

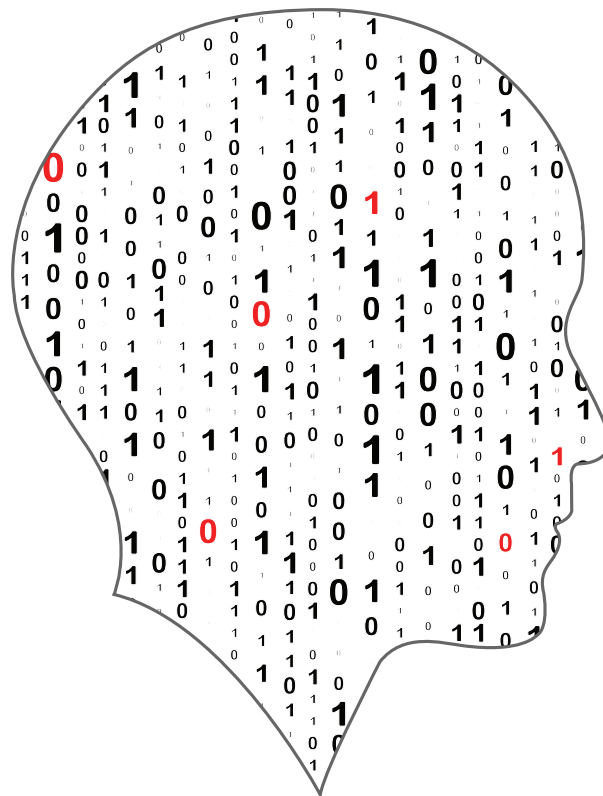


www.pdst.ie



© PDST 2017

This work is made available under the terms of the Creative Commons Attribution Share Alike 3.0 Licence <http://creativecommons.org/licenses/by-sa/3.0/ie/>. You may use and re-use this material (not including images and logos) free of charge in any format or medium, under the terms of the Creative Commons Attribution Share Alike Licence.

