Women In STEM



Foreword

The *Women Who Wander* group of projects began in 2018, and has now expanded into *Women In STEM* in 2020.

The rail and community rail industries are working towards making rail a more equal, diverse and inclusive place. By ensuring we promote and champion the voices of women and girls, we can shape the future of rail as an attractive option for travel and employment for all women.

A key aspect of this is engaging with women and girls from a wide range of backgrounds; not only encouraging them to consider rail and community rail career options, but using their opinions to inform and shape the future of these industries with their lived experiences in mind.

Women In STEM specifically looks to engaging women and girls in experiencing rail use and considering the STEM roles within the industry, producing inspiring writing and creative art pieces in a wide range of styles, expressing their views. These views are essential for building a genuinely inclusive transport industry now and into the future.

These published winning pieces were selected from hundreds of entries, and on the 9th of March 2020, the authors and artists attended the launch event at the National Railway Museum, to read their pieces to industry professionals and the Right Honourable, the Lord Mayor of York, Councillor Janet Looker.

We thank the funders of this project, along with our sponsors and supporters including London North Eastern Railway, Northern, Merseyrail, TransPennine Express, East Midlands Railway, Hitachi, Network Rail, educators and groups who gave their time and resources in facilitating and all the women and girls who participated.

We are also extremely grateful to Bernadette Kelly, Permanent Secretary at the Department for Transport, Karen Hornby, Head of Performance and Customer Relationship at Network Rail, and Carolyn Watson, Community and Sustainability Director at Northern, who were invaluable in selecting the final winning pieces.

Special thanks must go to the Community Rail Lancashire team, without whom this project could not exist.

For more information, or to be involved with Women Who Wander, please contact info@downtheline.org.uk



Contents

Page 4 KAOS X STEM - Kerri Ankrah-Lucas and performed by Staged Kaos

. ago .	Total A Contrain Lacas and performed by Glaged Naos
Page 7	ATOMIC - Kerri Ankrah-Lucas and performed by Staged Kaos
Page 8	"Delicate fingers trace twisting tracks" - Elise Don Oudges' Choice Prize Winner
Page 9	"You were given this life" - Kiran Bibi
Page 10	"Proud to be a woman" - Esha Uddin
Page 11	Trains - Enia Rangelova
Page 12	"One by one they march in." - Vimbai Mbofona
Page 13	Train Job Aren't Just For Men - Georgia Summers
Page 14	We CAN do it - Medina Ahmed
Page 15	She - Ayaana Campbell
Page 18	"You will hear me roar" - Mia Parkinson
Page 19	"We wonder why" - Mackenzie Highton
Page 20	Unforgettable Victoria Nowicka
Page 21	"My railway is sheltered." - Chloe Isabella Leech
Page 22	"Dear diary," - Michelle Katana
Page 23	Aawaz - Robab Khan, Afia Chaudhry and Armeen Akhtar
Page 25	Women Who Wander - Sunna Abaid, Nayyab Butt, Katie Greenlees, Saara Shaikh
Page 28	Sheffield University International Women's Club - Sylvia Chen
Page 29	My Third Eye - Radita
Page 30	Women On Rails - Emma Dixon
Page 31	Power in Me - Laiba
Page 32	Science Museum - Mia Madigan
Page 33	"We can do this!" - Fareeha Ahmed

Page 36 Girls Can do Anything - Lilley Rose Jones

Page 34 "You can be anything" - Isabella Hanley

Page 40 RAIL - Eilidh Hitchins

Page 35 TRAIN - Ivy Rowlands

- Page 41 "You'll see" Masie Eccles
- Page 42 "YES!" Annie McMahon
- Page 43 LISTEN AND LEARN (THE FEMALE VOICE) Elinor Tompkins Grand Prize Winner

The following two pieces were written by Kerri Ankrah-Lucas and performed by Staged Kaos at the Women In STEM launch on 9th March 2020.

Staged Kaos is a youth theatre based in Liverpool. Our classes inspire positive development through the Performing Arts with a focus on creative growth, developing confidence and social awareness.

All you ever hear and read about Is girls aren't meant to scream and shout Know our place and smile sweetly If thats my future count me out

Tonight we're gonna do some educating 'Cause we are taking over the nation Us girls have brains, won't lock us in a tower Knowledge, creativity we have the power

Science
Technology
And
Engineering
Plus
Maths
But just for you tonight
We're S T E M, live!

