

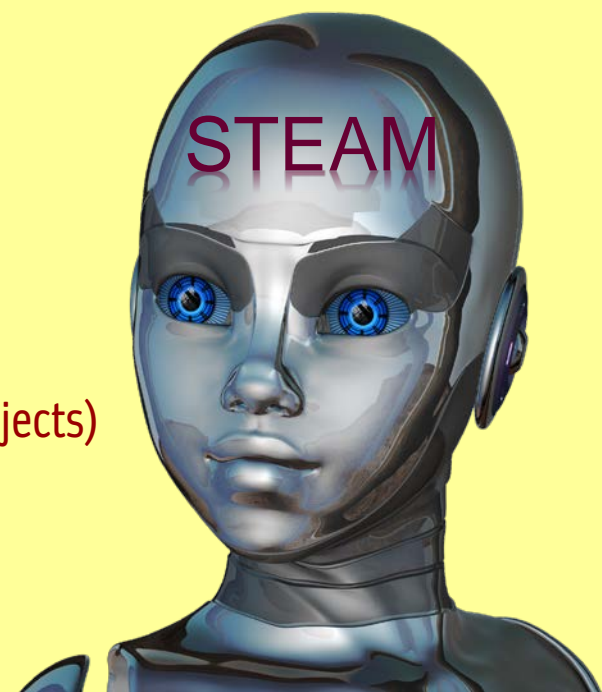
"IMPROVEMENT, IMPLEMENTATION, DEVELOPMENT OF RESEARCH AND PROJECT ACTIVITIES IN STEAM ORIENTED EDUCATION"



M^aJosé García Garcia-Saavedra, PhD



- ✿ CIPFP Ausiàs March, Valencia, Spain
- ✿ Health Vocational and Technical Teacher
- ✿ Associate Professor (Valencia University, Masters' Degree in Teaching Health subjects)
- ✿ Teachers Trainer, eTwinning Ambassador, life long learner
- ✿ mgarcia@ausiasmarch.net



S.T.E.A.M.



CIPFP AUSIÀS MARCH
CENTRE INTEGRAT PÚBLIC
DE FORMACIÓ PROFESSIONAL

Science
Technology
Engineering
Arts
Mathematics

S.T.E.A.M.
Beyond the acronym



$$Y = mX + C$$

phi

$$\frac{X - X_1}{X_2 - X_1} = \frac{Y - Y_1}{Y_2 - Y_1}$$



$$V = 543.25$$



Kids are born scientists; they really want to understand causes and effects from very early on.

- ✿ “STEAM education is not only an educational approach to learning; it is not limited to the subjects in the STEAM acronym; it isn't just the course content.
- ✿ STEAM education is a project-based learning, or inquiry-based learning process that uses knowledge as a way to solve problems in real-world contexts.
- ✿ STEAM education is a pathway of becoming scientists, mathematicians, engineers, artists, technological entrepreneurs, critical thinkers, tolerant and better human beings who will change the world.



When was the first time I thought of becoming a scientist?



Calendula officinalis



Calendula Officinalis

- Great for burns, dry skin and stings.
- Powerful natural fungicide.
- Anti-inflammatory and antiseptic properties.
- Bacteria fighter ...



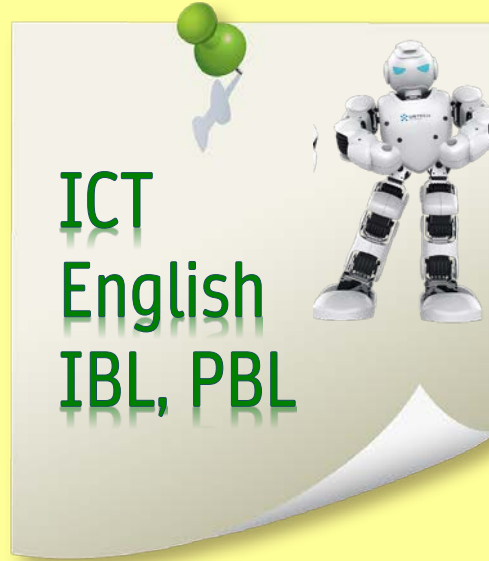
- All these reasons make it worthy of a place in our school garden.
- Let's grow calendula, let's make a cream and thus will ensure a caress to the soul when something hurts.



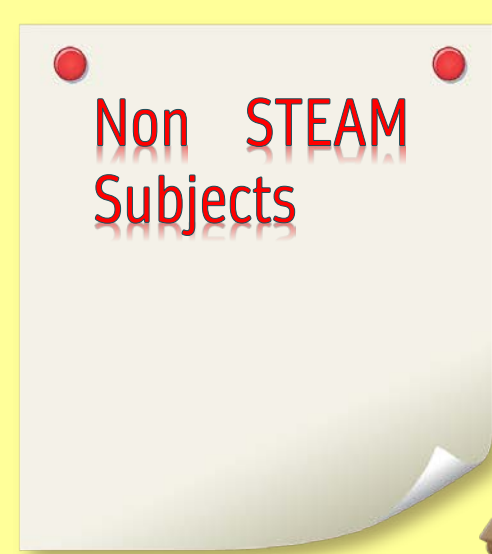
STEAM PARTNERS



V.E.T.



ICT
English
IBL, PBL



Non STEAM
Subjects

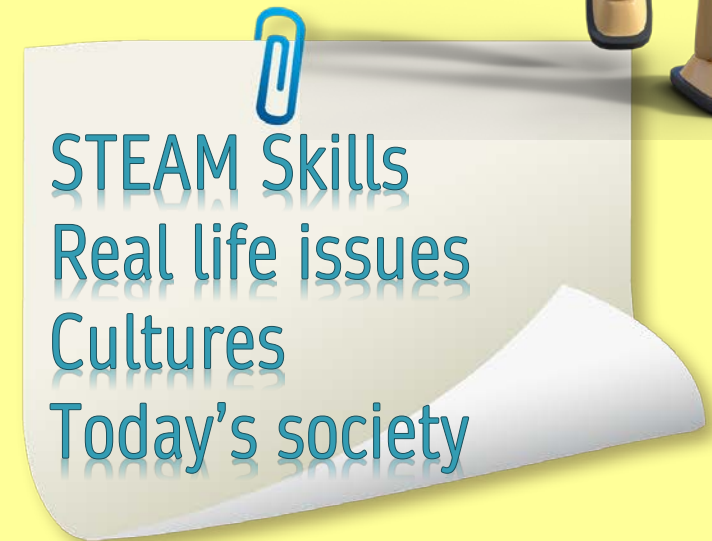


860.415 TEACHERS	213.659 SCHOOLS	113.610 PROJECTS

- ✿ STEAM: 447 eTwinning projects
- ✿ STEAM + 2020: 22 eTwinning projects
- ✿ STEAM + Lithuania: 6 eTwinning projects
- ✿ VET + STEAM: 0 eTwinning projects