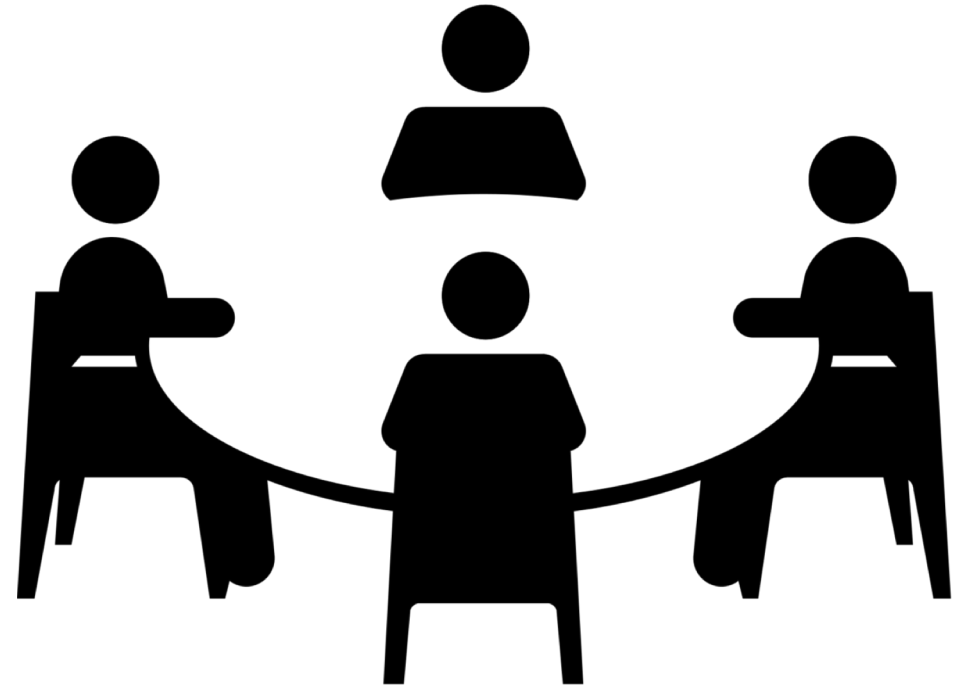


LEAVING CERTIFICATE COMPUTER SCIENCE

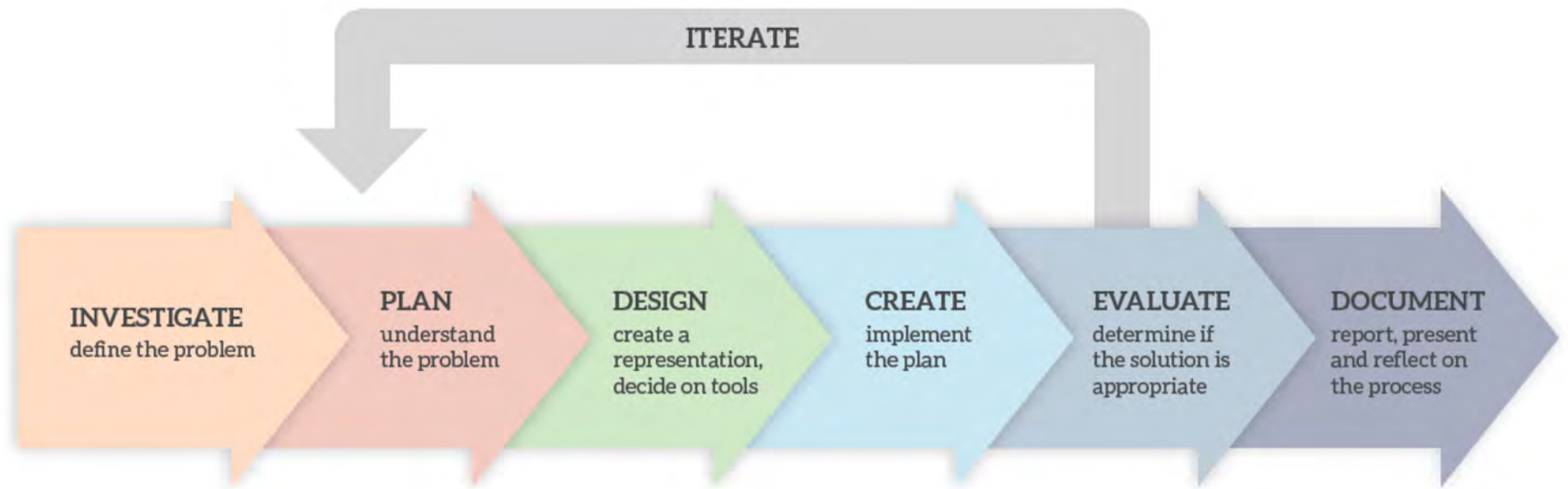
National Workshop 2

Session 4 - ALT4 Embedded Systems I

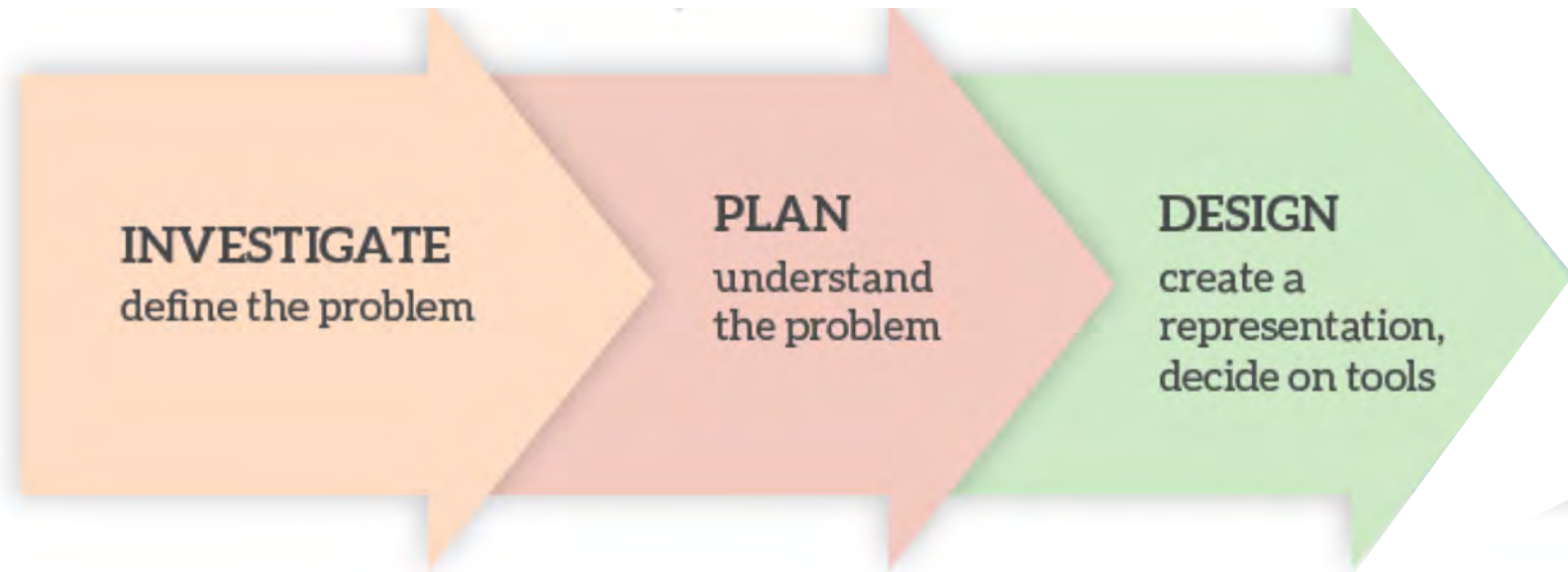
Main Group Activity



ALT4



The Design Process



Session 4 - ALT4 Embedded Systems (Part I)

1

INVESTIGATE
define the problem

Warmup Activity - ALT 4 Follow Up


padlet

PDST LCCS 1m

ALT4 Brainstorm


Started in NW1 but built on at NW2

PDST LCCS 19m



PDST LCCS 30m

micro:bit Fidget Spinner Speed Test



Episode 16 - micro:bit Fidget Spinner Spe... by MicroMonsters youtube

PDST LCCS 1h

3.13

develop a program that utilizes digital and analogue inputs

PDST LCCS 1h


Help the community

PDST LCCS 1h

Sports related theme

PDST LCCS 27m

micro:bit pinball game



DIY micro:bit pinball game by PinkyPepper youtube

PDST LCCS 1h

3.14 design automated applications using embedded systems


PDST LCCS 1h

3.11

Use and control dig inputs and outputs within embedded system: input- keyboard/broadcast messages output- leds/sound/ broadcast messages

PDST LCCS 19m

bit plant water pump



micro:bit plant water pump by Microsoft MakeCode youtube


PDST LCCS 1h

design a system that sends a message when the pressure drops.

PDST LCCS 1h

