Fabric Tote

Age-group: 6-9 years old
Number of hours: 10 hours
Short description of activity: Make students more aware of sustainable development. Learn more about plastic. Design and sew a fabric tote.
CT-competences:

- Pattern recognition
- Algorithms/Sequencing
- Problem decomposition
- Debugging
- Automation

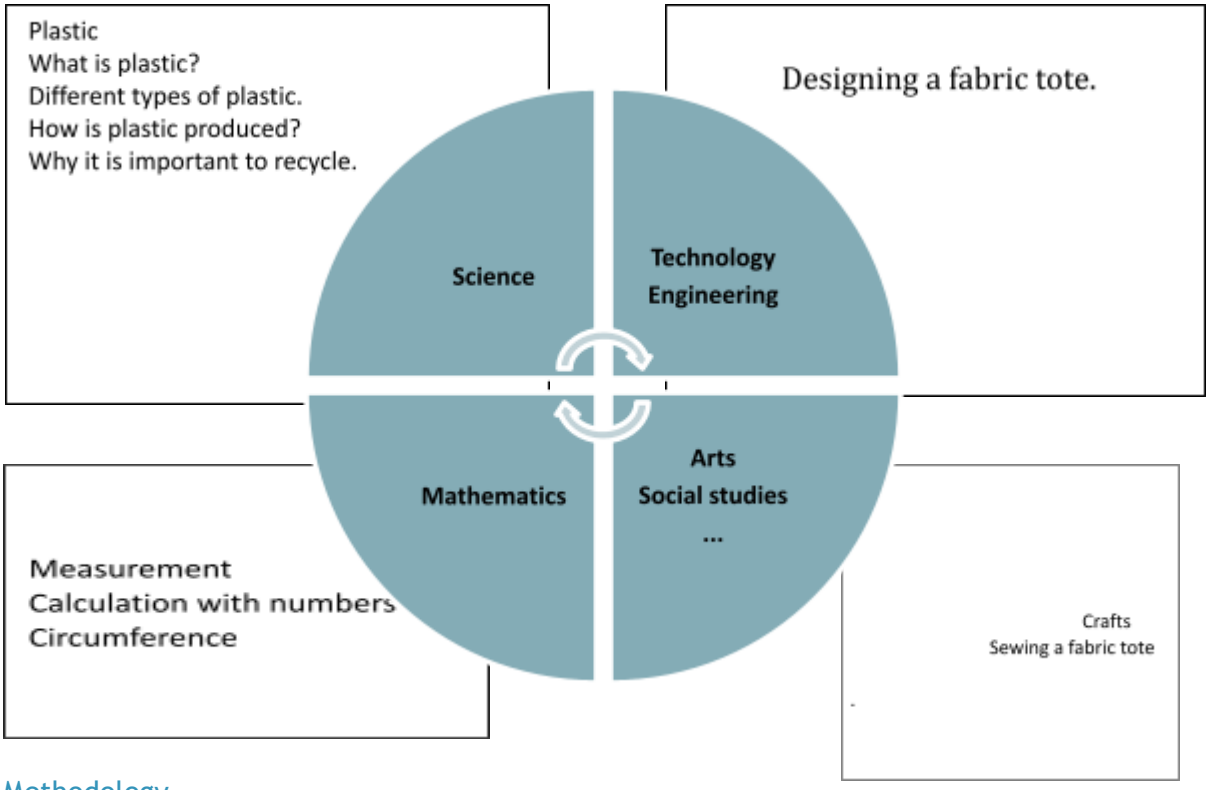
Goals

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Awareness about plastic. Design and sew a fabric tote.

Realistic STEAM-context

The consumption of plastic is increasing in the world. This leads to environmental pollution when throwing plastic everywhere and not recycling. Also the costs of producing and buying plastic increases. Plastic - good or bad? Designing and sewing a fabric tote.