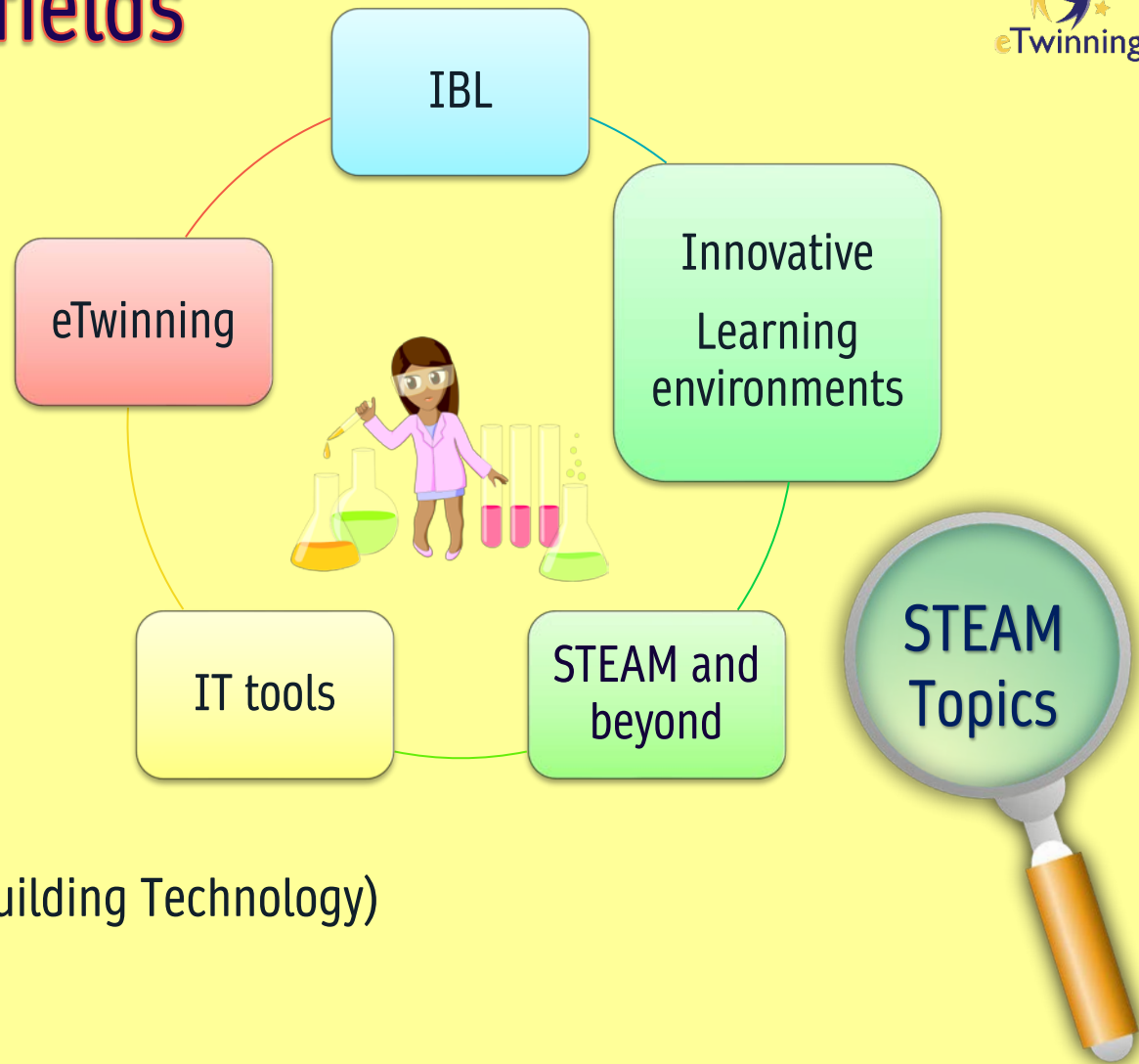
Outside the box:
Park
Garden ...



STEAM Skills
Real life issues
Cultures
Today's society

Vocational Education and Training fields

- ✿ Agriculture and Forestry Business
- ✿ Administration and Law
- ✿ Education
- ✿ Health and Welfare
- ✿ Humanities and Arts
- ✿ Natural Sciences
- ✿ Service Industries
- ✿ Transport, Logistics
- ✿ Social
- ✿ Mechatronic, Energy and Electrical
- ✿ Information and Communication Technologies (ICTs)
- ✿ Technology: Architecture and Construction (Construction, Building Technology)
- ✿ Industrial Supervision
- ✿ Process, Chemical and Materials Engineering
- ✿ Food Sciences, Material Technology, Textiles and Clothing Technology





SCIENCE

IBL – PBL

MATHEMATICS



ICT

THE ARTS

STEAM

ENGLISH

ENGINEERING

TECHNOLOGY

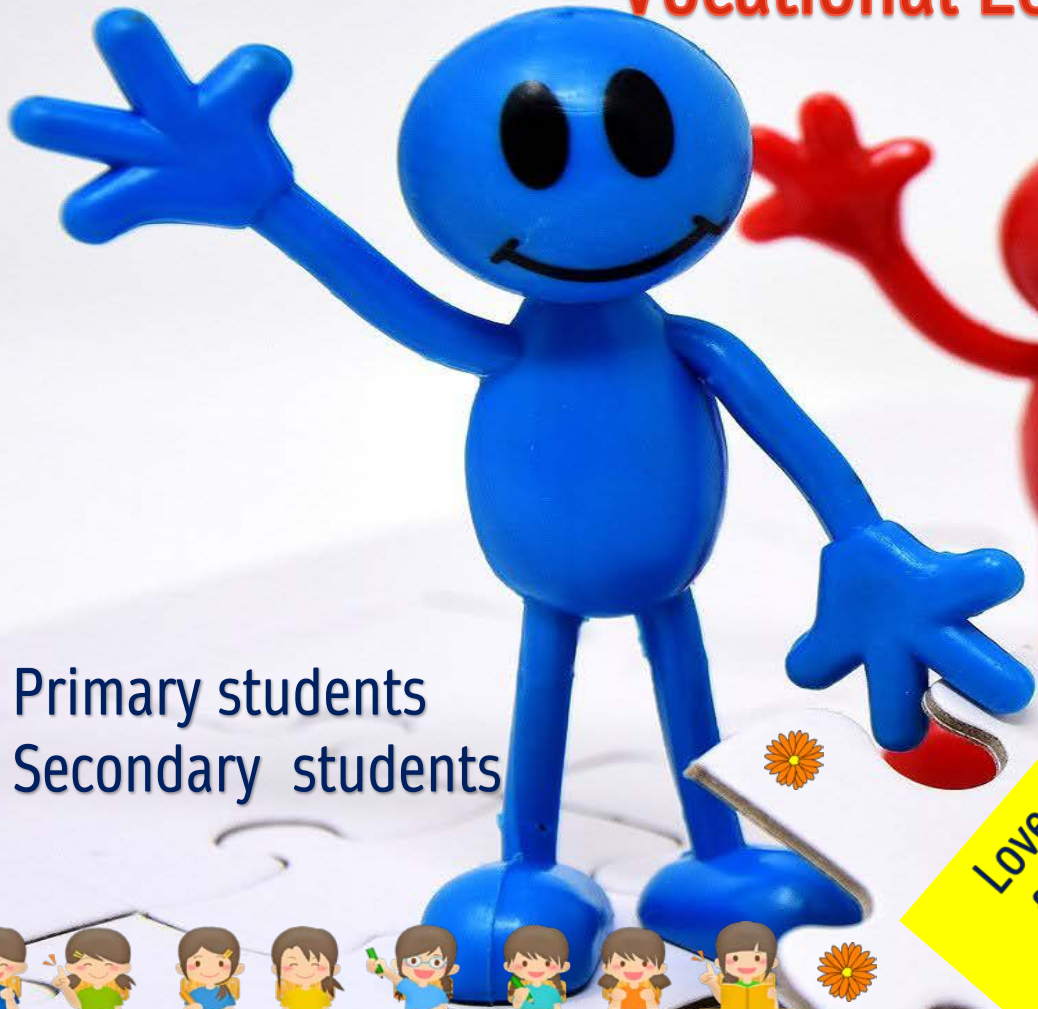
STEAM+VET “together” learning

LET'S
DO IT!

Let's start this amazing learning adventure



V.E.T. students Vocational Education and Training



eTwinning

- Primary students
- Secondary students

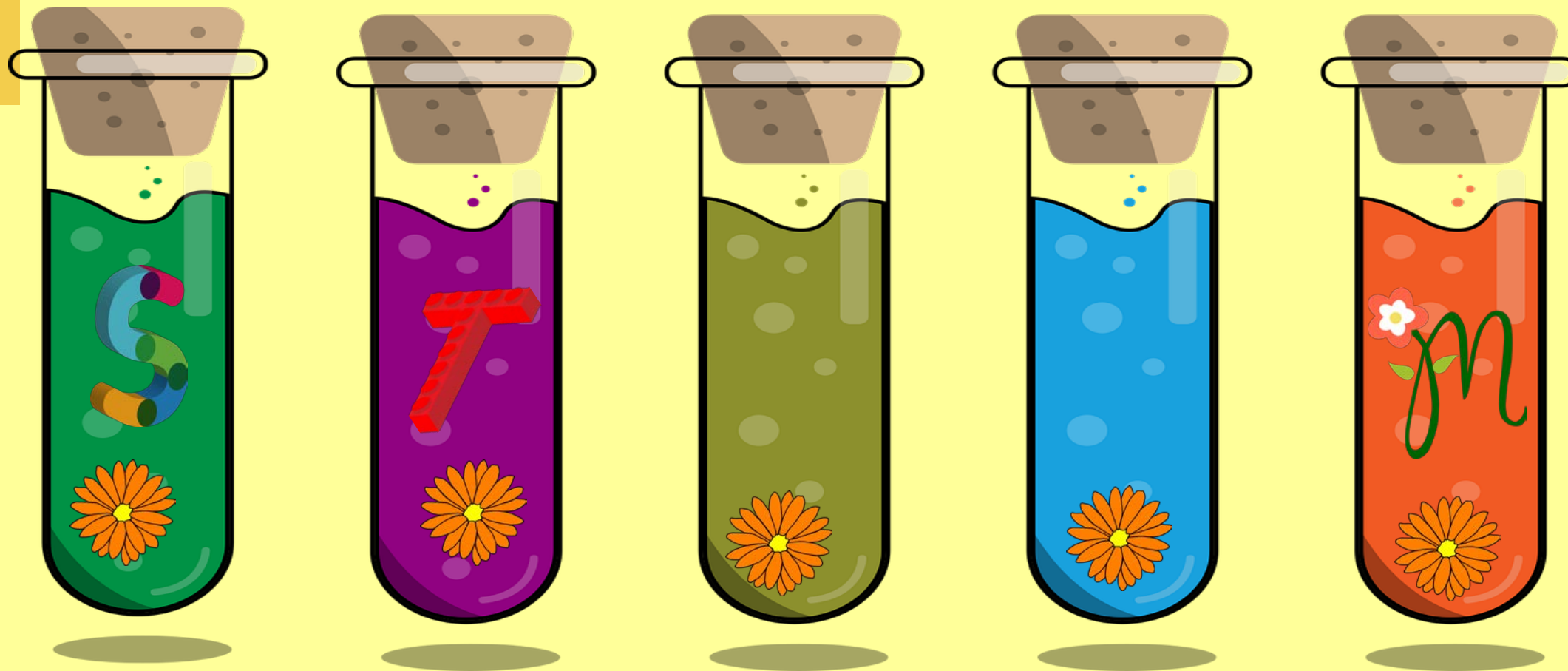


- English, IT tools
- IBL – PBL – STEAM
- Non-STEAM Subjects

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DE FORMACIÓ PROFESSIONAL



Hands-on learning approaches with eTwinning ...