Health and Wellbeing theme


PDST LCCS 1h



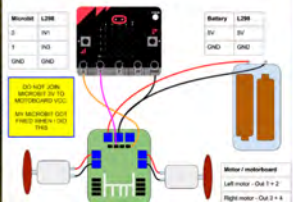
Micro:bit Educational Foundation microbit

PDST LCCS 1h

robot sensing an obstacle



PDST LCCS 1h




PDST LCCS 1h

sensing pitch , roll and yaw using an accelerometer

PDST LCCS 1h

Elderly

PDST LCCS 1h



PDST LCCS 28m

micro:bit Part 4: Remote

<https://www.youtube.com/watch?v=jANCdtkJAKY>



padlet

1. In your assigned groups start brainstorming again as to possible project ideas for students for ALT4.
2. Aim for as many ideas as you can.
3. Fill in your ideas on the Padlet board supplied – can be text / images / videos etc.



padlet

[https:// pdstlccs.padlet.org/cpd/
sktc3s4as1z8](https://pdstlccs.padlet.org/cpd/sktc3s4as1z8)



LiveSlides web content

To view

Download the add-in.

liveslides.com/download

Start the presentation.



2

PLAN
understand
the problem

**Pick one of the suggestions from
the Padlet board or one of your new ideas.**

Dissect the idea

Is there a broad theme or a specific topic?

Who is the audience?

What teaching & learning strategies could you use?

What does your project do?

Does your project idea cover all the LOs for this ALT?

What other LOs can be taught through the lens of this project?

What tools or materials are needed?