(short justification of STEAM-integration)



Methodology

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

Part	Description	Timing
1	**Introduction of the activity** This activity is about sustainable development and we are going to discuss/talk about plastic. The consumption of plastic is increasing in the world. This leads to environmental pollution when throwing plastic everywhere and not recycling. Also the costs of producing and buying plastic increases. At the end of this activity you will design and sew a fabric tote. (15 min) **Different types of plastic** Let the students discuss (in pairs) if they have noticed different types of plastic. Let them write down/draw their thoughts. Discuss with the whole class. (15 min) **Discuss with the students what plastic is made of?** Let the students think first by themselves, then in pairs and in the end together all. What do the students think, what is the plastic made of? Then show the students the links. (An additional challenge is the dependence on fossil raw materials. 99% of all plastic today is made from oil, which means that it contributes to climate change when it is burned. All combustion results in carbon dioxide and carbon dioxide is a gas that acts as a warming "blanket" for the earth.) (10 min) https://plasticoceans.org/7-types-of-plastic/ https://sliplay.se/haninge/play/products/242395-plasten-i-var-vardag-mikroplast-i-haven-och-atervinning-av-plast Problem decomposition.	40’
2	**Student activity** Let the students discuss in groups of three, when and why they think plastic is good and when/why it is not good. Let the groups share their thoughts with the whole class. Bring different things or write down things or show pictures of things that are made of plastic and let the students try to put the things in different groups, using a chart (*appendix 1*). Discuss the chart with the students so that they have an understanding of different types of plastic. https://plasticoceans.org/7-types-of-plastic/ Problem decomposition.	40’
3	**Home assignment** Choose five different things from the refrigerator that are wrapped in plastic. Give suggestions about what the things you have chosen can be wrapped with instead of plastic. Problem decomposition.	30’
4	**Recycling** Why it is important to recycle plastic and how it is done.	30-40’

	Helpful questions: How many different plastic sorts did you find? Can we use another thing instead of plastic? https://www.svenskplastatervinning.se/en/about-plastic-recycling/ Problem decomposition Debugging	
5	**Why is it better to use fabric instead of plastic when you make totes/bags?** Show the picture (*appendix 2*) and discuss the picture. **https://www.sustainme.in/blogs/news/why-are-cloth-bags-better-than-plastic** Problem decomposition	30’
6	**Design your own fabric tote.** The teacher shows the different fabrics that the students are supposed to use or *. Individual task: Make a drawing/sketch of your fabric tote. Decide the size and write down the measures on your sketch, also decide the colour you want (*appendix 3*). Now you need to make real patterns with the exact measurements. Put the pattern on the fabric and pin them together. Don´t forget the handles. Pattern example: https://www.slojd-detaljer.se/inspiration/aterbruk/enkel-tygkasse Pattern recognition Algorithms/Sequencing Automation Debugging	80’
7	**Decorate the fabric tote** For an example you can create a tick-tack-toe game. Pattern recognition Algorithms/Sequencing Automation Debugging	60’
8	**Sew the fabric tote by hand** Each student sew their own tote. **https://www.youtube.com/watch?v=EZngDWBk0xE** Pattern recognition Algorithms/Sequencing Automation Debugging	120-180’
		8 hours

*E-mail the parents about fabrics… if they have clothes that they are going to throw away, they can send it to school and you can use the fabric and recycle it to a tote/bag.

Organization

Materials:

- different things that are made of plastic, fabric, needles, scissors, ruler, measuring tape, thread or yarn, paper, colored pencils

Coaching

Useful questions:

- Why is plastic not good for the environment?
- Plastic in the seas; what happens to the animals in the water if they eat plastic?
- How long does it take for the plastic to decompose?
- Which material is the best to use for a tote/bag for a long time?
- When is it good to use plastic? Give examples.
- How can we make people more aware that it is important to recycle plastic?
- How can we prevent people from throwing plastic in the seas and in the forests?

Stimulation of self-management: (concrete opportunities/remarks adapted to the project)

Stimulation of cooperation: (concrete opportunities/remarks adapted to the project)

Teamwork: work in pairs

- Groups consist of 3 students.
- Competences needed in a group:
  - Creativity
  - Mixed gender
  - Leadership

Formative assessment: The students activity and participation in pair discussions and also in discussions with the whole class. The students creativity to draw a sketch of the fabric tote and make a pattern of it. The students ability to sew a fabric tote by hand. The students' awareness and knowledge of plastic.