... and English, environment, ICT, real life contexts

Hands-on learning approaches with eTwinning & STEAM



- Healthy teeth, healthy smiles and healthy children



- Promotion of healthy lifestyle during education



- Diet or D.I.E.T.: Did I eat that?



- eTwinninggreen4u



- European Jobs for you (th)



Wonder wall



- 🌍 Dental Health
- 🌍 Lifestyle and wellbeing
- 🌍 Eating habits
- 🌍 Body Mass Index (BMI)
- 🌍 Air pollution and health
- 🌍 Climate change
- 🌍 Carbon Footprint



STEAM



Hypotheses Driving Questions



Is our lifestyle healthy?

If not, what could we do to improve it at school?



Diet or D.I.E.T.?
Did I Eat That?

Our eating habits influence our BMI



Do you know the air we breathe?

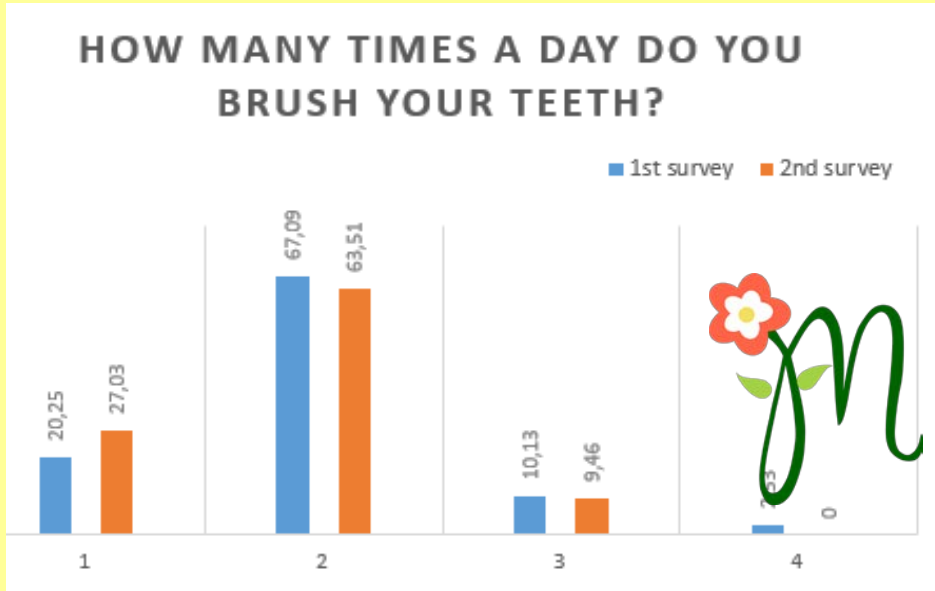
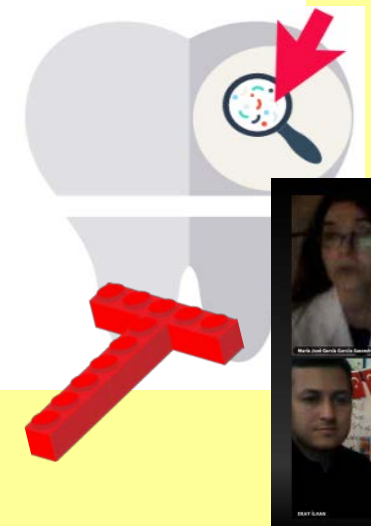
Our attitude: a cause of or a solution to climate change?



Dental Health



HEALTHY TEETH, HEALTHY SMILES AND HEALTHY CHILDREN





María José García García-Saavedra, PhD



Želvita Jankunė



Ilona Surgautienė

Dental Health



ERAY İLHAN



HAMZA EVMEZ



ETwinning Day on Tuesday 9 May!



Prado Museum
Visit to a Hospital

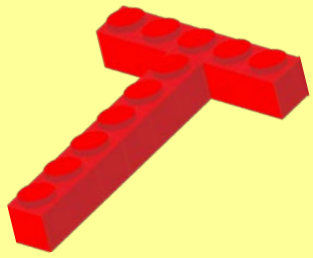


Nurse Assistant students

(1845-1928) Painter
JIMÉNEZ ARANDA, LUIS

STEAM - TEAM - JOB DREAM?





Lifestyle Diet

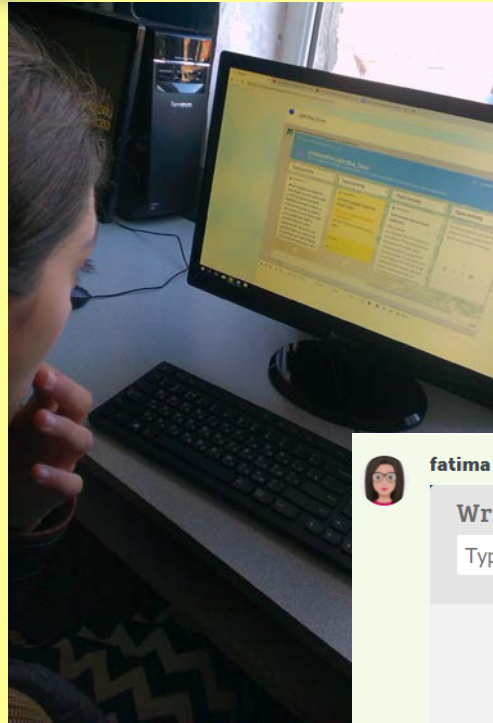


Safe internet - Greece 2019 By Theodora Chandrina



Match pairs and improve your eating habits.

OK



fatima aldean

Write things that make you happy

Type your answer here...

Submit

20 characters remaining

art is fun good collaboration!! positive thoughts!! my friends and travel sunset
 my family good books!!! music thanks travel eat humor
 friend smile love sing nature
 to go to the movies sharing jokes peace

