



## NEXT STEP O2

### *NEXT STEP SCENARIO*

### *Starter School Educational Scenario*



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## 1. Introduction

### Main aim

The NEXT STEP project is proposing a whole school approach to science learning. Building on previous successful European open schooling and STE(Arts)M initiatives, the project will bring about the NEXT STEP in education by providing a roadmap for the transformation of school classrooms into open and creative learning spaces. NEXT STEP methodological approach exceeds the state of the art regarding existing creative approaches and STEAM initiatives. In this framework the NEXT STEP project will design and set in operation the STEAM IDEAS' Square, an innovative learning environment which will be the nucleus of the school's activities. NEXT STEP will demonstrate how these environments a) can offer opportunities for deeper learning of STEAM, b) can improve the innovation and creative capacities of learners, c) can support the new role of teacher as a coach of the learning process, d) can facilitate effective cooperation with external stakeholders and e) can inspire policy-makers, school heads and school staff to imagine the schools of tomorrow.

### Vision of the Project

The NEXT STEP vision for a creative and innovative school is the development of the creative and innovative classroom of tomorrow, the STEAM IDEAS' Square, in which education relies on an interdisciplinary, arts-based methodology within an entrepreneurship and design thinking framework.

**STEAM IDEAS' Square - (SIS)** which will be the main core of the school's creative and innovative activities will have two substances: digital and physical. In its premises and via its digital tools in-school interaction between STEM and other disciplines schoolteachers and among all the relative stakeholders (students, educators, parents, artists, scientists, local community authorities, industrial stakeholders, and policy makers) will be established with purpose to run complex and exciting real-life educational world projects. Teams of students (from the same or different classes) can also work and cooperate under SIS umbrella.

By connecting curious minds and specialists and lead them to think "out of the box" will help to speed up the flow of ideas to **transform the school and its classrooms to** a unique creative space for educational innovation and STEAM education.

Through collaboration and the appropriate pedagogies will be established prototyping, pedagogical innovation, creativity (along with distance learning opportunities) and well-being at school.

In addition, the capacity to work with external organizations so as to explore how such partnerships and networks can be built through a long-term strategy-based on trust and common objectives they contribute to key competence development.

**A way to implement and use the ideas of NEXT STEP project is through developing a series of scenarios of use that are in line with the proposed approach and involve schools in a series of creative and innovative activities for the improvement of the local cities, settlements, and communities' physical and built-up environments, while engaging key stakeholders (experts, researchers, local communities, businesses etc.) in the process. Different scenarios about different school typologies will be created and these with the help of the right Strategies will help schools to evolve**

**One of these scenarios that is suitable for a STARTER school (according to our typology) is the one presented later in this document.**





## 2. Essential Features of the STEAM IDEAS' Square

The development of key competences is further facilitated by the provision of context from other disciplines and can:

- a. offer opportunities for deeper learning of STEAM,
- b. improve the innovation and creative capacities of learners,
- c. support the new role of as a coach of the learning process,
- d. facilitate the effective cooperation with external stakeholders and
- e. inspire policy makers, school heads and school staff to imagine the schools of tomorrow.

All the above in total in the context of a functional NEXT STEP STEAM IDEAS' square will drive to overcome the organizational and technical barriers and to integration of creative and innovative culture in every day school practices and to aggregate and create projects and activities customized to the specific needs of schools.

Deeper Learning Competences, as **defined in the Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning (2006/962/EC)** as described by the Hewlett Foundation model (Pellegrino & Hilton, 2013) can be adopted in order to define the exact indicators needed to measure the efficiency of the project's objectives. A selection of certain deeper learning competences that correspond to a range of ages wider than the high school students (which is the main target group of the deeper-learning competences model) can be classified in the following three groups (Frans & Andreotti, 2018):

**Group A: Cognitive competencies**

- (1) Mastering rigorous academic content - A1
- (2) Thinking critically - A2

**Group B: Interpersonal competencies**

- (3) Working collaboratively - B3
- (4) Communicating effectively - B4

**Group C: Intrapersonal competencies**

- (5) Learning to learn (C5)
- (6) Developing academic mindsets - C6

**As defined in the Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning (2006/962/EC):**

- F1) Literacy competence (GA1)
- F2) Multilingual competence
- F3) F3M.Mathematical competence and F3S. competence in science, F3T. technology and F3E.engineering, F3MS, F3ST, (STEM=F3)
- F4) Digital competence - F4
- F5) F5P.Personal, F5S.social and F5L.learning to learn competence (C5)
- F6) Civic competence
- F7) Entrepreneurship competence
- F8) F8C. Cultural awareness and F8E.expression competence

**We use the Competences as features taxonomy from the European Parliament and the Council's recommendation in our scenario. ( ... )**







### 3. NEXT STEP Scenario Identification for the proposed scenario with the title: *The kite then and now*

#### 3.1. Educational Scenario in a Starter School - General description.

*A kite is an unpowered, heavier-than-air flying device held to the earth by a line. The kite flies because wind resistance causes the air pressure under the kite to be greater than the air pressure above the kite, making the kite rise. The word kite is derived from the name of a type of bird belonging to the hawk family which is known for its graceful, soaring flight.*