Welcome to the show, to the history remix Switching up the flow as we add the prefix Everybody knows that we used to be just girls Raising up the roof till we hit the ceiling Get ready for the truth that we'll be revealing Everybody knows that we used to be just girls But now we're STEM Girls

Chemistry, physics and biology Study of natural things like you and me Experiments, measurements, collecting evidence Improving our knowledge Of the whole universe

I'm learning code 'cos I like IT Gonna be the the next Bill Gates Oh yeah you'll see I'll study hard and do my best Show you I'm slicker than the rest

(And)

Girls should look pretty, don't need to be smart (Rude)

Girls can do anything we want to do Nothing that we can't do Stick around and you see what we can do

cont.





I'm gonna build a brave new world How?

When I become an engineer that's how Wow!

Cleverness imagination a will to succeed Engineering is an art we all need

2 plus 2 minus 1 that 3 quick maths (quick Maths) Maths is all around us in everything we do Structure and order Figure it out Numbers, shapes and patterns to sing about

No more will we be the house wife Girls is time to start planning your life Sets your sights high reach for your star Stick to the STEM path and you'll go far I said stick to the STEM path and you'll go far Now I bet you all wanna be a STEM star!



ATOMIC
Kerri Ankrah-Lucas and performed by Staged Kaos

Today we are gonna be talking about STEM Subjects usually dominated by men For some reason we thought they were boring Until we did a little exploring

We've come a long way since back in the day In case you'd forgotten, girls' lives were rotten Equal rights and education made things better Now look at me I'm a real trend setter!

STEM stands for Science, Technology and Engineering plus Maths, do you understand It's all about knowledge, research and skills So we can get good jobs and pay our own bills

Time & relative dimensions in STEM We'll exterminate those who condemn Regeneration, we programme our own code No one's gonna doctor us, you've been told.



Delicate fingers trace twisting tracks Glide tiny wooden trains along carefully - fitted paths Little heart racing, rails interlacing Conductor's hat tilting as she laughs

Midnight splintered with delicate moonbeams Secret midnight visions In which a locomotive gleams Merely make-believe, don't be so naïve Little girls aren't meant to have those kind of dreams

Determined, passionate-she can't help but question Isn't it about time for true progression? Recognise her capabilities Offer equal opportunities Derail the archetype of this age-old profession

So mind the gap Between the stigma and the potential Conductor's gender? Inconsequential! A diverse new generation In which all can fit the cap



"You were given the Kiran Bibi, Accrington Mosque Sisters"

"This is a special message for anyone who is feeling sad. We sometimes think we can't feel happy again, but the reason we are living is because we are strong enough to fix our problems. We can be happy again. So no matter how sad you feel today, remember that while you are still alive tomorrow is another chance to be happy again."





"Proud to be a woman Esha Uddin, Accrington Mosque Sisters' Group

The message in my artwork is for all the young girls out there. I chose to use a rainbow of colours to symbolise the unity of every type of woman - we are all different but we come together like a beautiful rainbow. I want girls to be proud of who they are and know that women can do anything men can do. There are not enough women in engineering and computing which I think is wrong. I think we should encourage women to do these types of jobs. I hope my artwork will inspire the next generation.



Trains.

Trains don't care who we are. Trains don't care where we are from, Trains don't care what we do for a living, So why do you?

Trains don't care how tall we are. Trains don't care about our race. Trains don't care about our gender, So why do you?

Everyone deserves and equal chance to be, Whatever they want to be. Choose the train to success. And support Women Who Wander.







they march in." Trust - Young Women's Health Project **One by one** Vimbai Mbofona,

Imagine it's your first team meeting at your new job. You got a fresh trim the day before, arrived early and put on the best smile you can manage. You walk in the meeting room 15 minutes before everyone else. Because that's the polite thing to do.

One by one they march in.
One by one they look but don't speak.

They glance and speak amongst themselves. You on one side as they fill and crowd the other.

You've lived in this country long enough to know. People have stared at you enough to know. So the fact that you manage to keep the smile plastered on your face isn't a miracle, it's just practice. And as you look around a room full of white men you are grateful for that practice.

