacher make room in the classroom for the competition to begin.

**TEACHER.** - We are going to divide the class into two groups of 10 students. The first 5 students will have to mime a geometric figure on the floor that is on these sheets. Then, the other 5 students, you will have to observe carefully to reproduce the perfect symmetry of their figure. If the figure is well done, you will win one point, if the symmetry is also well done, you will win 2 points. If the symmetry is not well done, you do not get a point and if it is not well done at all, you get -1 point!

While the groups of students are being formed, the teacher puts a string or coloured tape on the floor to form a straight line and a student hands out the sheets with the different geometric shapes to be made.

**THE STUDENTS.** - (The pupils are very excited about this competition but wonder) But we have to do them all?

**TEACHER.** - There is a stopwatch, each team has 3 minutes, the aim is to do as many of them as possible correctly. To do this, we'll have to observe the figures carefully, and communicate so that we can do them together. So, are you ready?

The pupils are getting into position, the final battle is about to begin!



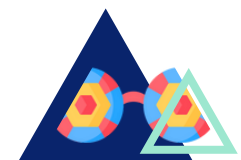
Mime



Duration of the Act :  
50 minutes



Symmetry,  
Geometry, Maths



Self-expression,  
Observing, Orientating

## Phases of activity

- 1 Divide the class into two groups according to the number of pupils in the class.
- 2 Do some warm-up exercises, stretching together to wake up the body: face, neck, arm, hand, wrist, torso, legs...
- 3 Put a rope or coloured tape on the floor and place pupils like this: **5 Students**  