*The Kite Scenario is a project-oriented scenario consists of 10 activities. The activities are transdisciplinary in nature, aiming to create the necessary cooperation and synergies between teachers, school management and other educational authorities as long as various stakeholders. The activities and the preparatory actions are proposed to take place inside classrooms, ICT labs or other labs and STEAM IDEAS' square place (newly created or started to implement).*

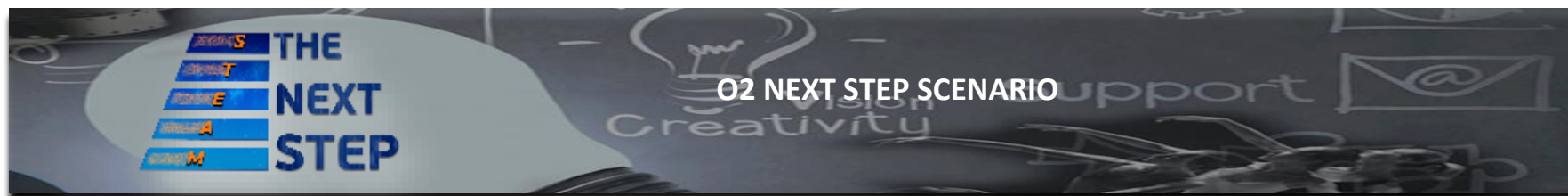
*Various teachers' fields will be needed according to their activities and different synergies explained in the scenario.*

*We can note about Teachers' fields and concepts they will deal with as follows:*

- **Science Teacher:** *Physics (forces, balance, flying, altitude, temperature, pressure, and weather phenomena, history of Science.*
- **Technology Teacher:** *Engineering, construction of the kite*
- **ICT/Informatics Teacher:** *Apps for stop motion videos, ...*
- **Art Teacher** *painting kites, and add-on paper for kites*
- **Mathematics Teacher** *Geometry, mathematical equations)*

Teacher Synergies they will implement include, for example:

- Art Teacher will collaborate with Technology Teacher in the creation of the paper which will be used to the kites.
- Science Teacher will collaborate with math Teacher in order to prepare (in sketch) the frame of the kite in different sizes.
- Math and Technology Teachers will collaborate in order to create/construct the frame of the kite used as a model to teaching.
- These collaborations could take place in STEAM Ideas' Square physical premisses or at any other electronic place.

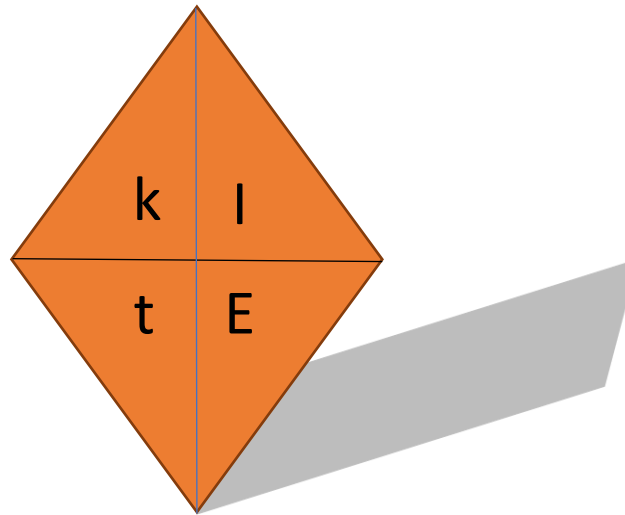


### 3.2 Scenario Identification Card

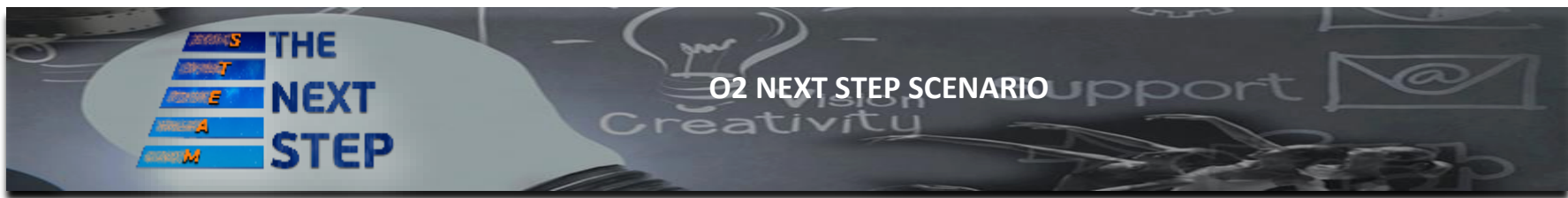
Category	Description
Title	<b><i>The kite then and now</i></b>
Teaching theme/problem	Through several activities of kite's creation various phenomena and concepts of science, technology, engineering, art, and history are studied and explored in a pleasant and full of vivid experiences, educational process.
Keywords	STEAM, kite, Forces, B. Franklin, Geometrical Shapes, AR, Painting movements and Art styles
Language	English
Thematic classification	STEAM oriented Education
Learning/Teaching main objectives:	Principles of Flight, Principles, and applications of Weather Measurements (S), Construction of a Kite (T) engineering (E) Painting Styles (A), Kite's shapes and geometrical properties, (M)
Suggested age group	12-15
Estimated level of difficulty	Starter
Material and technical infrastructure needed	STEAM IDEAS' Square physical and/or digital (new created) , ICT school infrastructure, 1-1 laptops/tablets/iPads
School - Stakeholders Synergies	Field trip, "Koulouma" event on Kathari Deytera, local competition with prizes
Typical interaction time	1/2 month
Teaching level	(Gymnasium and Lyceum) Junior High School and High School
Level of interactivity	High
Type of interactivity	Physical, digital, educational field trips, events
Authors, Publisher name	Dimitrios J. Sotiropoulos, Menelaos Sotiriou
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### 3.3 Scenario Identification Picture




