Margaret Westaway & Curtis Wiebe - June 19, 2015 - Draft 1

MakerSpace Items / Kits for Surrey Schools

Books & Supporting Literature:

"Why Make Literature Pack"

1. Invent to Learn - Sylvia Martinez
2. Getting Started in 3 Easy Steps - https://www.iste.org/explore/articleDetail?articleid=103&category=ISTE-Connects-blog&article=Create-a-school-makerspace-in-3-simple-steps
3. Copies of "articles packet" for educator starting points (ISTE, Edudemic, edSurge, edutopia, et al.)
4. "Low tech" options/ideas/materials - Getting your MakerSpace started!

Coding (Grades K - 7):

Step 1: Introduction to Coding Low Tech Kit:

1. **LittleCodr** (Grades K - 7) - Coding card game - $20 CDN x1 (order 2 per kit) - http://www.littlecodr.com
2. **Robot Turtle** (K-3) - $22 USD each - Robot Turtles (Programming Board Game) http://www.robotturtles.com/
3. **Code Monkey Island** - $35 USD each - (Programming Board Game) http://codemonkeyplanet.com/

Websites & iOS Apps to supplement physical coding resources:

Move the Turtle ($4.59), code.org, Kodable (free), Daisy the Dino (free), ScratchJr (free)

Step 2: Exploring Coding & Computational Thinking Kits:

1. **Sphero 2.0 -** $99.95 each (Apple Store) - $15 Sphero Silicon Cover (amazon.ca) Sphero is the world's first app-controlled robotic ball and a sophisticated companion for your smartphone or tablet. Learn, play, and explore with this awesome new robot. Sphero 2.0 rolls at speeds of up to 4.5 mph and pairs to your device via Bluetooth with a range of up to 100 feet. Powered by induction charging, Sphero 2.0 is three times brighter than the original and is pet proof, waterproof, and ready for any adventure. http://www.gosphero.com/

(Supplementary free iOS Apps: Tickle app, Sphero apps (MacroLab, RollingDead, Chromo, SpheroCam, SpaceParty!, ColorGrab, Tag, orbBasic, Exile, SpheroGolf, Draw&Drive, Sphero, Drive)

2. **Cubelets -** http://www.modrobotics.com/cubelets/ - 6 Pack Kit - $160 USD (Available direct & on amazon.ca w/ CDN pricing) The Cubelets Six kit contains 6 Cubelets and is a great way to get started with modular robotics. With the Cubelets Six, you can create simple mobile and reactive Cubelet robots. Charging cable included. - (Supplementary free iOS Apps: Cubelets Control, Cubelets Log, Cubelets Sketch)

3. **Lego WeDo Kits -** Use "Scratch 2.0" to code and program Lego WeDo Kits (Scratch available for install on Windows/OS X)

    A) Lego WeDo Construction Set - $140 USD - Part #9580

    B) Lego WeDo Resource Set - $60 USD - Part #9585

Websites & iOS Apps to supplement physical coding resources:

code.org -
Free iOS apps: ScratchJr, Cargo-Bot, Hopscotch,
Browser Based / OS X / Windows : https://scratch.mit.edu/
Resources at http://scratched.gse.harvard.edu

Physical MakerSpace Kits (Includes K to 7 material):

A) "Not a Box" Kit (Grades K to 7):

1. "Not a Box" book by Antoinette Portis
2. MakeDo Kit - https://mymakedo.com - Includes child-friendly safe-saw to cut and perforate cardboard, scru & scrudriver, and reinforcing straps. - Class bundle - $140 USD
3. Supplementary lessons and ideas sheet/PDF

B) OSMO (Grades K - 7) - Description - $99.95 - iPad 2+ or iPad Mini+ required to use. (iPad not included with OSMO)

OSMO iOS Apps: Words, Newton, Tangram, Masterpiece

-Include ideas sheet & PDF.

C) plastimake.com (Grades K- 7) - (may be cheaper alternatives on the market, requires further research and investigation) - hot water kettle, bowls, and water are required for this material.

-Include ideas sheet & PDF ideas.

D) Makey Makey Kits (Grades 2 - 7)

1. Makey Makey (Package of 5) - Description - $50 USD
2. Copper Tape - (Package of 5) - $7
3. Large Roll of Aluminium Foil
4. Ideas sheet & resources PDF

E) LittleBits - http://littlebits.cc (Grades 4 - 7) - (Explore individual sets & workshop set) - **

Little Bits Brick Adapter - $9.95 USD
USB Power Bits Port $9.95 USD
USB Power Adaptor & Cable - $8.95 USD

1x @ $135.15 USD each
Little Bits: Synth Kit Module

1x @ $169.15 USD each
Little Bits: Deluxe Kit Modules

1x @ $84.15 USD each
Little Bits: Base Kit Modules

1x - Makey Makey Starter Bundle (Little Bits) @ $194.65 USD each.
1x – Space Kit @ $126.65 USD each
1x – Cloudbit Starter Kit @ $84.15 USD each
1x – Arduino Coding Kit @ $75.65 USD each
1x – Smart Home Kit @ $211.65 USD each

-Include idea sheets, web links, PDF on lesson ideas, plans, extra resources. Plenty of resources available at littlebits.cc

F) Squishy Circuits (Grades K - 7) - as laid out in Upper Intermediate Grades "Mini-Maker Kits"

-Include ideas sheet & PDF ideas.

G) SparkFun Inventor's Kit (Grade 6 - 7) - $120 - http://www.canakit.com/arduino-professional-kit.html
Quick Overview
Includes Sparkfun RedBoad
Includes full color printed booklet with 15 circuit examples!
Includes parts for all circuit examples

H) Raspberry Pi 2 (Windows 10 support coming soon) - $85 (Grades 6 - 7) - **HDMI compatible monitor required - http://www.canakit.com/raspberry-pi-starter-kit.html**

Quick Overview
An exclusive Kit from CanaKit TM that includes everything you need to get up and running within minutes in the exciting world of Raspberry Pi! Comes with the new Raspberry Pi 2 - Model B.

Kit Includes:

- Raspberry Pi2 Model B 1GB
- 8 GB SD Card - Raspberry Pi Recommended SD Card with NOOBS
- CanaKit WiFi Dongle (Ralink RT5370 chipset)
- High Quality Case
- CanaKit Raspberry Pi 2.5A USB Power Supply
- Premium Quality HDMI Cable
- A handy CanaKit General Assembly Guide for Beginners to Electronics.

I**) Make Wonder – Dash & Dot Coding Wonder Pack** (Grades K - 7) – $280 - Available NOW at the Apple Store & direct - https://www.makewonder.com/

-A plethora of teacher resources, iOS apps, lesson plans, and more ideas at the **makewonder.com** website.

Physical Items that help "Make" a "MakerSpace"

1. Floor to ceiling "whiteboard wall" - 3M Whiteboard Vinyl Covering" or DIY: http://lifehacker.com/cover-a-wall-with-a-giant-whiteboard-for-under-15-1587162959
2. Whiteboard table - http://frankdenneman.nl/2012/05/03/whiteboard-desk/ & http://www.ikeahackers.net/2012/10/whiteboard-desk.html
3. Individual sized "whiteboards"