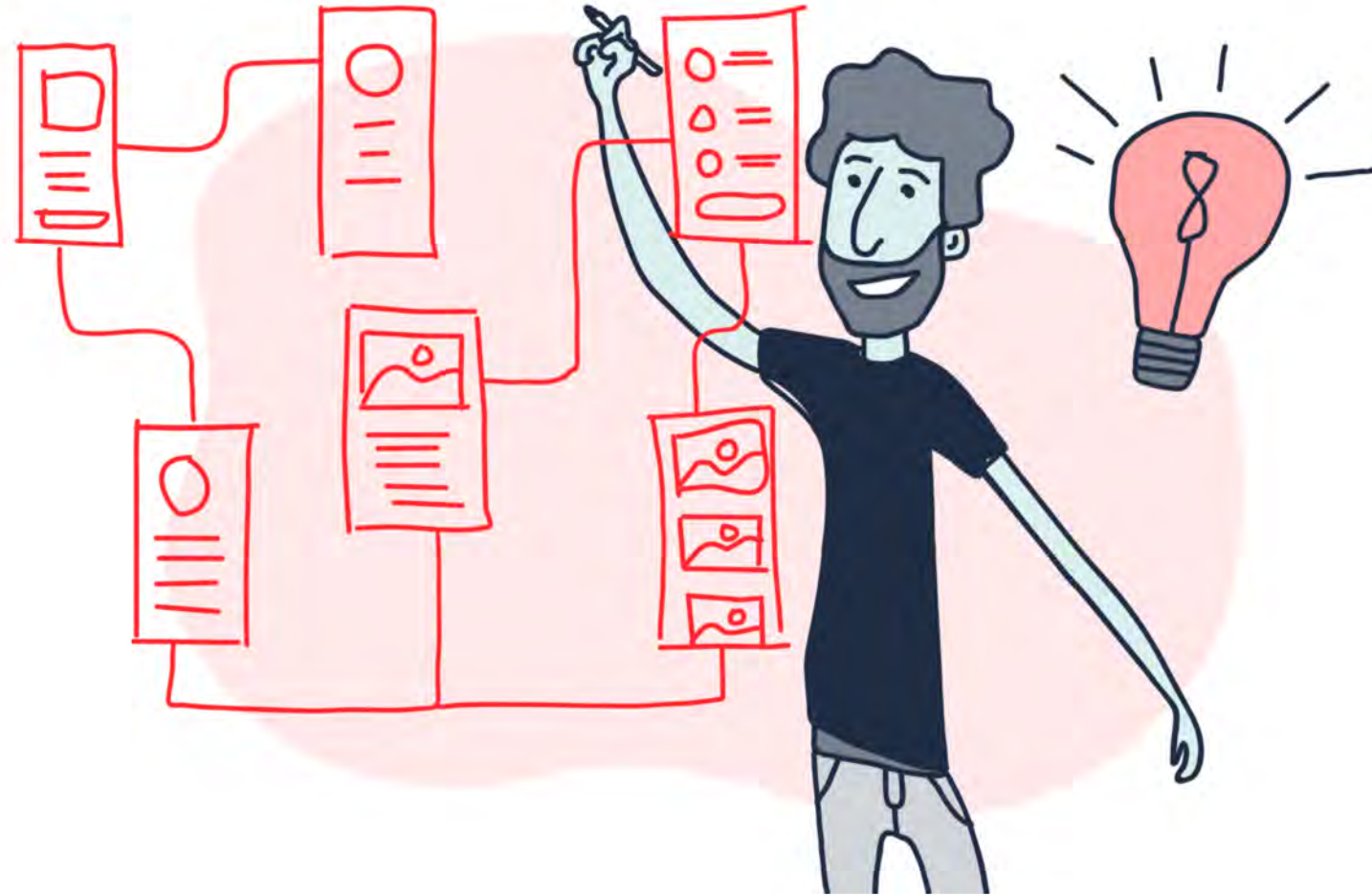
What are the roles in the group?

What research or upskilling do you need to do ?

