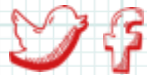IF YOU WERE an
ENGINEER
WHat WOULD YOU DO?®

@LEADERSAWARD   #LA2020   #IfYouWereAnEngineerWhatWouldYouDo?

Ideas and examples

EARLY YEARS ENGINEER®   PRIMARY ENGINEER®   SECONDARY ENGINEER®   institution of Primary Engineers   institution of Secondary Enginee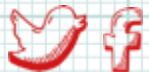rs   STATWARS®   IF YOU WERE an ENGINEER WHat WOULD YOU DO?®   ENGINEERING STEM Professional Recognition Postgraduate Certificate
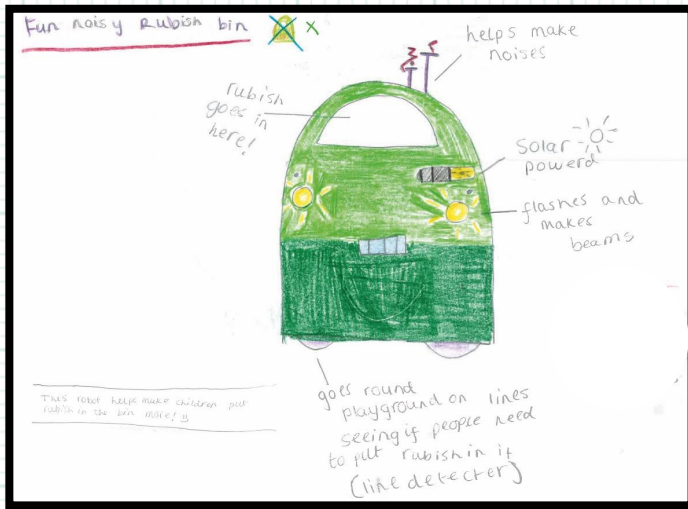
UNIVERSE OF ENGINEERING®

The Fun Noisy Rubbish Bin

Designed to encourage children in the playground to recycle their litter

Fun noisy Rubish bin

helps make noises

rubish goes in here!

Solar powerd

flashes and makes beams

This robot helps make children put rubish in the bin more!

goes round playground on lines seeing if people need to put rubish in it (line detecter)

Fun noisy Rubish bin

helps make noises

rubish goes in here!

Solar powered

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This robot helps make children put rubish in the bin more!

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What do you like about this idea/design?

What would you change about the idea/design?
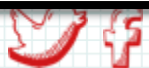
The AC Pillow

Dear Sir / Madam

I am writing to you to say that, I have had a ashtonishing and helpful idea called the A.C. pillow I would think the A.C. pillow will help a lot of people.

My wonderful invention will help people with migraines, stress, headaches and loads of other things. My idea would give people a Unbelievably good sleep / nap.

