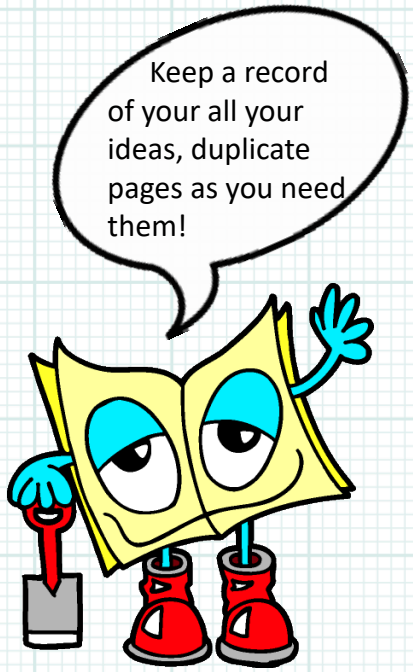
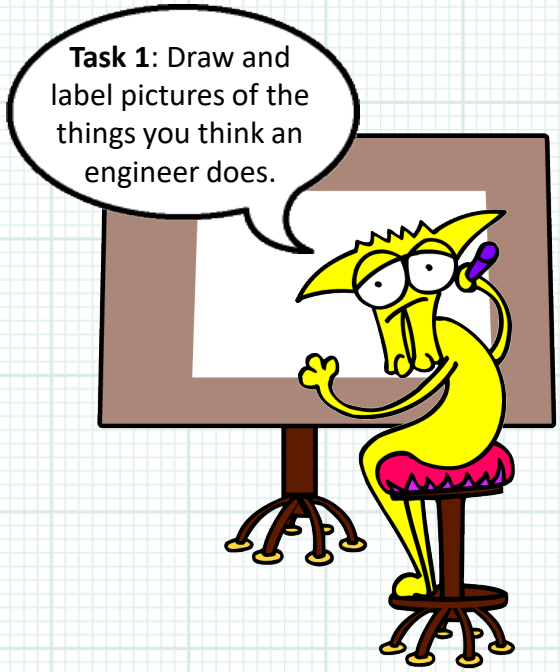
IF YOU WERE an ENGINEER WHat WOULD YOU DO?®

@LEADERSAWARD #LA2020
#IfYouWereAnEngineerWhatWouldYouDo?

Engineer's Logbook




Task 1: Draw and label pictures of the things you think an engineer does.


Now ask everyone you know, what they know! Do some research.

A queue of questions

Task 2: If you could meet an engineer what would you ask them? Add your ideas here

How do you come up with ideas?

What problems have you solved?

When did you know you wanted to be an engineer?

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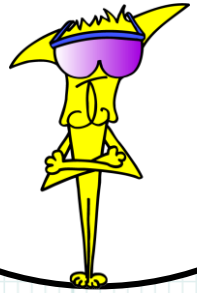
Primary Engineer Programmes
...the first step®

Task 3: Product Functionality
What is it you are looking at?
Describe it here.



Materials
What is it made from?

5

Environment
Where is it used?

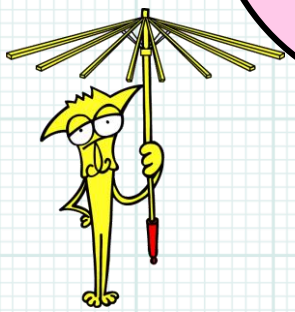
5

Function
How it works

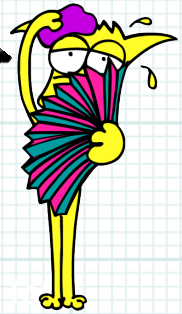
5

Cost
To buy

5



Choose 'something'. How well does it work? Give each aspect a score out of 5.



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Ergonomics
How it feels

5

Aesthetics
How does it look?

5

Safety
How safe is it?

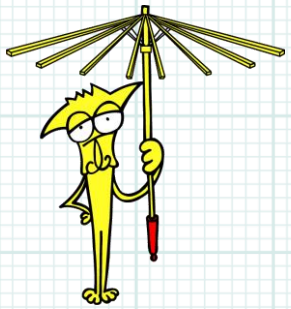
5

Durability
How long it lasts

5

In your opinion...
What is the score out of 40? Does it do all the things it should?