My recommendations are to advertise for jobs in more diverse areas e.g. LGBT+ groups or specific POC groups. Mentorships are a great way to make sure new employees have a reliable person to contact for guidance and progress meetings.



en For Aren Sqof Train

Young Women's Health Project The Proud Trust Georgia Summers,





But I won't I won't listen to them No person of any gender can tell me what I do No matter how important they are to me They can't tell me what I can and can't do

I can do what I want
I am an independent woman
I can inspire others to do the same
Because I am strong
I am courageous
I am a woman

And that's what I did
I know a lot about trains and the rails
My voice was heard
I have inspired others
I work with a lot of women and a lot of men
And you can do the same

She realised it was her time to rise She is brave, the bravest of her time

She is proud of who she is She thinks of her talents as a gift

She can work on the rails She with great pride never fails

She believes both genders can work together She hopes that belief can stay forever

She will make a positive difference She knows she can go the distance

She can step up and run the station She will do it without hesitation

She wonders who can smile with glee She is hopefully the future me



She Ayaana Campbell, Dean Trust Ardwick



"You will hear me roar"

I don't want to wear an apron I don't want to mop your floor I don't want to cook your food I know I can do so much more

Girls versus boys Women versus men There shouldn't be an issue with who this world employs

I'm a strong intelligent woman who wants to the reach for the stars
I am more than lipstick and hairspray
And I don't care if I don't look like a star on Broadway

I know I can drive a train
I know I can fix a car
I may not be a Mr. but I know I can go far

One day I may be a wife and a mother It doesn't mean my career has to suffer

I have a mind
I have a soul
None of which you can control
When I come knocking
Open your door
You won't just hear a voice
You will hear me roar

"We wonder why" Mackenzie Highton, Kirkby High School

We wonder why we are not valued as much as men We wonder why we don't get paid the same amount as men

We wonder why we let inequality get in the way of our happiness

We wonder why we are the last resort

We wonder why it's always our fault

We wonder why we are having to make these poems

We wonder why we have to go on these trips just to show

That we mean something.

We wonder why we have to fight to get our views across

We wonder why women get pressured to look a certain way

We wonder why more women can't be footballers, train drivers, scientists, police

Architects, bus drivers, pilots, or any of the other 'professions for men'

We wonder why we are stereotyped to cook and clean and watch children

We wonder why women are looked as an inferior to men

We wonder if the day will come when men and women will be equals

If they stand as one

The rhythmic noises of the railway are something I will always remember. As much as it flounders in the corner of my mind it will never be forgotten. I love sitting back in the comfortable seats and switching away from reality as I eternally stare at the lime meadows and umber brick tunnels we pass at the speed of sound.

I love the variety every time I step the tip of my foot on the ebony metal steps. One day it is incredible busy; seeing society bustling about the enclosed space, urgent to feel the sense of wonder on our journey.

The other day it is spacious and quiet, everyone is already entranced by the journey, the open premises. A simple journey in a lively area which prepares you for a clustered public premise can be so entrancing. It's magical.

I adore the museum, seeing the history of magic. Staged photographs leading up to the advanced transport we have now. However, the best part by far is the diversity. This isn't just the classic place where only men work. It is the ultimate occupation for life, and a fantastic employment option for fantastic women.

Each woman working on the railway is so kind and charismatic. They all work to the best of their capability. Just this alone proves women's powers as superior in many ways. All this is why the journey on a train is absolutely unforgettable.

My railway is fun, Relaxing, Safe, Fast, Automatic.

My railway can be inclusive, Equal, Comfortable, Modern, Extended.

My railway will include women, Black people, LGBT people, People in wheelchairs, Autistic people.

My railway is sheltered.







Dear diary,

Today has been an eventful day. I really enjoyed it. I wish I could do this everyday. This was also really helpful as it helps me to consider by career goals. It also makes me realise that work which is male dominated, doesn't mean a woman can't do it.

When we boarded the train we interviewed some women who were working on the railway. It was a great way to see what jobs there are out there other than a train driver. I think that resources business partner is a good assignment in rail since you can do tons of different things each day. There are positives and negatives for each job. Some people who work on the railway have to work really early.

But these people show dedication to their jobs to help us have a safe journey, men and women. This trip taught me that there is no patriarchal job out there, everyone can do it with effort. No gender is better than the other, no gender is superior to another.

