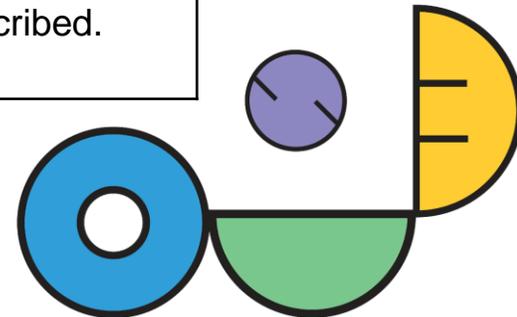
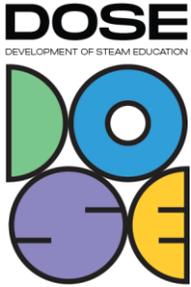


Where to find information for STEAM activities

Description of the activity:	Within this presentation you will get an overview on where to find information to build STEAM activities as a teacher
Target group(s):	Elementary school teachers (pre primary and primary)
Keywords:	STEM, STEAM, Challenges
Duration of activity:	90'
Description of activity environment and materials needed:	Reading through this powerpoint will give you an overview on the different sources you can use in order to integrate STEAM into your lessons. Different approaches are described.





The Starting point... The context – the challenge

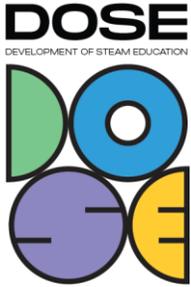
The trick is to "look for STEM in everything."

"Teachers sometimes come up with a problem so the students can fix something. For example, we punch a bicycle tire to fix it. Or a Super Hero doesn't get down and needs a parachute.

Making up problems is often not necessary. You'll come across plenty of things in the classroom or neighborhood that you can turn into a STEM activity."

Lieselot Verdonck





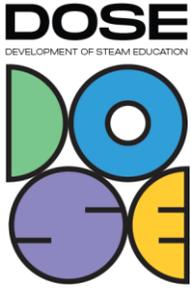
The Starting point... The context – the challenge

How can you water the seeds? (activity 'watering') How can we drop an egg without it breaking?

...

From an open-ended question, children are challenged to 'Investigate', 'Design' and 'Optimize'.





From manuals, workbooks, the Internet, ...

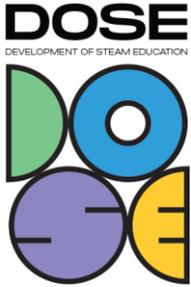
Starting from an experiment / a step-by-step plan / an existing design

Recipe for soap bubbles

Cooking activity

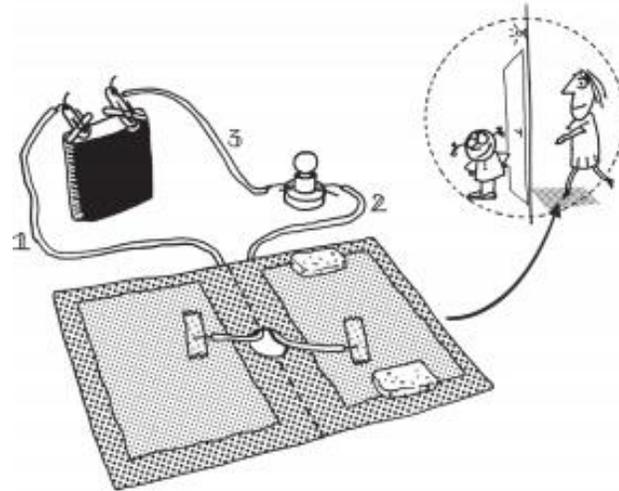
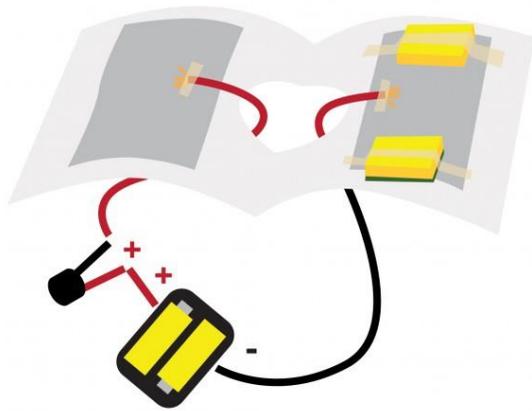
Such more closed activities still require a follow-up in the form of a research question / problem statement (e.g. how can we make the soap bubbles bigger?)