40



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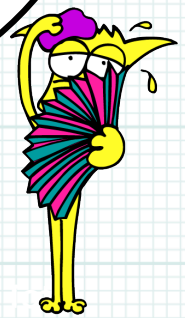
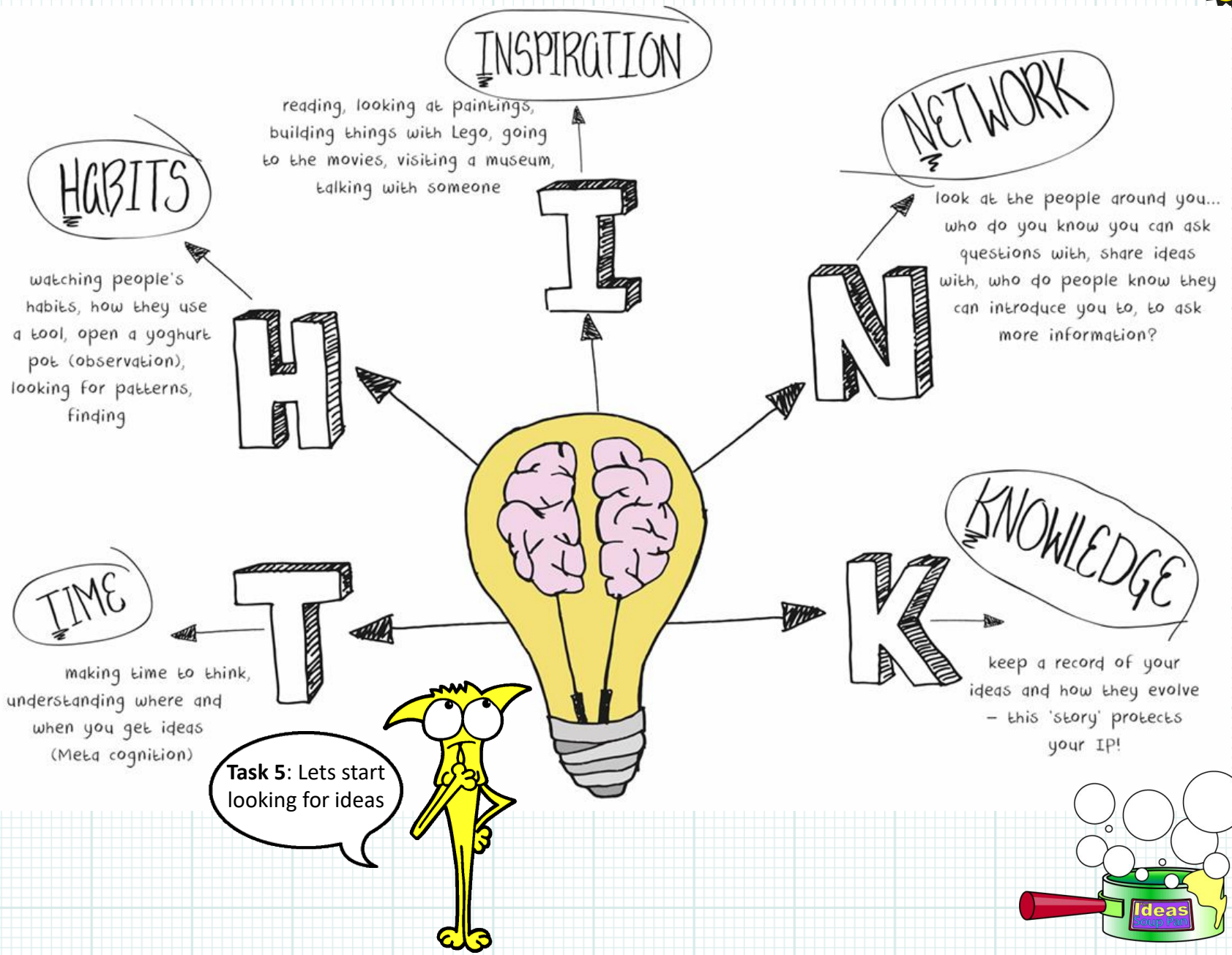
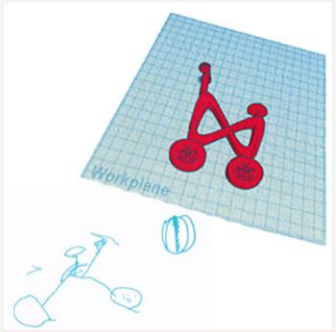
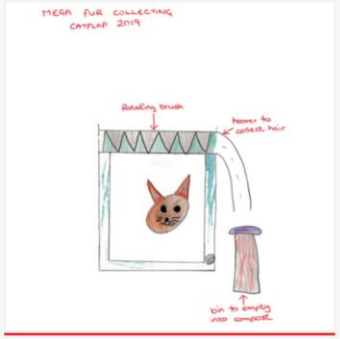
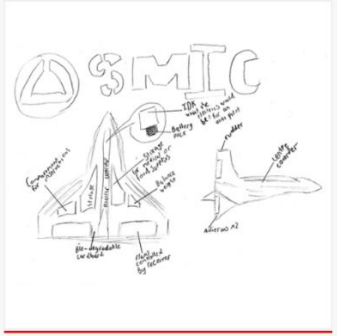
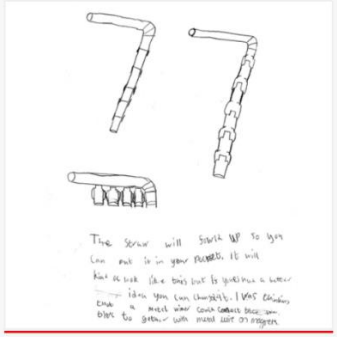



