FATIH HIGH SCHOOL

«Funded by the Erasmus+ Program of the European Union. However, European Commission and Turkish National Agency cannot be held responsible for any use which may be made of the information contained therein.»

WHO ARE WE?

Fatih High School ,the coordinator school of **MET INSIDE** project ,was built with 16 classrooms in 1987 in Afyonkarahisar.

Today there are 537 students,43 teachers,1 principal and 2 assistant principal.Our school grows its students into multifaceted personalities able to face the challenges of the world with confidence and ease. Our vision is to be one of the most well-known and high quality schools in Afyonkarahisar with its social ,cultural activities and its educational achievements.

WHY MET INSIDE?

We will create a support environment for them to express easily.Of course; MET INSIDE project isn't the result of an unexpected coincidence! Every year Fatih High School's project team comes together to discuss the complemetary methods in education which helps to improve quality and effectivity of educational process and innovative teaching strategies that improve student engagement.

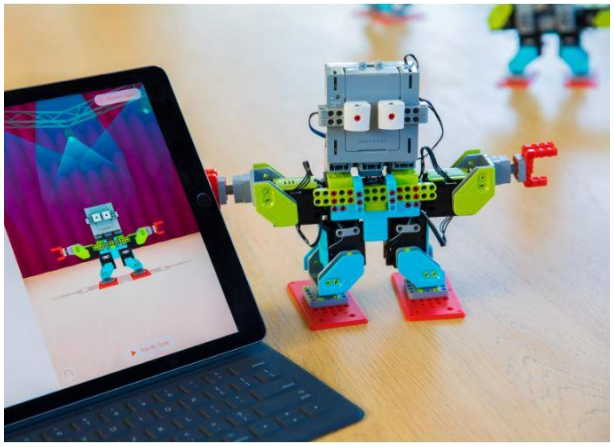
The EU is includes different nations,languages and cultures. In the belief that the most important and meaningful way to share this unity is the Erasmus Projects, we came together again with our team the year of 2018 to launch "MET INSIDE" project initiatve. We searched partners that fits MET INSIDE project's aim through educational platforms such as E-twinning and asked them to share their experineces and also expections from the project.Then Turkey, Lithuania, Italy, Spain, Portugal and Poland came together to form the partnership of MET INSIDE project the main objective of which is cooperation for innovation and **the exchange of good practices which are directly in line with Erasmus+Programme objectives.**

"maths inside" "engineering the" "techno class"

MET inside!

THE IMPORTANCE OF STEM AND ROBOTICS EDUCATION

When we take into consideration the increased productivity and achieve more in less time, and advantages of robotics in our workforce, we would likely all agree that "we'll need more roboticists in the future", but in reality the impact will be much more profound and far reaching. All the other key skills will still be important, but robotic literacy will play an important role in employability and peference will be given to job applicants with robotics and programming experience. The successful candidates will be the ones who have experiences in robotic ,thus school education in this field plays an important role.It is clearly seen that education approach for students in STEM and Robotic Coding has received increasing attention over the past decade.MET INSIDE project aims to reach profound educational benefits beyond simply learning to build and program the bots themselves.



STEM and Roboting Coding also plays an important role in education not only developed countries in the world but also developing ones in Europe; especially, Turkey. Therefore,Turkey, Lithuania, Portugal, Poland, Italy and Spain gathered together…….

We believe that Met INSIDE project with its robotic and E-STEM related activities assist to make students become better problem solvers, self-reliant, innovators,creators,logical thinkers and technologically literate.

OUR WORK SO FAR AND WHAT WE HAVE YET TO DO...

We prepared Erasmus+ Corner in Schools to inform students about the the partners and the topic of the project.This activity is also very important for informing students about the partners and the topic of the project.

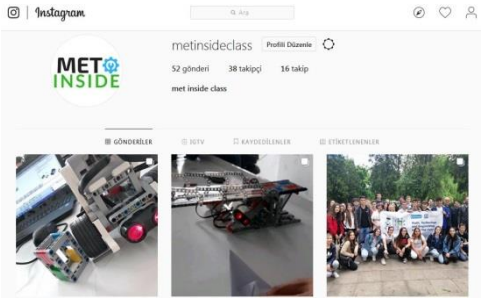
FATIH HIGH SCHOOL'S DIGITAL ERASMUS+ CORNER

Here is Fatih High School's Erasmus+ Corner.You know this project is not just a STEM one,this is also E-STEM that deals with environmental issues at the same time.Therefore ,we prepared a digital corner as regards to not wasting our sources and materials.Fatih Hıgh School's corner is visible and open for every visitor in project's social media platforms.Moreover,it is used in every class's interactive boards as a desktop wallpaper.We prepared a short film for "MET Inside",this film and the other activities as slides are shown our school's main corner.

