

# Kat Does Maths

How I learned to stop worrying and love the  
'Comm  
PiWorks

30/09/2025



**Dr Kat Phillips** (she/they)

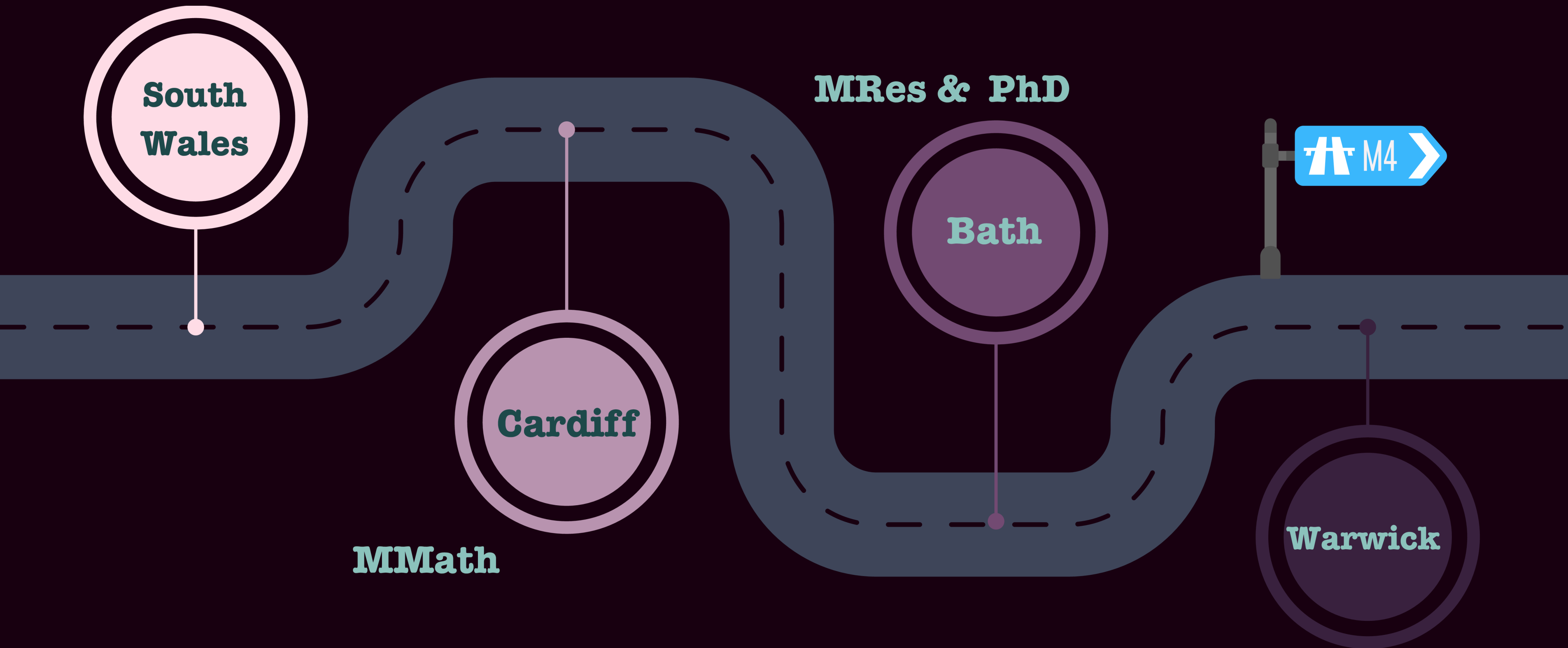
Innovation Research Associate

@katdoesmaths

<https://katdoesmaths.me>







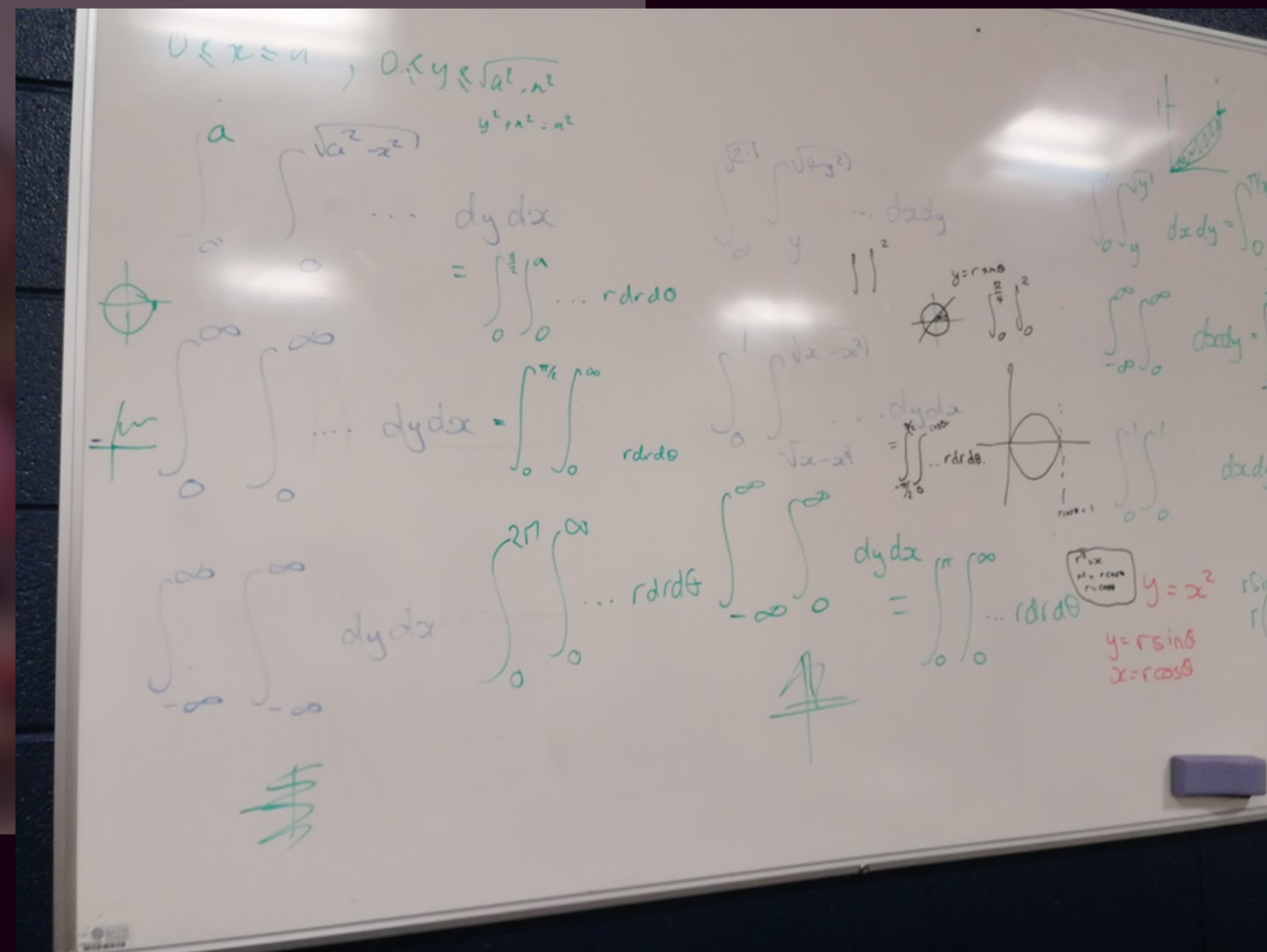


# **Centre of Doctoral Training for Statistical Applied Mathematics at Bath ( SAMBa CDT) Cohort 6**





# Training for Statistical Applied (SAMBa CDT) Cohort 6



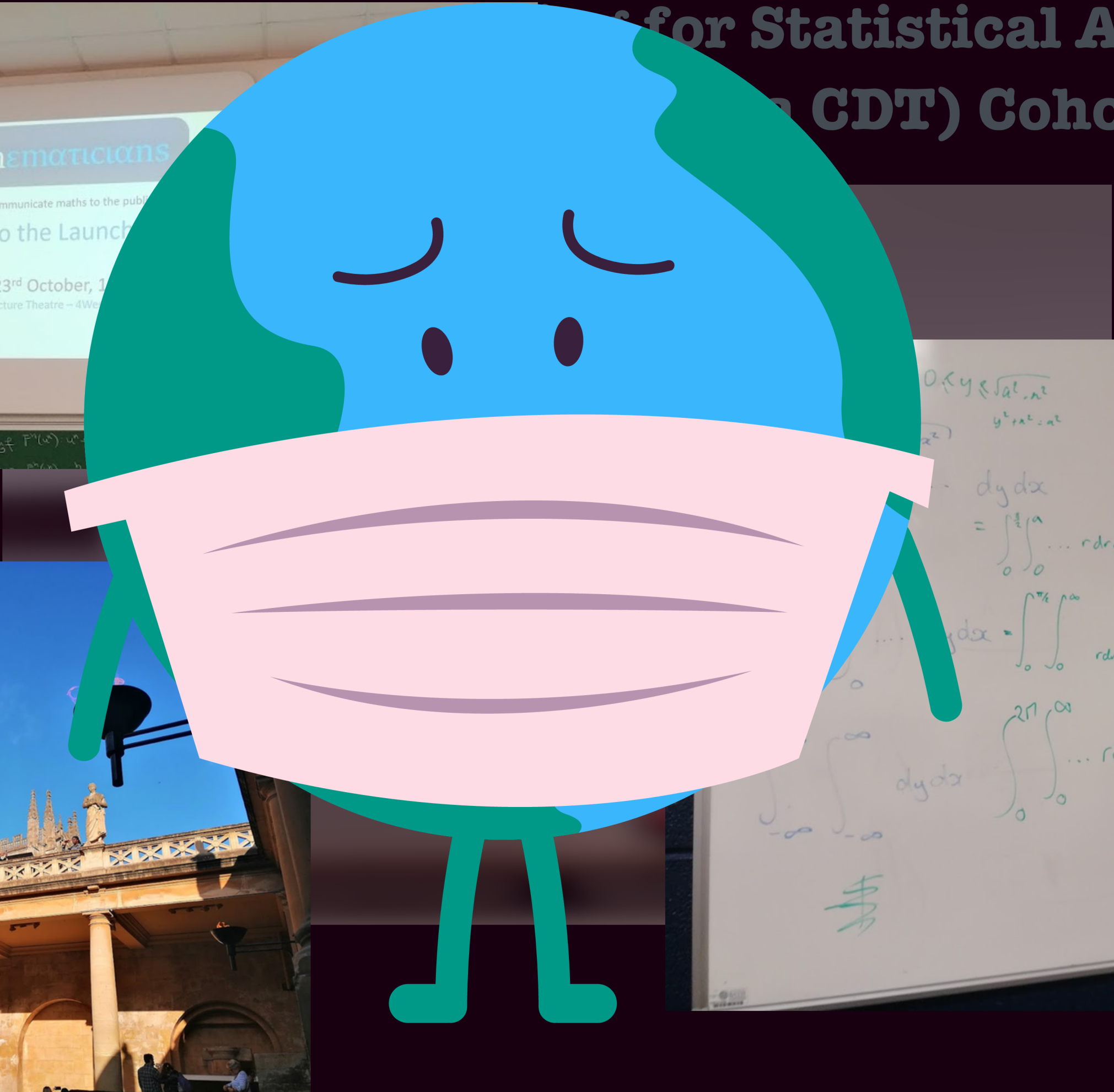