**5 Students**
- 4 Let the pupils get to grips with symmetry and mime.



## Learning objectives

Following on from the previous activities, it is now time for the pupils to compete cooperatively in this final test, which brings these first acts to a close. The objective here is to allow the pupils to reinvest the knowledge acquired during the previous activities but also to update it concerning symmetry and geometric figures.

The pedagogical interests of this activity are the reinvestment of knowledge, knowing how to cooperate, communicate and organise themselves within a group while being benevolent so that a team wins a maximum number of points. Finally, the last objective is to be able to reinvest physically what has been observed visually.

## Theatrical objectives

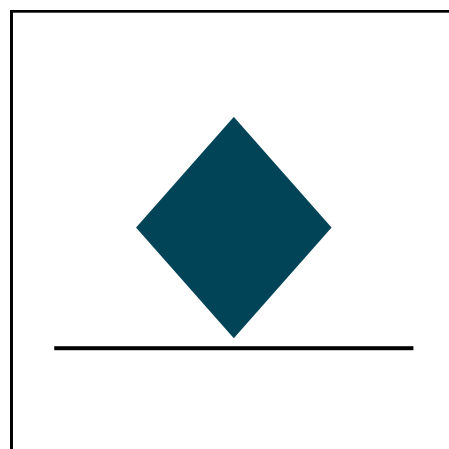
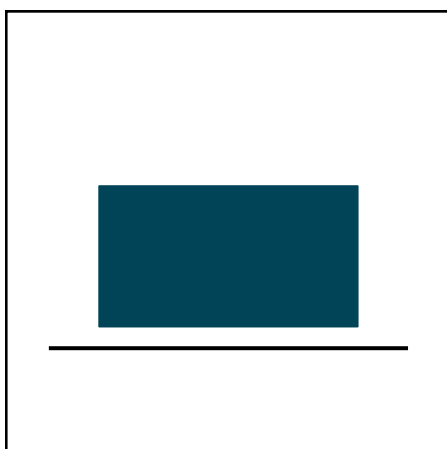
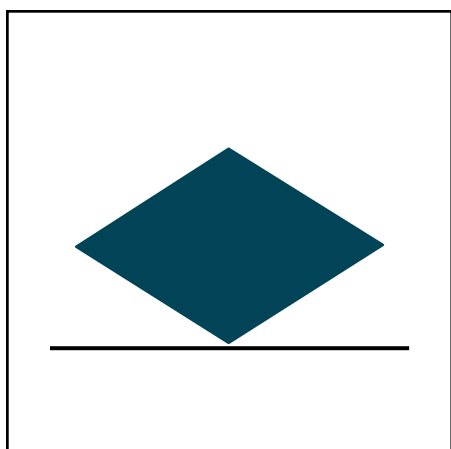
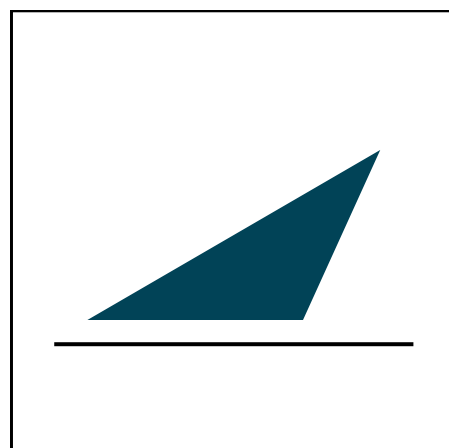
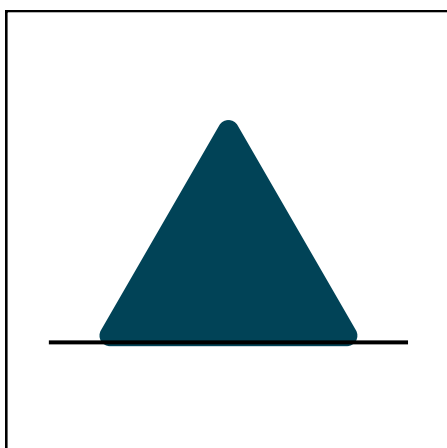
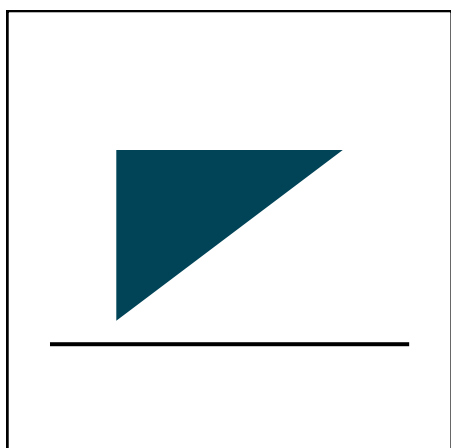
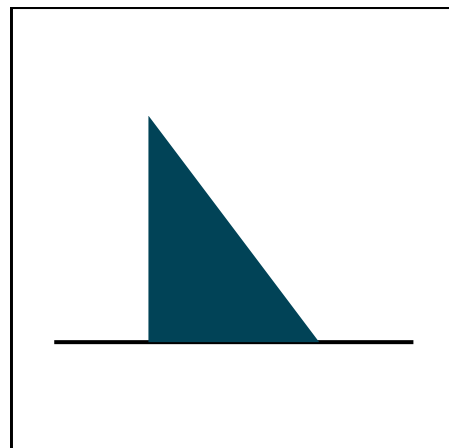
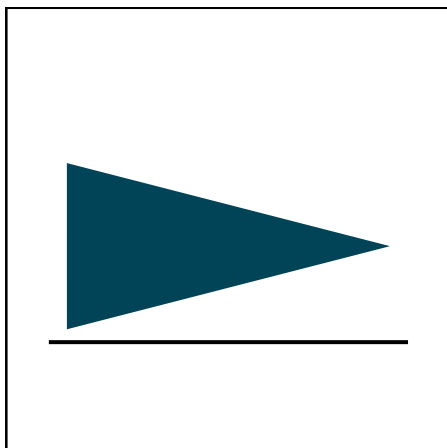
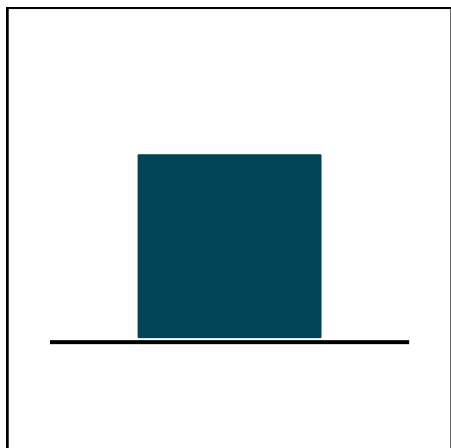
To reinvest all the knowledge acquired during the previous activities concerning mime such as body expression and awareness of the capacities that our bodies offer to express and represent geometric figures. Mime requires an important capacity of observation to be able to transcribe what we see and therefore an ability to analyse and reason. Here, the interest of this activity is to amplify the difficulty of reasoning, analysing and reproducing in a given time.