My invention is Eco Friendly. It takes air from the outside and put's it into youre air box. Then the air will transfer into your pillow which will give you a nice cold refreshing pillow. Wouldn't you like to be part of a revolutionary design that will positively affect the world? I hope you could consider making my product. Yours sincerely - Adil Reed
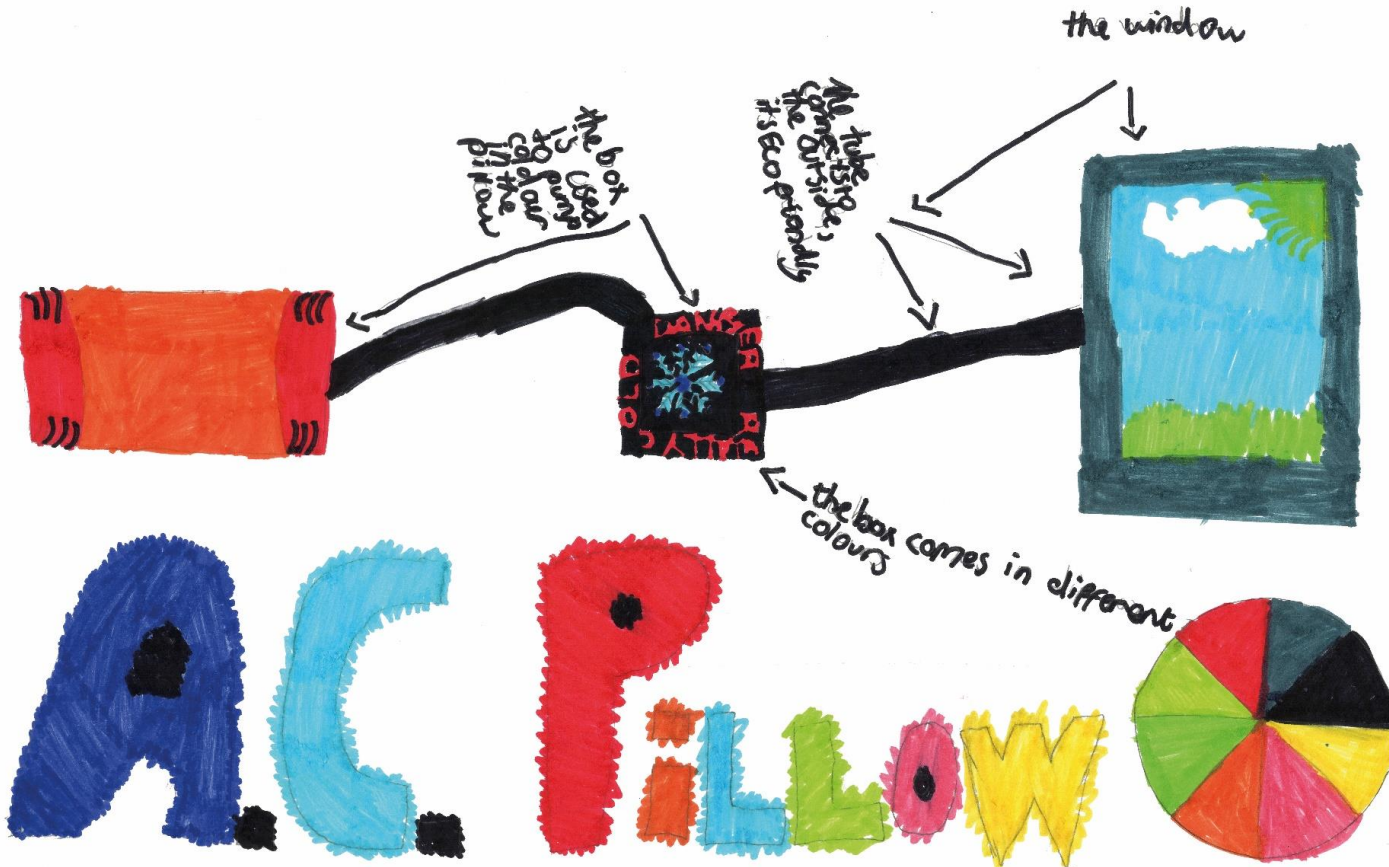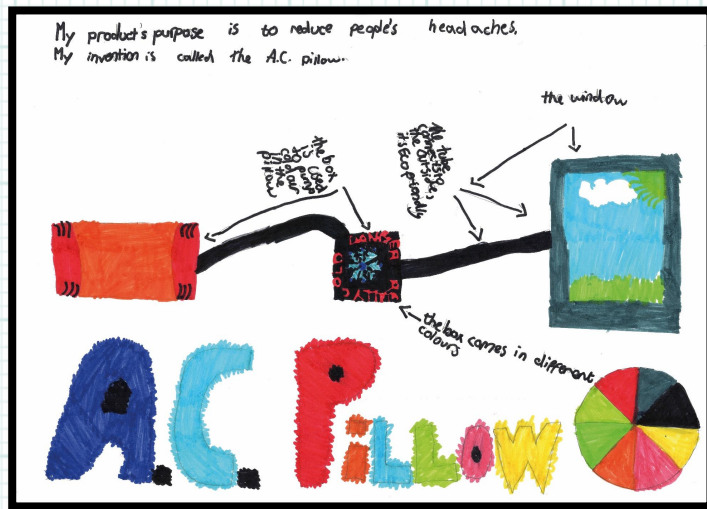
The AC Pillow

My product's purpose is to reduce people's head aches.
My invention is called the A.C. pillow.

the window

the box gets used to pump air in the pillow

the tube connects, so the air goes outside, it is Eco friendly

the box comes in different colours

A.C. Pillow

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My invention is called the A.C. pillow.

the window

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A.C. PILLOW

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What do you like about this idea/design?

What would you change about the idea/design?

