



#STEMGlasgow

Glasgow Secondary Hackathon 2018



Glasgow Schools Hackathon 2018

What is a *hackathon*?

A hackathon is a sprint-like event in which a group of creative designers, engineers and technologists work together to collaborate on solving a problem in a short amount of time. Hacks can be a physical product, an app/webpage or a social movement, it's up to you!



Work in teams to identify a problem



Present the hack to the judges

What to expect on the day

Pupils will have the duration of the event to identify a problem they think they can solve, create a hack and present their solution.

There will be over 30 problems for the teams to choose from so they do not need to come up with one themselves. All problems will be based on the Glasgow European Championships 2018 and will cover the themes of:

- *Accessibility*
- *Transport*
- *Inclusion*
- *Facilities*

Teams can come up with as many *hacks* to solve the problem as they want but they must have one fully completed idea by the end of the day. Judges will arrive at lunchtime and will be looking at what the teams have been working on before hearing their final pitches.

Teams can create any kind of hack that they want. This could be a product that they make from modelling materials, website/app or a social movement that has no physical output.

An example problem and hack has been provided for the team to have a look at in advance.



Glasgow Schools Hackathon 2018

Example Hack

This is a persona card. It is double sided and tells the story of someone who has a problem with something in the city. It will sum up their problem and give some extra information such as where the issue takes place, their personal history with the problem and some hints on how to get started. These are colour coded to the themes mentioned on the previous page.

GLASGOW SCIENCE FESTIVAL

HACK

EUROPEAN CHAMPIONSHIPS GLASGOW 2018

Hack Task: Transport

Alex, 19: Public Transport User

Living in the city centre is great but when a big event is on like the European Championships public transport can get really busy. I would be happy to cycle to most places but I don't want to get soaked in the rain!




GLASGOW SCIENCE FESTIVAL

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EUROPEAN CHAMPIONSHIPS GLASGOW 2018

Hack Task: Transport

Alex, 19: Public Transport User

 Location <p>Alex lives in the city centre so she normally uses buses or the subway. She can cycle a bike but does not own one of her own. Normally she is travelling to work or the shops so does not want to get wet in the rain.</p>	 History <p>Alex is a confident cyclist but has not owned a bike since she moved into the city. She does not have room to store one so she would need to find another way of acquiring one. She does not want to have to carry her work clothes in a bag as they will get creased. She also does not want to wear a hood as that ruins her hair before she gets to work.</p>	 First Thoughts <p>Where could Alex get a bike in the city centre but not have to store it at home?</p> <p>Are there any materials that are waterproof but not obstruct her view?</p>
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Example Hack: Solution



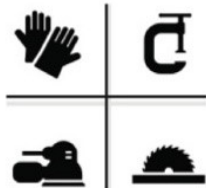
The team discussed Alex's problem and identified the main issues as:

- Overcrowded public transport
- Lack of stylish and sensible waterproofs for cyclists



They then conducted some research and found that the 'Next Bikes' can be found near her home and work, so she can rent one when she needs without having to store it.

They also brainstormed the best ways to keep dry when it rains.



The team then decided that what Alex really needed was an umbrella for a bike that kept you dry but was easy to store.

Using the materials available they constructed a prototype and tested it to see if it would work. They made some adjustments and then created a presentation about their idea.

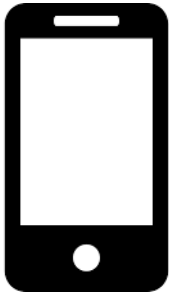


They presented their idea to the judges and other teams. Their solution can be seen in the photographs below.



Glasgow Schools Hackathon 2018

Example Hack: Other Solutions



Alex did not want to use public transport when it was too busy. The team could have developed an app that told Alex what public transport options were the least busy when she wanted to use them.



Part of Alex's problem was that her work clothes get creased in her bag on the way to work if she cycles. The team could have created a work laundrette initiative that allows employees to wash and iron their clothes for free if they cycle to work.



Alex wanted to cycle more but had nowhere to store a bike in her flat. The team could have developed a smart storage hack where the bike was hung from the ceiling or on the outside wall of the building.

Eyal, 22: Wheelchair User



Location

Eyal does not have tickets to any of the major venues but instead wants to watch the events from Glasgow Green. The park has a lot of footpaths that he can use but he wants to be with his friends on the grass.



History

Eyal has always had issues with using his wheelchair on the grass. It's too heavy and sinks in too deep for him to push it.

His wheelchair works perfectly on solid ground.



First Thoughts

What are the main issues that Eyal faces trying to move his wheelchair on the grass?

What would make it easier for him to turn the wheels?

Eyal, 22: Wheelchair User



I'm hoping to see a lot of the action at Glasgow Green this summer. The only problem is that I have to stick to the path because my wheelchair is difficult to move on grass. The chair is heavy and sink into the ground making it hard for me to turn the wheels.



Samira, 34: Blind Spectator



Location

Saimira has tickets to the gymnastic event at the Hydro. The seats in the arena are in rows up concrete stairs. The stairs all feel the same and Samira cannot read the row letter.



History

Normally Samira counts the steps up but with all the noise this can be difficult.

She often has to ask for help but expects attendants to be much busier than normal.



First Thoughts

Is there an easier way for Samira to find her row?

If there is no attendant available is there another way?

Samira, 34: Spectator



My blindness doesn't hold me back. I really enjoy sitting in the sports venue and taking in the atmosphere while listening to the commentary. Although I can find it difficult to find my seat. I sometimes lose count of what row I'm on and have to ask for help. The ground all feels the same under my cane.



Hayley, 13: Spectator



Location

Hayley has tickets to the gymnastics events at the Hydro. Hayley is still young and is afraid that she won't be able to see any of the competitors over the large crowds.



History

Hayley has had this problem before at public venues and has used booster seats to help tackle the problem.

However, Hayley feels silly and like a baby when using them.



First Thoughts

What is Hayley's main concern about attending events?

Why does she not want to use a booster seat and is there something you can do to fix this?

Hayley, 13: Spectator



This summer I have tickets to see the gymnastics at the Hydro. This is my first time at a large sports event and I want to make sure that I can see all of the action.



Charlotte, 23: Competitor



Location

As a gymnast Charlotte competes in arenas and stadiums all the time. For the games she will be based at the Hydro Arena.



History

Charlotte tried to wear her glasses when she competed but they always fell off.

She now uses contacts but finds that the chalk used for grip dries her eyes out and makes it difficult for her to see what she is doing.



First Thoughts

Why did Charlottes glasses fall off in the first place?

Gymnastics is a precision sport so it is important that everything she wears is streamlined.



As a gymnast I have to see the apparatus in front of me and execute my routine perfectly to stand a chance of winning. I don't have good eye sight so this can be tricky. Glasses just fall off and the chalk I use for grip dries my contacts out. Neither are a great solution to my problem.



David, 34: Injured Spectator



Location

David has tickets to the championship events for the cycling at the Emirates Arena.

The theatre style seats in the arena do not leave much let room and David does not have anywhere to store his crutches.



History

Had David known that he was going to be in crutches he would have requested seats in the another area.

It is not safe when people block the walkway in and out or rows with bags, jackets and other items. He is keen to avoid doing this with his crutches.



First Thoughts

Since the leg room cannot be increased how will you tackle this?

If David does not want to lie his crutches on the ground how else can they be stored?

Nothing can block the walkway due to health and safety.

David, 34: Injured Spectator



I broke my leg earlier this year and will be in crutches all summer. I have tickets to the cycling events but there will be no where to store my crutches when sitting in the spectator area. I don't like leaving them on the floor as that makes it difficult for others to get by.