INSPIRATION
reading, looking at paintings, building things with Lego, going to the movies, visiting a museum, talking with someone
I
NETWORK
look at the people around you... who do you know you can ask questions with, share ideas with, who do people know they can introduce you to, to ask more information?
N
HABITS
watching people's habits, how they use a tool, open a yoghurt pot (observation), looking for patterns, finding
H
TIME
making time to think, understanding where and when you get ideas (Meta cognition)
T
KNOWLEDGE
keep a record of your ideas and how they evolve – this 'story' protects your IP!
K
Task 5: Lets start looking for ideas
Ideas
Scamp Paint

Bike	Whale of Litter	Tap With Germ Sensor	Mega Fur Collecting Cat Flap 2019
			
David Fraser an Early Years pupil at Jimmy Dunnachie Family Learning Centre designed 'The Bike' Davids bike sprays out tree seeds and a spray to water them. When it is running low on seeds or water it sounds an alarm. David 3D printed his idea.	**Lacey Murphy** an Early Years pupil at the Jimmy Dunnachie Family Learning Centre designed 'Whale of Litter', Lacey designed a whale that will pick-up all the rubbish in the sea and has an extendable arm to cut the plastic that is caught around fish. Lacey said that plastic is bad for the world and takes too long to break down.	**Perrie Simpson** a Primary 1 pupil at Woodside Primary School designed a 'Tap with Germ Sensor' to detect germs and then bleeps when your hands are clean.	**Mae Stanbrook** is a Primary 1 pupil at Ae Primary School, Mae designed 'The Mega Fur Collecting Cat Flap 2019' so that as the cat is coming back into the house via the cat flap it grooms all the loose hair from the cat so that hair doesn't collect on the sofas and carpets.

Task 3.1:
What do you like about this idea/design?

What would you change about the idea/design?