How persuasive is the letter, and how would you have described the idea

The Watch Your Pet

Watch Your Pet

- This Watch makes sure you never forget about your pet.
- I want all animals to have fun.
- The Watch will 'beep' when it's time for a walk, or a play or feeding, or it wants to hear your voice.
- The pet owner will benefit from having a healthy, happy pet.
- This Watch is special because anyone can use it a keep their pet happy.

by Niamh

Watch Your Pet

This Watch allows you to watch your pet play and have fun, through a tiny camera on your pet's collar.

The Watch will 'beep' when it is time for a walk, or feed, or play with your pet.

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What do you like about this idea/design?

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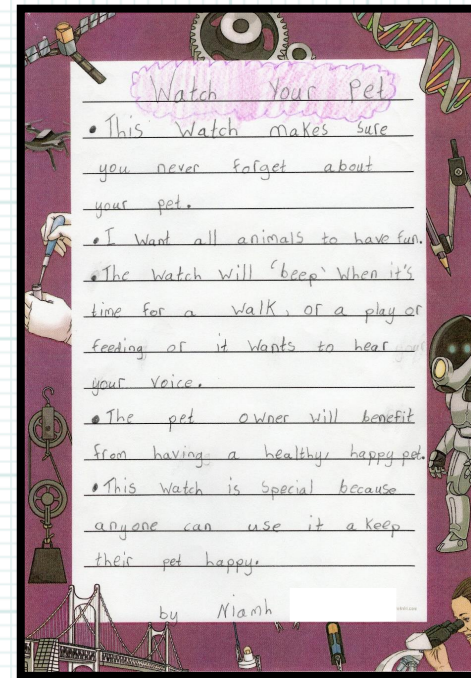
How persuasive is the letter, and how would you have described the idea

The Electric Car Charging Lamp post

Dear Sir/Madam,

If I were an engineer I would invent the electric car charging lamppost. A recent study by Emu Analytics found that the UK needed 80,000 more EV charging points in the next two years as their will be 1 million electric cars on the British roads by 2020 and I believe the electric car charging lamp post will solve this problem by combining two essential services in one.

The electric car charging lamppost is an ordinary LED, energy efficient lamppost but it has a rapid 480v EV charging point integrated into the lampposts metal tube.

To use the car charging point all the driver has to do is scan a special car charging point card, enter his/hers registration number and plug their car in. The drivers small bill (on average £3.64 for a full charge) will automatically be deducted from the owners bank account linked to his/hers car charging card. To help drivers identify the charging lamppost from ordinary lampposts they will have a biue stripe below the light and a luminous green control console that houses the card reader and touch screen as well as the cable that connects to the car. The charging lampposts will also show up on cars SATNAVs so if an electric car is low on charge the driver can quickly find the nearest one. To further help the driver use the electric car charging lamppost, it has an Artificial Intelligence helper built in which can help the driver by answering questions such as how long the charge will take and what there is to do nearby whilst the driver waits for the charge to end. By having the 480v charger it only takes half an hour to charge a cars battery to 80%.

I came up with this idea after I became interested in electric cars. My interest in them started as the future of them was on the news a lot and I realised quickly how the lack of roadside chargers could limit the progression of these eco-friendly machines. To help with my design process I watched the online "meet the engineer" interview with Lulia Motoc who has a PHD in Electrical Engineering. Although she specialised in robotics and not electric cars, the interview helped me come up with the idea for the Artificial Intelligent helper built in to help out the driver.