## A large, stylized cartoon Earth with a blue body and green continents. It has a simple face with two curved lines for eyes and a small, downward-curving line for a mouth, giving it a sad or weary expression. The Earth is positioned in the foreground, partially obscuring a presentation slide in the background. The slide is for a group called 'Bathemathicians' and mentions a launch event on Wednesday 23rd October. The background also shows a dark banner with text about a cohort for Statistical Analysis.



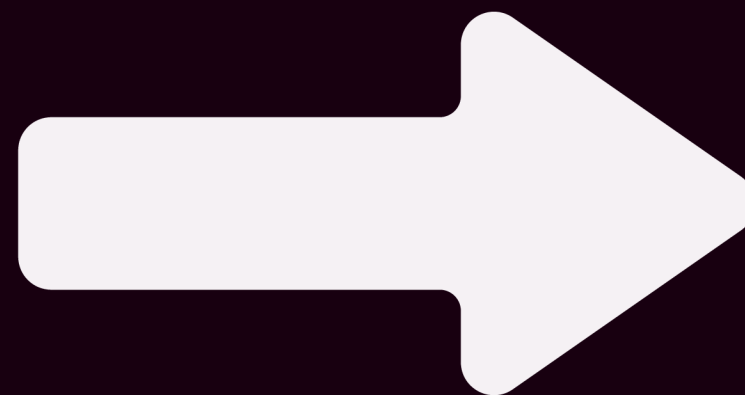
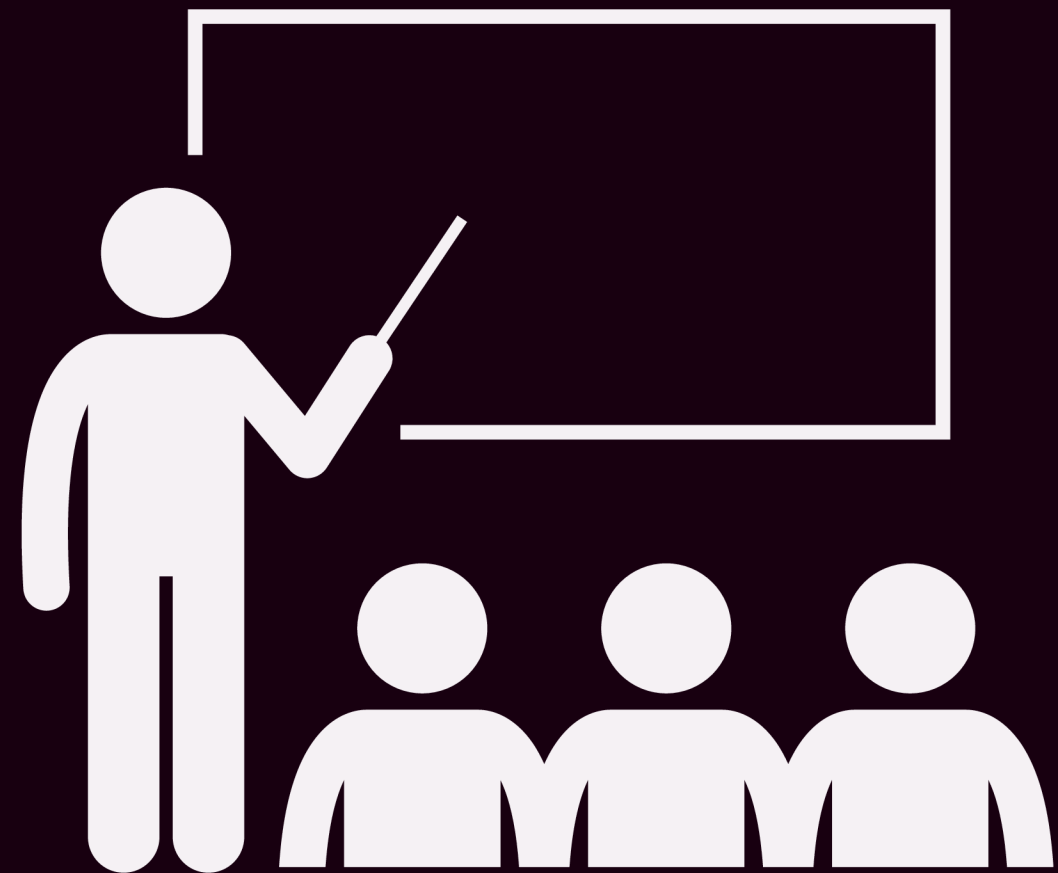
$$F(w) = \inf_{v \in \mathcal{V}} \sum_{i=1}^n \ell(w, v_i)$$