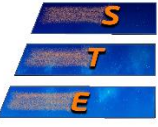




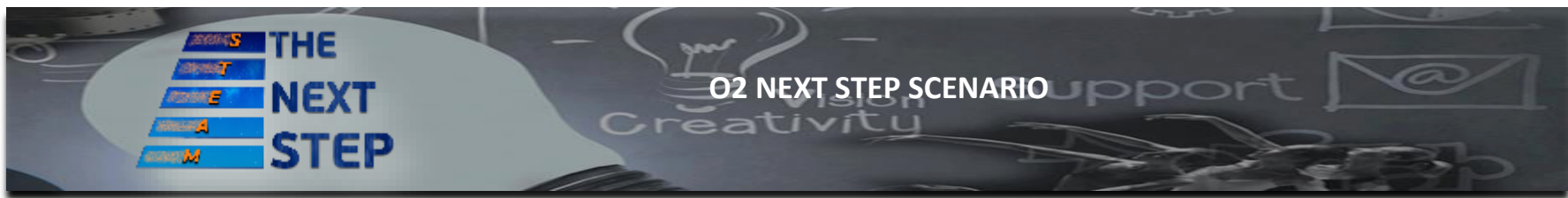
#### 4. Main Project - MP: Kite construction

					
Act #	Description of activities, strategies, methods, means, resources and synergies		Learning goals - Learning outcomes Features/Competences	STEAM Fields	
<b>A1</b>	<b>Science Teacher</b>	Shows videos ( <a href="#">MP_FA1_WS1</a> ) and pictures of different kites. (websites) Make questions to the students to trigger them to think. Referring to Benjamin Franklin's kite story <b>Tools:</b> IWBS, P., <a href="https://www.kiteplans.org/">https://www.kiteplans.org/</a> , <a href="https://www.history.com/this-day-in-history/franklin-flies-kite-during-thunderstorm">https://www.history.com/this-day-in-history/franklin-flies-kite-during-thunderstorm</a>	<b>Educational Method</b> <i>Introduction to the theme and Socratic dialogue</i>	This activity introduces students to the concept of "a kite", and they will learn about its history and the various types of kites around the world	
	<b>Students</b>	Discuss in pairs, take (digital) notes, using tools working Using: <a href="#">MP_FA1_WS1</a> <b>Tools:</b> tablets or notebooks		<ul style="list-style-type: none"> <li>Can describe what a kite is</li> <li>Can describe different kite types</li> <li>To know Benjamin Franklin's kite story and weather concepts</li> </ul> <p style="text-align: center;"><b>F1, F2, F8C, F3S, F4, F5P, F5S</b></p>	In classroom <b>45m</b>
<b>STEAM Ideas' Square (SIS) Operation - School Community Synergies</b>	During A1 and after A1, the schoolteachers (musicians, artists, historians, scientists) collaborate on creating worksheets, online platforms, timeslots for using creative spaces (working in and preparing the STEAM Ideas' Square) and agree on the whole procedure and time needed from daily school activities. It could also the competition theme and criteria could be established.			Time: 1-2 hs	
<b>School-Stakeholders Synergies</b>	A teacher (maybe from STEAM Ideas' Square that the school is gradually starts to create, or the principal) will collaborate with the local community stakeholders to organize the event of "kite's competition" during "Kathari Deytera" or any other day (could be used for). Competition could be organized with gifts and prizes. The kite could have been judged by its height reached on that day, its appearance, its art inspired theme, etc.			Time: 2 hs	