I hope you like my idea that could help improve the infrastructure that supports electric vehicles and realise that having more inventions like the electric car charging lamppost would make electric cars more convenient and therefore more popular. If electric cars were more popular this would help to drastically reduce the 68% percent of all greenhouse gases in the world that are caused by petrol and diesel cars and help slow the impact of climate change which threatens life as we know it on planet earth.
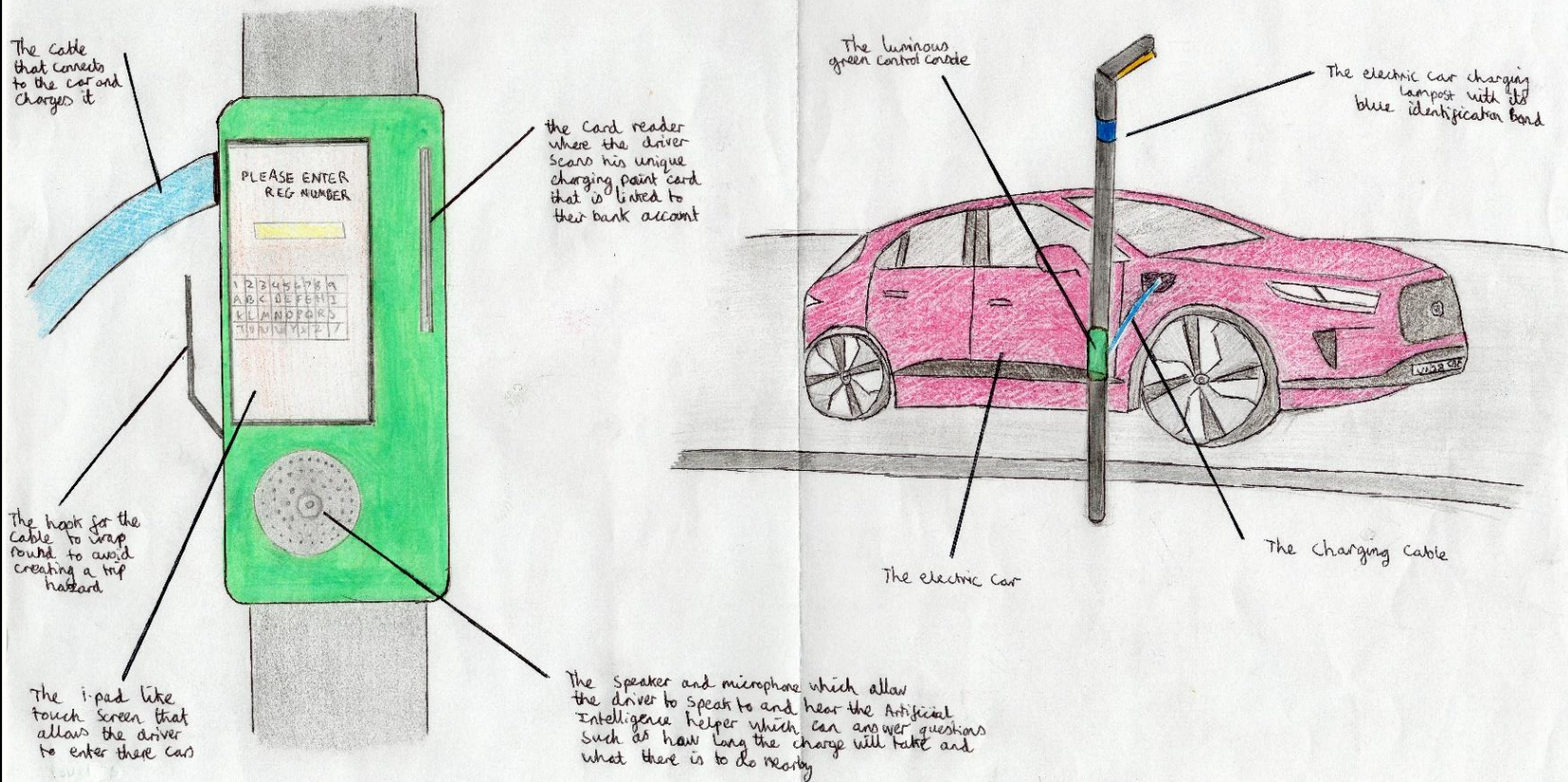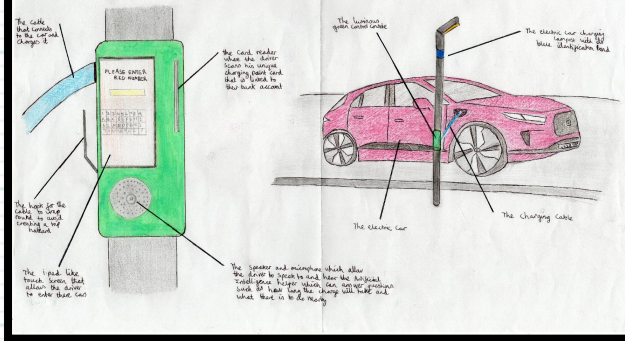
Yours Faithfully,

