

5.1 Painting and creative work in school

This 3-hour STEAM program develops 2nd graders SPRIT skills through 2 stages of a combination of art with science and maker pedagogy through the theme of a hot air balloon (interesting physical object) found in a piece of artwork by a well-known artist. In the first stage, children look at paintings by famous artists. Their flexibility is developed by listening to their classmates' different ideas about what the artist was thinking. In the second stage, students build a hot air balloon/or any interesting items using simple materials such as egg cartons and foam while the problem-solving valuing others, creativity and emotional regulation skills are developed. The object is chosen by the children from one of the paintings. By preparing, testing and improving, they learn to stay calm and find new ways to achieve their goals. Group discussions also help students develop empathy by listening to and valuing the opinions of others. Finally, the project also builds resilience by showing learners that trying again after making a mistake is an important part of learning. The STEAM project can be continued with other self-made creations, but in this case, the children must see the object they are going to create in one of the paintings.

Basic Information Sheet

Age group	Student number	Duration	Number of stages	Subjects connection and relevance
3 rd grade	One class (max. 30 students)	180 minutes	2 stages	grammar and literature, environmental studies, digital culture, design and technology, visual arts

STEAM Event Summary

As part of the activity, students become familiar with the artworks of Pál Szinyei Merse, preferably through an on-site visit to the Hungarian National Gallery. If the museum visit cannot take place, the artist's life and work are presented in the classroom environment through a discussion accompanied by visual projections, including the analysis of selected paintings, with special attention to the one depicting a hot air balloon.

In the next part of the program, students engage in a creative activity: they construct hot air balloons using polystyrene and egg cartons, reflecting on the motif seen in the painting. Throughout the creative process, students develop their fine motor skills, problem-solving abilities, and spatial thinking. The activities also aim to foster students' resilience and flexibility, with a special focus on enhancing adaptability, perseverance, and a positive attitude toward new challenges.

SPIRIT Skill Focus

- Creativity
- Problem-solving
- Valuing people and nature
- Curiosity, sense of wonder and openness

National curriculum Link and Objectives

- Development of observation skills, analytical thinking, and memory
- Improvement of reading comprehension and vocabulary expansion
- Development of opinion formation and visual communication
- Interpretation of the themes and motifs of artworks (e.g. nature, hot air balloon, relationship between humans and the environment)
- Basic understanding of how hot air balloon's function and their role as a means of transport
- Material awareness: recognizing the properties of materials used (polystyrene, paper, plastic)
- Model creation following simple technical steps
- Understanding the role of basic structural elements (e.g. how a hot air balloon model can stay airborne)
- Practical knowledge of working with and using different materials.

Real-world STEAM Connection and Problem definition

The program is based on the artistic representation of phenomena from everyday life, offering students the opportunity to reflect on the world through aesthetic experiences. Through the painting of a hot air balloon by Pál Szinyei Merse, a connection is created between art, technology, and history, while students explore the significance of the development of means of transportation. The construction of a hot air balloon serves as a modelling activity, during which students create, experiment, use recycled materials, and develop their problem-solving thinking. The task emphasizes creativity, environmental awareness, as well as collaboration and adaptability – all of which are essential competencies for navigating everyday life.

Materials at a Glance

Pál Szinyei Merse's paintings in some form (original paintings in the museum; projected images or printed images displayed on the wall in the classroom).

- scissors
- glue
- wooden skewers
- egg carton
- styrofoam ball
- paint, coloured paper, glitter, etc. (for decoration)
- painter's tape

Indoor/Outdoor and Classroom layout

Adaptation to the conditions of the museum setting. In the case of classroom-based activities, images should be displayed or projected in a way that ensures they are clearly visible to all students.

During the creative process, the classroom should be arranged to support group work, considering the needs of the students.

Notes on Research-based approach and integration

During the program, careful observation and analysis of the paintings encourage students to ask questions, express their opinions, and conduct independent or group research on the topic. This process strengthens critical thinking and the ability for autonomous learning. In the hot air balloon construction activity, students apply the knowledge gained from their observations and analysis in modelling, while developing their problem-solving skills and creativity. The integrated approach provides an opportunity to connect art, technology, and science, promoting multidisciplinary thinking and the practical application of learned concepts.