3

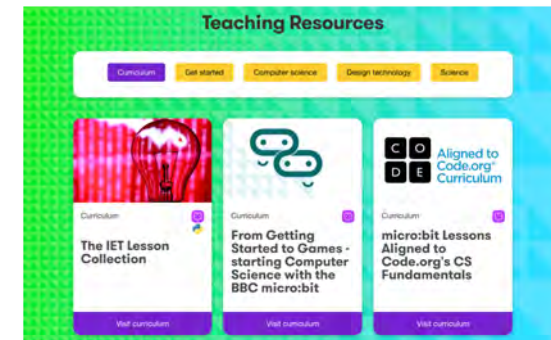
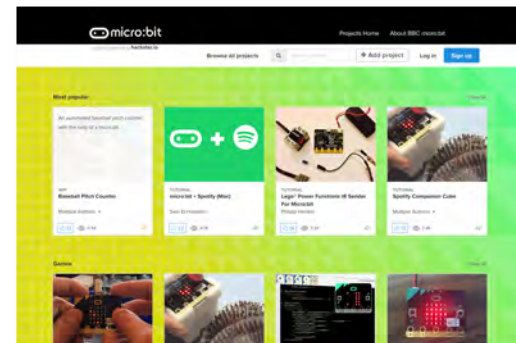
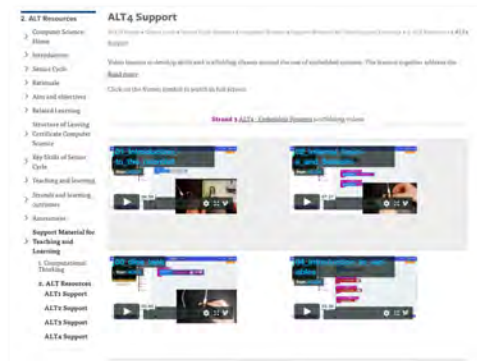
DESIGN