Neil

The Electric car charging Lamppost

The cable that connects to the car and charges it

the Card reader where the driver scans his unique charging point card that is linked to their bank account

The luminous green control console

The electric car charging Lamppost with its blue identification band

PLEASE ENTER
REG NUMBER

1 2 3 4 5 6 7 8 9
A B C D E F G H I
K L M N O P Q R S
T U V W X Y Z

The hook for the cable to wrap round to avoid creating a trip hazard

The i-pad like touch screen that allows the driver to enter there car

The speaker and microphone which allow the driver to speak to and hear the Artificial Intelligence helper which can answer questions such as how long the charge will take and what there is to do nearby

The electric car

The Charging Cable

What do you like about this idea/design?

What would you change about the idea/design?

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Yours Faithfully,

Neil

How persuasive is the letter, and how would you have described the idea

The Super Water Sucker   by Harry

I have made a Super Water Sucker. It sucks water out of the stream and pushes the water through a tube to a fire or bucket for washing your hands.

We need to have a Super Water Sucker so that we don't have to stand in the stream and get our feet wet. We also need water to put fires out. We use fires at school to cook food like garlic bread and pancakes.

Please help us to make a Super Water Sucker so that we can use it every week.

Thank you

From

Harry

Harry S
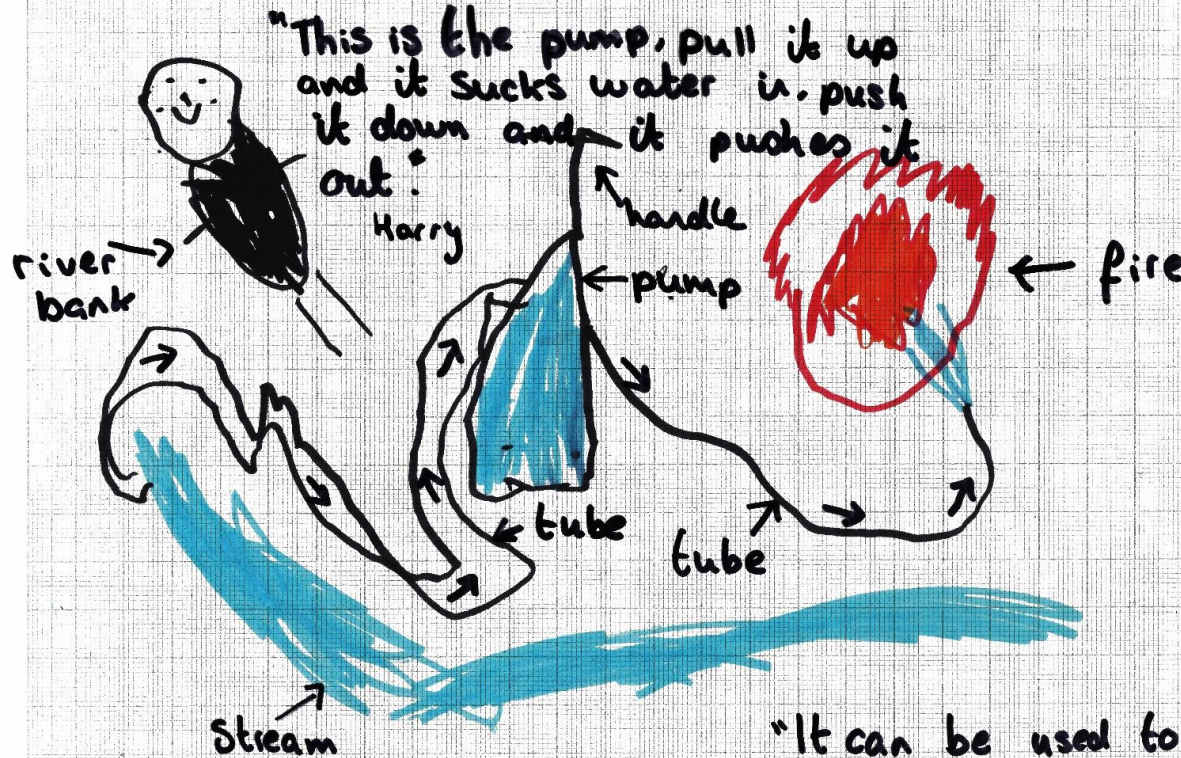
The Super
Water Sucker

"This is the pump, pull it up and it sucks water in, push it down and it pushes it out!" Harry

river bank

handle

pump

← fire

tube

tube

Stream

"It can be used to wash your hands, put out a fire, water plants or move water to another tray." Harry

Harry S

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From

Harry

What do you like about this idea/design?

