20200604 Comments by Vo on

St KMUG LT proposals of additional resources, aiming at

Exploration, Evaluation and – probably - Recommendation

GENERAL WEBSITES

Institute of Electrical and Electronics Engineers Robotics Newsletter

http://spectrum.ieee.org/static/newsletters-signup

Why signup? The following Link is guiding directly to the facts:

https://spectrum.ieee.org/

Lego Engineering

www.legoengineering.com/

Interesting proposals, similar to the „Projects.ev3“ in our common website.

NASA Robotics

http://robotics.nasa.gov

Leads to a jungle of related Websites, not under response of NASA; Preference on challenges.

Not my goal! I prefer international cooperation; the „winner“ is the whole team, just by working together.

National Robotics Week

www.nationalroboticsweek.org/index.php

Website answers, that the element couldn´t be found. I corrected the source to www.nationalroboticsweek.org

This is running now; again you are forced to register, signup or submit something.

Preference on competions, but competitions are not our project´s goal, especially not with such different (age, maturity, competences, learning conditions...) teams.

We agreed upon international cooperation with a common CREDO: „Winner“ is the whole team, just by working together.

Let´s look for more or less simple ideas, which extend those of the LEGO®-Mindstorms EV3 45544-BOX or find cheaper solutions, using non-preformed material by smart and mature students.

PBS Design Squad

http://pbskids.org/designsquad

Where can I find the close relation to our project´s goal?

Programming

Hour of Code

http://code.org/

General knowlegde. Coding Course; different languages available.

Extending our area of LEGO®-GraphicalCode or OpenRoberta NEPO (Scratch).

Much more content to learn than in LEGO®Graphical Code.

Raspberry Pi Programming

www.raspberrypi.org/

General knowlegde. More complex Coding. Just in English.

Extending our area of LEGO®-GraphicalCode or OpenRoberta NEPO (Scratch).

Much more content to learn than in LEGO®-Graphical Code.

RobotC Programming

www.robotc.net/

Additional Content to LEARN; Language C; more complex than LEGO®Graphical Code or OpenRoberta NEPO (Scratch).

Scratch Programming

https://scratch.mit.edu/

Similar to NEPO by OpenRoberta, which is close to our hardware LEGO®Mindstorms EV3, CalliopeMini and Calli:bot.

Online community for Scratch educators

http://scratched.gse.harvard.edu/

Just in English. Aiming - as an appliciation - on differents subjects. Where is the close relation to our project´s goal?

ROBOTICS KITS

How should sixthgraders with just poor English-Competence be able, to evaluate these kits?

Cublets Robotics

www.modrobotics.com/education/#lesson-plans

Check costs; compare with the construction and program options of LEGO®Mindstorms EV3 and program options of Calliope...
Almost no technical construction with beams and gears, just movement by integrated microgears.
No function like lifting, shifting, climbing, painting etc.
The graphical Language Blockly seems to be quite interesting. At least it´s similar to NEPO by OpenRoberta.

Mini Makers Pack	Creative Constructors Pack	Creative Constructors PLUS Pack	Inspired Inventors Pack
			