## Skills developed

- Know how to listen and communicate within a team
- Observe and analyse
- Reinvest knowledge
- Develop your creativity
- To collaborate in a group
- Know how to find one's bearings in space
- Develop reasoning and logic
- Dexterity



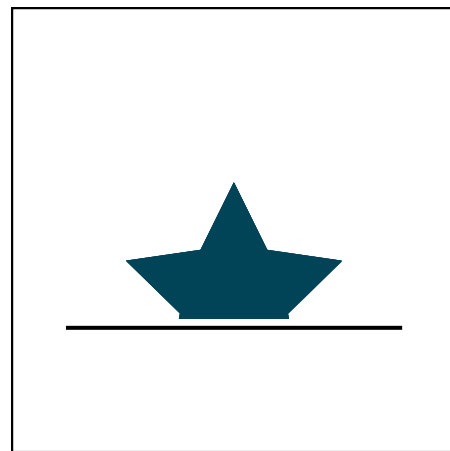
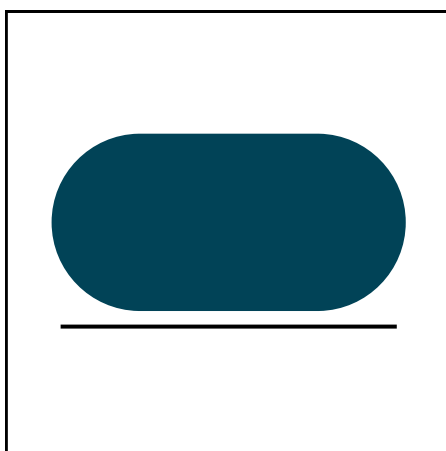
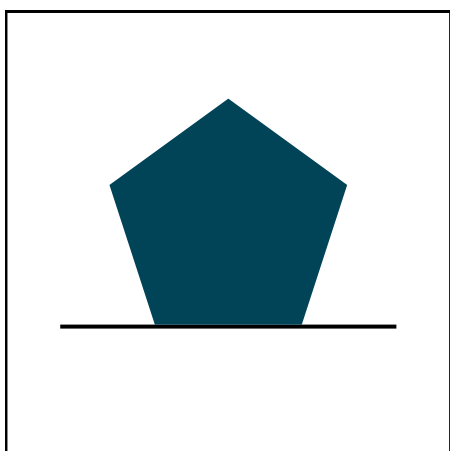
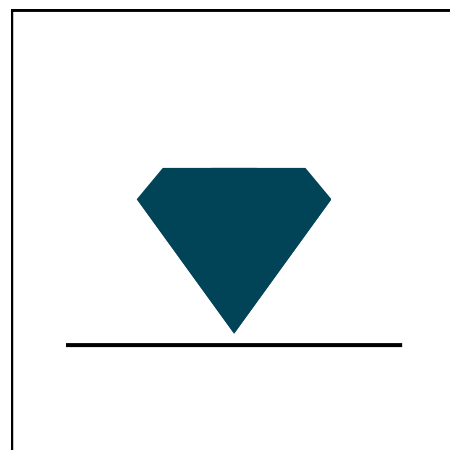
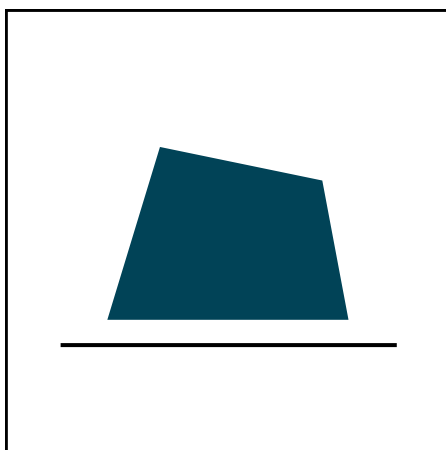
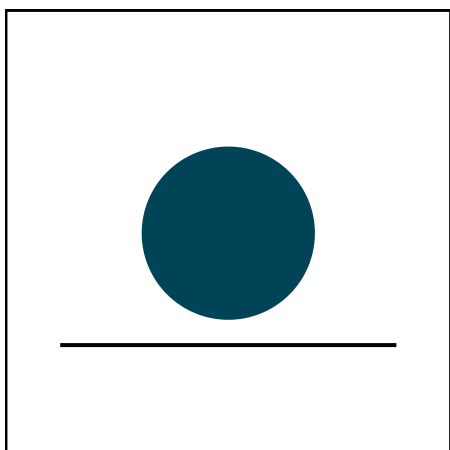
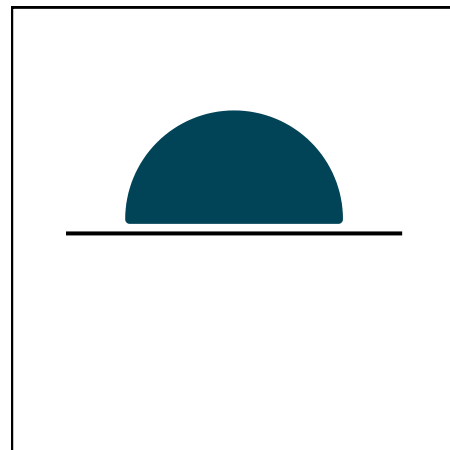
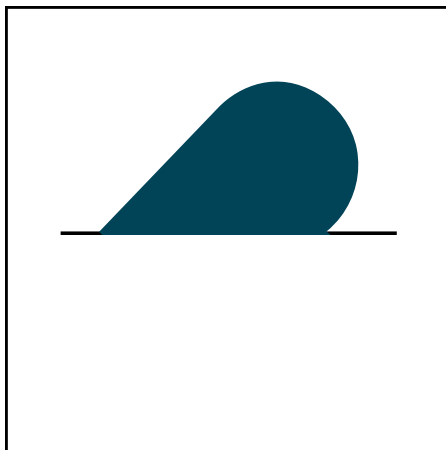
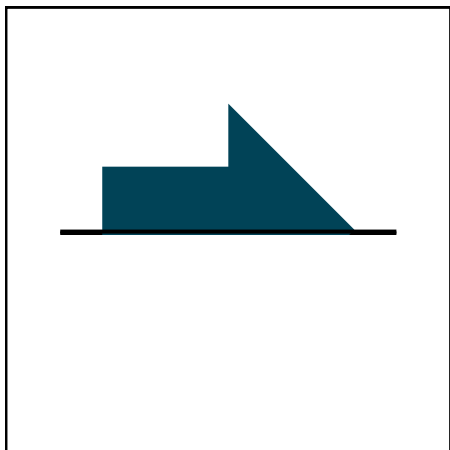
## Geometric shapes