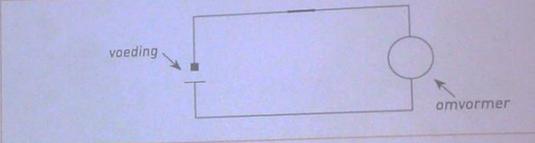
From manuals, workbooks, the Internet, ...

eg. A step by step plan to make a electrical circuit, ... can change into a more open activity. Eg. Making a doormat alarm



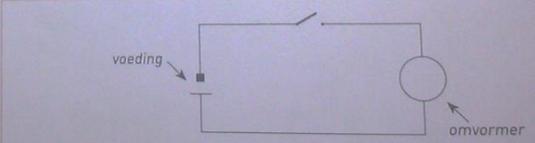
Markeer wat klopt.

de potloodslijper



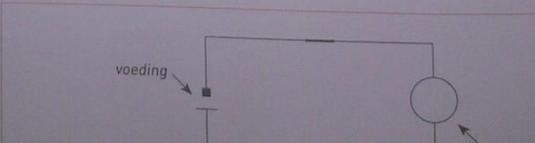
De voeding is een batterij / netstroom. De schakelaar is aan / uit.
De omvormer zet elektriciteit om in een draaiende beweging / licht.

het strijkijzer

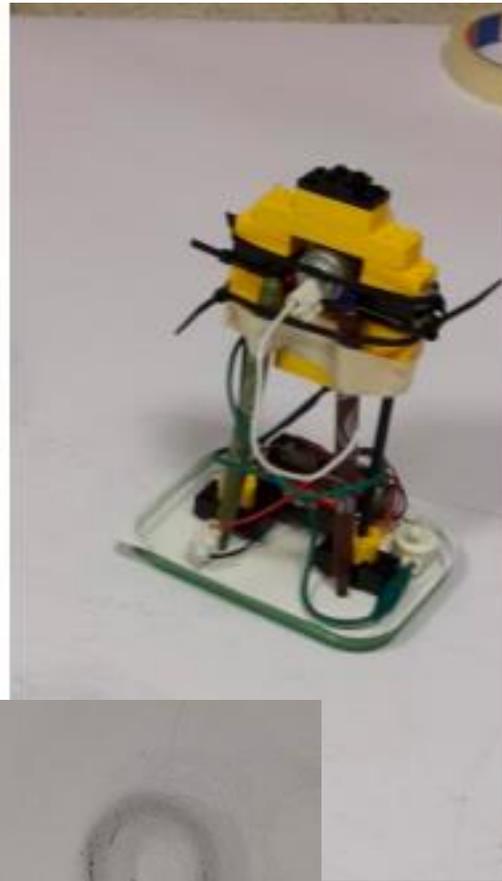


De voeding is een batterij / netstroom. De schakelaar is aan / uit.
De omvormer zet wel / geen elektriciteit om in koude / warmte.

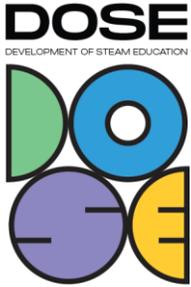
de radiowekker



De voeding is een batterij / netstroom. De schakelaar is aan / uit.
De omvormer zet elektriciteit om in licht / warmte / geluid.



Using the concept of electrical circuit in order to build a drawing bot



From manuals, workbooks, the Internet, ...

"See how the watercress grows."

This activity is not "STEAM" yet...

But how can we make this more "STEAM"?

1 **Experiment**
Bekijk hoe de waterkers groeit. Schrijf op wat je ziet.