INTERNET PLATFORMS

Internet platforms are our main dissemination channels.These platforms are not only permit insight into the project work of participating partners, enable wider dissemination,but also they provide communication,sharing of challenges and results during the project.

WEBSITE : http://erasmus229metinside2018.wordpress.com
FACEBOOK : https://www.facebook.com/groups/327868461108764
INSTAGRAM : https://www.instagram.com/metinsidseclass/
TWITTER : https://twitter.com/InsideMet
PINTEREST: https://tr.pinterest.com/metinside/
YOUTUBE: https://www.youtube.com/channel/UCfl8DczpQ6X2VQjJpjGc6pw



All of these social media platforms sated above are very important for the MET Inside's educational videos and

sharing good examples.Every challenge and activitiy related with STEM, Ev3,Arduino and 3D printed materials has been uploaded on these social media platforms,especially,YOUTUBE .

WHAT DID WE DO TILL NOW

E-STEM TASKS

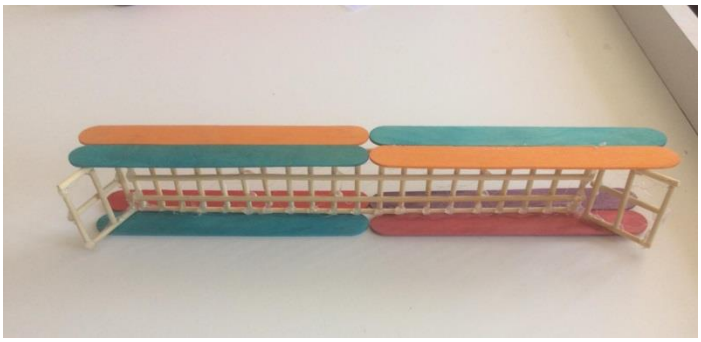
"THE HOUSE OF MOTHER NATURE"

For the "THE HOUSE OF MOTHER NATURE" activity,we asked our students to build a prototype house that produces its own energy. First,each partner countries key teachers explained a problem to the students and made them to find possible solutions. The thing asked to students is that imagine themselves in a scenerion which they are livin in 2100. So, they imagined all the possible negative outcomes such as not having electricity, petroleum, water or heat system.To overcome this inadequate standarts,the students tried to find simple and also natural solutions.Therefore they started to design their prototype house by using renewable enrgy sources.For this prototype house,they were asked to provide; -An energy source for lighting system, -A system for heating -7/24 hours -Drinking water from the lake that is near from home -Decomposing the garbages collected without harming the environment -Growing the vegatbles more fruitful.

Youtube ---- >>>> https://www.youtube.com/watch?time_continue=2&v=g72E6ZZeXV4

"SAVE THE MARINE LIFE"

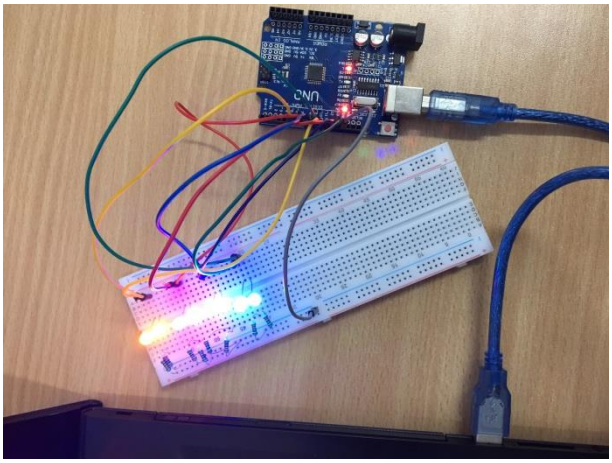
The Challenge: The numbers are schocking:There are 5.25 trillion pieces of plastic debris in the ocean.Of that mass, 269,000 tons float on the surface, while some four billion plastic microfibers per square kilometer litter the deep sea.How can we begin to solve this problem without harming the marine life in the process? You're ready to take