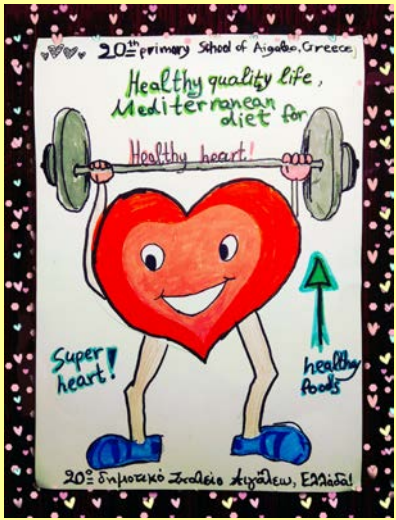
positive thoughts



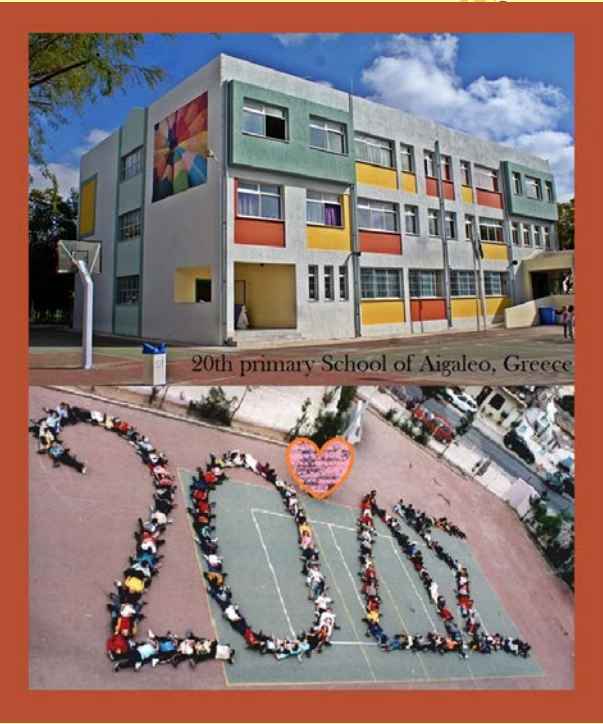
Pixiz

Lifestyle Diet



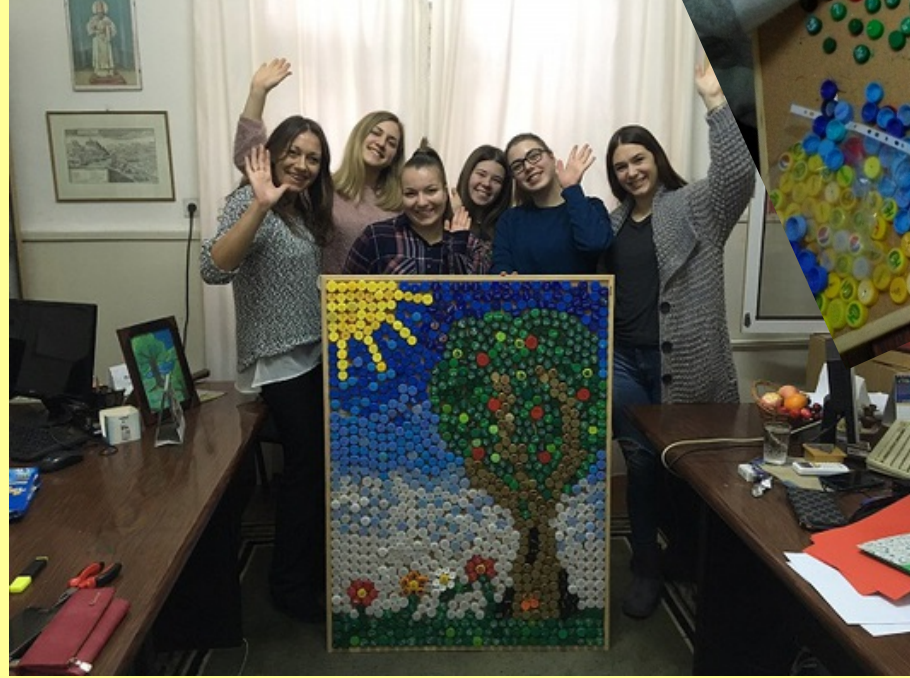


Lifestyle Diet



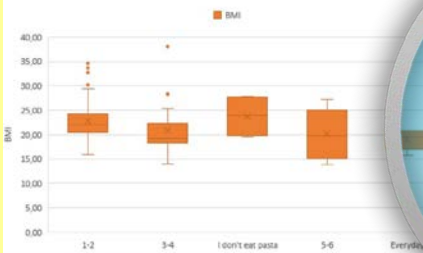
https://www.youtube.com/watch?v=4ce09ohUZGI&feature=emb_title

Lifestyle Diet

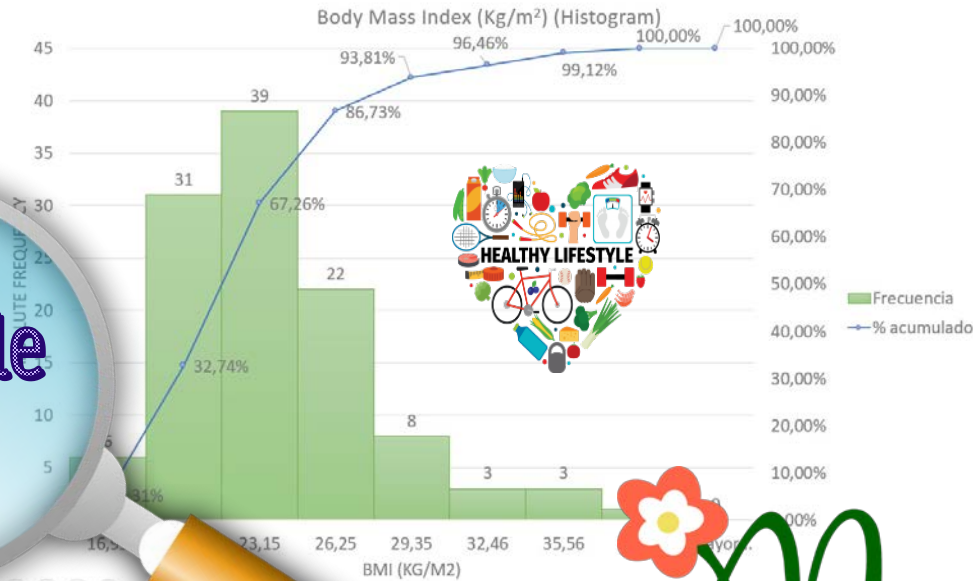


BOX AND WHISKERS PLOT

How many times do you eat pasta in a week?

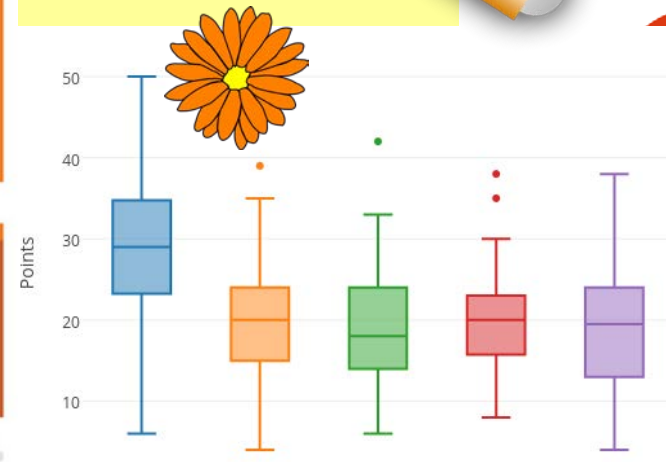
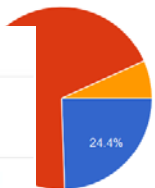


Lifestyle Diet



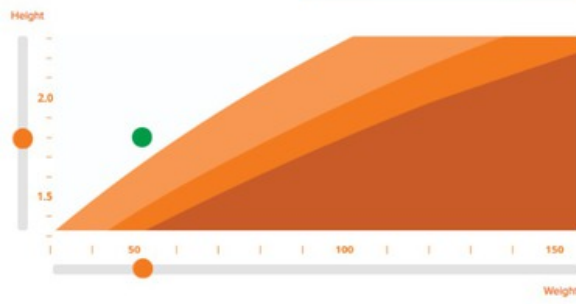
consider your lifestyle as

- healthy
- not so healthy as I would like to be
- Not very healthy or moderate healthy
- Unhealthy

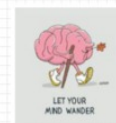


Calculate BMI

IMPERIAL METRIC
 Enter Your Height: 1.78 m
 Enter Your Weight: 52 kg
 Calculate
 YOUR BMI IS **16.41**
UNDERWEIGHT
 When your body mass index is less than 18.5, it could indicate that you do not have enough body fat to sustain good health.
 Weight Gain Tips



OUR BOX AND WHISKER PLOT FOR "AGE"



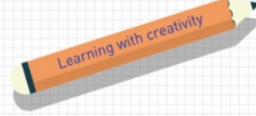
We made our learning fun and meaningful

#1 What is a box and whisker plot?

- A box and whisker plot is defined as a graphical method of displaying variation in a set of data.
- Box and whisker plots are very effective and easy to read, as they can summarize data from multiple sources and display the results in a single graph



Box and whisker plot created by Health Information Technicians students. Vocational and Technical School Ausiàs March. Spain



powered by PIKTOCHART



2020

eTwinninggreen4u



Erasmus+ eTwinning

CLIMATE CHANGE

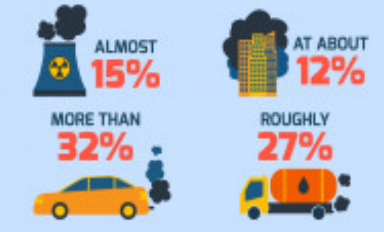
and environmental challenges

ECOLOGY INFOGRAPHICS

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tristique orci nec una tristique, non luctus sem. Orsectetur dex adipiscing areltn eger tristique orci nec una tristique.