Everyone is equal and everyone has a right to do what they want.

AAWAZ is a voluntary sector organisation and registered charity which was formed by Asian women in 1997. The name AAWAZ means "Voice" in Urdu and is the "voice" of Asian women across Lancashire and nationally. The charity's work revolves around the principle of self-help, equipping women and families to learn to help themselves, so that the culture of dependency can be broken down. Through its work, a better understanding between communities has been achieved which is aiding integration and harmony.

The following pieces of art and poetry were written and created by Robab Khan, Afia Chaudhry and Armeen Akhtar.



















Poem in English;

Train, train take me away, show me the way

How can I help myself, get more confident, I want to learn, I want to get along, I want to be more confident

Train, train take me away, show me the way

How can I study, How can I learn new skills, How can I get experience and become more employable

Train, train take me away, show me the way

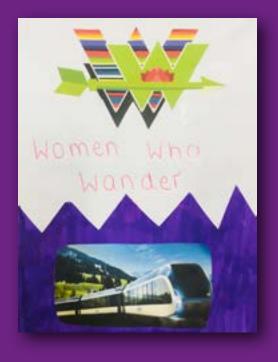
I am lucky to have Aawaz to help me, I have already learned so much, I want to get that job, I want to better myself

Train, train take me away, show me the way Train, train take me away, show me the way

Saara Shaikh, Pleckgate High School Greenlees, Sunna Abaid, Nayyab Butt, en Wom

The following images are of an incredible, unique booklet that was entered into Women In STEM by a group of four young women.

This booklet is available in print separately; contact info@downtheline.org.uk to request copies.



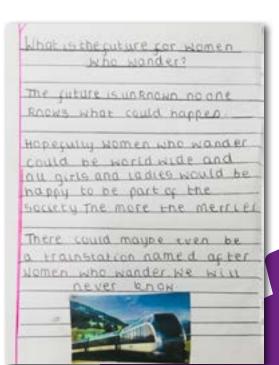


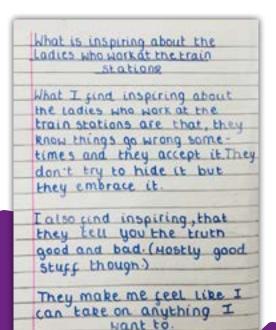






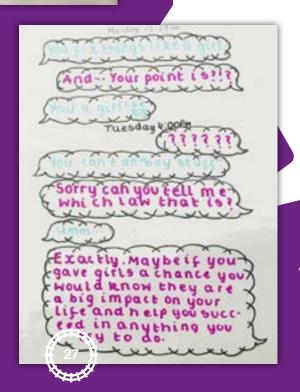






Saara Shaikh & Katie Greenler

This is a norm by Nauvab Lines can drive a train so can 1 You really make me want to sigh, Women can do anything they put the eir mind to. We are just as good as you DOD'T TRY STOP US CAUSE WE HOUT PLOD We'll carry on and reach the top. I'm as good as you'll ever be. Tust watch out and you'll see, L can do it, yes I can. Just because I 'menot a man, I will drive the train to night, pon't worry as women don't bice Nayyab Butt



The International Women's Club is a social support network for the female (partners of) international staff and postgraduate students at the University of Sheffield.

On the 9.45 from Sheffield to Lincoln, a lovely winter sun shining through the windows of the new carriages. Frost on the fields. We talked about living abroad (literally Women Who Wander), careers, and dreams for the future. We snacked. We listened. We laughed and enjoyed each other's company. The journey was as fun as the destination itself.

All of us experienced the journey differently. Some of us photographed or filmed it all and posted on social media as we went. Others chatted to friends sitting beside them or made new friends. And some just wanted to watch the world go by.

Some of us had never travelled without our families since moving to the UK. Some wanted more opportunities like this so they could explore more of the country for themselves. Some of us are planning our next rail trips already.