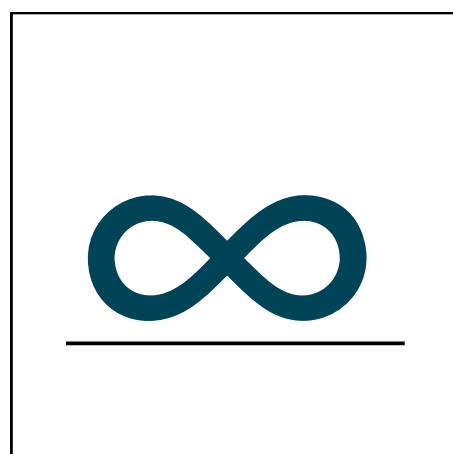
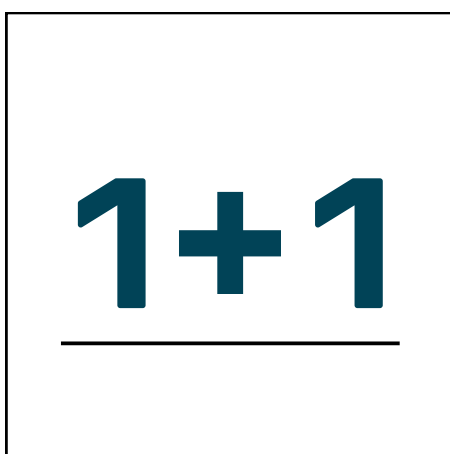
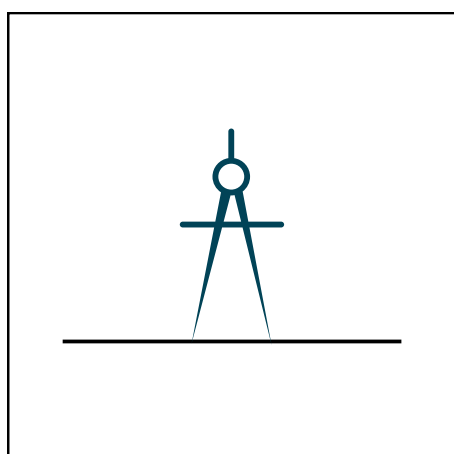
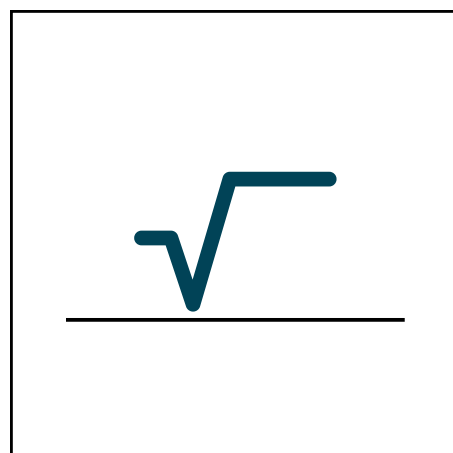
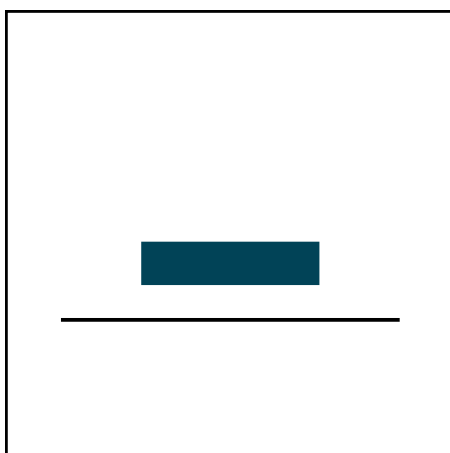
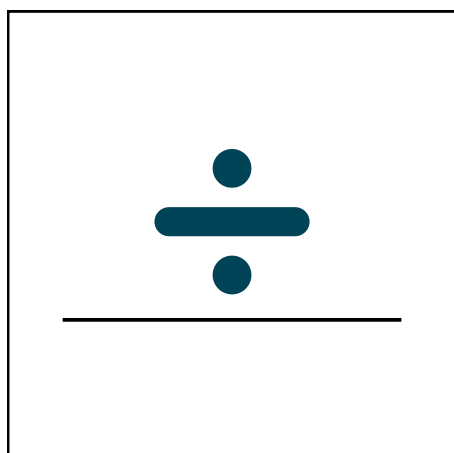
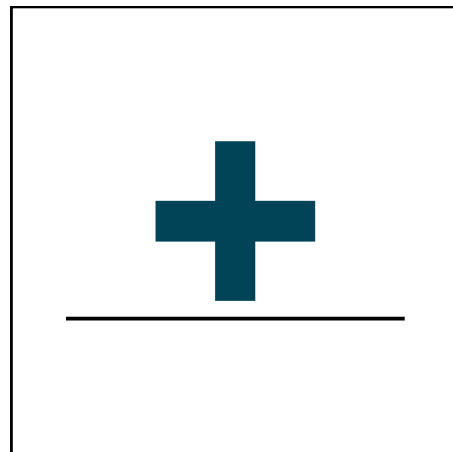
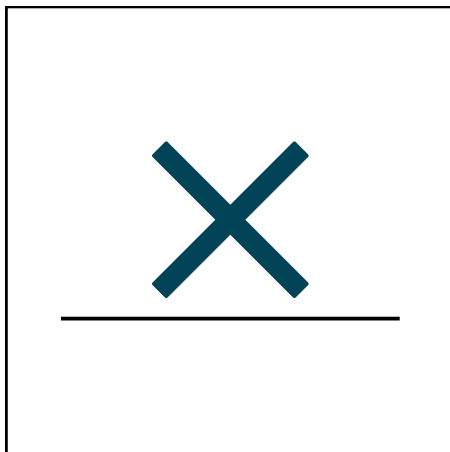
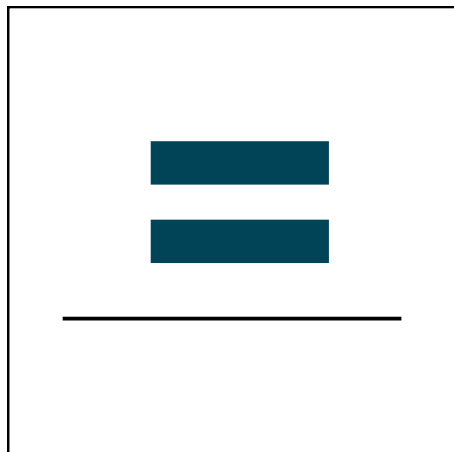