Act #	Description of activities, strategies, methods, means, resources and synergies		Learning goals - Learning outcomes Features/Competences	STEAM Fields
A2	<b>Science Teacher</b> Show video and making questions about the possible materials in kite's implementations. <b>Tools:</b> IWBS,P, <a href="https://www.kiteplans.org/">https://www.kiteplans.org/</a>	<b>Educ Method Inquiry</b>	<ul style="list-style-type: none"> <li>To learn about materials used in creating a kite.</li> <li>Can describe the materials that can be used in kites and can refer to the possible uses of kites</li> </ul> <p><b>F3, F4, F5</b></p>	 In classroom duration <b>45m</b>
	<b>Students</b> Using <a href="#">MP I A2 WS2</a> will try to answer to questions and imagine how kites had been constructed. Students with this activity will make questions (to themselves and pairs) <b>Tools:</b> tablets, notebooks			
A3	<b>Technology or History Teacher</b> Show videos, and referring to paper invention (as paper is one of the main materials for kites) and paper making history in Europe and Greece <b>Tools:</b> IWBS,P, <a href="https://www.youtube.com/watch?v=Mx9949aT06U">https://www.youtube.com/watch?v=Mx9949aT06U</a>	<b>Educ Method Inquiry</b>	<ul style="list-style-type: none"> <li>To learn about the history of paper invention</li> <li>To connect the past with the today paper creation</li> <li>Can explain the paper creation process with various methods.</li> <li>To get sensitized about paper recycling</li> </ul> <p><b>F1, F3, F4, F5, F8E</b></p>	 In classroom duration <b>45m</b>
	<b>Students</b> Using <a href="#">MP I A3 WS3</a> will try to answer to questions about paper manufacturing <b>Tools:</b> tablets, notebooks			
<b>(SIS) - School Community Synergies</b>		Teachers gather necessary tools and materials for next activities of creation of a kite. One kite must be constructed in advance (from teacher's synergy) for using it in the classroom in order Teachers to use it as model. Maybe a (draft or not so draft) video from the procedure also could be in hand in order to be used next (or to have it as procedure in a flipped-classroom alike procedure)		Time: 3h
<b>School-Stakeholders Synergies</b>		Physical Visit (or iconic visit to a <a href="https://museotek.net/venue/mouseio-benaki/">museum</a> through <a href="https://museotek.net/venue/mouseio-benaki/">https://museotek.net/venue/mouseio-benaki/</a> ) about ancient or older "making paper" procedures. Or at a factory of recycling paper ( )		Time 1h / Field trip






Act #	Description of activities, strategies, methods, means, resources and synergies		Learning goals - Learning outcomes Features/Competences	STEAM Fields	
A4	<b>Science Teacher</b>	Using a kite (as a model) for demonstrating the forces applied at it and in parallel will use pictures and text to create a relative presentation (to show and explain the forces applied at a kite and the condition of flying- as it is here: <a href="#">website</a> )	<b>Educational Method</b> <i>Guided Discovery</i>	<ul style="list-style-type: none"> <li>to know the major forces in a kite (weight, lift, tension, and drag)</li> <li>Be able to describe the main forces that take place in a flight of a kite</li> <li>Be able to recognize the conditions of a kite in order to fly up, going down and flying in a constant height</li> <li>Be able to recognize the force derived from the air (force in general not taking into account in physics problems)</li> <li>Be aware of temperature and pressure interaction at the atmosphere</li> </ul> <p><b>F1, F2, F3 (F3S,F3T,F3E),</b></p>	<p>In classroom duration <b>45m</b></p>
	<b>Students</b>	Students will work in teams (3-4 students) Using : <a href="#">MP C A4 WS4</a>  Tools: tablets (or notebooks), camera (tablet's)			
A5	<b>Science or Math Teacher</b>	Explain math functions and trigonometry needed to construct the frame of the kite / (do something like this in classroom: <a href="#">video</a> ) . Making the appropriate calculations for kite of various sizes	<b>Educational Method</b> <i>Guided Discovery</i>	<ul style="list-style-type: none"> <li>To know the math of a kites' frame construction</li> <li>Be able to calculate the lengths of the sides of different shapes of various kites</li> </ul> <p><b>F2, F3, F4, F5S, F5L, F8C, F8E</b></p>	<p>In classroom duration <b>45m</b></p>
	<b>Students</b>	<b>Actions:</b> Students will work in teams (3-4 persons) and will make the mathematical calculations to draw a kite's frame Tools: tablets or notepads, <a href="#">Wolfram Alpha</a>			
	<b>Technology Teacher</b>	Demonstrate the frame construction of a kite, talking about the different shapes and sizes and starting construct a diamond shaped kite	<b>Educational Method</b> <i>Inquiry</i>	<ul style="list-style-type: none"> <li>To see and get to know how a kite can be constructed</li> <li>Be able to construct a kite's frame based on their calculations</li> <li>Explain and apply the steps to create a kite</li> </ul>	
	<b>Tools, Resources:</b> appropriate rope, stripes from light plastic or wood of different length				