	The Weighable Suitcase	Bio-Degradable Cardboard Glider	Metal Straw	Chill Band
				
	Kaitlin Bennett a Secondary 1 student at Kilmarnock Academy designed 'The Weighable Suitcase', and whilst this was one of two designs she entered (and not her favourite) the judges really liked the idea of a suitcase which weighed itself.	**Cameron Mullet** a Secondary 1 student from Arbroath High School designed 'Bio-Degradable Cardboard Glider' which is able to drop supplies into refugee camps and then be left to bio-degrade naturally.	**Scott Coulter** a Secondary 2 student at St. Matthew's Academy designed 'The Metal Straw' as a solution to plastic straws and their impact on the environment. This design, made from metal easily collapses and can be kept in your pocket.	**Natasha Clark** an Secondary 2 student at West Calder High School designed 'The Chill Band' for students who suffer from anxiety or autism to enable them to concentrate better in class – the design has many features that the student can play with to help them concentrate better.
What do you like about this idea/design?				
What would you change about the idea/design?				

Task 4: Create an Idea Flow Chart

What is the problem you have found?

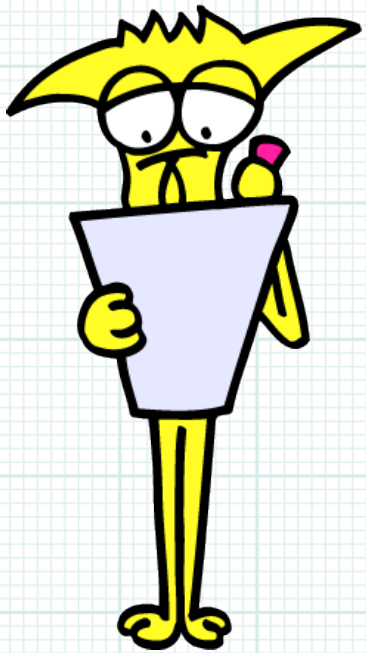
Who will it help?
Who is the audience?

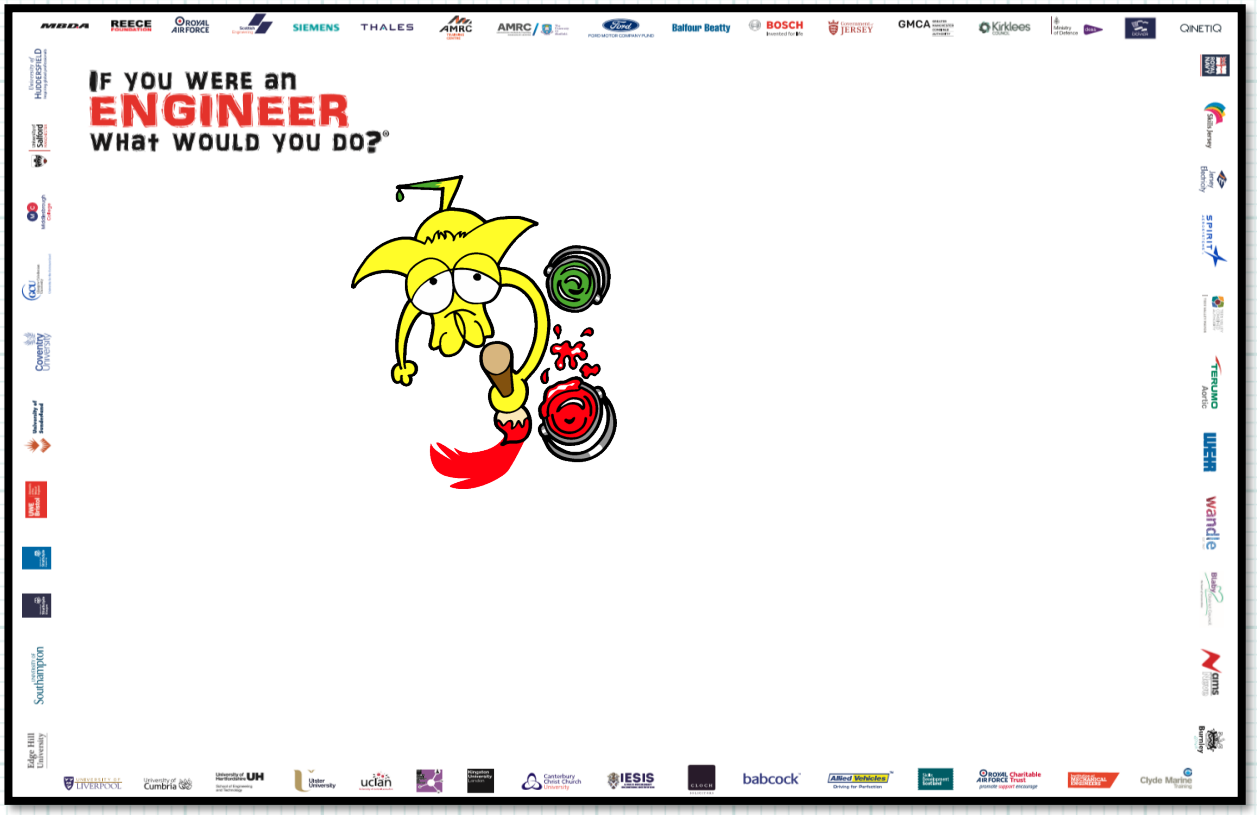
What is your first solution?