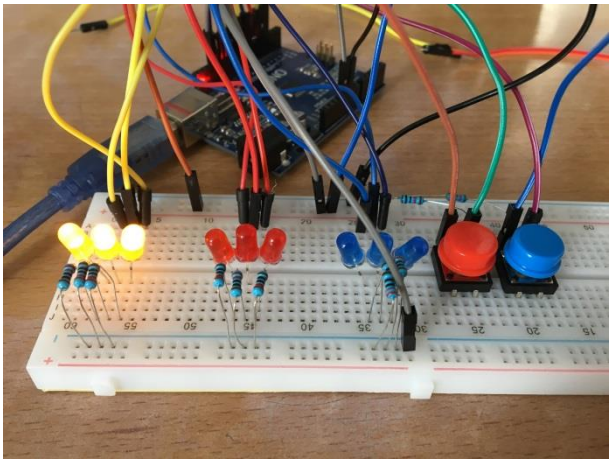
on the challenge of this massive problem. In order to move forward with this project, you have decided to build a prototype of a machine or device that can help solve the ocean trash problems. Are you going to focus on the surface trash or the trash that is found deep within our oceans? How can you scale your solution to have the greatest impact around the globe?
Youtube ---- >>>> https://www.youtube.com/watch?time_continue=89&v=G7BYgsYf88g

ARDUINO ACTIVITIES

Arduino is an open-source platform used for building electronics projects.Arduino consists of both a physical programmable circuit board and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board – you can simply use a USB cable



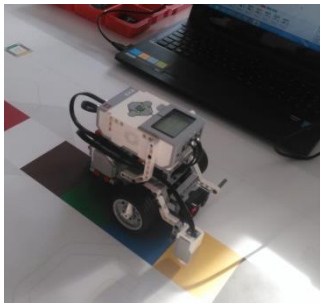
How do I turn on an array of LEDs? The students connected three or more LEDs to the digital outputs of the microcontroller by using a prototyping board, some resistor and some wires. After blinking each one individually, they tried to create a sequence of lightning changing order and timing.The students have also discovered how to build their first circuit using jumpers, bread board and resistors, and program to control an LED with Arduino. https://www.youtube.com/watch?v=ss6HvjxKsy4



"Controlling with buttons" Students were able to code a simple game with one or two buttons used as digital inputs in order to program a "Reaction game" with some LEDs.With this enjoyable game,the students also have learnt how to use buttons with Arduino and how to writemore complicated program to control multiple LEDs.

https://www.youtube.com/watch?v=Umtqm4Z3_KY

LEGO ACTIVITIES

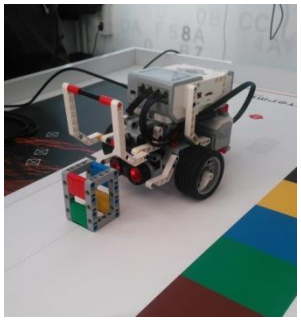


"WARM –UP WITH KITS 1"

The students test the Gyro sensors about how the sensor replies to the right commend or the wrong one.

"WARM –UP WITH KITS 2"

The robots tell the name of the colour that the student hold and detect changes in the light reflection intensity and ambient light.



"WARM –UP WITH KITS 3"

The students introduce "Security Guard Robots" or Reaction Games with Ultrasonic Sensors .The students make robots which allerts when an item is taken and needs a special colour code to stop the alarm.

https://twinspace.etwinning.net/74454/pages/page/529531

"PIANIST ROBOT WITH EV3"

Students will build the robot that can play a rhythm and music. And our students created a robot with ev3 that can play piano.

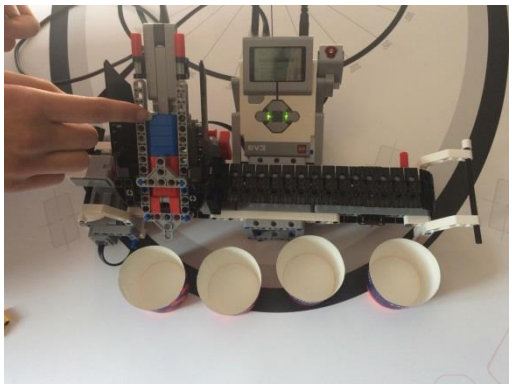
https://www.youtube.com/watch?v=xFnLuyop1Qw

THE SPACE CHALLENGE

The Space Challenge is for all educators who want to teach STEM through hands-on problem-solving. Whether this is your first experience using LEGO MINDSTORMS or robotics, or you are an experienced user, this learning programme has been developed to support you and to make the materials suitable for your teaching environment.