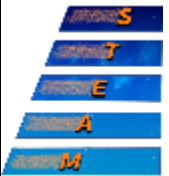

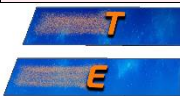
A6	Students	<p>Create their own kite (per team) working in pairs. First the frame and then with Art Teacher the main paper</p> <p><b>Resources:</b> light rope, stripes from light plastic or wood of different length for every team</p>		<p><b>F2,F3,F4, F7,F8L,F8E</b></p>	<p>In classroom</p> <p>90m / 2 teaching hours</p>
A7	Art Teacher	<p>Talk about different colors and/or shapes</p> <p>Talk and show different painting styles and movements, Cubism especially, remembering students collage art techniques.</p>	<p><b>Educational Method</b></p> <p><i>Guided Discovery</i></p>		<ul style="list-style-type: none"> <li>• Get to know different art and paint movements</li> <li>• Apply such techniques to their kites</li> <li>• Step by step painting of their kites' main paper or paint light paper (to be glued after to the kite)</li> <li>• Using cubism as an inspiration (through painting or collage art techniques).</li> </ul>
	Students	<p><b>Actions:</b> Complete their own kite working in pairs adding the main paper on the frame. Working in pairs. The paper itself is the canvas of their painting or the base where they glue their light hand painted paper. Paint, make their kite an Art item, taking pictures of the results, in order to create (later) stop-motion videos from the procedure.</p> <p><b>Tools:</b> paper, paints, camera (tablet's)</p>		<p><b>F1, F2, F3, F4, F5, F8</b></p>	
A8	Science Teacher	<p>Show videos about flying a kite</p> <p>Show videos of kite with tail, without tail, without "ears". Explain the importance of tail in kite's flying,</p>	<p><b>Educational Method</b></p> <p><i>Socratic dialogue</i></p>	<ul style="list-style-type: none"> <li>• Students with this activity will be oriented in the concept: "how to flight a kite"</li> <li>• Identifying the forces and the possible factors for not quite balance in a flight</li> <li>• Calculating the weight, a kite could lift</li> </ul>	
	Students	<p><b>Tools:</b> IWBS, P. (using: <a href="http://dide.ker.sch.gr/ekfe/epiloges/6_artra/77_aetos.pdf">http://dide.ker.sch.gr/ekfe/epiloges/6_artra/77_aetos.pdf</a>)</p> <p>Discuss/working in pairs, take digital notes, Using a game simulation of kite flying <a href="https://m.apkpure.com/kite-flying-layang-">https://m.apkpure.com/kite-flying-layang-</a></p>			<p>In classroom</p>



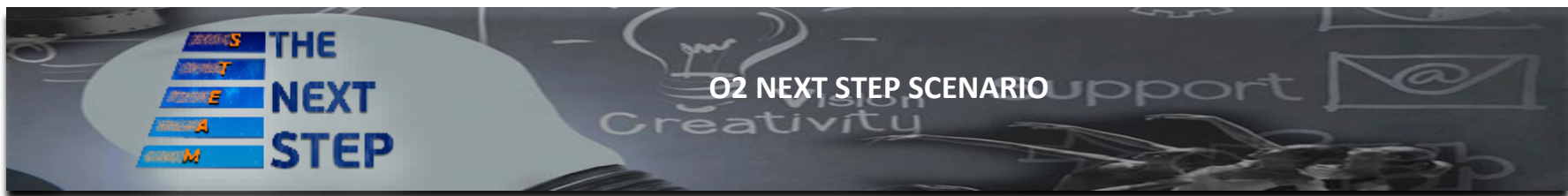


# O2 NEXT STEP SCENARIO

Support Creativity

		<a href="http://ayang.br.pipacombate.maiworm/download?from=details">ayang/br.pipacombate.maiworm/download?from=details</a> , or <a href="https://apps.apple.com/us/app/real-kite-flying-simulator/id1448464346">https://apps.apple.com/us/app/real-kite-flying-simulator/id1448464346</a>			<b>45m</b>
		Tools: tablets or notepads		<b>F3, F5, F6</b>	
<b>A9</b>	<b>Science Teacher</b>	<b>Science Teacher actions</b> Flying the kite outside in the school yard with his students	<b>Educational Method</b> <i>Introduction to the theme and Socratic dialogue</i>	<ul style="list-style-type: none"> <li>• They will flight their kites</li> <li>• Experientially get to know the factors influencing a “good kite fly”</li> <li>• Adding more tail in situ (outdoor)</li> <li>• Using laboratory little masses (weights) sets</li> </ul>	  <b>Outdoor/ School Yard 45m</b>
	<b>Students</b>	In pairs, flying their kite. At least and depending on the available free space, in order to check the flight balance of the construction. They are also taking pictures of first flying attempts  <b>Resources:</b> scissors, paper, light rope, glue, “weights” for experimenting kite lifting capabilities			
	<b>SIS Operation School Community Synergies</b>	Before A9 person form SIS check the weather conditions for outdoor activities (sunny and windy day). Preparing the field trip on the day of "Kathari Deytera", or another appropriate day (if the time period cannot be arranged).			Time: 1-2 hs
	<b>School-Stakeholders Synergies</b>	<u>One special tradition is koulouma.</u> On the day of “Kathari Deytera”, families gather eat all together and fly kites. It would be possible to arrange an event for students -with the local community- to fly the kites they created during this educational scenario at that day (or at another day).			Time: 2h
					
<b>Act #</b>	<b>Description of activities, strategies, methods, means, resources and synergies</b>			<b>Learning goals - Learning outcomes Features/Competences</b>	<b>STEAM Fields</b>
	<b>ICT Teacher</b>	Show the process of creating a video, the materials which are needed to create one video of that type	<b>Educational Method</b>	<ul style="list-style-type: none"> <li>• To create a stop-motion video</li> </ul>	