Lesson Flow Overview (linked to details below)

Stage	Title	Brief Description	SPIRIT Skills	Duration	Link to Details
1st	Museum Education Session, Getting to Know the Paintings	- Museum Education Session / Classroom "Walk" Introducing the Paintings. - Exploring the works of Pál Szinyei Merse, observing and analysing selected paintings	- Valuing people and nature - Curiosity, sense of wonder and openness	90 minutes	STAGE 1 – Museum Education Session, Getting to Know the Paintings
2nd	Creative work – making a hot-air balloon from Styrofoam and egg cartons	Making a Hot Air Balloon: - Cut out the part of the egg carton where the eggs sit - this will serve as the basket of the hot air balloon. - Attach 4 to 6 equal-length toothpicks to the inside of the basket using painter's tape. The number of toothpicks can be freely chosen by the students (4, 5, or 6 are all acceptable). - Place a styrofoam ball on top of the toothpicks and secure it with a small amount of liquid glue. - The hot air balloon can be decorated as desired. - If the diameter of the styrofoam ball is larger than the width of the basket, it can be placed onto the toothpicks without glue by piercing it onto them. However, to ensure stability, it is recommended to use a little glue even in this case.  	- Creativity - Problem-solving	90 minutes	STAGE 2 – Creative work – making a hot-air balloon from Styrofoam and egg cartons

Tips and Tricks for dealing with challenges (for the whole STEAM program)

- By considering different learning styles, varied questions and tasks can be used to encourage thinking and active participation. Positive feedback is essential, as it reinforces students' willingness to experiment and their perseverance. If students find it difficult to express their thoughts about artworks, visual or playful methods - such as drawing or short storytelling - can be helpful. During the creative process, a flexible schedule can support experimentation and problem-solving, while ensuring the safe use of materials and tools.

Difficulty level tailoring notes

When observing and analysing the paintings, it is useful to focus on simpler, easily noticeable visual elements, while offering more complex, in-depth questions as optional prompts. The number of artworks discussed can also be adjusted according to student needs.

During the creative activity, the airship-making task can be easily adapted: the simpler version involves fewer elements, while more advanced versions allow for elaborate decorations and more complex structures. Teachers should continuously monitor students' needs and provide support when necessary to ensure that all students experience success during the activity.

STEAM Program Debriefing and Reflection Questions

- What part of today's program did you like the most, and why?
- Did you encounter any difficulties during your work that you were able to solve? How did you manage it?
- How did you feel when something didn't work out the first time as you wanted?
- What did you learn today about adapting and finding new solutions?
- How did your classmates' opinions or help contribute to doing the task better?
- What are you most proud of after today?

5.1.2. Stage details and Activities Flow

STAGE 1 – Museum Education Session, Getting to Know the Paintings

How does this develop particular SPIRIT skills

The aim of the session is for students to develop resilience and flexibility through observing and interpreting the paintings of Pál Szinyei Merse. By closely examining the artworks and discussing various interpretations, students experience that understanding is not always immediate but can be achieved through perseverance and thoughtful reflection. Resilience is strengthened by cultivating patience and acceptance of uncertainty, while flexibility is demonstrated through embracing different viewpoints, openness, and responsiveness to new perspectives.

What do we want to achieve regarding SPIRIT skill development (student understanding and/or behaviour)?

Students learn to observe visual details persistently and consciously, even if they do not understand their meaning at first. They accept that making mistakes or not knowing something is not a failure, but part of the learning process. They become capable of listening to and accepting different interpretations and confidently expressing their own thoughts. Their openness, emotional awareness, and ability to adapt flexibly to different viewpoints improve.

