



“E-STEAMSEL”

Preparing Youth for the Future Labor  
Market with STEAM and SEL

PROIECT DE PARTENERIAT STRATEGIC ERASMUS +

Nr. de referință proiect: **2021-1-NO01-KA220-SCH-000032511**

**Simpozion Internațional Diseminarea rezultatelor proiectelor internaționale, Ediția I**

**Secțiunea 1: Exemple de bună practică**

**ROSIE REVERE, ENGINEER BY ANDREA BEATY**

**LESSON PLAN**

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**Topic/Subject:** Rosie Revere, engineer by Andrea Beaty

**Target Group:** 3-rd/4th grade, 9/10 years

**I. Engineering a text. Question - Answer Relationship. Objectives:**

Obj.1 improve reading comprehension;

Obj.2 explain question-answer relationships in texts by identifying where to find the answers to questions;

Obj.3 categorize types of questions by sorting the questions-answer relationships.

**II. How to set up a STEM challenge. Items made of recyclable materials. Objectives:**

Obj.1 collect data and provide elementary interpretations of them;

Obj.2 develop awareness towards littering by classifying the type of rubbish that can/can't be recycled;

Obj.3 repurpose used items for themselves.

**III. Treasure Map. Objectives:**

Obj.1 define a floor plan;

Obj.2 design a map to identify the locations of familiar places and objects in their classroom;

Obj.3 use a map to locate familiar places and things.

**Approach/Methodology used:**

Learn Through Conversation

Create User Stories Before Design

Brainstorm Projects — Swap Ideas

Interdisciplinary approach

Project-based learning

Hands-on activities

Problem-solving

**Means/Tools/Educational technology:**

Projector, Computer, Smartphones, the Internet

Data and results collection sheet, Handouts

Sculpture/coloring materials, string, felt, glue, found/recycled objects

**Plan for work:**

Time	Activities	Methods/ means
10 minutes	<p><b>Engineering a text. Question - Answer relationship</b></p> <p>1. Start by proposing the students to listen to "Rosie Revere, engineer", by Andrea Beaty read aloud.</p> <p>2. Reread some passages with them.</p>	<p>1. <a href="https://youtu.be/0G-wtK_zc_I">https://youtu.be/0G-wtK_zc_I</a></p>
15 minutes	<p><b>Check for understanding:</b></p> <p>3. Propose the students to become text engineers. Explain to them that there are four types of questions they will encounter.</p> <p>Define each type of question and give examples from the text:</p> <ul style="list-style-type: none"> <li>- Right There Questions: Literal questions whose answers can be found in the text. Often the words used in the question are the same words found in the text.</li> <li>- Think and Search Questions: Answers are gathered from several parts of the text and put together to make meaning.</li> <li>- Author and You: These questions are based on information provided in the text but the student is required to relate it to their own experience. Although the answer does not lie directly in the text, the student must have read it in order to answer the question.</li> </ul>	<p>2. <a href="https://wordunited.com/product/abrams-books-rosie-revere-engineer/">https://wordunited.com/product/abrams-books-rosie-revere-engineer/</a></p>
15 minutes	<ul style="list-style-type: none"> <li>- On My Own: These questions do not require the student to have read the passage but he/she must use their background or prior knowledge to answer the question.</li> </ul>	

10 minutes	<p><b>Guided practices/Modeling:</b></p> <p>4. Read a short passage aloud to your students.</p> <p>5. Have predetermined questions you will ask after you stop reading. When you have finished reading, read the questions aloud to students and model how you decide which type of question you have been asked to answer.</p> <p>6. Show students how to find information to answer the question (in the text, from your own experiences, etc.)</p> <p>7. Practice sorting questions on the edge of the text according to the QER criteria</p>	
15 minutes	<p><b>Independent Practice:</b></p> <p>8. Have the students work in boys and girls groups to interview a book/animation character at their chois (they can watch interviews on youtube for documentation) and present it to the class. They are encouraged to make an original presentation.</p>	7. <a href="https://wordwall.net/resource/29194313">https://wordwall.net/resource/29194313</a>
15 minutes	<p><b>Closure:</b></p> <p>9. Present the interview to the class in any form they choose to (by reading it, by playing, playing a recording on their phones etc.)</p>	8. <a href="https://youtu.be/21q15LmcjWw?list=PLKbV_6U6azAtqkbZoIa-aDIoEkVPUBjO4">https://youtu.be/21q15LmcjWw?list=PLKbV_6U6azAtqkbZoIa-aDIoEkVPUBjO4</a>
10 minutes	<p><b>Assessment:</b></p> <p>10. Have the students conceive/fill a graphic organizer/mind map (on a piece of paper or using one of the online platforms which provides templates) about QAR illustrated with questions from one of their readings.</p>	10. <a href="http://Bubbl.us - Mind Maps">Bubbl.us - Mind Maps</a>
10 minutes	<p><b>How to set up a STEM challenge. Items made of recyclable materials</b></p> <p>1. Students bring in classroom plastic bags; each containing different items for example pieces of aluminum foil, scrap papers, plastic bottles, plastic cutlery, plastic toys or parts of plastic toys, batteries, empty cans, glass bars, aerosol cans, paper or cardboard boxes, newspaper, cup cakes, electric cables, used napkins, waxed paper, banana peel. They collect all items in the middle of 5 tables.</p> <p><b>Check for understanding:</b></p> <p>2. Divide class into five boys and girls groups. Assign each group a name/they can choose their own name. Give each group one of the five</p>	