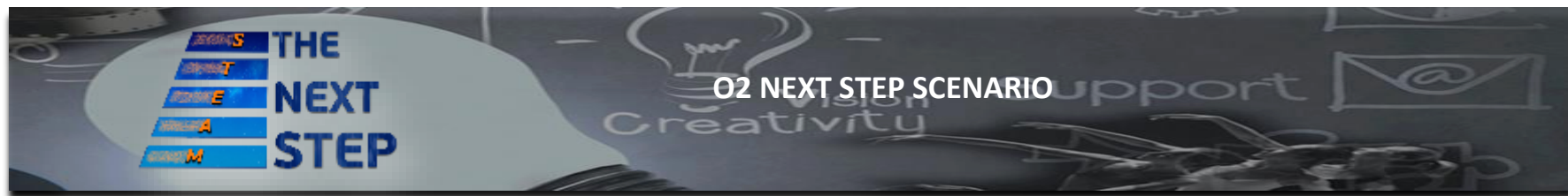


<b>A10</b>		Start to create the video with the pictures had taken from Teachers' kite construction.		<ul style="list-style-type: none"> <li>To share it within school and with local community</li> </ul>	
		<b>Tools:</b> IWBS, P.S.			
	<b>Students</b>	With this activity will create stop motion videos of the procedure of creating their kite. Discuss in pairs, using app for stop motion videos			<b>In classroom 45m</b>
		Tools: Pcs at Pc Lab, an app like: <a href="#">qStopMotion</a>			<b>F3,F4,F5L,F7</b>
<b>SIS Operation - School Community Synergies</b>		Structuring of the online platform in order to properly place the photos and the story of the kite's creation. Uploading the phots and videos / creations of the students to school's platform			<b>Time: 1 h</b>
<b>School-Stakeholders Synergies</b>		The (responsible for) sharing person (of STEAM Ideas' Square) will collaborate with the appropriate stakeholder to publish one or more videos of creating a kite (talking into account the personal data e.t.c.). To make the activities known to the public in order to prepare the event that will take place at Kathari Deytera. Where students will fly their kites at a local community event.			<b>Time: 1 h</b>

## 5. References

(...)

<https://www.eursc.eu/BasicTexts/2018-09-D-69-en-1.pdf>



## 6. ANNEXS

### 6.1 ANNEX 1 – Worksheets

#### 6.1.1. Main Project - Feel - Activity 1\_ Worksheet 1 - MP\_F\_A1\_WS1

Science teacher discusses with students through Socratic dialogues and showing them some videos (below) to the IWBS.

#### Socratic dialogues

- Do you know what a Kite is? (Yes, No)
- Have you ever tried to “fly” a kite? (Yes, No)
- Have you ever tried to construct/build /create such a kite? (Yes, No)
- Have you ever tried to construct/build / create something like a Kite? (Yes, No)
- What was that? (This can be just heard not written if there is not a device)
- Have you ever seen this kind of kites? (Yes - the majority of them, None, Some of theme)

V1. <https://www.youtube.com/watch?v=fViEyvR-ADc> (3:38)

V2. <https://www.youtube.com/watch?v=87NIC35Psw8> (3:14)

V3. [https://www.youtube.com/watch?v=xz\\_yeWgIFqI](https://www.youtube.com/watch?v=xz_yeWgIFqI) (2:33)

V4. <https://www.youtube.com/watch?v=DGpm50njvDA> (13:29) (showing some scenes only)

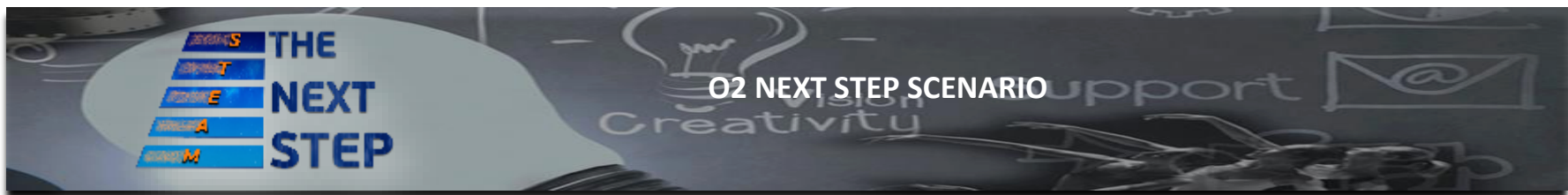
V5. <https://www.youtube.com/watch?v=aqcTZsyLLGE> (0:58) (in Greece)

V6. [https://www.youtube.com/watch?v=DttZhzfa\\_qQ](https://www.youtube.com/watch?v=DttZhzfa_qQ) (3:25) - Kite surfing

B.F story site. <https://www.history.com/this-day-in-history/franklin-flies-kite-during-thunderstorm>

*Students in pairs they are discussing and answering one by one to their owns devices or notebooks.*

- They answer the above questions and note them into their tablet/laptop/iPad or notebooks.
- The answers are collected and presented in IWBS by the .
- The dialogue continues with the and students continue to work in pairs.