$$F^*(w) = \sup_{v \in \mathcal{V}} \sum_{i=1}^n \ell(w, v_i)$$

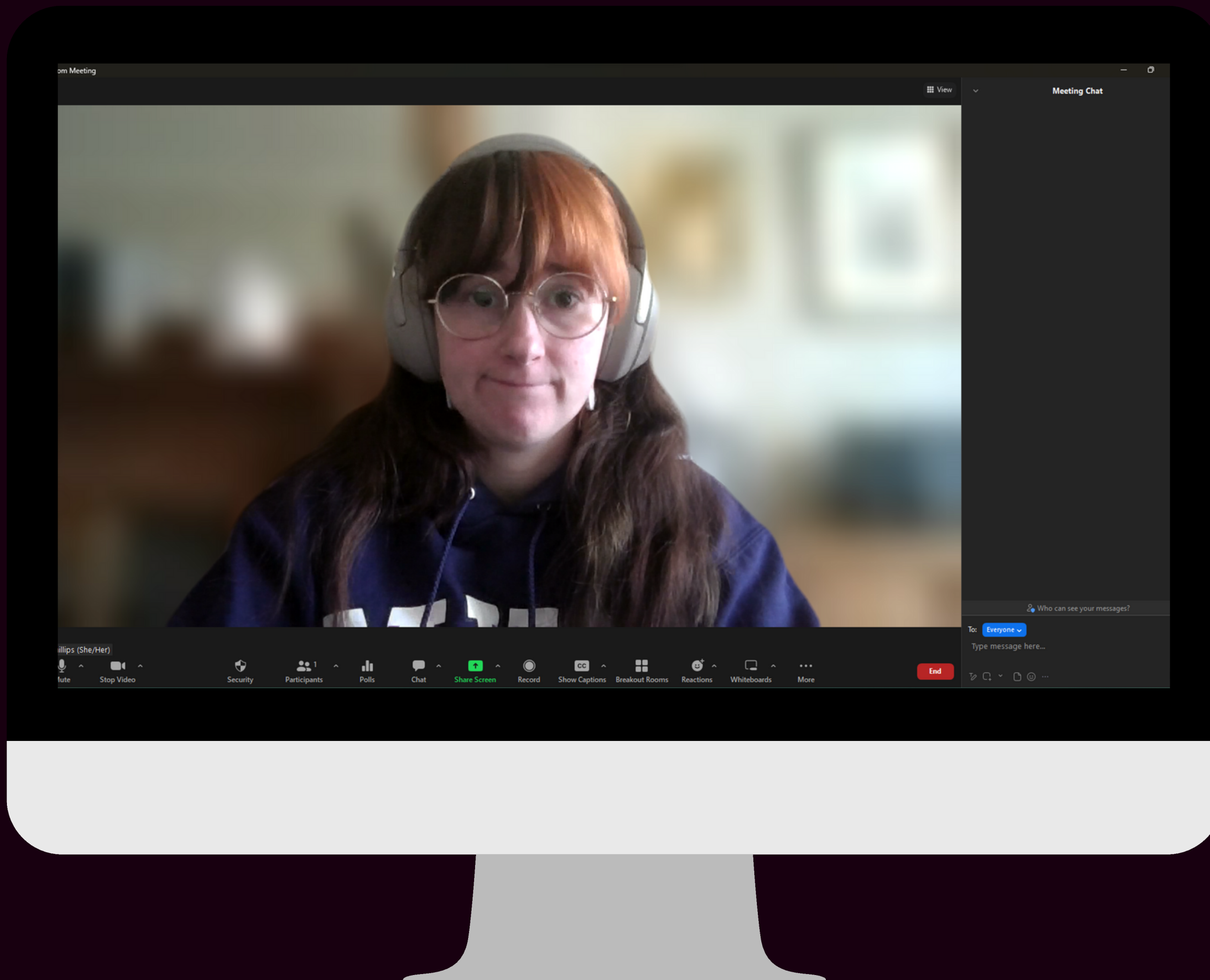


[illegible]











om Meeting

View

thank you

yes

hang it in the tate

exactly

after discrete turns to algebra masterpiece

We're thanks cheers thank you :D

its nice

this is the highlight of my day...

just worksheets

nice

yeet

illips (She/Her)

mute

Stop Video

Security

Participants

Polls

Chat

Share Screen

Record

Show Captions

Breakout Rooms

Reactions

Whiteboards

More

End

Meeting Chat

dean: Lol this is hilarious

louis: I wonder if they'll notice this text is fake

sarah: Probably someone keen will notice this.

kat: Well it's not like I actually screengrabbed my real tutorial chat. that breaks all sorts of rules.

zac: That's valid. you are now just talking to yourself though....

kat: don't argue with me, get back to learning algebra like you're supposed to.

sarah: lol

kat: I can't even think of more text, I'll just copy the stuff above.