### Geometric shapes



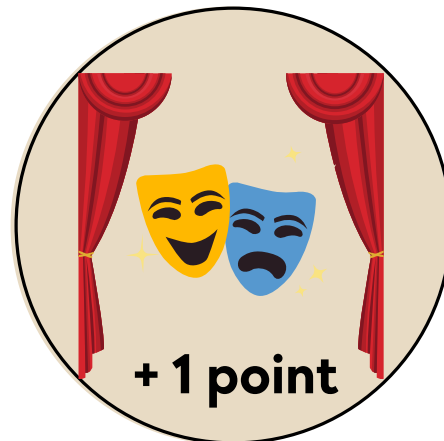


## Mathematical figures





Winning points





## Winning points



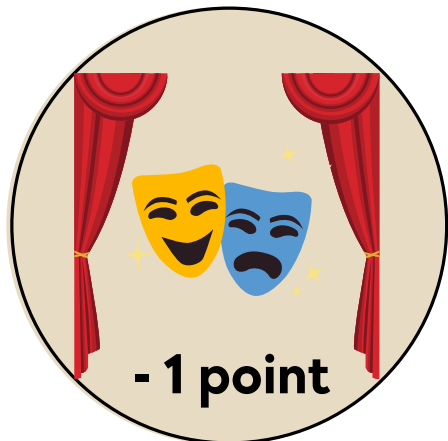


## Winning points





## Winning points







## Budding architect: the pieces of wood

This activity proposes to manipulate **wooden elements to build geometrical constructions** and to make the pupils work on their dexterity! Be careful not to shake or drop anything! This activity aims to let the pupils imagine, create or reproduce **architectural constructions** with the pieces of wood. Some examples can be given to help some students who lack imagination. We have provided some ideas such as the stairway to hell, the bridge, the pallet and the star. Independently and in small groups the pupils should manipulate, create and become aware that mathematics, geometry and symmetry are essential in architecture.



*From left to right. First line: Establishment / The star / The castle. Second line: The Stairway to Hell from two sights. Third line: The bridge / The triangular star from two sights.*

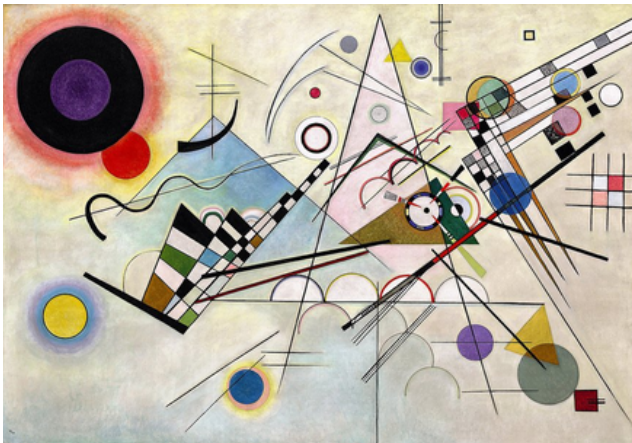


## Art in all its states: abstract art

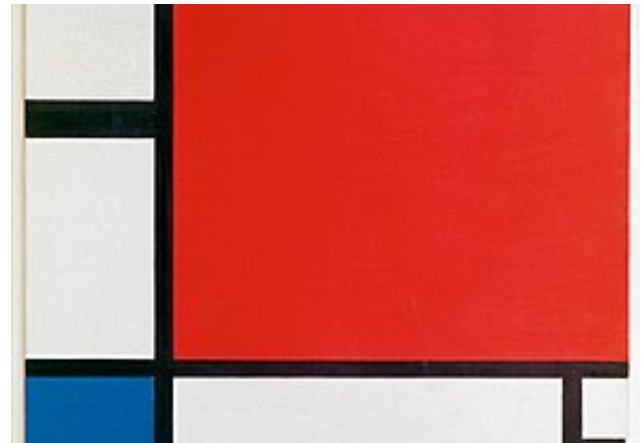
To go further, you can suggest that your pupils discover modern art and more particularly abstract art through certain works by famous artists such as Kandinsky, Piet Mondrian, Robert and Sonia Delaunay. First, you can introduce them to some famous paintings and get them to discuss what they observe and their emotions about these works:

- Composition 8, Vassily Kandinsky, 1923
- Composition with red, blue and yellow is a painting, by Piet Mondrian, 1930
- Electric Prisms, Sonia Delaunay, 1914
- Rythme n°1, Robert Delaunay, 1938

Finally, you can invite them to draw and paint with coloured pencils, markers or paint so that they can in turn create an abstract work of art composed of geometric figures. Afterwards, you can display the pupils' artwork in the school. The aim is to make your pupils understand that geometry is a source of inspiration and creation.



Composition 8, Vassily Kandinsky, 1923



Composition with red, blue and yellow,  
Piet Mondrian, 1930



Electric prisms, Sonia Delaunay, 1914



Rythme n°1, Robert Delaunay, 1938





## Keen observers: geometry and symmetry in my school

In small groups of 3, you can organise an activity in which the pupils **are acting as observers**. For this, you can ask them to observe all the geometric and symmetrical objects in the classroom, the corridors or the courtyard.

If your school is equipped with a digital tablet, you can ask students to take 5 photos per group. The aim is then to organize a small debate in class so that the groups can explain why they took the photos they did, and to discuss the relevance or otherwise of the items taken by the groups. The objective is to make pupils aware that geometry is present all around us, it surrounds us whether it is through infrastructures or in nature. Another objective is to teach pupils to observe what surrounds us.



## Summary of the activity - Act 4: Finger choreography

After the final battle, it's time to focus on one part of the body: the hands, and more particularly the fingers. Speed, dexterity and agility will be put to the test! For this activity the pupils will have to create a choreography with their hands. One day in class the teacher tells them that ...

