

ACTIVITY DOSE PROJECT '22 –

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Title Activity	Upgrading the school garden
Age	X 3rd grade (10-12y)
Estimated duration	4 x 50' (spread over 2-3 weeks)
learning objectives / competences	<p>(The pupils can ...)</p> <ul style="list-style-type: none"> - investigate what plants need in order to grow. - design a QR code with information for each type of plant. - design the school garden. - record the data of the plants in a graph.
Short description of the activity (max. 4 sentences)	
<p>The school garden goes viral! A vegetable garden is nice but not that easy as it seems. How do you know where to plant the beans? And the plant that comes out of the ground, is it a weed or not? Of course you can put pictures on sticks with the name of the plant, but that is so oldskool...</p>	

CONTEXT	
Motivation	<p>Do you have a school garden or are you going to make a small vegetable garden at school?</p> <p>Then it might be a good idea to put a QR code next to each plant (newskool :-).</p> <p>It also offers many other possibilities: other classes can also visit the garden and scan the code with a tablet. This information can then be used in their lessons. In addition, some characteristics of the plant can be mentioned (growth, medicinal properties, ...)</p>
Where is the STE(A)M integration? (in a few words, small checklist for yourself)	<p>S: investigating how plants grow</p> <p>T: create a QR code + website for the different types of plants</p> <p>E: update plant data using the QR code</p> <p>(A:) designing the school garden</p>

<p>Timing: 50' Work format and classroom organisation: Classroom / groups</p>	<ul style="list-style-type: none"> - without water - with water - in a cold area - in the sun at the window (warmth) <p>A few days later, we come to the conclusion that plants need sun/heat, water and light. We discuss the concept of photosynthesis. We apply this to our own vegetable garden.</p> <p>Part 2: designing</p> <p>Brainstorm in the classroom:</p> <p>How do we make the vegetable garden more attractive? What should be present in a vegetable garden? How can we easily find the different types of plants? How do we keep track of the information about the plants?</p> <p>In group, the children sketch a plan of the vegetable garden. They take the following criteria into account:</p> <ul style="list-style-type: none"> - vegetable garden divided into sections (1 per class) - place for walking - space for the work equipment - Place for a bee hotel? - room for ornamental flowers? <p>The sketches of the vegetable gardens are discussed in class. Advantages/disadvantages of the designs. We decide which features to implement in the vegetable garden.</p> <p>The children design a name card for each type of plant. The card will contain the name, photo and QR code.</p> <p>The QR code takes you to a web page where you can see the details of the plant. The children make a web page for each type of plant.</p> <p>The following data can be found:</p> <ul style="list-style-type: none"> - date when the plant was sown/planted - amount of water - length of the plant - characteristics of the plant - edible/ inedible fruit - expected date of harvest - possibly additional information
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<p>Timing: moments of 15' spread over 2 weeks</p>	<p>Part 3: Analysing</p> <p>In 2 weeks time (depending on the type of plant) the children often visit the vegetable garden in groups to analyse the plants. They do this by scanning the QR code. Via a web page they add the data of the plants.</p>
<p>Method and class organisation: groups</p>	
<p>Timing: 15'</p>	<p>After a few moments, the children have added enough data to discuss. We look at the vegetable garden and the data.</p>
<p>Work format and classroom organisation: Classroom</p>	<p>Is there anything that stands out? Similarities/differences between the vegetable garden and the data? Is it difficult/easy to add data via the QR code?</p>
	<p>What can we change?</p>
	<p>If necessary, adjustments are made.</p>
<p>Timing: 35'</p>	<p>Part 4: Reflecting</p>
<p>Method and class organisation: duo</p>	<p>We let another class visit the vegetable garden. The children make pairs so that the classes are mixed. They take a tablet and scan the QR codes. They look at the data online about the different types of plants.</p>
	<p>They evaluate the visit together on the basis of the following questions:</p>
	<ul style="list-style-type: none"> - Are the plants in the vegetable garden growing? - Can you scan the QR code easily? - Are the data clear? - Is the vegetable garden attractive?
<p>Timing: 15'</p>	<p>Reflection (on both cooperation and the product):</p>
<p>Method and class organisation: duo</p>	<p>In a class discussion we discuss the entire activity 'upgrading the school garden'. The following questions are addressed:</p>
	<ul style="list-style-type: none"> - What have we investigated, and how does photosynthesis work? - Do our plants grow in the kitchen garden? - What did we design? And how did it go? - Is the data website clear and well-organised? - Can you convert the data into graphs? - How was the cooperation? - What have you learned? - Are you satisfied with the end result? - How do we maintain the vegetable garden?

How do you evaluate the acquired competences of the pupils during this activity?

(e.g. specific questions, extended instruction, differentiation,...)

Is there an evaluation after the activity to record the acquired knowledge/skills?

During a Quiz, the knowledge about plants, how plants grow, can be tested.

During the execution of the task, the teacher can observe the children's skills.

During a maths lesson, the data can be converted into graphs.

Tips & tricks

(which would you give to another teacher to make that lesson go more smoothly)

- create and test a QR code and web page yourself in advance

Additional information / Links:

<https://nl.qr-code-generator.com/>

<https://sites.google.com/>

<https://schooltv.nl/video/clipphanger-wat-is-fotosynthese/#q=%22fotosynthese%22>

<https://schooltv.nl/video/fotosynthese-eeen-plant-maakt-zijn-eigen-voedsel/#q=%22fotosynthese%22>

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