

## Toolkit 3

### Mimesis Activities for linking Science & Performing Arts



## 3.1 Introduction to the Mimesis Activities

The Mimesis activities are a set of eight interactive and educational proposals called "Plays" and divided into "Acts" aimed at creating pedagogical sequences to approach a wide array of scientific concepts and principles using theatrical techniques such as improvisation, acting, physical theatre, and puppet theatre to help students grasp complex concepts in a fun and engaging way.

The activities either focus on a specific scientific topic such as marine biology, astronomy, environmental science, and mathematical concepts or can easily be freely adapted to a wide range of topics according to the wills and needs of the teachers. They are designed to foster curiosity, knowledge, and critical thinking skills. They emphasize the importance of teamwork and communication, allowing students to collaborate and exchange ideas. They include hands-on exploration, role-playing, and creative expression.

[Watch tutorial](#)



[Step by Step](#)



**PLAY 1**  
**A MATTER OF SCALE**

#body #space  
#physicaltheatre



**PLAY 2**  
**SCIENCE STORYTELLERS**

#improvisation  
#interpretation #acting



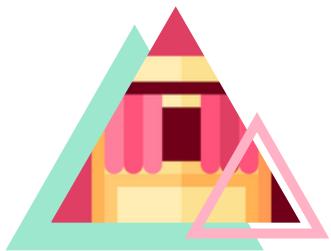
**PLAY 3**  
**THE SECRET LIFE OF PLANKTON**

#mime #improvisation  
#acting



**PLAY 4**  
**WATER WATER EVERYWHERE**

#masktheatre  
#improvisation #acting



**PLAY 5**  
**POINT-LINE-SHAPE-PUPPET**

#puppet #dance  
#scriptwriting #narration



**PLAY 6**  
**WORLD ON FIRE**

#improvisation  
#scriptwriting #acting



**PLAY 7**  
**STEAM YOUR BODY**

#body #mime #acting  
#dance



**PLAY 8**  
**FAMOUS KAMISHIBAI**

#sets #motifs #narration  
#diction #expression

### 3.1 Introduction to the Mimesis Activities



#### Play 1 - A Matter of Scale

Theatrical techniques used: Body and space awareness, physical theatre

This activity is thought as the discovery of space. To start with, the children discover space with their own body. They experience how big are the distances in space and how the planets turn and interact with each other. This is a mess ! But if you look at it from another point of view, it's very organised, almost perfect...

In the second part of the activity, the children use the knowledge earned in the first sequence to create their own planetary systems. For each system, constraints have to be respected. At the end, the children will present their system to the class. They will need to explain its specificities and describe all the planets.

**Scientific orientation:** This activity centres around astronomy and cosmology, exploring concepts related to the solar system, planets, stars, galaxies, and the vastness of the universe. Through hands-on exploration, students simulate the movements of celestial bodies, create their planetary systems, and gain insights into the characteristics and interactions of different celestial entities. This fosters an appreciation for the wonders of the cosmos and nurtures scientific inquiry.



[view activity](#)



#### Play 2 - Science Storytellers

Theatrical techniques used: Improvisation, interpretation, acting, physical theatre

The 'Science Storytellers' activity is designed to provide students with a fun and creative way to discover and learn about science. It aims to stimulate students' scientific curiosity and enhance their understanding of scientific concepts through the medium of theatre.

The main objective of this activity is to encourage students to use their creativity and scientific knowledge to improvise on short stories, thereby reinventing the science concepts they have learned in class.



[view activity](#)



In groups of two or three students, they will draw four different cards, each representing a different element. The first card determines the scientific concept they will draw at random, the second card provides an element of the setting that they must incorporate into their improvisation, the third card assigns a character to include in their story, and the fourth card gives instructions on how they should improvise.

**Scientific orientation:** This activity provides a creative approach to various scientific topics such as biology, chemistry, and physics. Students use improvisation skills to create short stories that incorporate scientific concepts. For instance, they can improvise stories about animal adaptations, ecosystems, chemical reactions, or forces and energy. By engaging in this activity, students enhance their scientific knowledge, communication skills, and creative thinking abilities.



#### Play 3 - The Secret Life of Plankton

Theatrical techniques used: Interpreting, miming, acting, improvising, physical theatre

***At the beginning, there was nothing...***

The 'Secret Life of Plankton' activity aims to introduce the fascinating topic of underwater life to children of all ages. Through this interactive and educational activity, children not only expand their knowledge about underwater life, but also delve into the captivating realms of earth science, biology, the creation of our planet, the intricate food chain, and the vastness of geography. By participating in this activity, children embark on a journey of discovery and exploration, where they will uncover the mysteries of the underwater world in a fun and engaging manner.

**Scientific orientation:** This activity delves into marine biology, oceanography, ecosystems, and environmental conservation. Students explore the diverse world of plankton, their vital role in marine ecosystems, and their interactions with other organisms. They investigate the impact of human activities on plankton populations and gain an understanding of the importance of protecting these delicate ecosystems. This promotes scientific literacy and environmental awareness.



[view activity](#)



#### Play 4 - Water Water Everywhere

Theatrical techniques used: Mask theatre, improvising, physical theatre, acting

Through the Water Water Everywhere activity, children will explore basic physical concepts and processes related to water through physical and mask theatre techniques. These activities, divided into 4 acts, resemble the composition of a play and offer different approaches to studying water, its 3 aggregate states and the 4 main transition processes between them. Students will develop their knowledge through action and expression of body movements.