01 AIR POLLUTION

lorem ipsum



03 SOIL POLLUTION

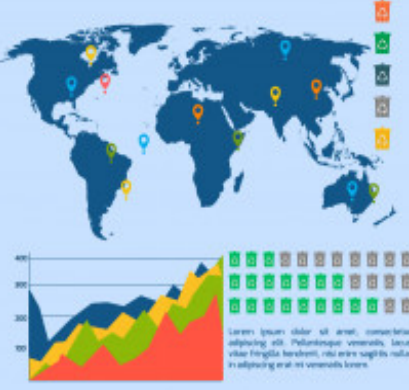
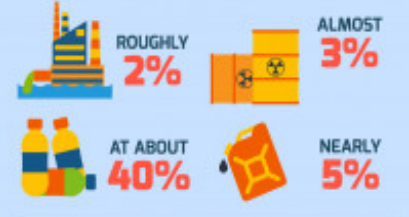
lorem ipsum

- AT ABOUT 40%
- ALMOST 13%
- ROUGHLY 22%
- NEARLY 15%

5 JUNE
ENVIRONMENT WORLD DAY

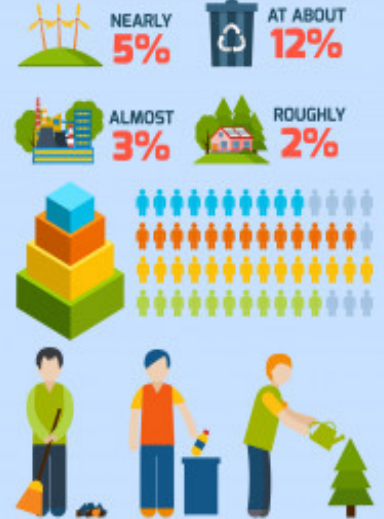
02 WATER POLLUTION

lorem ipsum



04 GREEN LIFE

lorem ipsum



BreezoMeter The Most Accurate Air Quality Data Worldwide Trusted By 85 Million People Worldwide

Pilies tak., Kaunas County, Lithuania

Air Quality Pollen

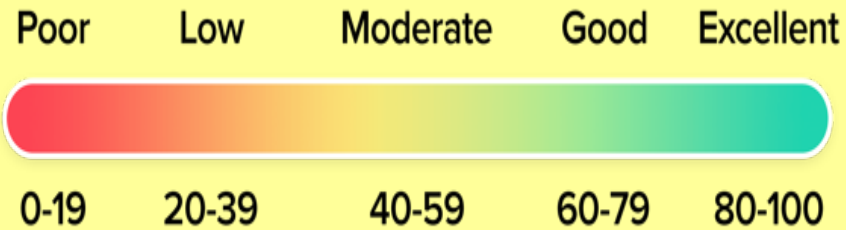
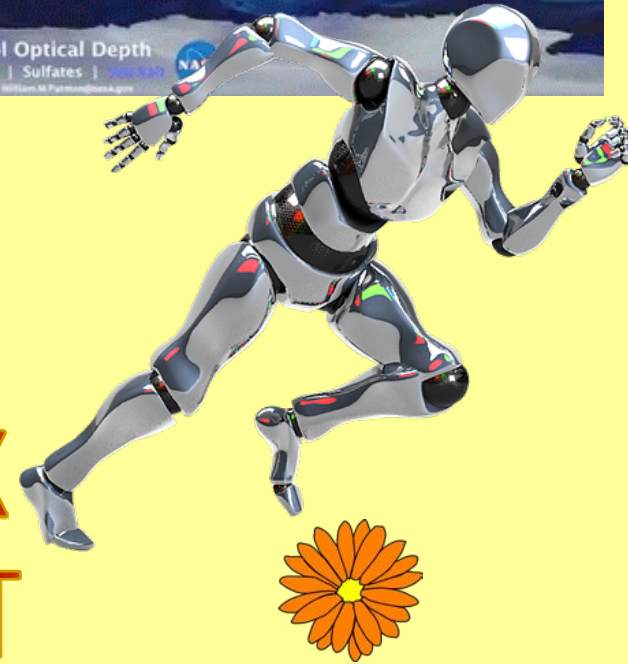
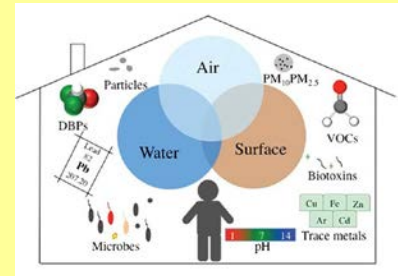
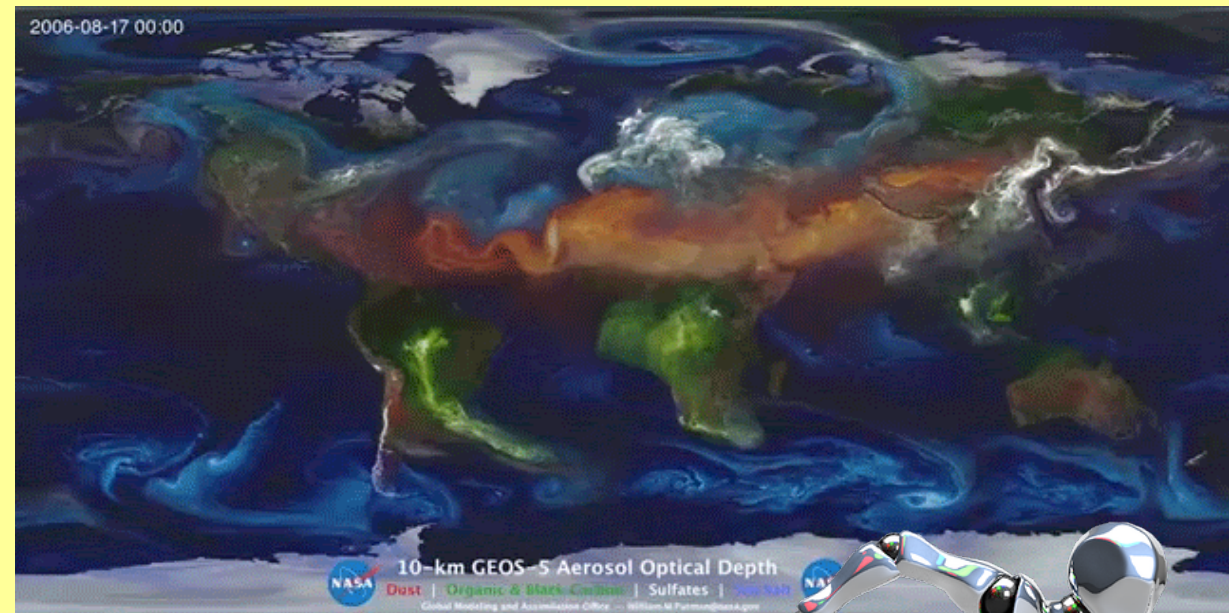
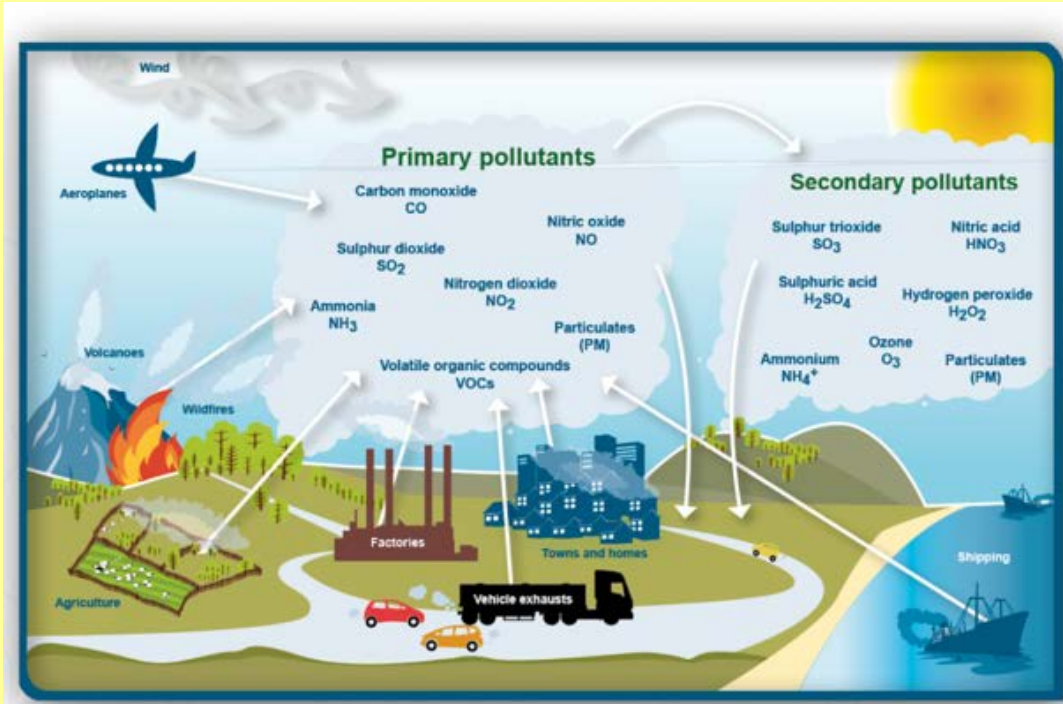
BreezoMeter AQI (Global) 85 Excellent Air Quality