Adaptations

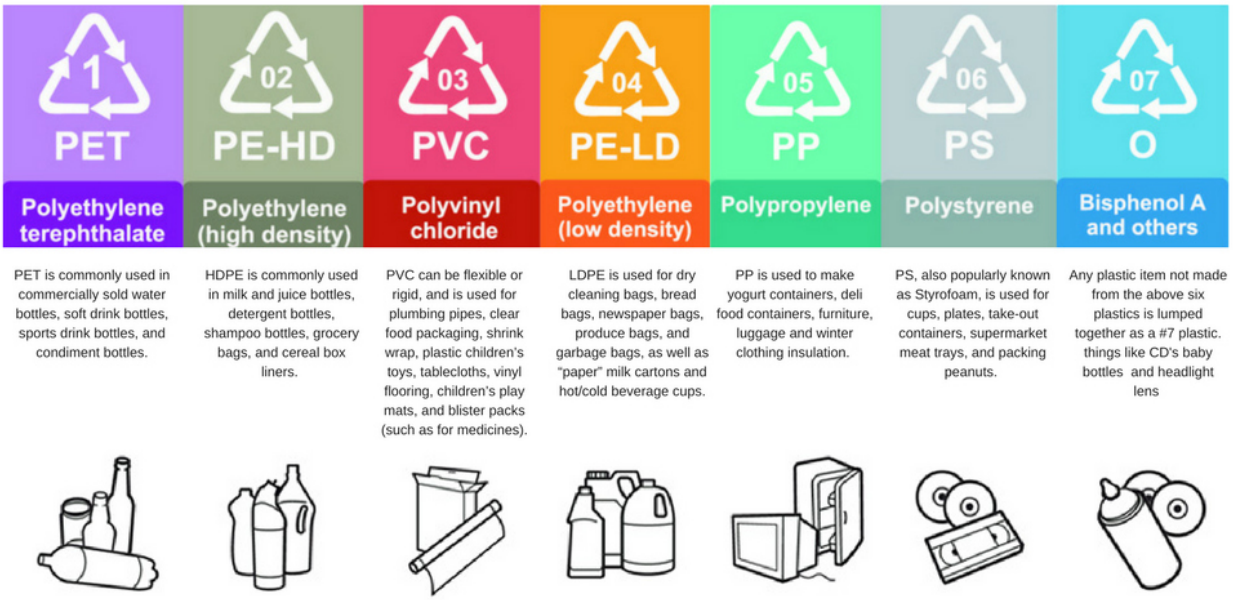
- General ideas: You can adapt this activity to which age group you are teaching.
- Ideas with younger/older children: (3-6 <-> 6-9 / 9-12 <-> 12-15)
  For older students you can use a sewing machine and also add a pocket. You can also add that the tote can be reversible.

Tips & tricks

Create a poster which shows how you can recycle plastic. Let the students come up with different ideas. Maybe they can create/build a recycle station for the school or the classroom.

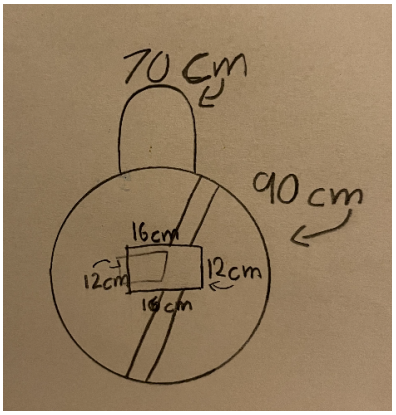
Let the students create their own plastic
https://www.instructables.com/Make-Your-Own-Bioplastics/

Appendix 1.



Appendix 2.

Appendix 3.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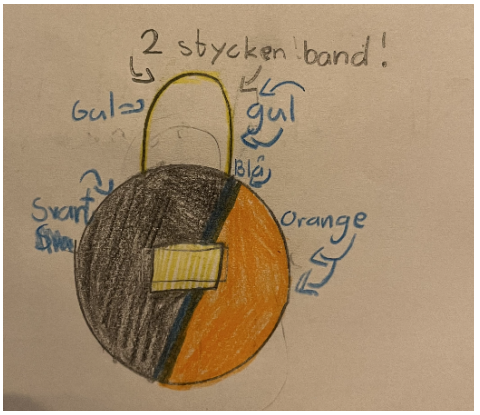
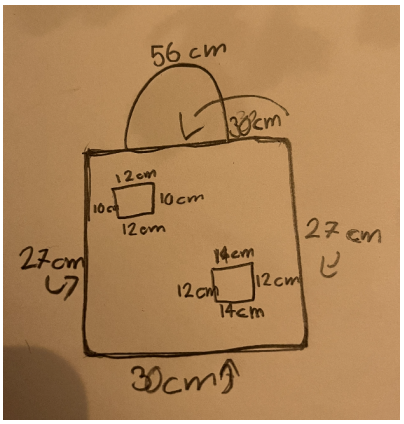

2 stycken band!
Gul
gul
Svart
Orange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2 stycken band