10 minutes	<p>piles of recyclable items. Help groups to identify the items in their piles.</p> <ul style="list-style-type: none"> <li>- Ask each group to focus on their bag and decide if any of the items could go to a recycling company.</li> </ul> <p>3. Stick two newspaper sheets; one on each side of the class. Write (Can recycle) on sheet 1, and (Can't recycle) on sheet 2.</p>	
15 minutes	<p><b>Guided practices/Modeling:</b></p> <p>4. The students find out that the waste companies are looking for devices for waste processing. They have to build prototypes for any stage of waste processing.</p> <p>5. Teacher introduce to students data and results collection sheet</p> <ul style="list-style-type: none"> <li>- Teacher can help them explore how others have worked with this sheet and solved problems (or we can skip this step to keep a free mind)</li> <li>- Students start by create a short user story before design</li> <li>- They fill data and results collection sheet</li> </ul>	
45 minutes	<p><b>Independent Practice:</b></p> <p>6. After imagining and discuss multiple possibilities, the next step is to select one to build a model</p> <ul style="list-style-type: none"> <li>- Teacher can have the role of a moderator/specialist and supports children to observe and identify solutions for waste problems.</li> <li>- Teacher give children opportunities to explore multiple mediums for modeling—such as sculpture materials, string, felt, glue, found objects—and then using them to create models that they present to others</li> <li>- Students build a device that can be used in everyday life to solve different types of waste problems</li> <li>- Every member of the team, boy or girl, participate to every step of the activity/teams can be encouraged to cooperate</li> </ul>	<p>5. <a href="https://i.pinimg.com/564x/ec/03/9e/ec039edf0a68accfce8b2e3c35d94bd5.jpg">https://i.pinimg.com/564x/ec/03/9e/ec039edf0a68accfce8b2e3c35d94bd5.jpg</a></p> <p>Xtrasource: Film Making Fun with Jimmy Diresta on Netflix</p>
25 minutes	<p><b>Closure:</b></p> <p>7. The teams make a presentation film pointing to the items that they chose from waste to build their device and the utility they think their device could have in everyday life.</p>	
20 minutes	<p><b>Assessment:</b></p> <p>8. Every team will present the product to another class/school partner for being evaluated and listen the conclusion of the evaluation</p> <p>Photos from my class activity: <a href="https://www.facebook.com/permalink.php?story_fbid=pfbid02UYCKrih">https://www.facebook.com/permalink.php?story_fbid=pfbid02UYCKrih</a></p>	