Dominant Pollutant - O₃

HOURLY FORECAST

Excellent Air Quality 85/100

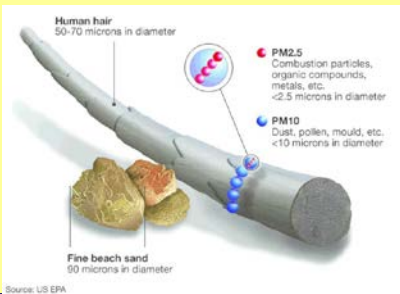
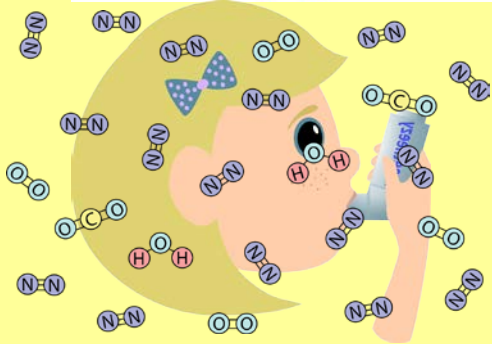
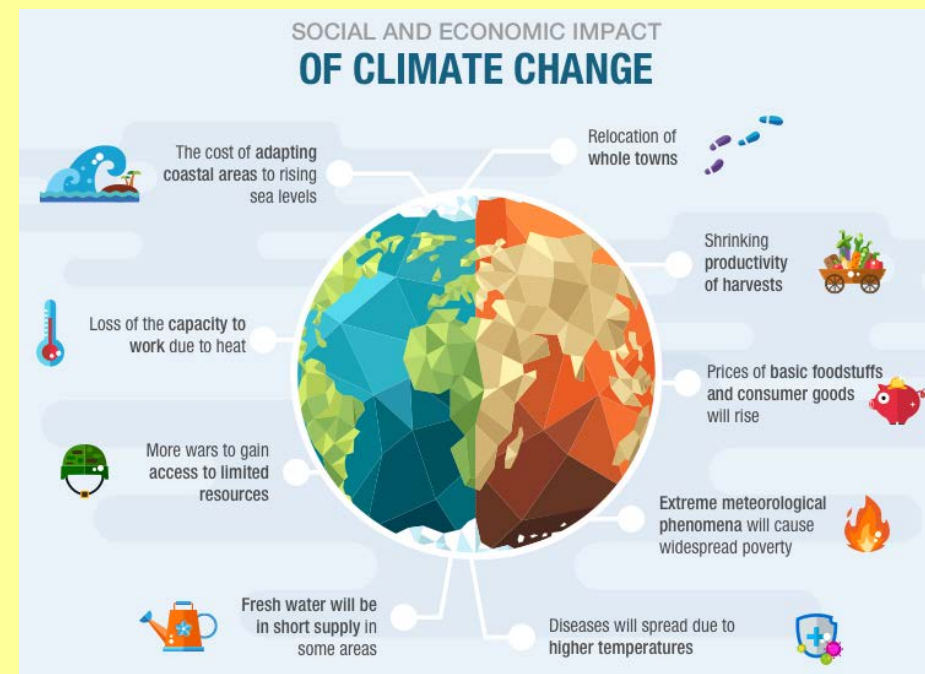
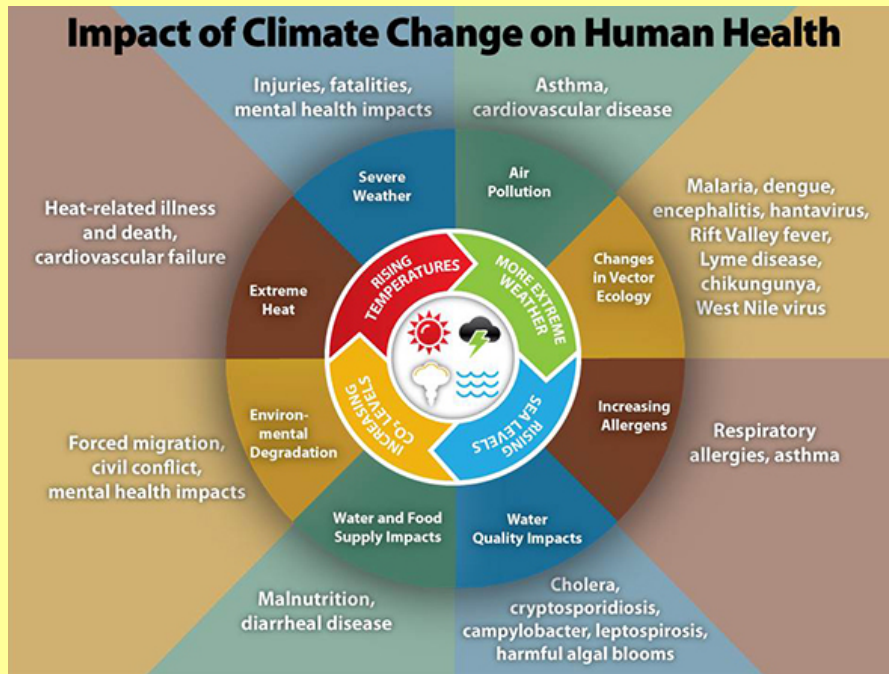
How is Air Pollution Monitored?



AIR QUALITY INDEX

CARBON FOOTPRINT





<http://steamit.eun.org/category/stem-careers/>



<https://www.who.int/airpollution/infographics/en/>

AIR QUALITY INDEX CARBON FOOTPRINT

Inspiring students

-  STEAM teachers can bring scientist in the class to talk to students as role models to boost them in STEAM careers
-  Scientists can be students who are partners in eTwinning projects
-  All project and STEAM based learning products can be shared and disseminated
-  eTwinning partners can show learning scenarios to inspire young learners their dream jobs



- Meet online a scientist
- Meet online a STEAM professional
- Meet online an eTwinner
- Meet online a VET partner



STEAM online meetings

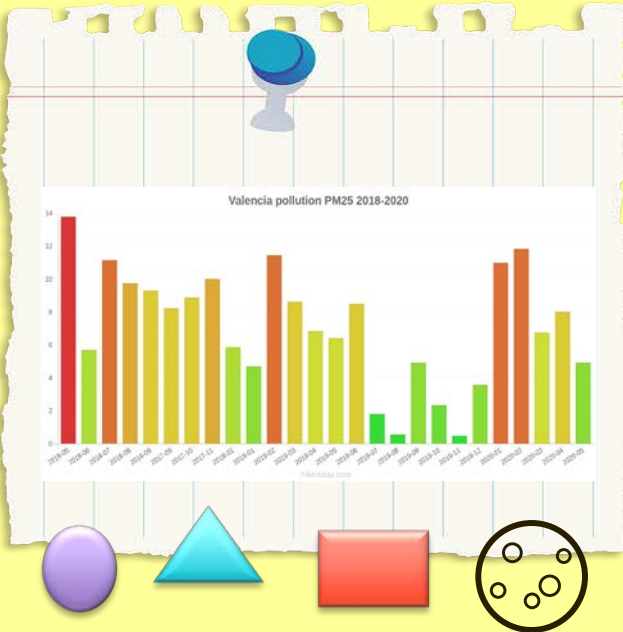
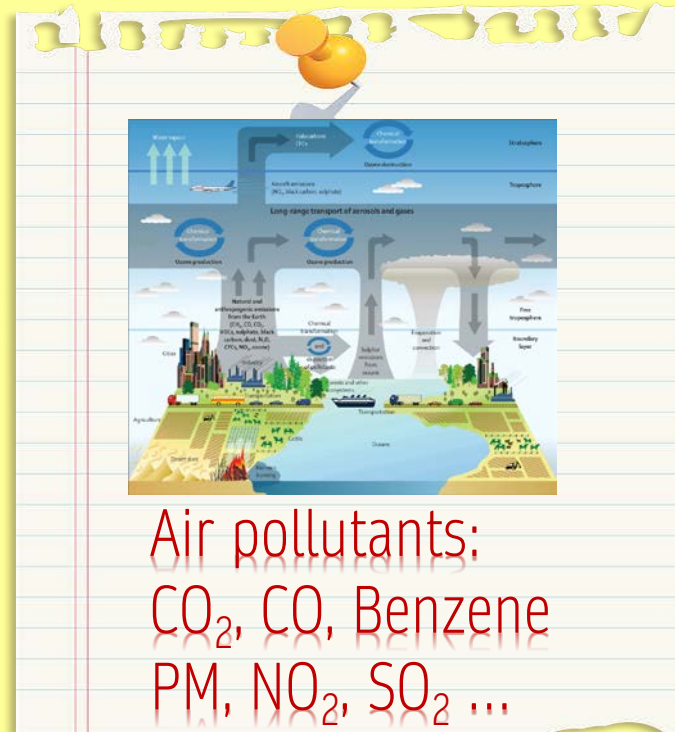
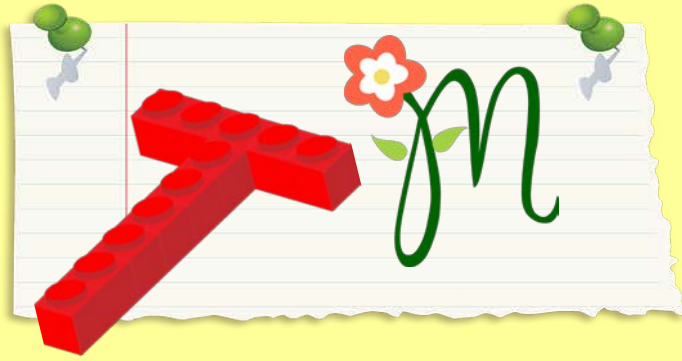
<https://santamaria.wa.edu.au/skype-a-scientist/>