Experiment 1: warmte/koude

onze stelling: _____

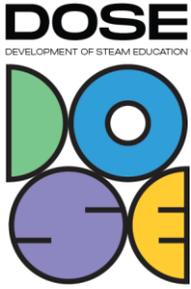
wanneer je kijkt	op een warme plaats	op een koude plaats
na 2 dagen	_____	_____
na 4 dagen	_____	_____
na 6 dagen	_____	_____
na 8 dagen	_____	_____
na 10 dagen	_____	_____
na 12 dagen	_____	_____

ons besluit: _____

Experiment 2: licht/donker

onze stelling: _____

wanneer je kijkt	op een lichte plaats	op een donkere plaats
na 2 dagen	_____	_____
na 4 dagen	_____	_____
na 6 dagen	_____	_____

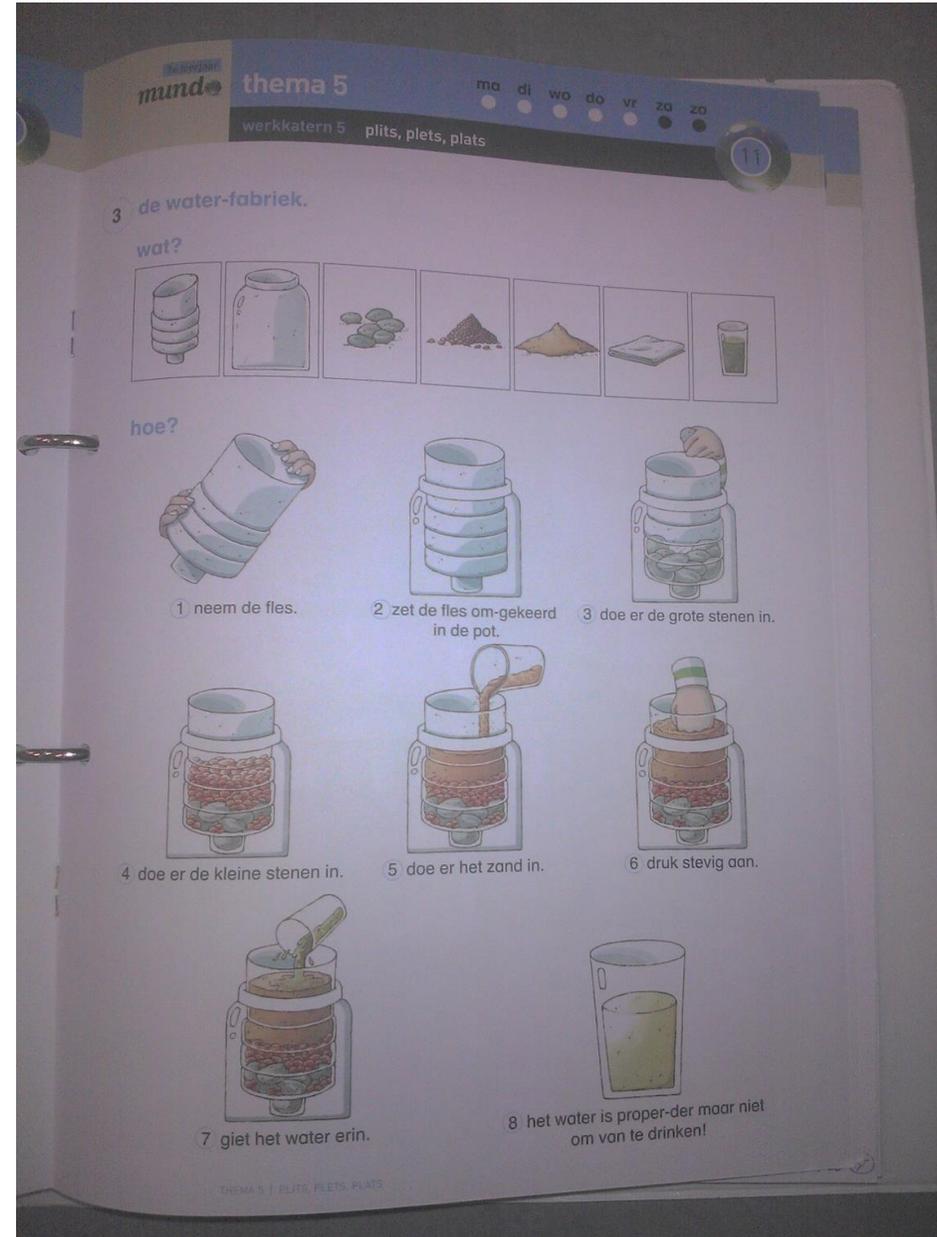


From manuals, workbooks, the Internet, ...

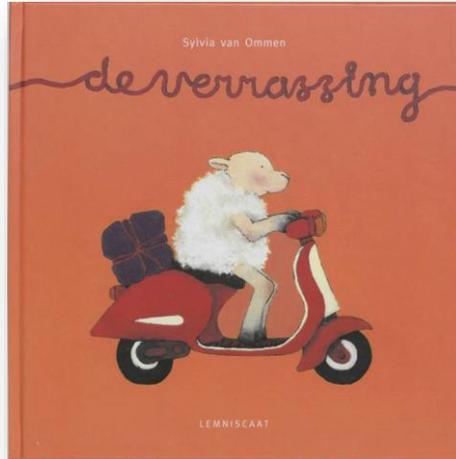
Here you see a step-by-step plan from a manual..

How can we make this more “STEAM”?