Academic/Curriculum Objective connection

- Developing observation skills, analytical abilities, and memory
- Improving reading comprehension and expanding vocabulary
- Enhancing opinion formation and visual communication
- Interpreting the themes and motifs of artworks (e.g., nature, hot air balloon, relationship between humans and the environment)

Materials and tools needed for implementation

Pál Szinyei Merse's paintings in some form (original paintings in the museum; projected images or printed images displayed on the wall in the classroom).

Preparation notes

High-quality reproductions of the paintings need to be prepared for projection or in printed form. It is important to provide a basic, age-appropriate overview of the artist's life and work - avoiding overly complex biographical details.

It is advisable to give a brief, storytelling-style context beforehand to support the reception of the artworks, and to allow time for silent observation as well. Planning the questions in advance helps guide the observation process (see appendix).

The educator should also be prepared to activate the students' imagination and prior experiences (e.g., have they ever seen a hot air balloon, visited a museum, or what "old painting" means to them).

Guided Questions

- What was the first thing you noticed in the painting? And now, if you look again, do you see anything else?
- What do you think was the artist's intention? Why do you think they painted this particular scene?
- What would you do if you didn't understand what is happening in the painting? What could help in such a situation?
- Was there any detail in the painting that you found difficult to understand? What do you think about it now?

Stage Debriefing Questions (Optional)

- Was there a moment when you weren't sure what you were seeing? What did you do then?
- Did your opinion about the painting change as you looked at it more? Why?
- How did it feel when others saw the same painting differently than you did?
- What was the most difficult part of this task, and how did you solve it?

Tips and Tricks for dealing with stage challenges

- For hesitant students, it is helpful to use simple, open-ended questions, such as "What do you notice first?" and to reinforce that every answer is valuable. When answers are quick and superficial, asking about other senses, for example, "What sounds might you hear there?" can deepen observation. In cases of differing opinions, it is important to emphasize that art can be interpreted in many ways, which helps develop flexibility. Shy students can be engaged through small group or pair discussions. For those with attention difficulties, giving specific search tasks, like "Find a unique shape!", helps them focus better. To foster resilience, praise students who try again or seek alternative solutions after making mistakes.

STAGE 2 – Creative work – making a hot-air balloon from Styrofoam and egg cartons

How does this develop particular SPIRIT skills

During the creative activity, students encounter situations where their initial plans may not work out at first, or they need to adjust while using materials and tools. This supports the development of resilience, as they learn to experience and accept failures and seek new solutions. The competency of flexibility is demonstrated when students adapt to changing conditions, think creatively, and find alternatives to emerging problems. Throughout the activity, students actively engage in problem-solving, communicate, and reflect on their work, which also supports the competencies of self-regulation and collaboration.

What do we want to achieve regarding SPIRIT skill development (student understanding and/or behaviour)?

The aim of the activity is for students to learn to accept failure and be able to restart the task, thereby strengthening their resilience. It is important that students develop flexibility in adapting to emerging problems and become capable of seeking alternative solutions.

The activity also aims for students to recognize and express their own feelings and thoughts during the creative process, supporting their ability for self-reflection. Part of the development is to boost the children's self-confidence and encourage them to embrace challenges with perseverance in completing the task. Finally, the goal is for students to improve their collaboration skills and be able to listen to others' ideas in order to find solutions together with flexibility.

Academic/Curriculum Objective connection

- Development of memory
- Improvement of reading comprehension and vocabulary expansion
- Interpretation of the themes and motifs of artworks (e.g., nature, hot-air balloon, the relationship between humans and the environment)
- Basic understanding of the function and role of the hot-air balloon as a means of transportation
- Material knowledge: recognizing the properties of the materials used (Styrofoam, paper, plastic)
- Model-making through simple technical steps
- Understanding the role of basic structural elements (e.g., how a model hot-air balloon can stay in the air)
- Practical knowledge of how to work with and use materials

Materials and tools needed for implementation

- scissors
- glue
- wooden skewers
- egg carton
- Styrofoam ball
- paint, coloured paper, glitter, etc. (for decoration)
- painter's tape

Preparation notes

To successfully carry out the activity, it is essential to prepare all necessary materials in advance. It is helpful to demonstrate the steps of building the hot-air balloon beforehand and show examples to support students' visual understanding. Clear and simple instructions should be provided, and students should be given enough time to experiment and start over if needed. It is important to consider students' varying abilities and offer flexible support throughout the creative process. Safety guidelines should also be explained in advance, with special attention to the use of glue and small parts.