My third eye is just like my two eyes See something moving Hear someone speaking Feel the surrounding atmosphere

My third eye is never troublesome me I can hold it in my hand I can put it in my pocket And I can bring it in my bag

When I got a ticket I put my third eye in my pocket Waiting to depart Wherever my feet take a part

Club

Sheffield University International Women's

My third eye is wonderful It can catch the most beautiful scene Cathedral, Castle, River, Tea shop Even the sun was shinning brightly

My third eye do a brilliant job It can zoom in closer to me Something, someone, some place That is very far away from me

My third eye have a fabulous memory After 1 year, 5 years, even 10 years I still can feel being in some place that I want Only by open my third eye

You can lie with my two eyes But you can't lie with my third eye It catch whatever you do And it catch whenever you go





Women On Rails Emma Dixon, Hempland Primary Academy

A land full of rails we all know well, The noise, the sounds, the guards as well. But what is missing, can you tell?

The hooting and tooting of the trains, Or the shouts and whistles of the station game? "No" I say for this is not the link that has long been lost.

Women are the missing link; clever, powerful, they mean a lot.

With men they can work side by side, Their skills and knowledge spread far and wide.

Gender should no more divide, We should be on equal sides. For women have the right to be, The talent of technology.

To women out there, stand up tall, Believe in yourselves and don't act small. Rise to the top, stand strong, stand firm, Women should be seen by all.



Power in MeLaiba, Riddlesden, St. Mary's Primary School

I am a wonderful girl.

I am a powerful girl.

I am a girl who will chase my dreams to work on the railway.

I will stand up to men and give them a speech,

And show them the power in me.

On the railway I will success no matter who tries to stop me.

Remember to follow your dreams.

Remember to be powerful when someone is in need.

Science

Technology

Engineering and

Maths

Is all you need to have the power in you and me.

Have the power in you and succeed.

Work at the railway, it's so much fun! Show boys that you're tough and powerful enough.

Be powerful, be strong!



Science Museum Mia Madigan, Staged Kaos

We've come a long way, Since back in the day, When we stood around making cotton, I'll remind you what we've done in case you've forgotten.

We used to hear every day, Girls can't do that they'd say, Stand up straight, don't frown, Their words will not put me down.

It's not right, So we will fight. One day you will see, What we went through, How hard it was to just be me.

No you can't wear that, No you can't study that, No you can't go there, Actually we can do anything we want, We are STEM girls.

Society's not perfect, Not even today, Although we all wish, It could be that way. I can be a driver So can you

You can be a doctor So can I

I can give out tickets So can you

You can be an engineer So can I

I can be anything I want So can you

I can do anything I want if I put it in my mind.

I can drive, design and paint.

You can be anything, I can be anything.

We can do this!

I believe I can do this!

And you!

"We can do this!" Fareeha Ahmed, Riddlesden St. Mary's Primar

Primary School



Count on other women And dream you can be different Not just men included

Anything in the world Never let others down You are you Trying harder

No matter how long you live Imagine the world without you

Nothing is in the way of your life changing path Greatness is about you

AND YOU CAN BE ANYTHING!



TRAIN

Ivy Rowlands, Methodist Formby Rainbows

T – Travelling on the railway.

R – Riding on the bumpety jumpety train.

 \triangle – Around the world and all over the world.

– Incredible girls working hard on the railway.

Never give up when you are working on the railway.



Girls Can do Anything Lilley Rose Jones, St Cuthbert's Brownies

I think girls can do anything and be anyone they want if they put their minds to it.

There are no jobs that boys can do that girls can't do too. When I grow up I would like to have my own business in computing because I like designing things on the computer.



5th Roby Brownies Liverpool Megan Stanley, NON NON



When I think about who works on the railways I only

ever see men, I wanted to show that in the future this

can change and if we help girls of my age realise they can work there too then the future will mean that

there are both men and women working on railways.











Hello my name is Megan, I have Autism and Anxiety.

I deal with challenges by asking my travel trainer Mark questions and I find some situations harder than others because I am autistic. I know from my knowledge that some people have panic attacks on trains due to their anxiety. I don't have panic attacks but all I am trying to say is that some people especially don't understand autism at all.

So if a member of staff finds out someone is having a panic attack on the train and they don't understand what is going on, they will have to learn to deal with someone who is having a panic attack on the train.

As far as I'm aware I have only heard people with autism mention that they have panic attacks on trains themselves, because I've seen it being mentioned online by autistic people who are very aware of their triggers and know what makes them anxious. These autistic people have a very good understanding of their emotions.