Modular Robotics	Shop Education Resources Help My Account		
$1,440	$1,490	$2,190	$3,990
Designed for **6** student groups	Designed for **4** student groups	Designed for **6** student groups	Designed for **6–12** student groups
Includes 52 Cubelets	Includes 52 Cubelets	Includes 78 Cubelets	Includes 156 Cubelets
Includes 2 Bluetooth Hats	Includes 4 Bluetooth Hats	Includes 6 Bluetooth Hats	Includes 6 Bluetooth Hats
Enables basic robot building	Enables basic robot building	Enables basic robot building	Enables basic robot building
Enhanced learning and play with Cubelets apps	Enhanced learning and play with Cubelets apps	Enhanced learning and play with Cubelets apps	Enhanced learning and play with Cubelets apps
Explore coding principles with Tactile Coding	Explore coding principles with Tactile Coding	Explore coding principles with Tactile Coding	Explore coding principles with Tactile Coding
Screen-free robot challenges of all difficulty ratings	Screen-free robot challenges of all difficulty ratings	Screen-free robot challenges of all difficulty ratings	Screen-free robot challenges of all difficulty ratings
Build with high-level THINK Cubelets to develop computer science skills	Build with high-level THINK Cubelets to develop computer science skills	Build with high-level THINK Cubelets to develop computer science skills	Build with high-level THINK Cubelets to develop computer science skills
Easily analyze robot constructions and visualize data flow with Bar Graph	Easily analyze robot constructions and visualize data flow with Bar Graph	Easily analyze robot constructions and visualize data flow with Bar Graph	Easily analyze robot constructions and visualize data flow with Bar Graph
Includes all available Cubelets	Includes all available Cubelets	Includes all available Cubelets	Includes all available Cubelets

TI-83 calculator robots
www.smallrobot.com/robot-kit.html
Website answers, that the element couldn´t be found. I corrected the source to www.smallrobot.com/
This is running now.
You need a Texas Instruments graphing calculator and to buy the robot-kit at about 100$.
Using a „few lines of Basic“ shall cause the robot run.
This is more expensive, than to buy the CalliopeMini plus Calli:bot and use NEPO in different Languages on OpenRoberta!

SmartBot phone robot kit
www.overdriverobotics.com/
This link is leading to an unsecure, Chinese-appearing Website! Why shall we evaluate such an adress????

PROGRAMMING-RELATED IPAD® APPS
Have fun with APPLE®! I don´t trust to products of a company, whose update (Catalina) is locking out LEGO®-EV3-software.

Daisy the Dinosaur
www.daisythedinosaur.com/
Hopscotch
https://www.gethopscotch.com/
Cargo-Bot
http://twolivesleft.com/CargoBot/

ROBOTICS COMPETITIONS
Competitions are not our project´s goal, especially not with such different (age, maturity, competences, learning conditions...) teams.

We agreed upon international cooperation with a common CREDO: „Winner“ is the whole team, just by working together. Let´s look for more or less simple ideas, which extend those of the LEGO®-Mindstorms EV3 45544-BOX or find cheaper solutions, using non-preformed material by smart and mature students.

Best Robotics, Inc.
http://best.eng.auburn.edu/
Internetserver not available

Bot Ball
www.botball.org/
Compare the necessary costs and that´s it.
No different languages available. The programming-language is C.

How It Works

- Read Through the FAQs
- Register Your Team
- Order Your Robotics Kit
- Register For a Workshop
- Work With Your Students
- Register For a Challenge Event
- Participate in a Challenge Event

JUNIOR Botball CHALLENGE

Participant/Team FAQs:

Who can participate?

What does it cost to participate?

The kit is $575 with registration, which includes all equipment, software, curriculum and activity mats. It contains everything you will need with the exception of a computer. You will have an annual registration fee of $75 per team. Challenge events may have a small entry fee for participation.

How much of a time commitment will this require?

The curriculum has short easy to follow lessons that build the student's skill set. The amount of time you spend is dependent upon the goals you have for the students learning. Teams that participated in the program this past year put in an average of ~2 hours per week for a six week period and were very successful.

What prerequisite knowledge do teachers and participants need?

You do not need any prior experience with programming or engineering design concepts!

What skills will my students learn by participating?

Participants will learn how to write code in the C programming language. Learning to code improves computational thinking skills and problem solving, which both relate to improved math performance and problem solving skills. Students will also get real-life direct applications of the engineering design process. Participants gain valuable practice with; Critical Thinking, Decision Making, Collaboration, Analytical Skills, Adaptive Learning/Flexibility, Creativity/Innovation and Communication.