dean: Lol this is hilarious

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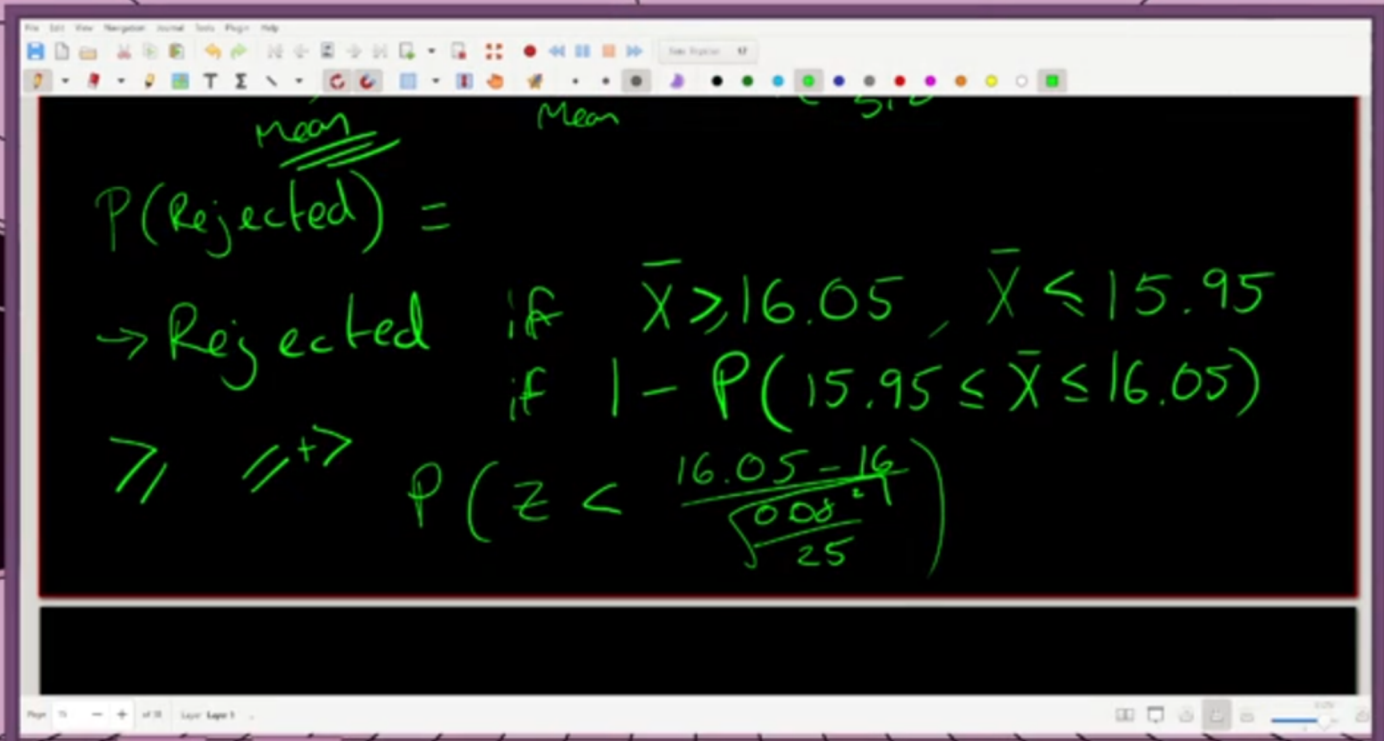
kat: Well it's not like I actually screengrabbed my real tutorial chat. that breaks all sorts of rules.

Who can see your messages?

To: Everyone

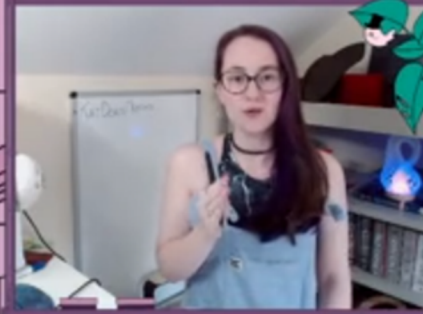
Type message here...





Followers: 2216

Lost Woods (Mysterious Forest)  
GameChops, Dj Cutman



CHAT

@TankMcCormick get this on a tee shirt

It's all about Independent Tropical Wales

he's right

Wenos dias

don't silence him

seriously niceee

hahoni well pi is exactly 3 if you round it down

what's the life under the greater than sign again

edogedia to one significant figure he is correct

hahahah

denn 3 pies sounds pretty good right about now

I'm a biologist I don't know what's happening

for also believes fig of steel weighs more than fig feathers to be fair

pi is short for pizza

ohhh I see. Thanks

hahaha

Forename(s) \_\_\_\_\_

Candidate signature \_\_\_\_\_



H

# GCSE MATHEMATICS

Higher Tier Paper 1 Non-Calculator

Thursday 25 May 2017 Morning Time allowed: 1 hour 30 minutes

## Materials

For this paper you must have:

- mathematical instruments.

You must **not** use a calculator.



## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.

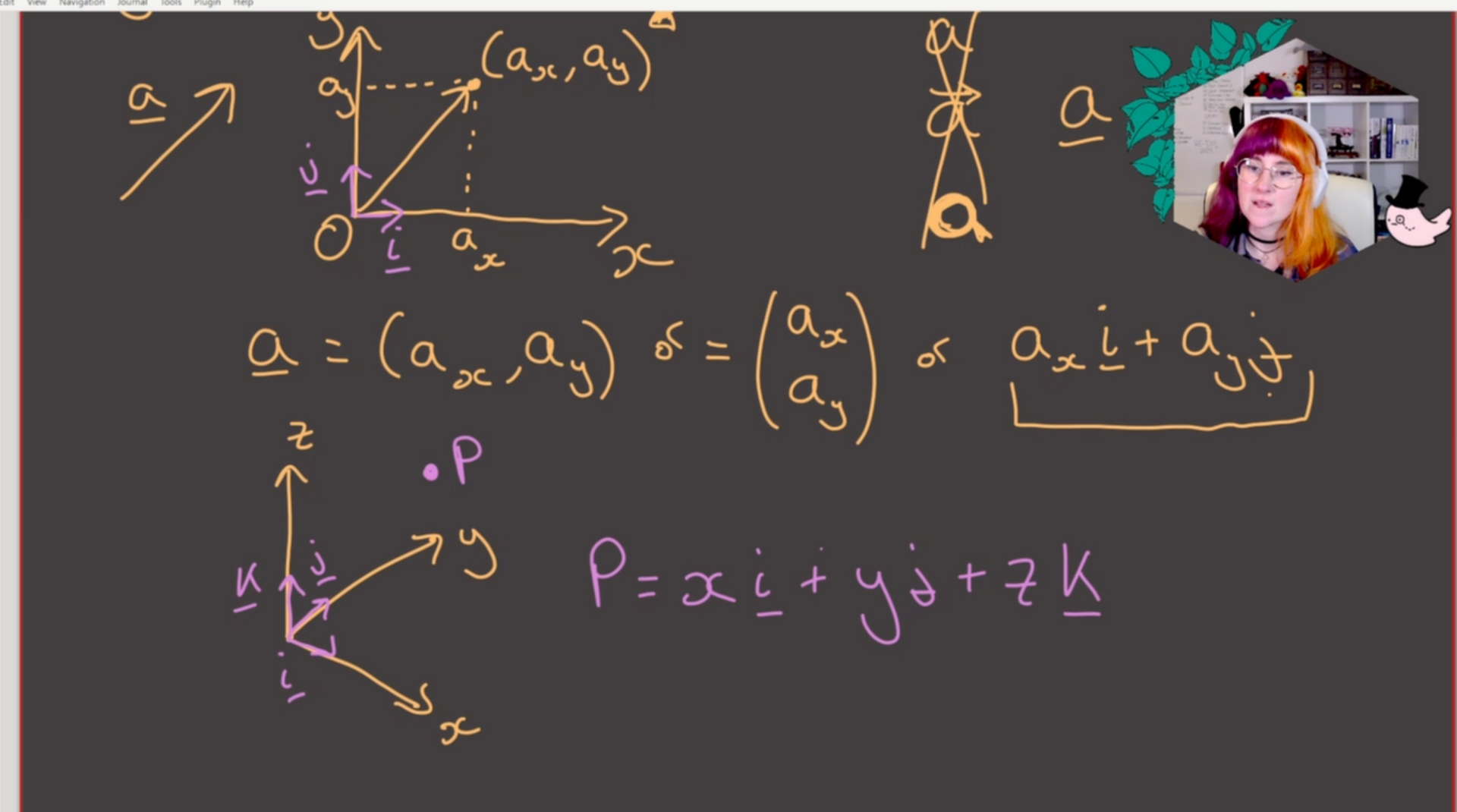
For Examiner's Use

Pages	Ma
2-3	
4-5	
6-7	
8-9	
10-11	

GCSE Maths Paper 1

27:26.07

Best: 27:26.07



CHAT

I've seen the, you're usually muted and reading those notes

EdwardBearGames If I could dress like a pirate every day I 100% would

I don't mind 32 tbh, it's pleasant-ish

at least indoors

EdwardBearGames Yes pirate based games can be a thing especially seeing as your computer can now handle it