Guided Questions

- What is your plan if something doesn't work out the way you imagined?
- What can you do if the glue doesn't hold well enough? Do you have another idea?
- How would you change your original idea if it doesn't work as planned?
- What other materials could you use if this one isn't available?

Stage Debriefing Questions (Optional)

- Was there a part you had to start over? How did you feel during that?
- What was something you found difficult at first but managed to solve in the end?
- If you could make it again, what would you do differently?
- What are you most proud of in your finished hot-air balloon?

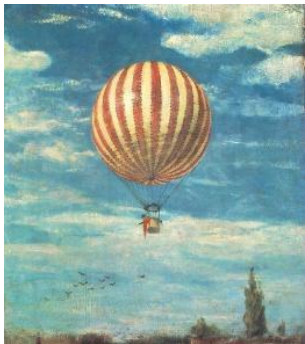
Tips and Tricks for dealing with stage challenges

- If students feel uncertain or are afraid of making mistakes, encourage them to try without fear and emphasize that mistakes are valuable opportunities for learning. If the glue does not hold properly, help them find alternative solutions or allow more time for drying. When different ideas arise, highlight the value of creativity and multiple solutions, thus developing their flexibility and ability to collaborate.

Annexes

Pilot implementation (detailed example with lesson/activity plan), attachments

The paintings used, with descriptions and suggested questions.

	Picnic in May (1873) • This painting marked the end of Szinyei's first artistic period. • It was created in the studio, not outdoors. • Szinyei himself is in the picture (the man lying on his stomach with his back to us, symbolically turning his back on critics). • Suggested questions: What colours do you see in the painting? (lots of green; the people - red, burgundy - blend well into the green grass) What are they doing? Do you think they are friends? Is the painter in the picture? If yes, which one do you think he is? Do you also go on picnics or hikes?
	Lady in Violet (1874) • His wife posed as the model. • The colours are not very vibrant. • The landscape was partly painted from memory. • This was also created in the studio. • The trees cast shadows on the woman. • Interestingly, the dress was sewn by the painter's wife, Zsófia Probstner. • Suggested questions: What are the colours like in the painting? (darker, the dress itself is also dark) Who do you think is in the picture? How do you think she feels? (She was distressed because she didn't like posing and was pregnant with their first child, making the dress tight.) Have you ever drawn a family member or friend?
	The Balloon (1882) • He painted his brother-in-law's balloon. • He was fascinated by flight. • With this balloon, Szinyei's brother-in-law travelled across Europe and parts of Asia, even settling in Japan for a while. • The airship can symbolize many things: longing, the soaring of creativity, artistic freedom. • Suggested questions: What colours does the airship have? (white and red, warm and cool contrast) Where is it located? (flying, but still close to the ground) Who might be waving from the basket? (Szinyei's brother-in-law) Where can you still see this balloon today? Have you ever flown before?

	Skylark (1882) • Most of the painting is sky (about 3/4 of it). • The blue and green colours next to each other almost vibrate. • The lady is looking at the skylark soaring in the sky (a contrast between freedom and being earthbound). • This was also painted in the studio. • Suggested questions: What colours dominate the painting and which colour is more abundant? Why do you think there is bluer? (it symbolizes freedom) The painting's title is <i>Skylark</i>, but where is the bird? Have you ever seen a skylark? Have you heard its song? Do you have a favourite bird?
	Meadow with Poppies (1902) • The green and red contrast also creates a vibrating effect. • Although the poppies are small, they dominate the painting. • The focus is not only on the flowers but also on the path next to them. • Suggested questions: What kind of flowers are in the painting? Colours opposite each other on the colour wheel are complementary colours, such as orange-blue, lemon-purple, green red. Do you see any of these in the painting? What effect does using such contrasts have? (It makes the painting vibrate.)