FIRST LEGO League
www.firstlegoleague.org/
Different Languages seem to be available, but then:

Oops! An Error Occurred
The server returned a "404 Not Found".
Something is broken. Please let us know what you were doing when this error occurred. We will fix it as soon as possible. Sorry for any inconvenience caused.

Poor information, much Advertisement for joining the FIRST®-LEGO®League, requiring registration...!

MATE Underwater Robotics
http://www.marinetech.org/rov-competition/
Any question concerning the goal of our project?
Necessary material, equipment, aquarium or swimming hall?
Costs of travelling and participation?
Remote-Controlled vs automotive?

2020 MATE ROV Competition

Due to COVID-19, this event has been canceled.
Click here for refund information

Click here for the 2020 MATE ROV Competition Briefing
SCOUT Competition Manual and Information is HERE
NAVIGATOR Competition Manual and Information is HERE
RANGER Competition Manual and Information is HERE
EXPLORER Competition Manual and Information is HERE

MATE's international student underwater robotics (remotely operated vehicle or ROV) competition consists of an international event and a network of 40 (and growing!) regional contests that take place across North America, Asia, North Africa, the Middle East, and Australasia. Hundreds of student teams from upper elementary schools, middle schools, high schools, home schools, community colleges, universities, and community organizations, such as the Boys and Girls Club and 4-H, participate.

2020 MATE ROV Competition World Championship
2020 Event Canceled
Villanova University - Villanova, Pennsylvania - USA

2019 MATE ROV Competition World Championship Highlights

Robofest
http://www.robofest.net/
Nice ideas not far from our tasks.
Costs of travelling and participation?

US First Robotics
http://www.usfirst.org/
Same as www.firstlegoleague.org/
Poor information, much advertisement for joining the event, requiring registration...!
Who shall pay for this?
Where is the close relation to our project?
We should solve some simple LEGO®-tasks with modified (better) constructions and reduced challenge of programming (no ARRAYs in the beginning) instead of competing ageinst each other or dreaming concerning world-championship!

Vex Robotics Competition
http://www.vexrobotics.com/competition/
Advertising VEX-Products; price comparable to LEGO® LEGO®Mindstorms EV3.
Hardware looks close to LEGO®Mindstorms EV3

Language similar to NEPO by OpenRoberta, usable for LEGO®EV3, CalliopeMini, Calli:bot and lots of others.


VEX IQ Robotics Construction Kit by HEXBUG
€344.99

This video shows how to make a simple vacuum effector using a balloon, duct tape, coffee grounds and a vacuum cleaner, and also describes how vacuum grippers work:
https://www.youtube.com/watch?v=3OjhoVuAQkQ
Interesting video concerning soft grippers, moved by pressed air or vacuum.
How far is this applicable for our project, regarding missing laboratory equipment like air-pressure-robotics and difficult operations.

https://www.youtube.com/watch?v=Hb6PajUGXFg
Interesting video concerning soft grippers, moved by vacuum, like we have experienced in Gdansk at Pomorskie Centrum Programowania Robotow - Wyspra Ostrow Gdansk.

These videos demonstrate how traditional vacuum effectors work:
https://www.youtube.com/watch?v=1F9RT8OjHWE
Interesting videos concerning soft grippers, moved by vacuum, like we have experienced in Gdansk at Pomorskie Centrum Programowania Robotow - Wyspra Ostrow Gdansk.

Here are some good examples of mechanical grippers:
https://www.youtube.com/watch?v=u4ZScJsaepg
Festo®Tool Gripper

https://www.youtube.com/watch?v=EcTL7Hig8h4
Festo®Tool Hand (Teaching by Trainer)

https://www.youtube.com/watch?v=4MQmlvzE0i8
Video not available

And here are some examples of magnetic effectors:
https://www.youtube.com/watch?v=Z8t59j9zjjc
Magnetic Gripper

https://www.youtube.com/watch?v=hpyzfm2r-uU
Magnetic Gripper for heavy loads; no direct relation to our project´s goal.