The only reason why I think it's important to know and be aware of people having panic attacks on the railway is because I believe some railway staff especially need to understand what a panic attack is in order to learn what upsets certain people and what calms them down. You never know what the full story is and you certainly don't know how other autistic people react to their anxiety or panic attacks. It's no good judging people for their panic attacks. A panic or anxiety attack isn't naughty.

If you just point at someone saying unkind things about them and their panic attacks, they might retaliate against you and even judge you back.

cont.

We need to think before we speak and then you might properly understand what someone might be going through. Understanding what someone has been through rather than insulting them other their panic attacks is totally different to assuming that they will soon get over it. Some train stations have quiet rooms for people with anxiety.

Have empathy for people, don't just assume that someone with a mental health problem will get over it.



Reality. In reality, out of all the people working in rail only 16% are female and I believe that everybody thinks this should change. We should all be equal whether we are female or male. Right now it is a male dominated industry and hopefully that will change.

Aspiration. In the future, I would like to see at least 50% of people working in the rail industry being female. If more women were to work in rail it would raise awareness about the skills and strengths of women. It can show you that, no matter what your gender, you can achieve whatever you want to achieve.

Inspiration. My inspiration is Aunty Rachi because she works for a company building a new metro system in Saudi Arabia. She is the Manager of Operations. She is especially proud of what she is doing because in countries like Saudi Arabia it will allow women to gain more freedom, independence and hopefully be empowered and get more rights. She also said that this new metro will give an affordable way to travel. This means it will be easier to find a job and to reduce poverty.

Living it! Come on girls let's start thinking about a career in rail. It's really fun and there are lots of different jobs you can enjoy. It helps many people to get to where they need to do. You can work all over the world with a job in rail. The best thing is that you can inspire other girls and show that women can have equal opportunities when it comes to work.

I'm tangled in my wires, my brain is fused to be, your harsh words are hurting.

It's never stopping me.

I've got a plan, and I don't need reminding that I'm not a man,

No I don't need your help, no I don't need a hand.

I don't need a man's assistance to show my plan will land.

I tell them, "be wise!" you'll soon be working for me,

They laugh in my face,

I exclaim,

"You'll see



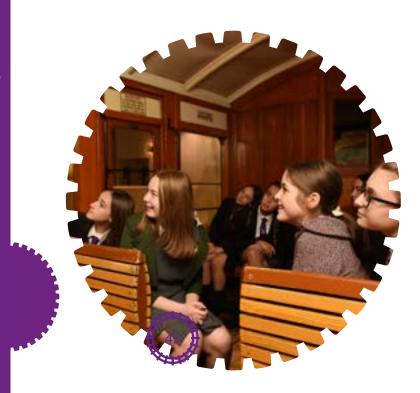
"You'll see" Masie Eccles, Keighley College

40

T E O : Annie McMahon, Staged Kaos No, you can't do that, No, you can't wear that, the men shouted, YES, we can 'cos we are women! WE can do anything!

Let's go back, way way back,
Back to the 19th century,
Emmeline Pankhurst, born 1868, was the suffragette leader,
She would vote and vote all day long,
Doesn't it sound easy,
NO, the men were stronger, men were braver,
NO

They kept on saying it and staying it and saying it, But just NO! So that's the story of the suffragette leader, YES!



VOICE **EMALE TEN AND LEARN (THE F**Tompkins, Hempland Primary Academy Elinor -

Listen to our voices, we will be heard.
If they build walls, open the doors.
Start building bridges over the rivers of doubt.
Technology is for all.

Expectations should be equal, contributions accepted despite our gender.

Now is our time.

An engineer of the future is what I want to be. Never be discouraged from your interests because of the views of others.

Dreams are worth chasing, follow them down the rails of life.

Learn our capabilities, why are you surprised? Engage with female minds.

A level playing field is what we need.

Reach across the barriers, our destination is in sight.

Now is our time. Girls will, girls shine, especially this one.

LISTEN AND LEARN



Women Who Wander is a unique group of writing projects that engage women and girls in expressing their views of the rail and community rail industries.

EISUN STE Women In STEM 2020 looks at how we can encourage more women and girls to join STEM roles in these industries, and promotes their views of these exciting roles within rail.



With thanks to our supporters and sponsors:



This project was funded by the Community Rail Development Fund, the Northern seed corn fund and Community Rail Lancashire.