**THE TEACHER.** - Today we are going to do a special activity. You are going to create groups of 3. You are going to create a choreography with your hands and fingers, making geometrical figures, rhythm and above all you are going to have to be synchronized all together. But before we start, let's watch a video together to inspire you. Today is about discovering a form of choreography, practising for the next activity which will be filmed

**STUDENTS.** - Wow...! (The students are very curious and calm).

**TEACHER.** - Here's the video, then we'll do the action. (Students and teacher watch the short video for inspiration...):  
<https://www.youtube.com/watch?v=GC-PV2BSYD4>



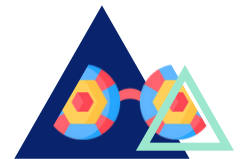
Dance  
Choreography



Duration of the Act :  
30 minutes



Symmetry,  
Geometry, Maths



Creation, observation,  
finding one's way in  
space, Dexterity

## Phases of activity

- 1 Form groups of 3 students: 3 students = 6 hands
- 2 Do some warm-up exercises for the hands, wrists, hands, fingers, arms to gently wake up the body.
- 3 Start the video without the music to help students learn from it.
- 4 Let the students get used to the hand choreography exercise.



## Learning objectives

In order to pick up on the previous notions of symmetry and geometry, this activity takes it a step further by creating a choreography. The objective is to allow students to explore all the capacities that our body offers for the art of dance. **Dance theater is a contemporary dance form that combines dance choreography with theatrical elements and acting expression.** In this activity, students are asked to imagine a finger choreography to music as a group, allowing them to work on their creativity, develop their agility, exchange and communicate as a group to create a choreographic structure and be able to adapt to each other to be perfectly synchronised. Close to mime, this activity is performed with only one part of the body and in silence.

## Theatrical objectives

Finger choreography is an activity close to theatre as it concerns another performing art: dance. On the same level as the theatrical genre of mime, this choreography has similarities with it since only the body expresses itself while remaining silent. The objective here is to discover dance theatre. **Through this activity, students are led to exchange, choose figures, actions with their hands and fingers and turn them into dance movements,** think about sequences, choose music to which they wish to perform their choreography like real directors!

## Skills developed

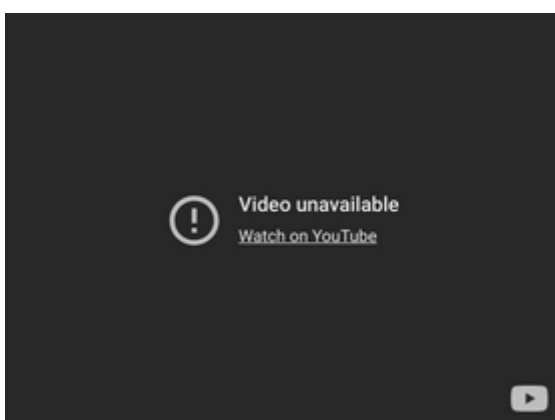
- Reinvesting acquired knowledge (symmetry, geometry)
- Agility and dexterity
- Communicating and listening
- Refining their body language through their body
- Being creative
- Knowing how to find one's bearings in space
- Develop their analytical skills
- Become aware of the potential of their body
- Refine their observation skills
- Ability to adapt



## Behind the scenes: sets & music

In addition to this main activity, students may decide to create backgrounds to accompany their hand choreography. For example, they can create patterns and colours on cardboard or sheets to accompany their choreography. At the same time, they can choose music to accompany their different choreographies and give them a rhythm with slower or faster movements. This little activity is recommended for pupils aged 9 to 12. For younger children, you can suggest lively classical music with slower rhythms to make it more accessible, such as:

- **Clair de Lune, Claude Debussy:** [https://youtu.be/CvFH\\_6DNRCY?si=b7EIDCILa1oEzPXL](https://youtu.be/CvFH_6DNRCY?si=b7EIDCILa1oEzPXL)
- **Symphony N°7 op.92, Ludwig van Beethoven:** <https://youtu.be/vCHREyE5GzQ?si=bz25XgZKIRJXzSNe>
- **Summer, Vivaldi:** <https://youtu.be/ciTCKnePyq4?si=ILKu1VxLQxgR6qf9>
- **La danse macabre, Camille Saint-Saëns:** <https://youtu.be/71fZhMXIGT4?si=ZYnPXFSMl1mmMZy3>





## Opening to the world: Hands in the dance

This section is about taking your students to new horizons. You can introduce them to the importance of hands in certain traditional dances and their significance. The aim is to draw a parallel with their own choreography but also to make them travel and open up to the world. Using examples of dances such as Cambodian, Indian or Hawaiian, you can show them short extracts (below) and get them to discuss them with the whole class. You can also locate these three countries on a map.

- **Cambodian dance:** <https://www.youtube.com/watch?v=7vs-H7xLnrs>
- **Indian dance:** <https://www.youtube.com/watch?v=JWhA3ldZcyY>
- **Hawaiian dance:** <https://www.youtube.com/watch?v=tWeqgY6uRx0>

In these traditional dances, each hand gesture has a symbolic weight and a precise meaning, it is a language but without words!