- Ask questions
- Show your research
- Virtual contest
- Create knowledge together
- Share knowledge



Air quality Index and Air pollutants calculation with IT app

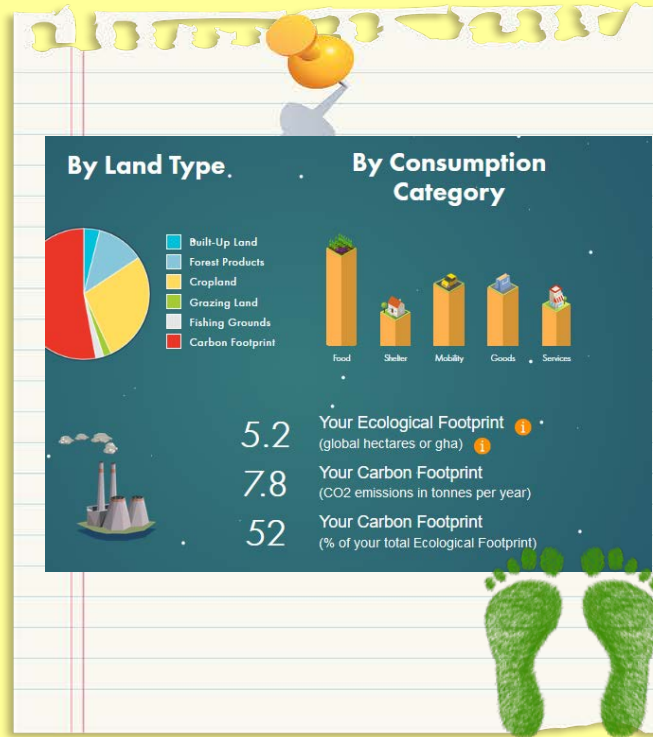


<https://twinspace.etwinning.net/121943/home>

Hands-on learning

Focused on shape, colour

Air quality Index and Air pollutants calculation with IT app



Footprint calculation
Offset footprint
Eco_actions

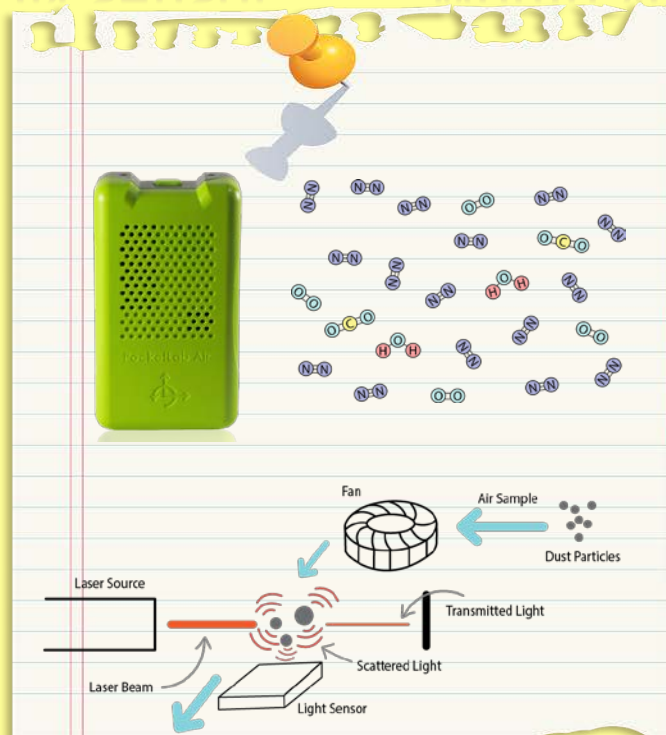
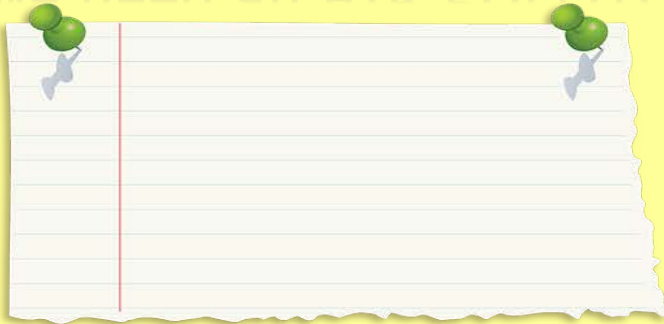
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Hands-on learning



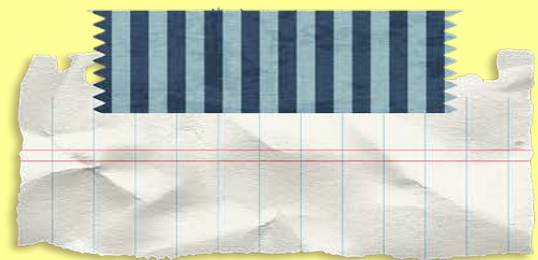
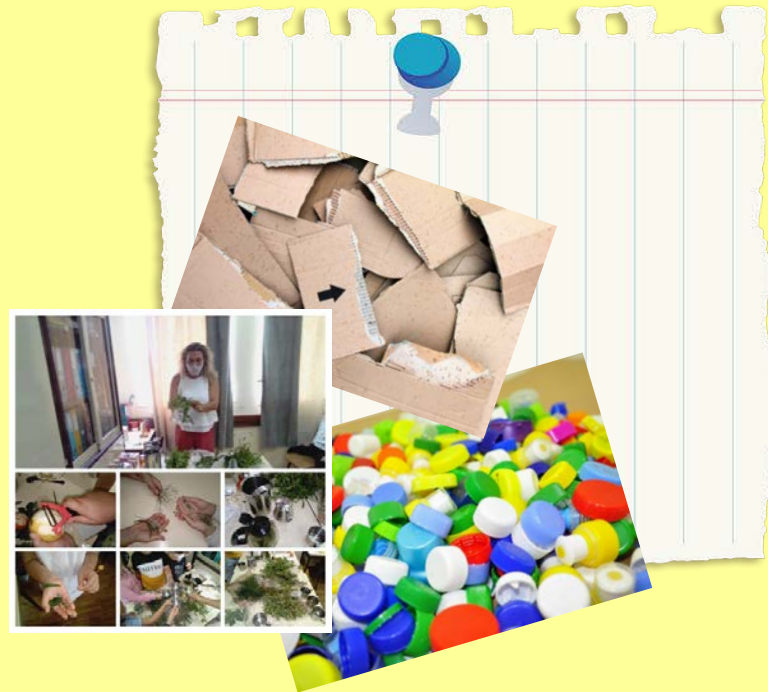
We need an AIR POLLUTION sensor. Would you like to help us?