tilcupxthings still got some bits of work left to do, lurk for now

32 outside, inside is naturally cooler, AC is optional

EdwardBearGames I just saw your brain stall

KDM.exe stopped working

ph forgot the dot would be count as a link

EdwardBearGames I am going to annoy Thomas for a bit before the maths starts to fry my brain x

will pop you a message shortly to try and organise thing

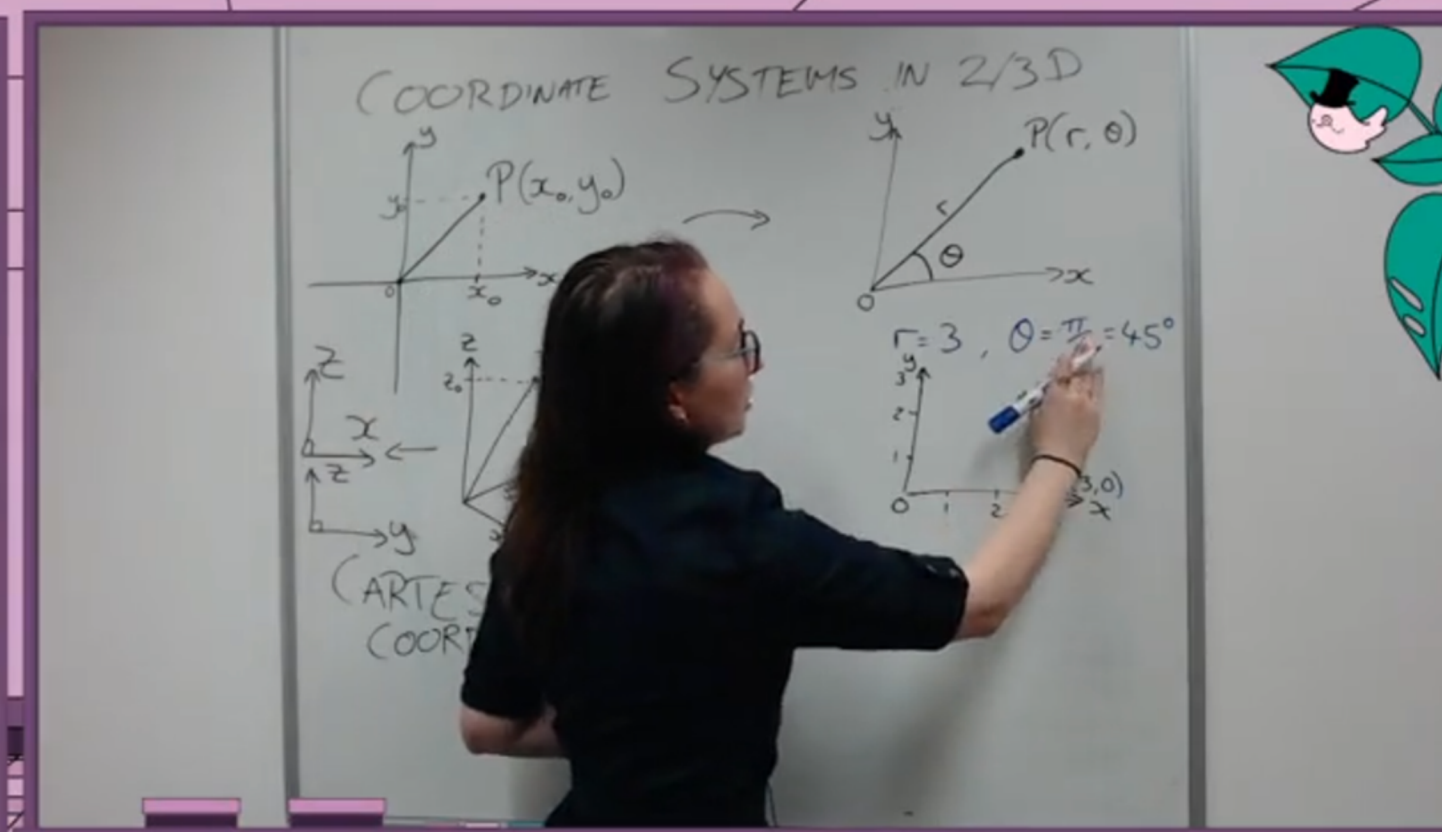
ah the bastard has gone for lunch

rush: lphd

love what ur doing

prynhawn da Kat, sut dych chi?

dw I de lawn diolch



Followers: 2452





**I am a serious and  
professional maths  
communicator**





# And since then?

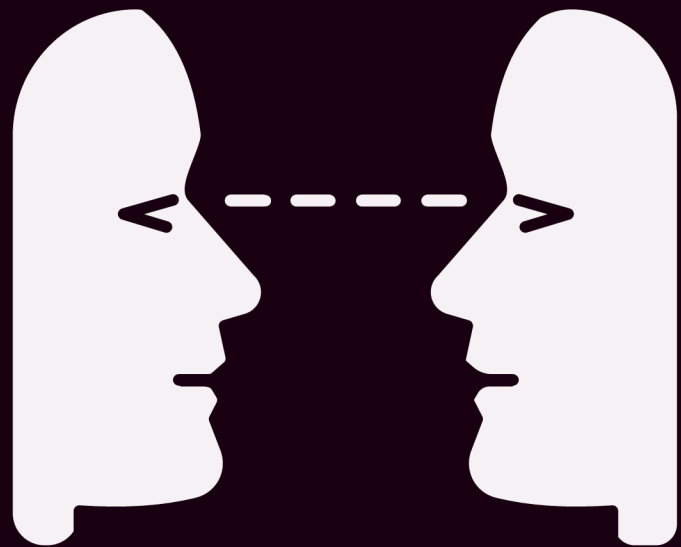




# ***The World's a Stage***



**Relax**



**Make eye contact**



**Get into character!**



**The  
“Tactical  
Pause”**



**Include the Audience**



## **OUTREACH**

**Focus on promoting enjoyment of a field through taking content to those who wouldn't have previously had access.**

## **WIDENING PARTICIPATION**

**Focus on entrance to higher education, specifically helping with awareness of available options regardless of background.**

## **PUBLIC ENGAGEMENT**

**Focus on the knowledge exchange between audience and researchers. A mutually beneficial feedback between learning and research generation.**