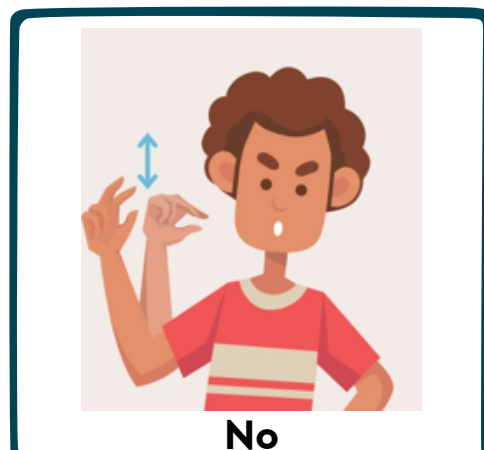
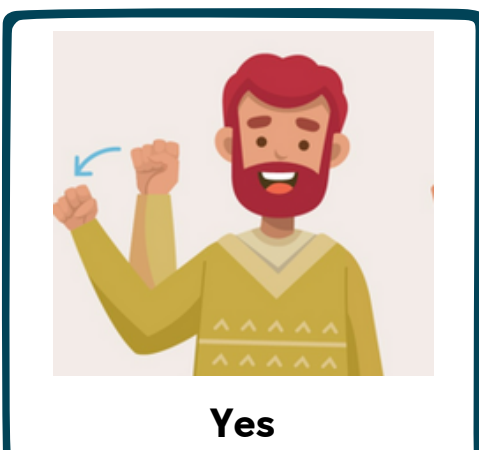
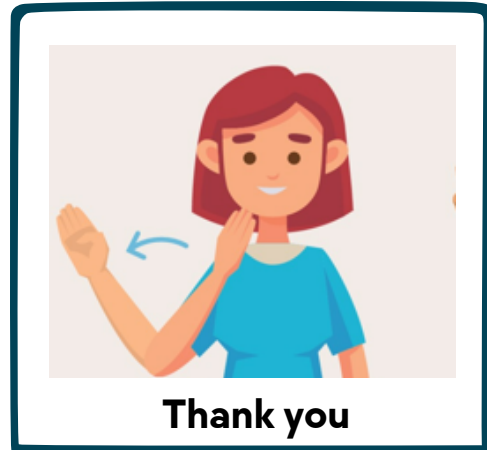
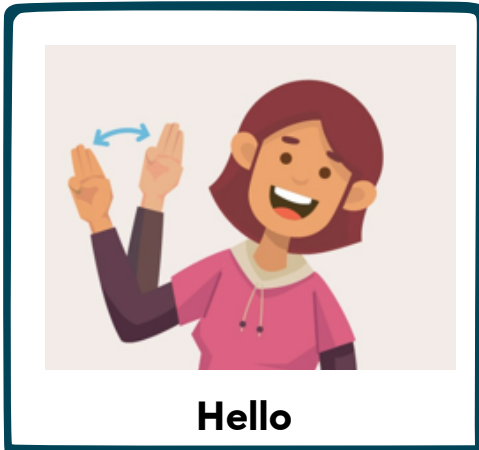






## Opening to the world: Hands in the dance

To go even further, you can also progressively bring your students to sign language and teach them to sign simple words such as: "Hello", "goodbye" and "thank you" as below.





## Summary of the activity - Act 5: Finger Kaleidoscope

To close the Steam your body chapter, it is now time for the final act!

**TEACHER.** - Today is a big day as you are going to perform each of your choreographies, group by group. Group 1 will start, then Group 2 and so on. We will stand around group 1 and watch their hand choreography from above. At the end of their presentation we will discuss what you liked, what you found beautiful and interesting.

*During the preparation of the groups, the teacher helps the students to put on their music and answers their questions. The teacher prepares the camera, to film each of the choreographies proposed by the groups of students.*

**STUDENTS.** - We are ready!

**TEACHER.** - 1, 2, 3 action!

*The final act is carried out in a calm and concentrated way.*



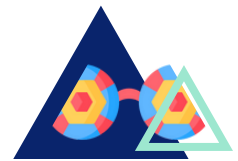
Dance  
Choreography



Duration of the Act :  
50 minutes



Symmetry,  
Geometry, Maths



Creation, observation,  
finding one's way in  
space, Dexterity

## Phases of activity



Groups sit around a table.



Do some warm-up exercises to stretch your hands, wrists and fingers.



Set the scene and music.



Let the students perform their choreography.



## Learning objectives

The aim of this last activity is to get the students to produce a hand choreography while reinvesting each of the mathematical concepts seen throughout this chapter.

Each group of students will have to present their finger choreography to the whole class, with their own sets and music. The students' creativity and imagination will be developed during these last two acts. The aim here is to introduce your class to the concept of the kaleidoscope by first experimenting and manipulating it through their bodies. If the kaleidoscope is first and foremost an optical instrument that allows geometric shapes and colours to be observed through a game of mirrors, the finger kaleidoscope activity allows this instrument to be discovered beforehand through the use of hands and fingers. The hypnotising effect that the kaleidoscope can create will be found in the choreography of the pupils' hands, which must imitate each of their classmates' movements (mime and symmetry). This activity requires observation, analysis, rhythm and, above all, a concordance of movements between the pupils.

## Theatrical objectives

Through this activity, the pupils are no longer mere actors but also become directors. They will have to propose and imagine their own choreographies, but also design sets and select music to accompany their performances. The aim here is to make the pupils discover another aspect of theatre: that of directing and the role of directors. The students will have to think about their desires, the visual effects they want to achieve to impress their audience.

## Skills developed

- Creativity and imagination
- Matching of movements
- Adaptation
- Observation
- Rhythm
- Communication
- Organisation within a group
- Proposing and exchanging





## Finger Kaleidoscope

After seeing each of your students' choreographies you can show them a Kaleidoscope finger video with the following link: <https://youtu.be/GC-PV2BSYD4?si=im0le15RclDYw6TI>



After this video, organise a discussion and ask them questions about the emotions they may have experienced while watching this extract. The aim is to gradually bring them to the captivating and hypnotising effect of this choreography, to briefly recall the effects of symmetry and geometry and to introduce the kaleidoscope.

## What is a Kaleidoscope?

The kaleidoscope is first and foremost an optical instrument, created by a physicist in the 19th century, which allows geometric shapes and colours to be observed through a set of mirrors. The observer must place his eye on one of the sides of the tube and observe the play of lights reflected on the mirrors, which creates spectacular visual effects. You can suggest that your pupils make a kaleidoscope in class. To do this, follow the instruction sheets below to organise a kaleidoscope-making workshop.