What is your second solution?

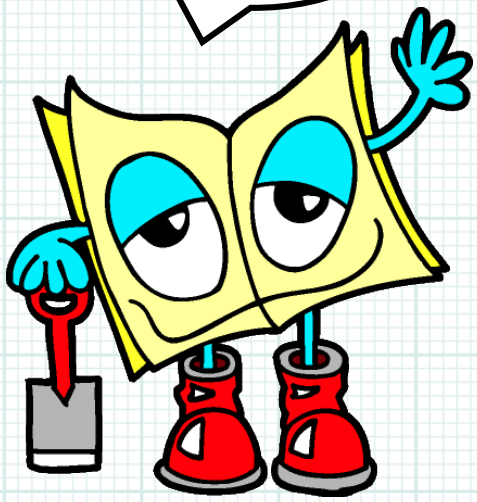
What is your third solution?

Fill in the flow chart by thinking of an audience you want to help and some problems or complaints they have. See if you can come up with different solutions to the problems then explore why they would work and, in some cases, why not.





Task 5: Choose your best idea and draw it, use lots of annotation explaining how the parts of your drawing will work



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Don't be afraid to change and develop your ideas, the more you do this the better your ideas will be!

Task 6: Now it is time to write your letter to the engineer explaining your idea and why they should build it!

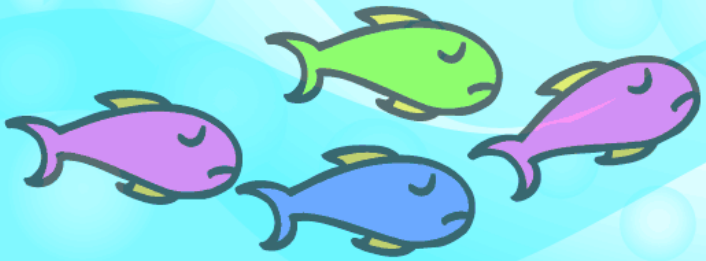
What is your invention?

Why should it be made?

Who inspired you?

How did you come up with the idea?

Who does it help?



Your address

Date:

Primary Engineer
Floor 2
AMS Office Tower,
AMS Technology Park
Burnley Lancashire
BB11 5UB

Dear Primary Engineer,

What is your invention?

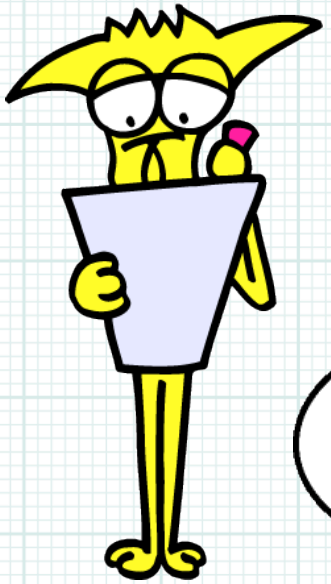
How did you come up with the idea?

Who does it help?

Why should it be made?

Who inspired you?

Yours sincerely,



You may want to design a logo add it to your letter.