## AUDIENCE

**Who is it that you are speaking to?**

**What assumed knowledge does the audience have?**

**How big is the audience?**



## PURPOSE

**What is the purpose of the talk?**

***Are you getting something from it too?***

**Are there clear goals?**



## FORMAT

**Are you online, hybrid, or in person?**

**What resources can you have to hand?**

**Is there opportunity for interaction?**

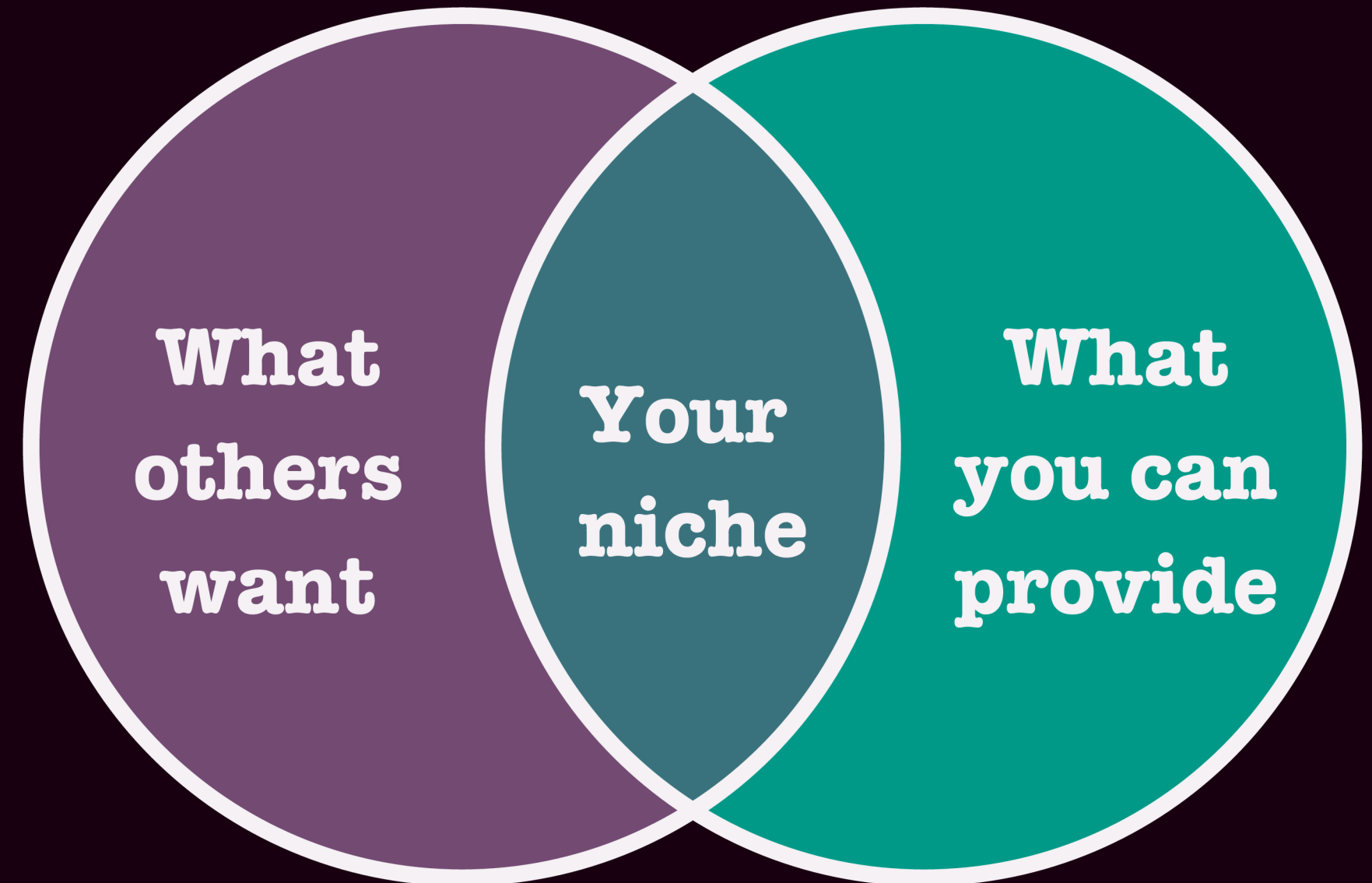




## *Live in 3, 2, 1...*

1. **Know your set up**
2. **TEST EVERYTHING**
3. **Storyboarding is your friend**
4. **Use your Format to your advantage**
5. **Find your niche**
6. **Learn from others**
7. **Plan the Moderation**



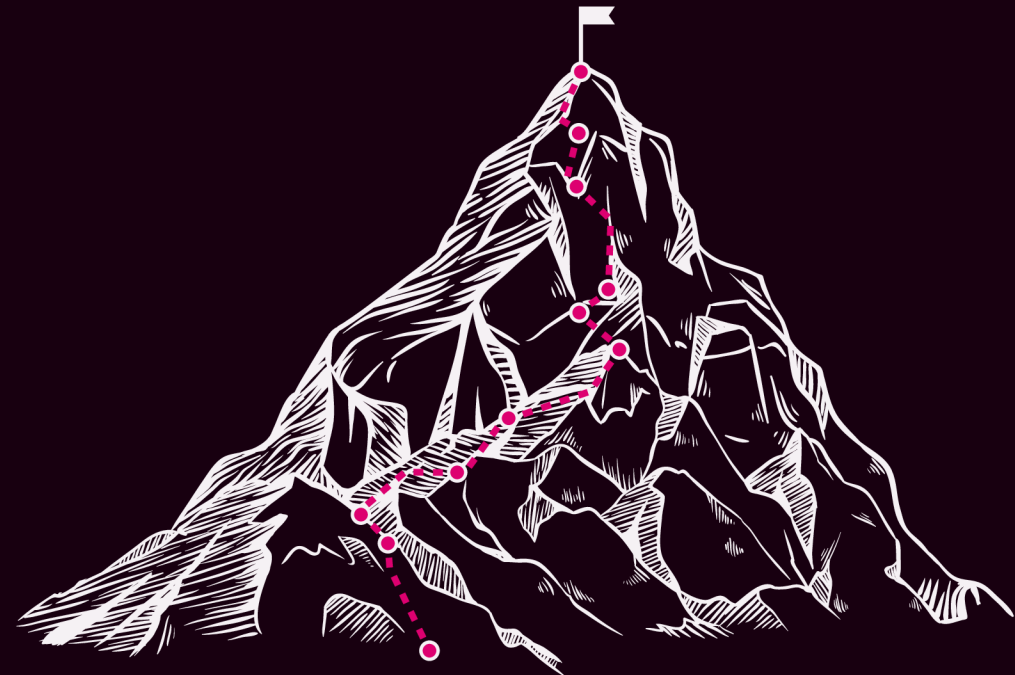


### **Types of Added value:**

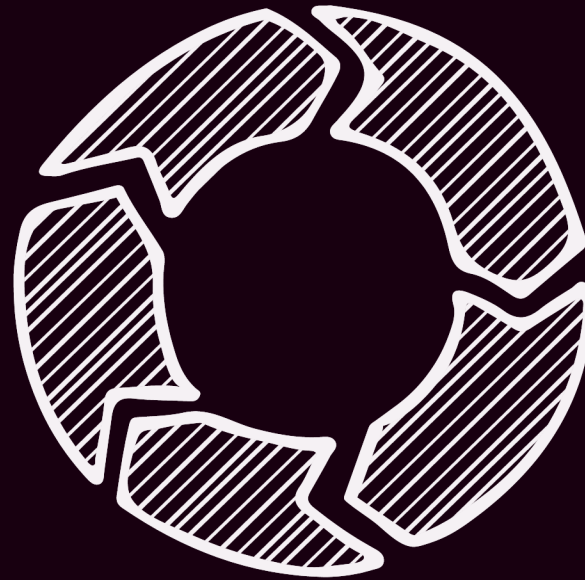
- **Make life easier for others**
- **bridge knowledge gaps - structured digestible content**
- **align interests to organizational needs**
- **be proactive not reactive**