- The statistics of the students' answers are recorded (*educational data analytics*).
- The data could be very useful in various evaluation procedures (student's skills, knowledge, e.t.c.).
- Try to imagine the dangerous circumstances when you fly a kite (inspire from B.F. story)

Students can see more at home about it: <https://www.youtube.com/watch?v=f0oc4gUCOQI>, <https://www.youtube.com/watch?v=g5mzFb2hhHY>

Essential Tip 1	If digital devices are not present for students to use, could use: <a href="https://get.plickers.com/">https://get.plickers.com/</a>
	See it here in progress: <a href="https://www.youtube.com/watch?v=bejiz2HzUz8">https://www.youtube.com/watch?v=bejiz2HzUz8</a>
	Data can be extracted to: CSV format for Educational Data Analytics



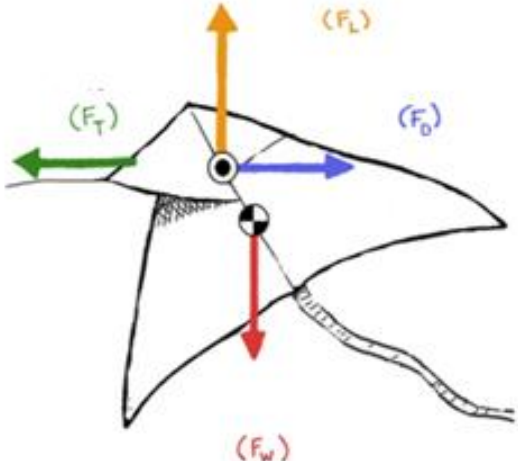


### 6.1.2. Main Project-Imagine-Activity 2\_ Worksheet 2 - MP\_I\_A2\_WS2

<i>Questions to Students -Answers</i>
<i>Propose ideas about materials of kites and its history, debate</i>
<i>Materials?</i>
<i>Uses?</i>
<i>Paper Invented earlier?</i>
<b>Teacher creates a Presentation with content especially about History of kites <a href="http://www.madehow.com/Volume-4/Kite.html">http://www.madehow.com/Volume-4/Kite.html</a></b>
<b>Students will note to their tablet/notebook their answers.</b>

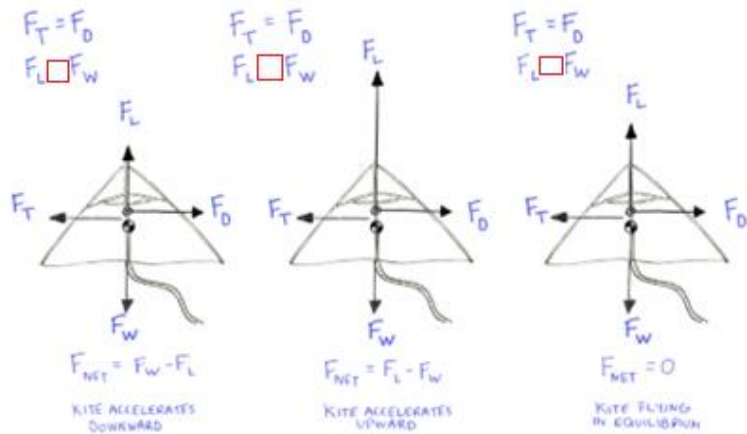
### 6.1.3. Main Project-Imagine-Activity 3\_ Worksheet 3 - MP\_I\_A3\_WS3

Show some videos about paper invention and paper in Europe and Greece
<a href="https://www.museodellacarta.com/en/interesting_video">https://www.museodellacarta.com/en/interesting_video</a>
Discuss about the paper creation
<a href="https://xeiropoiito-xarti.gr/prehistory.html">https://xeiropoiito-xarti.gr/prehistory.html</a>
What is the procedure of creating paper?
What materials are used?
Is the same procedure as at the ancient times?
What is changed?

6.1.4. Main Project-Creation-Activity 4\_ Worksheet 4 - MP\_C\_A4\_WS4

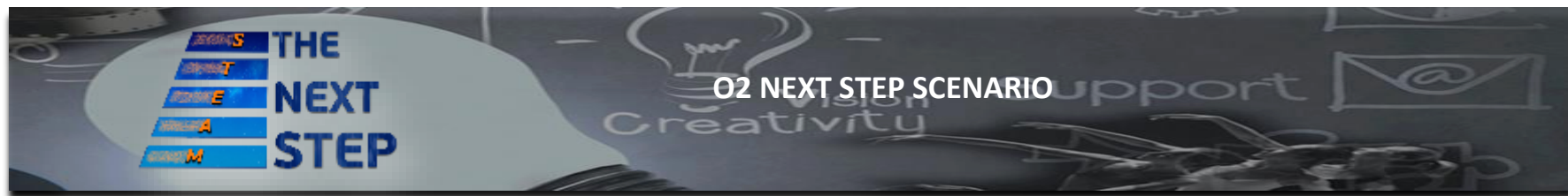
<p>Photo from <a href="https://www.sciencefriday.com/educational-resources/kite-engineering/">https://www.sciencefriday.com/educational-resources/kite-engineering/</a></p> 	<p>Exploring the forces applied to a kite that flying</p>
	<p>Green force is</p>
	<p>Yellow force is</p>
	<p>Blue Force is</p>
	<p>Red force is</p>
	<p>  is ...     </p>
	<p>  is ...     </p>