Making a Water purifying filter

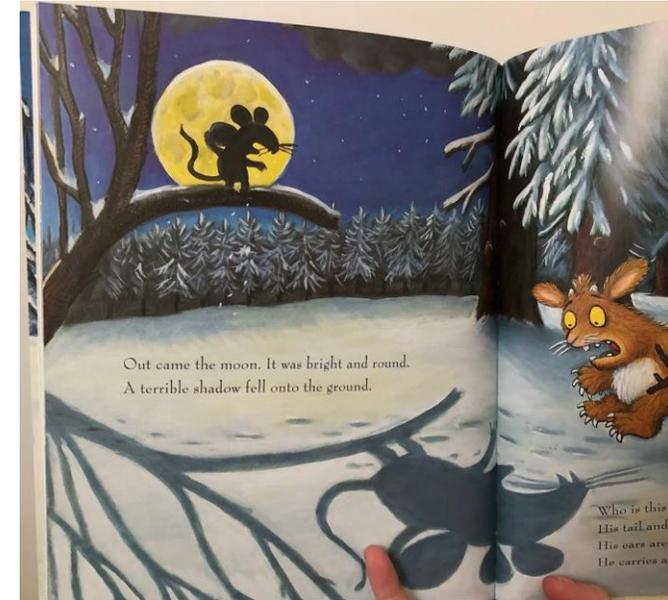


STORIES can be a nice Context

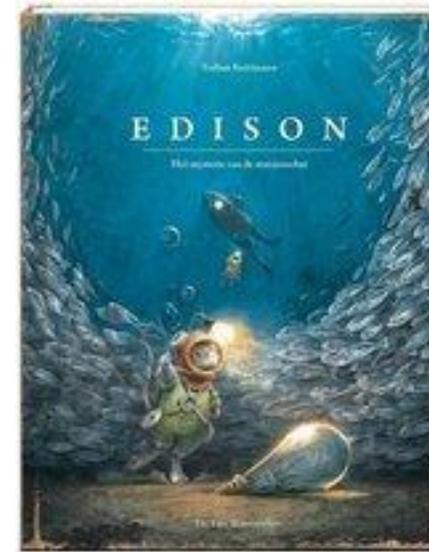
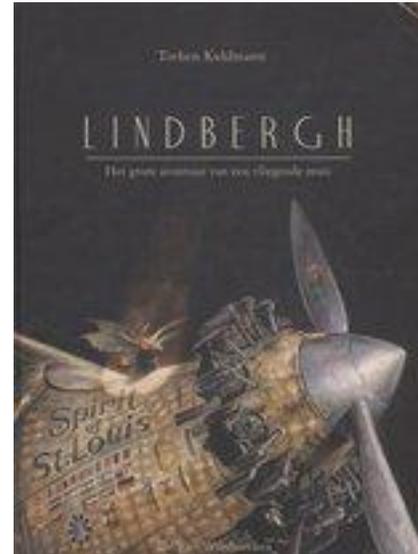
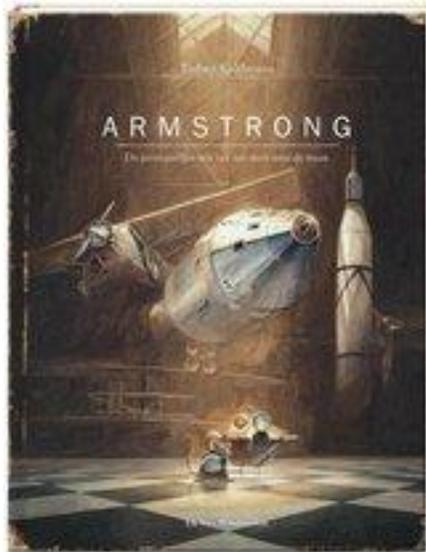


www.stembasis.be

Verdonck, L. (2017, januari)
*STEM en (leer)contexten in
kleuteronderwijs,*
Leergemeenschap
STEM+, CoP 7, Gent.

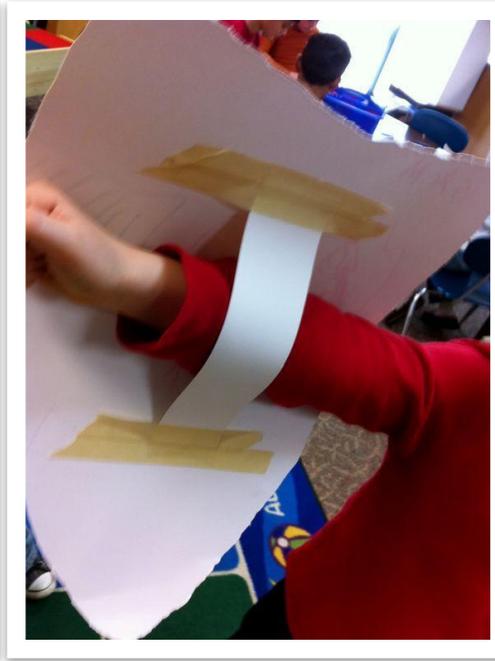


STORIES can be a nice Context

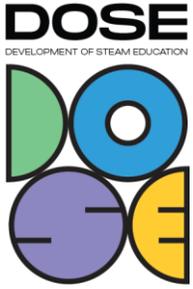


Eg the stories of Torben Kuhlmann

Projects that you already do... History ...