SOLUTIONS

CLEAN AIR FOR HEALTH #AirPollution World Health Organization

<https://twinspace.etwinning.net/121943/home>



- Driving questions
- STEAM Topics
- Specific tasks
- Sample (etwinners)
- Project goals
- Curriculum
- Learning products

STRUCTURED IBL

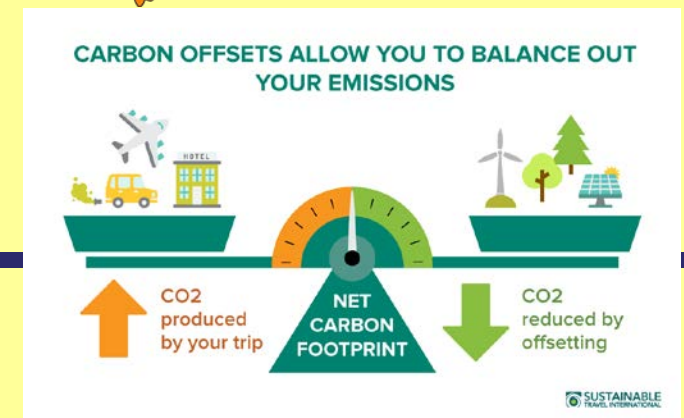
- Topics
- Information resources
- Project products:
 - Videotutorial
 - Infographics
 - Self-assess activities
 - Work papers

GUIDED IBL

- Free to teamwork
- Free to select information
- Free to select key words
- Free to select style
- Free to design activities
- Free to disseminate results in educational contexts

OPEN IBL

INQUIRY BASED LEARNING_IBL LESSONS





CARBON OFFSETS ALLOW YOU TO BALANCE OUT YOUR EMISSIONS



MATERIALS TO BUILD A LUNCH BOX

- PLASTIC EMPTY CONTAINER
- SCISSORS
- GLUE
- BUTTON
- CORD
- AND ... IMAGINATION!

LUNCH BOX using RECYCLED MATERIALS

10th Local Global Connectivity
WEEC2019
Bangkok, THAILAND

We all have recognized the importance of human and all beautiful creature survival, and that's the reason bringing us be here together.

WEEC2019 intends to devote and contribute to the environmental development and sustainability not only in the academic part but every single little thing that we can do.

Let's be a part of our intention

and make a big difference in protecting and enhancing environment throughout the congress.

- ### 1 Food Donation

LET'S SAVE FOOD!
Regarding the better food waste management, please be noted that the leftover foods will be donated to local organization who is in need. From environmental concern to concern for food waste, WEEC2019 do care.
- ### 2 Separated Bin

SORT IT OUT!
When it comes to throwing away items that we no longer need, it is so important that we separate our waste in the right way. What happens when it goes to the wrong bin? ... It'll probably be there forever.
- ### 3 Stationery Station

HELP YOURSELF, CHANGE THE WORLD!
No longer paper and pencils prepared on the table. If you would like to use it, we have already set the stationery station and you can get it whenever you want. Be reminded that less paper save forests.
- ### 4 No Plastic Bottle

BYOB!
For building zero-waste community, we would appreciate if you bring your reusable and/or refuse single-use disposables. We have prepared the water cooler for you to refill all day every day.
- ### 5 Carbon Emissions Calculator

OFFSET YOUR FLIGHT EMISSIONS!
Use the WEEC2019 CO₂ Emission Calculator to determine the carbon footprint of your flight as well as the amount that is required for carbon offsetting to donate to The Laem Phak Bia Royal Project, the project to treat both waste water and solid waste through environmentally and ecologically sustainable methods.



<https://weec2019.org/five-steps-to-reduce-your-ecological-footprint-during-the-10weec/>
<https://weec2019.org/five-steps-to-reduce-your-ecological-footprint-during-the-10weec/>

Hosts:

Co-Hosts:

Supporting Industries:

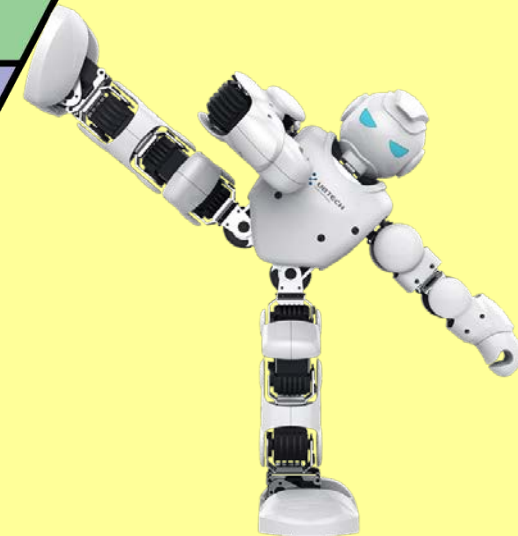
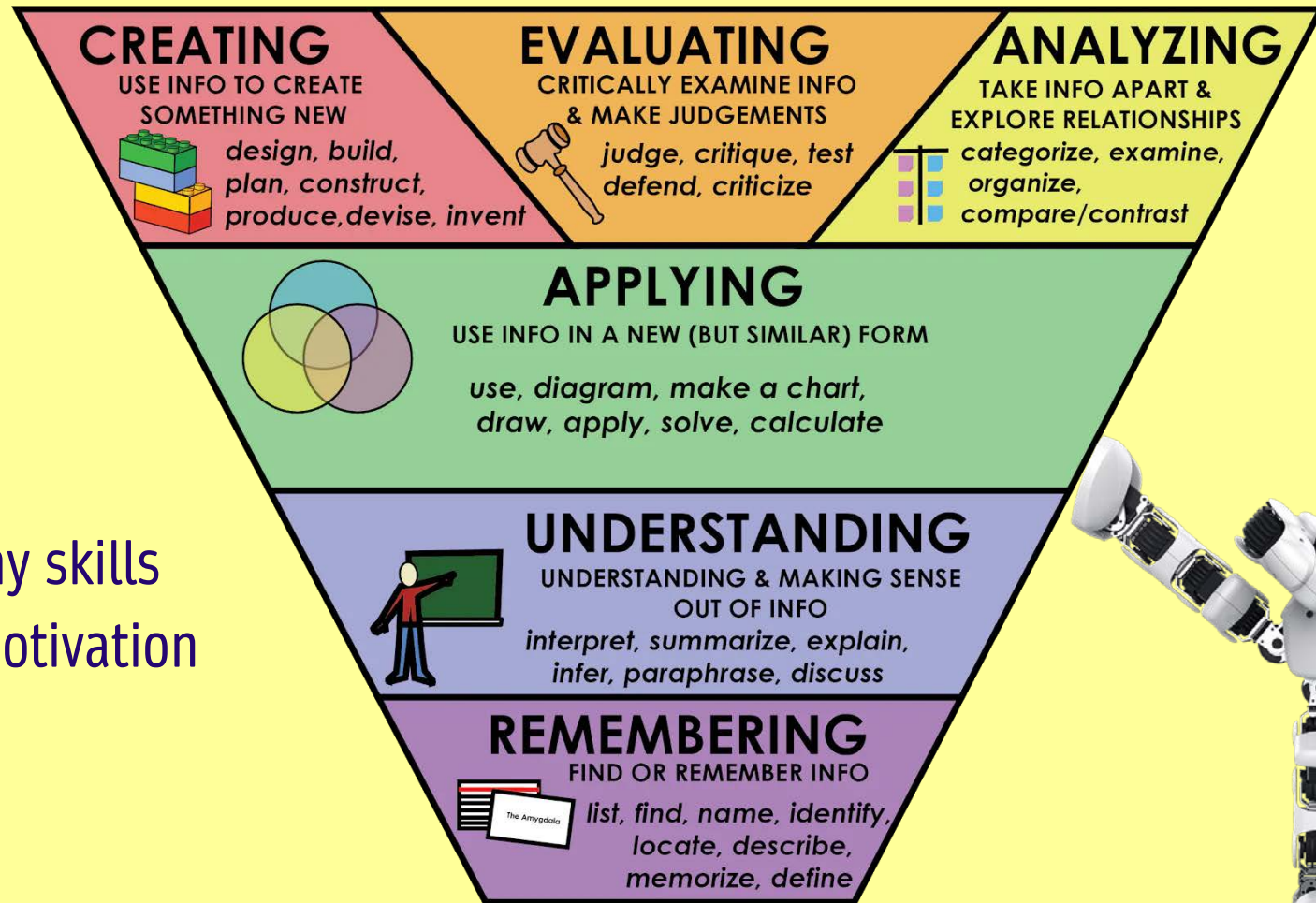
Endorsed by:

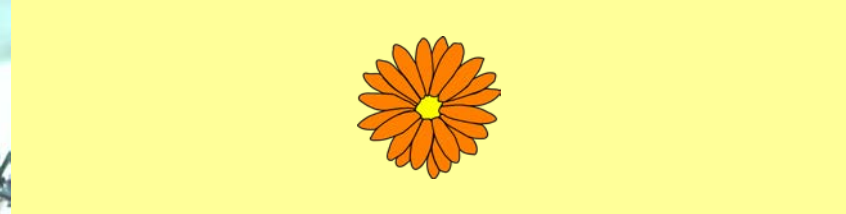
Organizer:

Benefits of Inquiry-Based Learning

BLOOM'S TAXONOMY

- Higher order thinking skills
- Critical thinking
- Problem solving
- Understanding content
- Communication skills
- Collaborative skills
- Independence and autonomy skills
- Engagement, energy, and motivation
- Research and analysis skills
- STEAM skills





mgarcia@ausiasmarch.net

www.eTwinning.net





Pixiz

THANK YOU VERY MUCH