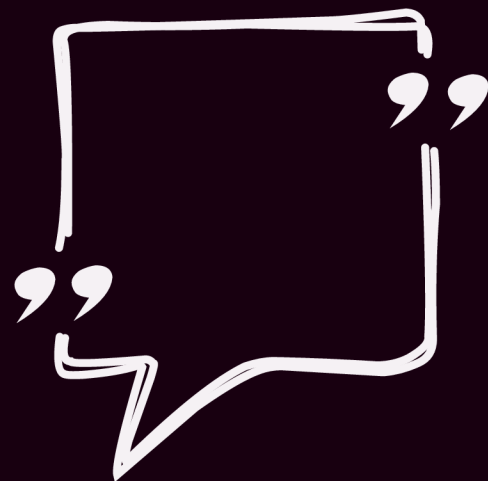
# MAKE IT A STORY



***The Quest***



***Voyage and  
Return***



***Anecdotal***



***Comedy***



***The  
Mystery***



# **Consume the content you want to make!**

**Video Essay – 3Blue1Brown, CGP Grey, StandUpMaths, Tom Crawford**

**Vlogs – Numberphile, Ellie Sleightholm, Harry Surplus, BEHIND THE RESEARCH**

**In Print – Ian Stewart, Matt Parker, Hannah Fry, Kit Yates, Chalkdust Magazine,  
The Aperiodical, Terrance Tao**

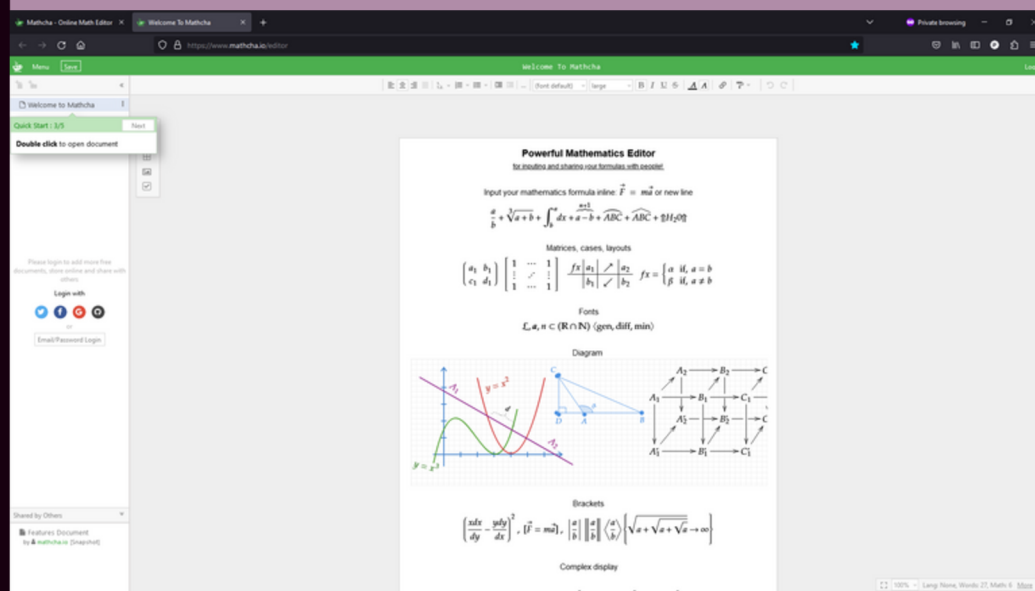
**Podcasts – The infinite monkey cage, The Numberphile Podcast, Mr Barton Maths,  
How to make a science video, THE UNSTABLE FLUID PODCAST**