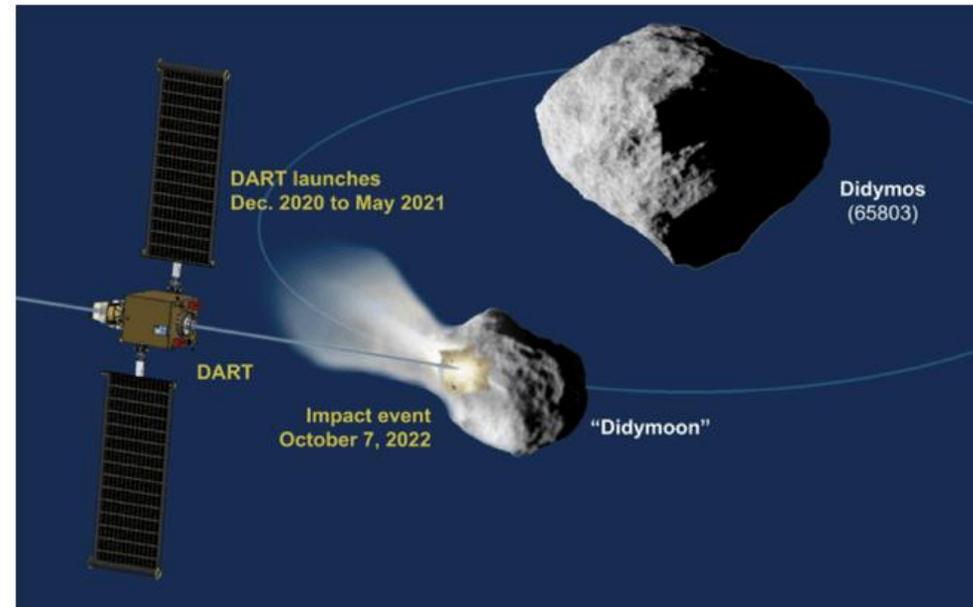


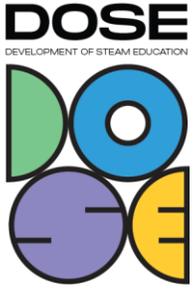
The task is to build a long aqueduct with paper and tape and to run as much water through it as possible in 1 minute. The channel of the aqueduct must be 2.5 m long, must have at least 1 bend and must be supported by no more than 4 pillars.



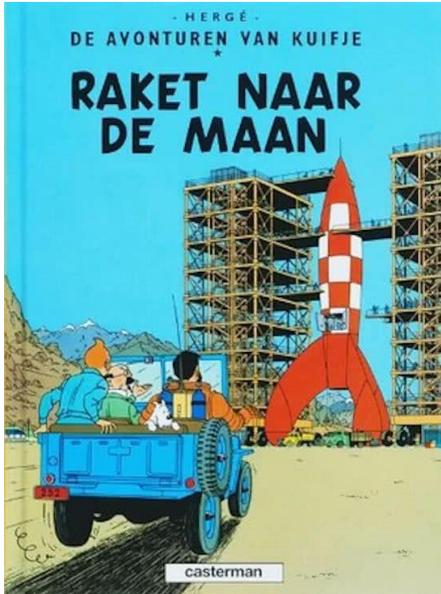
Current events ... vb. Into Space

NASA chooses SpaceX for a mission in order to change the course of an Asteroid



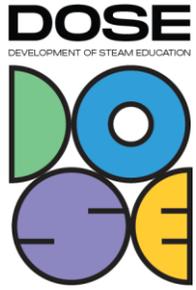


Current events ... vb. Into Space



www.onderzoekendleren.be
Inspiratie (4.30-5.02//6.02-...)





Current events ... vb. Into Space

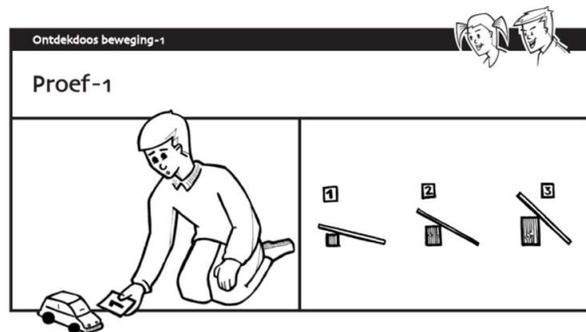


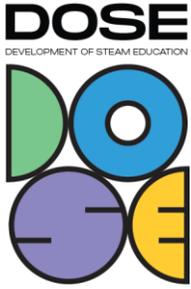
The game play of children

"When a couple of kids build a tower, I can use this as an opportunity to ask questions that make them think: 'Your tower goes much higher. How come? Yours is falling over. How can you make a taller tower?'"

For example, they discover that the base must be wider than the top. And now I also know that you make a sturdy construction with triangles.

"Spontaneous play, but can also be 'provoked' (choice of materials!)"





Starting from questions of children, ...

"During our Africa project, the children learned that in Africa you sometimes have to walk far to get water from a well. They were eager to know how that works. With a brush, a bucket and cardboard I already built them a water well. While doing this, we tried out different pulley systems. They came up with their own solutions to get the water out of the well with a bucket."



Pinterest ... and beyond ...