	<p><a href="https://www.thinglink.com/scene/1551891294903599106">LRLNpzHpXMSi7UENxocqX9uXsnK9KkEgmsdzrvuy2tQH3zQL7nJN3Q8mL1&amp;id=102958185418646</a></p> <p>Other original resources links:</p> <p><a href="https://www.thinglink.com/scene/1551891294903599106">https://www.thinglink.com/scene/1551891294903599106</a></p> <p><a href="https://www.thinglink.com/scene/1552326967653564418">https://www.thinglink.com/scene/1552326967653564418</a></p>	
10 minutes	<p><b>Treasure Map</b></p> <p>1. Students reread in Rosie Revere, engineer the passages identified by the teacher with nombre of the page and of the paragraph.</p> <ul style="list-style-type: none"> <li>- Propose the students to practice on telling the position of things on a gridded map by indicating 2 coordinates</li> <li>- Exercise (as a game, after short explanation) reading a map by indicating longitude and latitude</li> </ul> <p><b>Check for understanding:</b></p>	1. <a href="https://i.pinimg.com/564x/44/84/7c/44847ca1b0ab93f9f25f0eb3b004bc/b4.jpg">https://i.pinimg.com/564x/44/84/7c/44847ca1b0ab93f9f25f0eb3b004bc/b4.jpg</a>
5 minutes	<p>2. Tell the students they are going to still practice their mapping skills by creating a floor plan of the classroom. A floor plan is a type of map that shows where things are located in a room. It is like a picture someone drew looking down from the sky to show you where things are.</p> <p>3. Practice the vocabulary of mapping: map, map key, compass rose, symbol.</p>	<p><a href="https://www.pinterest.com/pin/324259241910979925/">https://www.pinterest.com/pin/324259241910979925/</a></p>
10 minutes	<p>4. Assign partners, boys and girls work together, and distribute a copy of a random Classroom Map to each pair of students. Direct the students to the example classroom map.</p> <ul style="list-style-type: none"> <li>- Instruct the students to color the symbols in the colors labeled on the map. Ask the students to then point out the various components of the map (e.g., point to the teacher’s desk) and walk around to check that they are finding things accurately.</li> </ul> <p><b>Guided practices/Modeling:</b></p>	<p>3. <a href="https://wordwall.net/resource/5637529">https://wordwall.net/resource/5637529</a></p>
20 minutes	<p>5. Explain that the partners will work together to create a map of their classroom. They are to imagine they are looking at the classroom from the ceiling. Explain that the map should be similar to the example but of their own classroom. Their map must include all of the items shown in the legend and use the same colors: The teacher’s desk must be a brown, colored in, rectangle. The window(s) must be blue lines. Student desks (or tables) must be white squares. The whiteboard must be a green line. The classroom door(s) must be a red line. The flag must be tricolor lines. Tell the students they may also add two additional symbols in the blank spaces, such as a classroom library, armoires or computer stations.</p> <ul style="list-style-type: none"> <li>- Instruct the student pairs to bring you the maps when they are finished so you can check their work. Allow time for students to work.</li> </ul>	<p>4./5. <a href="https://www.stlouisfed.org/-/media/project/frbstl/stlouisfed/education/lessons/pdf/treasure_map.pdf">https://www.stlouisfed.org/-/media/project/frbstl/stlouisfed/education/lessons/pdf/treasure_map.pdf</a></p>

30 minutes	<p><b>Independent Practice:</b></p> <p>6. When each pair is finished creating their floor plan, proceed as follows:</p> <ul style="list-style-type: none"> <li>- Check their map and then add clues symbols to the legend (for example colored dots). Use those symbols to mark on their map the location of the clues that you hid around the room.</li> <li>- They will find there funny tasks related to the text Rosie Revere, engineer (Build a paper airplane/a hat/a paper toy/design one of Rosie’s inventions)</li> <li>- Once the pair is done, they present their work</li> <li>- Allow time for the student pairs to complete the task. As they finish, check their work and award them with a small prize.</li> </ul>	
7 minutes	<p><b>Closure:</b></p> <p>7. Review the important points of the lesson by discussing the following:</p> <ul style="list-style-type: none"> <li>• What type of map shows where things are placed or located in a room? (A floor plan)</li> <li>• What explains the symbols found on a map? (The legend)</li> <li>• What is another word for a legend? (A key)</li> </ul>	6. <a href="https://www.rif.org/sites/default/files/images/2022/06/14/Support_Materials/Rosie-Edu-Extension2022.pdf">https://www.rif.org/sites/default/files/images/2022/06/14/Support_Materials/Rosie-Edu-Extension2022.pdf</a>
8 minutes	<p><b>Assessment:</b></p> <p>8. A Kahoot quiz: The students look at the plan of a house and answer questions related to identifying the symbols.</p> <p>or</p> <p>They can make a puzzle of the classroom map.</p>	8. <a href="https://create.kahoot.it/share/treasure-map/4e92d778-e38c-4b59-81a6-8d01696ead30">https://create.kahoot.it/share/treasure-map/4e92d778-e38c-4b59-81a6-8d01696ead30</a> <a href="https://www.jigsawplanet.com/?rc=play&amp;pid=0cff458e9a99">https://www.jigsawplanet.com/?rc=play&amp;pid=0cff458e9a99</a>

**Bibliography:**

<https://www.bing.com/ck/a?!&&p=bfda6e76f9b5f892JmltdHM9MTY1OTY4MTIyNyZpZ3VpZD1jZGFjNDRhMC0zNTY4LTQzNmEtODBmZi1iNGNiYmIwMjM0NGImaW5zaWQ9NTMyNw&pptn=3&hsh=3&fclid=8f60c21e-1488-11ed-a9b2-81e211217821&u=a1aHR0cHM6Ly93d3cuc3Rsb3Vpc2ZlZC5vcmevZWR1Y2F0aW9uL3RyZWZzdXJlW1hcA&ntb=1>

<http://littlebinsforlittlehands.com/stem-challenge-worksheets-free-printable/>