**Social Media – /r/DataisBeautiful, @neildoesmaths (TikTok),  
@thejennypowerhour (Insta)**

**LiveStreams – The Knowledge Exchange, KATDOESMATHS, DrSimonClark, An  
evening of unnecessary detail**

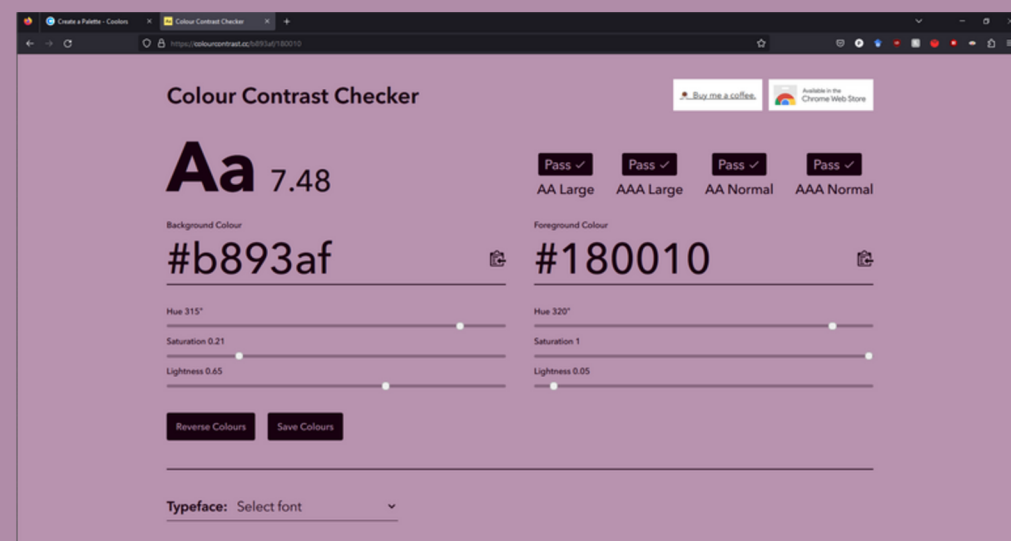


# Tools of the Trade: Maths but make it pretty!

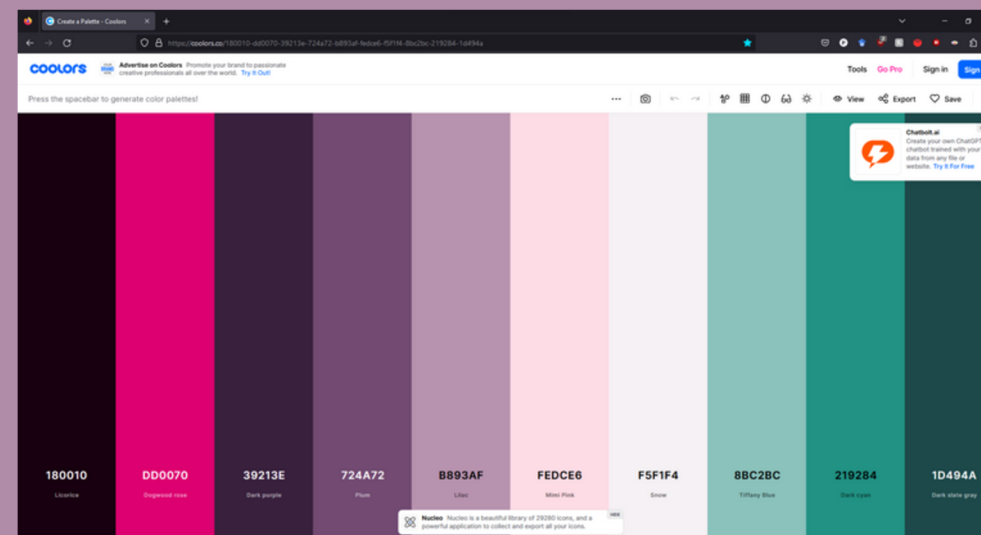




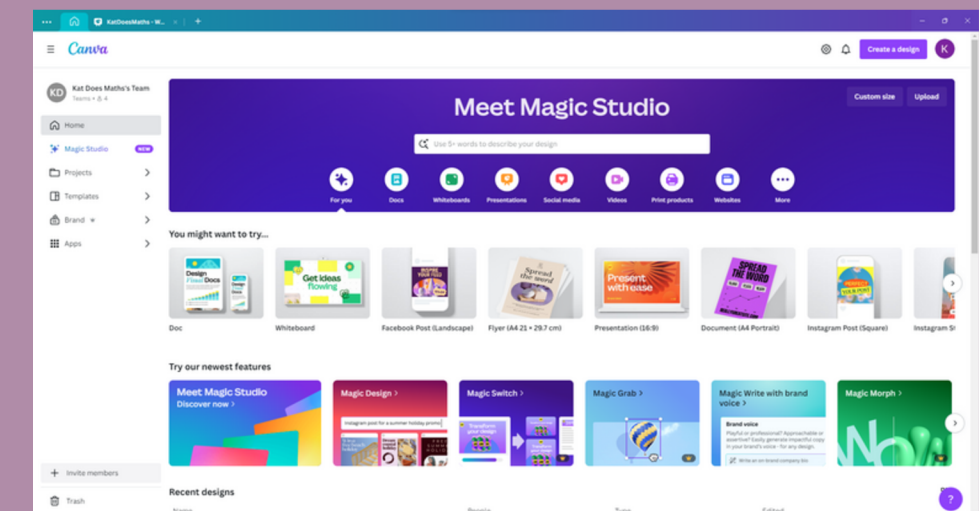
# Tools of the Trade: 'Brand' Aesthetics



<https://colourcontrast.cc>



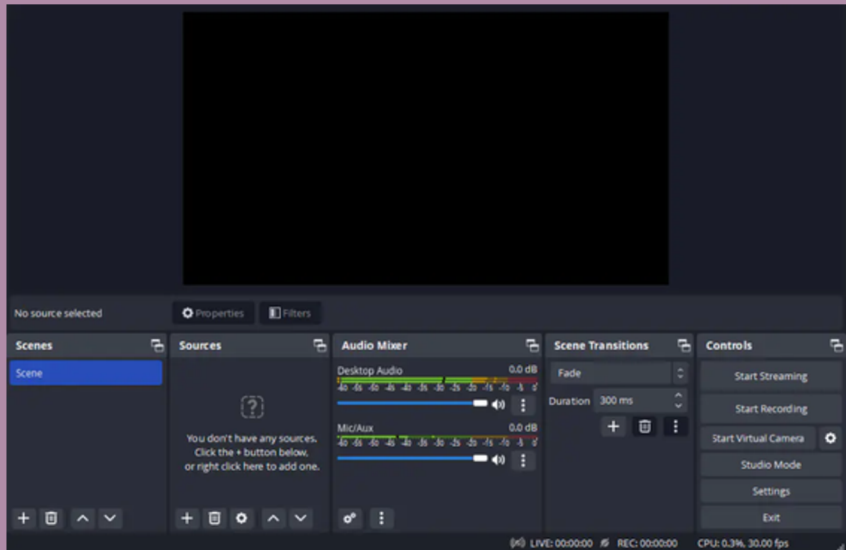
<https://colors.co/>



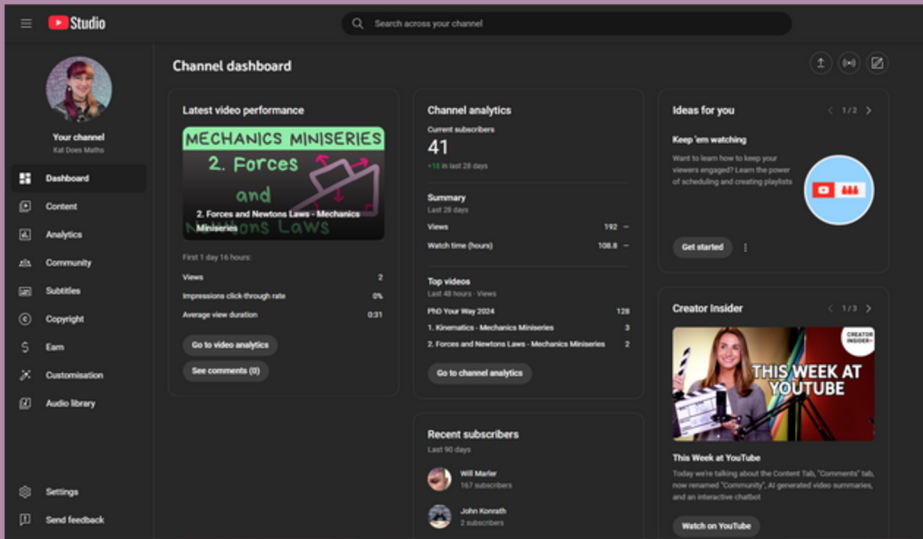
<https://canva.com>



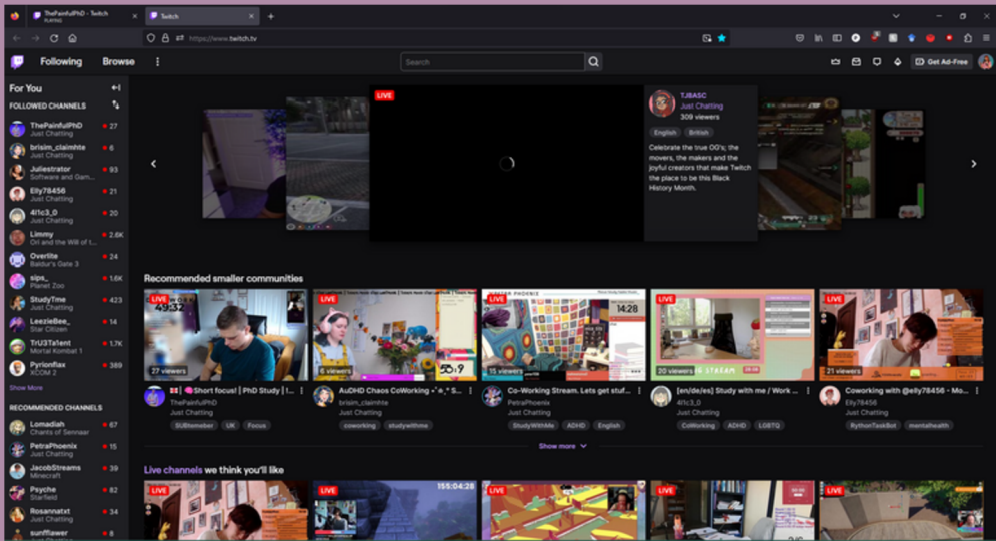
# Tools of the Trade: LiveStreaming



Open Broadcasting  
Software (OBS)



YouTube



Twitch



## **My advice:**

- **See what's missing from what's out there**
- **Consume the media you want to create**
- **Experiment and iterate**
- **Think about mutual benefit**
- **Don't wait for permission**
- **DO IT SCARED**
- **It's okay to evolve**





# PHD YOUR WAY



**22 October 2025**

**14:00 – 16:30 GMT**

**Free UK Maths PhD Information Event**

PhD  
Your  
Way

## AGENDA

- **Info Booklet**
  - Before the event get sent detailed, easy to read information about each institution.
- **Talks**
  - What a typical day in the life can look like from a current PhD Student.
  - Admissions and the application process from a current admissions tutor.
- **PhD Panel**
  - Live curated Q&A session with a range of current PhD students.
- **University Fair**
  - Visit a virtual university fair and get the opportunity to talk to current PhD students from a range of institutions.

**Reigster  
to attend!**



**<https://sites.google.com/view/phd-your-way>**



# Thank You

**Dr Kat Phillips** (she/they)

**Innovation Research Associate**

**@katdoesmaths**

**<https://katdoesmaths.me>**