## Tell me a story with your hands

Take your students to discover another art form: shadow puppetry. Hands are capable of anything, even representing animals! From the cards we provide below, learn the right gestures to be able to reproduce some of the animals and propose to your pupils to imagine and write a story. In groups of 4, the pupils will take it in turns to mime animals and tell a story. Through this activity, introduce them to this theatrical genre which consists of projecting silhouettes with very little material thanks to the play of light and darkness. Let them discover what shadow puppets can do in the performing arts.



## Building a kaleidoscope

### List of materials:

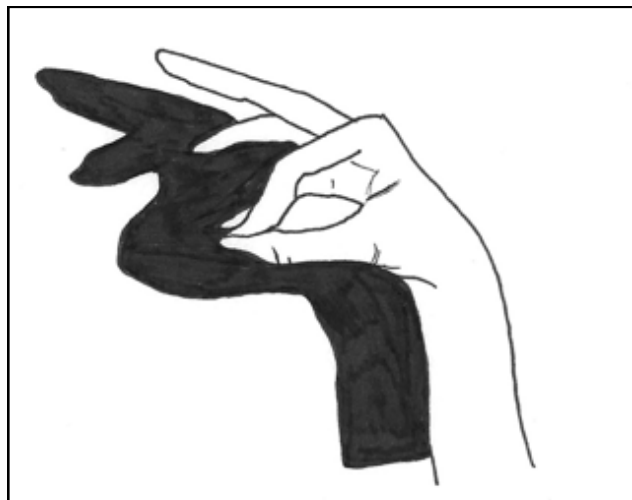
- |   |                                     |   |                                      |
|---|-------------------------------------|---|--------------------------------------|
|  | • A 20 cm long cardboard tube       |  | • A 10 cm square of transparent film |
|  | • A hard plastic sleeve             |  | • Beads, sequins and confetti        |
|  | • A ruler                           |  | • Scissors                           |
|  | • A felt-tip pen or markers         |  | • Scotch tape                        |
|  | • A 10 cm square of black cardboard |  | • Coloring sheets                    |

### Building steps:

- Step 1 - Draw a 20cm x 10cm rectangle on a piece of stiff plastic and cut it out. Draw three horizontal strips 3.5 cm wide and one thin strip 0.5 cm wide.
- Step 2 - Fold the plastic along the lines to form a 3D triangle. Tape the thin strip to hold the shape.
- Step 3 - Insert the triangle into a paper towel roll and attach a black cardboard circle to the other end. Punch a small hole in the center of the circle and attach it to the tube.
- Step 4 - Place a square of transparent film on the other end of the tube and push it together to form a small pouch. Fill this pocket with beads, sequins, and confetti.
- Step 5 - Place another square of transparent film over the end of the tube that encloses the beads, pull the paper tight, and put a rubber band around it to seal it.
- Step 6 - Trim the corners of the square for a better look.
- Step 7 - Decorate the outside of the tube with stickers or gift wrap.
- Step 8 - Look through the tube to see the multi-colored, geometric patterns created by the beads and other odds and ends as you slowly move them around the tube.



## Chinese shadow hands



The rabbit



The dog



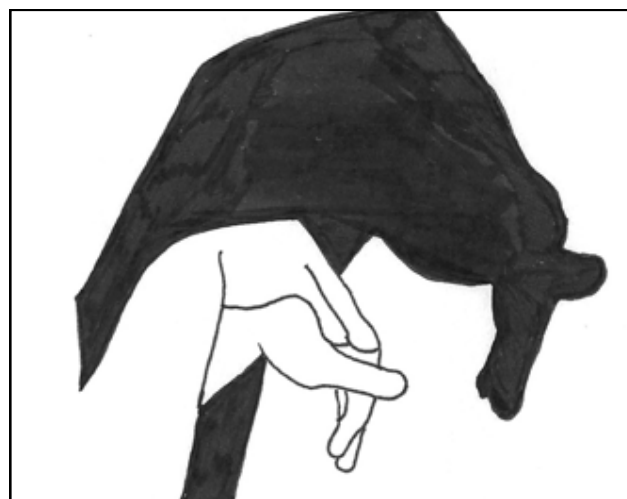
The deer



The spider



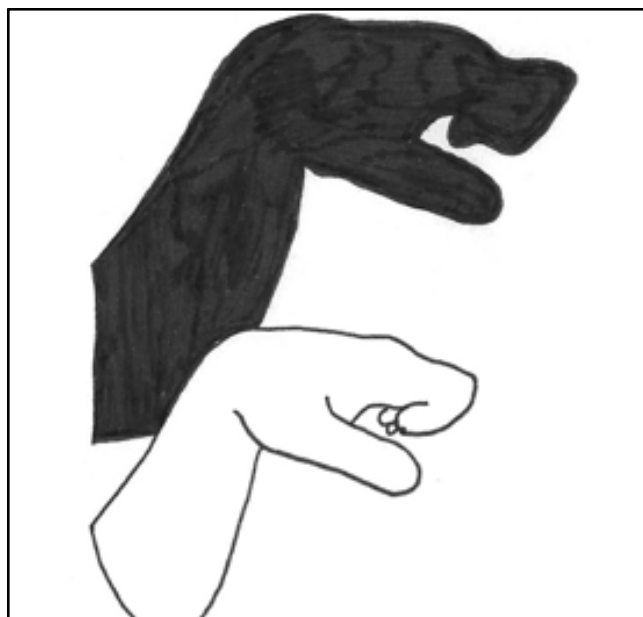
The camel



The elephant



## Chinese shadow hands



The snake



The horse



The bird



The snail