What would you change about the idea/design?

How persuasive is the letter, and how would you have described the idea

The Squeaky Clean

In our lesson we looked at some videos of what engineering is all about and the different types of engineers. Then we thought of everyday problems people face every day.

After that, we had to plan what we were going to create. So, I came up with problem and solution. Imagine if a wheelchair user went outside and it was muddy, and all their wheels got dirty even if they tried to clean them, so it would not make a mess in their homes it would still be a struggle for them

Therefore, I have designed a machine called a squeaky clean it will be the size and shape of a doormat and will be made of a combination of plastic and mainly metal to reduce plastic pollution and waste. To make the machine work what you have to fill it up with soap and water then set a time on the app and then press start.

The machine would have two options of power electricity or battery you can also fill it up with regular washing up liquid. On the backside of the squeaky clean there is a wash setting you can choose either deep clean, normal or high.

I truly believe this invention would help the people of this world enjoy their lives more rather than thinking of the consequences of having fun.

The problem my product is going solve is Dirty wheels on a Wheel chair.

The
Squeaky
Clean

Deep Clean   normal   light wash

Battery | Soap | water

Backside

Clean   Squeaky

You can chosse how long you would like it to clean for with the app!

Start/Stop

SQEEKY CLEAN

treadmils enable wheels to spin.

Wash

each fan Spins around (like a carwash) to maximize cleaning.
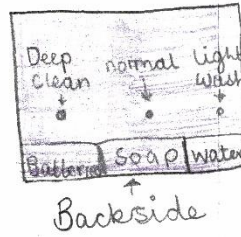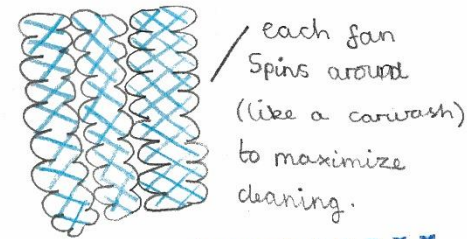
your can use normal washing-up liquid

The material of the fans
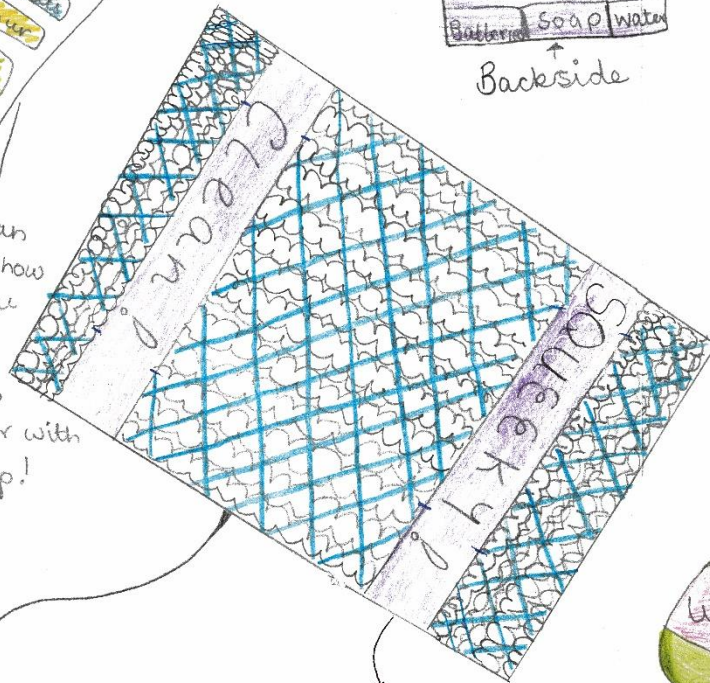
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Deep Clean   normal   light wash