create a
representation,
decide on tools



<https://blog.overflow.io/8-tips-for-creating-better-user-flows-e46eb0d2a2c6>

Online Resources for Micro:bit



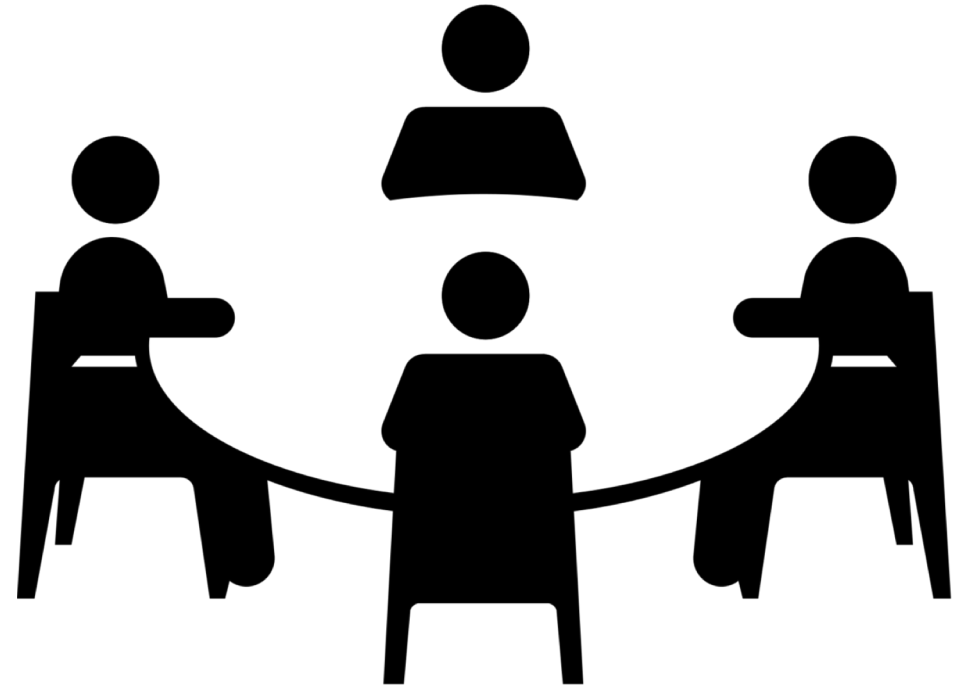


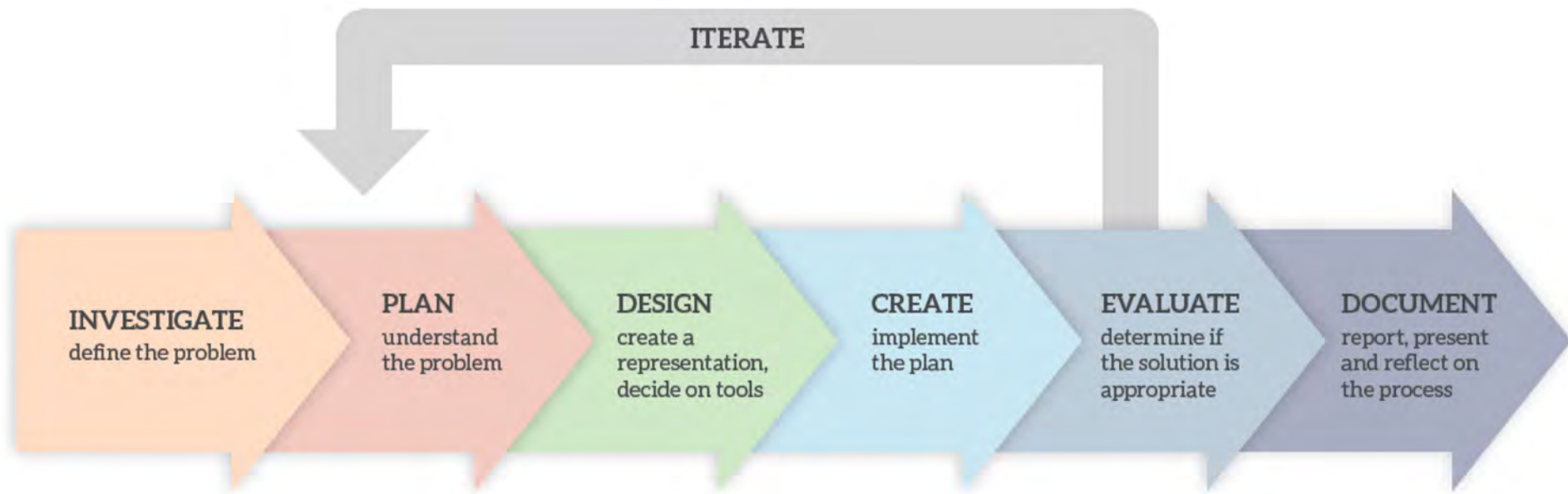
Quick recap / debrief from each team before we go for lunch.

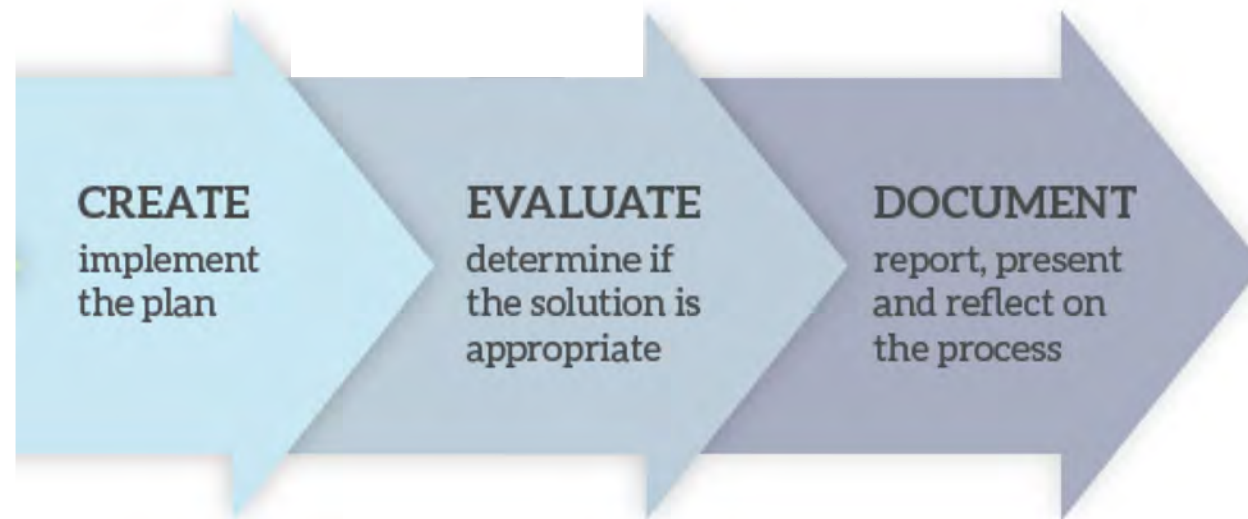
Lunch Break

Session 5 - ALT4 Embedded Systems II

Main Group Activity







Session 5 - ALT4 Embedded Systems (Part II)

*Not expected to get finished!
- some groups might though!*



75 mins



Presentation & Debrief

Roles & Group Dynamics

Problems

Design Process

Technology

Content / LOs

Theme & Audience

End Product



www.pdst.ie



© PDST 2017

This work is made available under the terms of the Creative Commons Attribution Share Alike 3.0 Licence <http://creativecommons.org/licenses/by-sa/3.0/ie/>. You may use and re-use this material (not including images and logos) free of charge in any format or medium, under the terms of the Creative Commons Attribution Share Alike Licence.