[view activity](#)



At the same time, students go through a sequential process from learning about acting tools, creating their own theatrical mask character and improvised mask theatre performance. Becoming a water creature and interpreting it with the body contributes to learning and consolidating knowledge through full body-emotion-mind experience. These different activities must be completed in full in order to acquire all the skills. They are designed to be done in parts in several consecutive lessons.

**Scientific orientation:** This activity focuses on the natural water cycle, states of matter, properties of water, and the significance of water for life on Earth. Through mask theatre, improvisation, and physical theatre techniques, students explore the dynamic nature of water and its various states. They learn about evaporation, condensation, precipitation, and the role of water in shaping the Earth's landscape. Additionally, they investigate water conservation strategies, fostering a sense of environmental responsibility and scientific understanding.

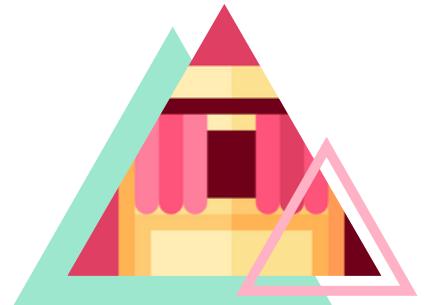
### 3.1 Introduction to the Mimesis Activities



#### Play 5 - Point-Line-Shape-Puppet

Theatrical techniques used: Physical theatre, dance, script writing, narrative expression, diction, interpretation, puppet theatre

Through the POINT-LINE-SHAPE-PUPPET activity, we aim to make children explore basic mathematical concepts through physical and puppet theatre techniques. These activities, divided into 4 actions, resemble the composition of a play and offer different approaches to acquire skills to understand and apply the abstract geometric terms "point", "line", "angle", "shape", etc. in a broad context. They allow students to develop their knowledge through their bodies and space.



[view activity](#)



The students will go through a sequential process of familiarisation with acting tools in the puppet theatre, creating improvised puppets and a script for a theatrical performance based on a given plot structure. This playful approach will facilitate students in solving more complex mathematical problems through visualisation, bodily experience and a creative attitude.

**Scientific orientation:** This activity focuses on fundamental mathematical concepts such as points, lines in the spaces, angles and shapes. Students employ puppet theatre techniques to visually represent these concepts and engage in interactive activities that involve creating and manipulating geometric shapes. They explore the properties of different shapes, identify angles in their surroundings, and comprehend the relationships between points and lines, fostering a solid foundation in geometric understanding.

#### Play 6 - World On Fire

Theatrical techniques used: Mask theatre, improvising, physical theatre, acting

The 'World On Fire' activity is an engaging and interactive group game inspired by theatre plays and creative techniques. Its primary objective is to empower children by providing them with a platform to confidently express their ideas and explore ways to transform them into reality.

**How can we avoid bushfires or mass wasting ? Prevent the rising of the seas and drought ? It sounds tricky, but we can all have ideas to address those issues.**

In the first part, children will go on an "idea safari" with the help of a little game. On the second, they will discover what jobs it takes to bring these ideas to real life. And at the end, they will play different role, to pitch their ideas to the rest of the group.

**Scientific orientation:** This activity focuses on environmental science, addressing topics such as climate change, deforestation, pollution, and renewable energy. Through discussions and role-playing scenarios, students examine the causes and effects of these environmental issues. They are encouraged to develop innovative solutions to prevent bushfires, mitigate the impacts of rising sea levels, and promote sustainable practices, fostering critical thinking and problem-solving skills.



[view activity](#)





## Play 7 - STEAM Your Body

Theatrical techniques used: **Miming, acting, dancing**

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 play, 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.



[view activity](#)



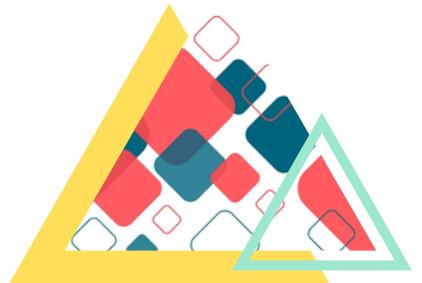
**Scientific orientation:** This activity offers an interactive and multidisciplinary approach to teaching mathematical concepts related to symmetry, geometry, and patterns. Through physical movement and creative expression, students explore symmetrical shapes, create geometric figures, and deepen their understanding of symmetry principles. They also investigate the connection between movement and mathematical concepts, fostering spatial reasoning and mathematical thinking.

## Play 8 - Famous Kamishibai

Theatrical techniques used: **Artistic choices on sets and motifs, physical expression, narrative expression, diction, interpretation**

The 'Famous Kamishibai' activity is an annual, long-term art project that offers pupils the opportunity to discover and create a Kamishibai, a portable paper theatre of Japanese origin. This activity allows both pupils and teachers to become exceptional storytellers using a series of illustrated boards. It aims to develop oratory skills and storytelling abilities for people of all ages. Through this project, pupils will explore the lives of famous and lesser-known scientists who have made significant contributions to history through their scientific discoveries. The project consists of two main parts: constructing the kamishibai and creating stories with illustrated boards.

The goal is to provide pupils with a scientific culture, enhancing their understanding of scientific contributions throughout history and fostering curiosity and interest in science from an early age. This activity helps develop a range of skills, such as communication, creativity, information retrieval, imagination, and collaboration, as well as approaching the basics of storytelling.



[view activity](#)



**Scientific orientation:** This activity is designed to explore the lives and contributions of renowned scientists, such as Marie Curie, Albert Einstein, Isaac Newton ... . By creating Kamishibai stories, students delve into the scientific discoveries and achievements of these scientists. They can depict Marie Curie's groundbreaking research on radioactivity or Albert Einstein's theory of relativity, fostering a deeper understanding of their significant contributions to scientific knowledge.