Batteries   Soap Water

Backside

Clean

Squeaky

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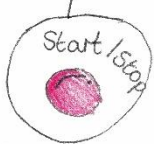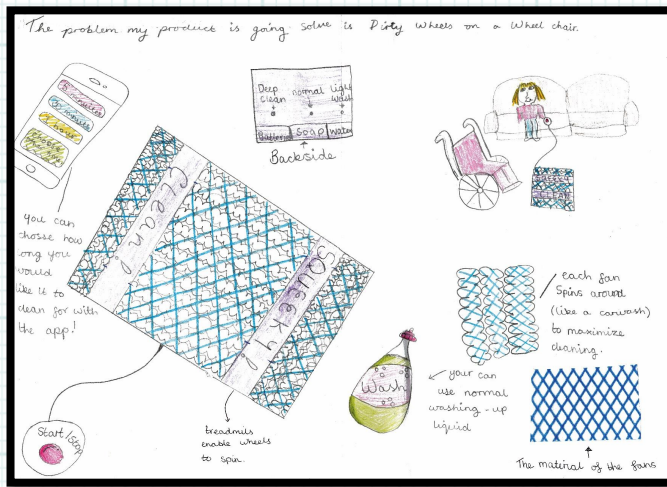
What do you like about this idea/design?

What would you change about the idea/design?

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I truly believe this invention would help the people of this world enjoy their lives more rather than thinking of the consequences of having fun.

How persuasive is the letter, and how would you have described the idea

This is my bike. My bike plants seeds for tree's The bike can go on any surface with the ultra tyre's. The bike can see with it's scanner under the handlebars what areas need more trees
There is a bag of water that comes out when the seeds fall out and it waters the seeds instantly. The bike can be bought from a bike store in glasgow and it costs up to £80. when the seeds and water is running out the bike has an alarm that lets you know they are both low or nothing left It makes a sound to let you know. The bike is made out of metal and the tyres are thicker and will never burst.

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How persuasive is the letter, and how would you have described the idea

What do you like about this idea/design?

What would you change about the idea/design?

LET'S REDUCE FATALITIES ON OUR ROADS

Dear Sir/Madam

I would like to bring to your attention my invention to reduce the number of fatalities on our roads today. Below is a table outlining the number of DEATHS and CASUALTIES (resulting in hospitalisation) for the last 7 years. Reference www.gov.uk/government/collections/road-accidents-and-safety-statistics

YEAR	DEATHS	CASUALTIES
2017	1710	176,500
2016	1800	185,000
2015	1700	180,500
2014	1760	193,290
2013	1730	185,540
2012	1790	199,740

You will see a decline from 2012 to 2017 of 80 deaths but there has been no significant reduction for the last 7 years even though safety and technology in our vehicles has increased.

So, is it mainly down to driver error that we see so many accidents!!!

Please let me introduce you to RLBS (Red Line Braking System). RLBS is a system where drivers will be able to see the severity of braking in the vehicles ahead. The red line travels around the perimeter of the rear screen – the harder the braking – the further the red line travels (please see my attached illustration).

LET'S REDUCE FATALITIES ON OUR ROADS

What are the benefits of RBSL?

- Reduction in deaths/casualties
- Reduction in costs to the National Health Service due to less injuries
- Reduction in insurance costs due to less claims
- Reduction in travel disruption and hold ups on the roads which ultimately costs companies millions when motorways and roads are closed

I hope that after studying my presentation, you will also believe that my invention brings many benefits not only to individuals but to the economy as well.

This concept could be expanded worldwide if we were able to get car manufacturers and governments on board.

Many thanks for reading.

Philippa
Year 7 Pupil
Hugh Sexey Middle School

Red Line Braking System RLBS

LET'S REDUCE FATALITIES ON OUR ROADS

ILLUSTRATION & ANNOTATION

GENTLE BRAKING

The red line will travel from the start box at the bottom middle of the screen to approx. 1/3rd of the way around the perimeter stopping at any point in between. This will indicate the user is depressing their brakes lightly.

MEDIUM TO HEAVY BRAKING

The red line will travel from the start box at the bottom middle of the screen to approx. 2/3rd of the way around the perimeter stopping at any point in between. This will indicate the user is depressing their brakes with more severity and attention is required immediately.

HEAVY BRAKING TO DEAD STOP

The red line will travel from the start box at the bottom middle of the screen ALL the way around the perimeter to the top box, stopping at any point in between. This will indicate the user is depressing their brakes most severely and urgent action required. The top box will flash indicating imminent danger ahead.

What do you like about this idea/design?

What would you change about the idea/design?

How persuasive is the letter, and how would you have described the idea

Annotation styles

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