Three Research Projects, co-developed with space engineers, provide rich opportunities for students to explore and create innovative solutions to current space-exploration topics. The Research Projects are built on three key problems that researchers around the world are trying to solve: how to ensure that humans survive in space; how humans can create energy in space; and how robots can help humans explore space.

COLOUR SORTER



Students built "Colour Sorter with EV3" to scan and load coloured object and let them in the right area. The students saw that sensor data can control systems using feedback and understand ratio concepts and use ratio reasoning to solve problems. The Colour Sorter uses the Array functions to store and play back data. By storing the colour and place each colour tile,the robot can then sort the objects out mechanically.

SIMPLE LIFE SOLUTIONS

“Simple Life Solutions 1” Students constructed “Walking Escalator or Moving Walkway “ with EV3

“Simple Life Solutions 2” Student designed an "Escalator or Lift" for the handicapped people that are using wheel chair.

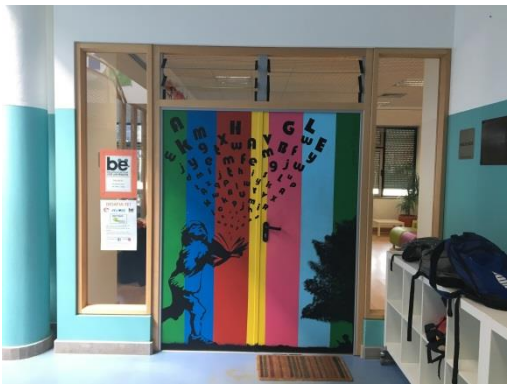
“Simple Life Solutions 3” The students constructed a stair climbing vehicle.The STAIR CLIMBER will help Wheel-chair user to climb up stair.

MEETINGS

MOBILITY IN PORTUGAL

MET Inside's Kick-Off Meeting held on between 5th-9th of November,2018 in Cartaxo,Portugal.Three representative teachers from each partner schools joined this meeting.Considering their specialities, the responsibilities of the participants for this meeting equally shared in advance.The agenda of issues that coordinator prepared before were discussed in the meeting.The meeting included 5-day workshop about Arduino,Ev3 and E-STEM related topics.

The objective of this workshop is to introduce the teachers involved in the project to code small electronics components by using an interface like the Arduino board a cheap microcontroller with open source software and very useful because of the big amount of resources about it.The teachers also have had enough knowledge about how to integrate Ev3 and Arduino in lessons ,so they can do further tasks with students.The teachers have understood that these tools are easy to program for the students and they have been able to make a great variety of original devices where electronics and code fit together.Having enough information,the teachers will introduce basic concepst about these great tools.We hope that all students will like working with Arduino which is innovative, user friendly and easy to understand and a great way to start learning more about electronics and robotics.



MOBILITY IN TURKEY

Teachers and students from all the partner schools in Italy, Spain Portugal Poland and lithuania have met the coordinator school and town in Afyon.

The meeting has been Rich in events and activities such as Lego Ev3 space challenge demonstrations, Arduino uno programming

sessions and engineering modelling. Representatives of local authorities from the town hall and province have been present and have met all the partecipants.

The five days of the meeting have been intense and full with visits to a local mineral water factory, local museums, historical centers, thermal resorts and school, sports facilities.

The students and teachers were also able to learn a lot about Maths, Science and Technology taught with the aid of robotics and microcontrollers as it was the core of all school activities as well as have a chance to improve their practical command of the english language that was necessary to communicate among participants.

The headmaster of the school has personally met and welcomed the delegations from the 5 guest schools. He has kindly handed formal written invitations for the final ceremony of certificate distribution that has taken place on thursday, 4th April. On Friday 5 the groups that were willing to do so where accompanied to the capital Istanbul by the host school teachers and coordinator of the project. Students and teachers were shown around the most prominent monuments and historical sites of Istanbul. The visit was very interesting and important from any point of view.