

ACTIVITY DOSE PROJECT '22 –

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Title Activity	Design a nice and functional cup holder that one can hang on its schooldesk.
Age group	primary education (10-12 years)
Number of hours	2 x 75'
Goals/skills summary (most obvious, related to context)	<ul style="list-style-type: none"> • Being curious about and willing to discover and learn about something new. • Exploring and experimenting. • Thinking creatively. • Detecting needs and challenges and coming up with possibilities and innovative solutions. • Coming up with a technical solution for a problem based on a need, and going through the various steps of the design process.
Brief description of the activity: (max 4 sentences)	
<p>The aim for the pupils is to come up with a bottle holder that can be made easily and efficiently.</p> <p>Criteria:</p> <ul style="list-style-type: none"> - The design contains at least 2 bends - It is steady and can be put or attached at the school desk - Functional (several drinking bottles fit) - It looks beautiful 	

CONTEXT	
Motivation	Drinking water is very important for humans. Drinking bottles are often no longer on school desks because they can tumble of the table. From a social need, the idea arose to efficiently attach drinking bottles to school desks so that they no longer tumble of the table, but are still accessible to the children.

STEAM	
Justification of STEAM integration	<p>S: geometry</p> <p>T: Designing a drinking bottle holder</p> <p>E: optimising the design</p> <p>A: the design of the bottle holder</p> <p>M: figures, dimensions, proportions</p>
Methodology and materials needed	
Materials	<p>By class:</p> <ul style="list-style-type: none"> ● Plastic bender ● Bending jig (adjustable angle gauge) ● Drill with safety materials <p>Per group:</p> <ul style="list-style-type: none"> ● Chromebook ● Hard foam PVC sheets 36 cm by 12 cm ● ruler ● Pencil ● Cardboard ● Adhesive tape ● Sandpaper
Organisation	<p><u>group</u> work</p> <p>Challenge: How can we efficiently attach our drinking bottle to our bench so that it does not fall over?</p> <p>Part 1: Brainstorming</p> <p>Each pupil sketches or draws his own design according to the given criteria. The pupils can do research by using internet (Chromebook).</p> <p>Part 2: Developing a prototype with cardboard</p>

	<p>The pupils work out their design with cardboard (pilot).</p> <p>Part 3: Reflection</p> <p>Am I satisfied with my work? Could it be better? What do I keep or change? Did the cooperation go smoothly?</p> <p>Part 4: Elaboration of a fixed design with plastic.</p> 
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Coaching & methodology

Based on learning by doing (with different levels: from imitation to creation)

Method

The teacher has a guiding role. The pupils are engaged in inquiry-based learning. They are given the opportunity to take control of their own learning process. The materials are available.

Thinking questions :

- Why do you choose these forms?
- Which materials do you use best?
- Does your prototype meet the 3 criteria?

Possible adaptations:

- Painting plastic sheet with patterns
- A drinking bottle holder made of fabric with needle & thread

Tips & tricks

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