Put the right symbol in the red boxes

< > =

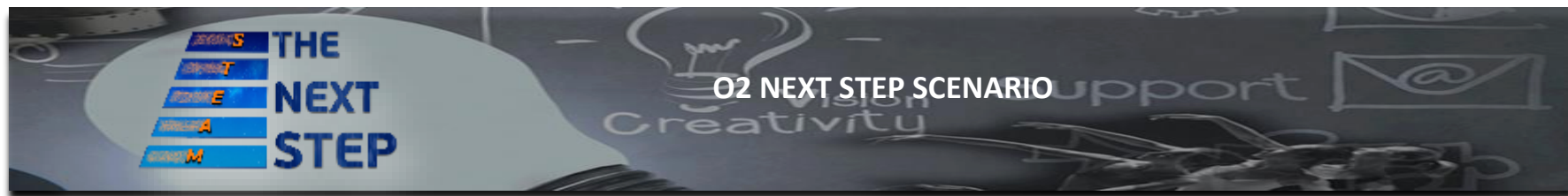


## 6.2 ANNEX 2. Information Library for Educational Material about Kites

- <https://www.sciencefriday.com/educational-resources/kite-engineering>
- <https://www.youtube.com/watch?v=Mx9949aT06U>
- <https://www.kiteplans.org/> ,
- <https://www.history.com/this-day-in-history/franklin-flies-kite-during-thunderstorm>
- [https://www.museodellacarta.com/en/interesting\\_video](https://www.museodellacarta.com/en/interesting_video)
- <http://www.madehow.com/Volume-4/Kite.html>
- <https://koon.ru/el/vozdushnye-zmei-v-proshlom-i-nastoyashchem-issledovatel'skaya-rabota-na/>
- [http://dide.ker.sch.gr/ekfe/epiloges/6\\_artra/77\\_aetos.pdf](http://dide.ker.sch.gr/ekfe/epiloges/6_artra/77_aetos.pdf)
- “Kathari Deytera” explained : <https://www.greekpod101.com/blog/2019/02/27/clean-monday/>
- **The Greek Kite – Traditional Toy for “Kathari Deytera”** (Clean Monday (Greek: Καθαρά Δευτέρα), also known as Pure Monday, Ash Monday, Monday of Lent or Green Monday, is the first day of Great Lent throughout Eastern Christianity [1] and is a moveable feast, falling on the 6th Monday before Palm Sunday which begins the Holy Week preceding Pascha Sunday (Easter) [https://en.wikipedia.org/wiki/Clean\\_Monday](https://en.wikipedia.org/wiki/Clean_Monday)
- **Benjamin Franklin** <https://www.fi.edu/benjamin-franklin/kite-key-experiment>
  - [https://www.fi.edu/sites/default/files/styles/gallery\\_large/public/Editorial\\_KiteExperiment.jpg?itok=HNBqgCSw](https://www.fi.edu/sites/default/files/styles/gallery_large/public/Editorial_KiteExperiment.jpg?itok=HNBqgCSw)
  - <https://kitesonaroll.com/s-t-e-m-s-t-e-a-m-kite-making-and-kite-flying/>
  - <https://www.grc.nasa.gov/www/k-12/airplane/kitelift.html>
- Kite Festivals: [Austin kite festival](https://www.facebook.com/BermudaKiteMaster/), <https://www.facebook.com/BermudaKiteMaster/>
- <https://www.msichicago.org/science-at-home/summer-brain-games/activities/more-activities/toys/kite/>
- [https://tel.archives-ouvertes.fr/tel-01424160/file/LOZANO\\_2014\\_archivage.pdf](https://tel.archives-ouvertes.fr/tel-01424160/file/LOZANO_2014_archivage.pdf)
- <https://www.engineeringemily.com/make-a-kite-using-recycled-materials-steam-activity-for-kids/>
- [https://brucemuseum.org/images/uploads/In the Heat of the Kite.pdf](https://brucemuseum.org/images/uploads/In_the_Heat_of_the_Kite.pdf)
- <https://www.cmosc.org/kite-making/>
- [https://www.clarington-library.on.ca/sites/default/files/custom/eProgram STEAM kite.pdf](https://www.clarington-library.on.ca/sites/default/files/custom/eProgram_STEAM_kite.pdf)
- <https://babbledabledo.com/how-to-make-a-kite/>



## 7. Abbreviations, short terms apps used in Educational Scenario



- SIS: STEAM IDEAS' Square
  - Stakeholders: Parents, special scientists, external Educators, authorities, entrepreneurs,
  - IWBS: Interactive White Board System, Video Projector and interactive whiteboard.
  - P. Presentation (like a pptx created with Powerpoint).
  - Tablets. Electronic devices for personal use, like Android tablets or iPads.
  - Laptops. Either in a lab or in classroom
  - PCs. Computers in a lab.
  - Plickers. <https://www.plickers.com/>
  - qStopMotion: <http://qstopmotion.org/>
  - <https://m.apkpure.com/kite-flying-layang-layang/br.pipacombate.maiworm/download?from=details>
  - <https://apps.apple.com/us/app/real-kite-flying-simulator/id1448464346>
- 
- F1. Literacy competence
  - F2. Multilingual competence
  - F3. F3M. Mathematical competence and F3S. competence in science, F3T. technology and F3E. engineering //or/ F3MS, F3ST , (STEM=F3)
  - F4. Digital competence
  - F5. F5P. Personal, F5S. social and F5L. learning to learn competence
  - F6. Civic competence
  - F7. Entrepreneurship competence
  - F8. F8C. Cultural awareness and F8E. expression competence



## NEXT STEP Partnership



Western Norway  
University of  
Applied Sciences



ELLINOGERMANIKI  
AGOGI

**NUCLIO**  
NÚCLEO INTERACTIVO DE ASTRONOMIA



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