## Constructions, loci and three-figure bearings
### A race to the gig: Bearings and loci

No. Oh no.

No!

Mae! Mae! Can you hear me?  Are they on yet!?

I don't know how to get there.  That's the point.

All that money for a festival ticket and I am not missing them.

They're my favourite band.

But you told me to go this way.

Is that them playing?

I can't use maps, I've got no data signal.

Hang on, I've got a compass app.

Did you say 81 degrees?

I heard 81 but that could be 81, 181, 281?

I don't want to get it wrong!

Look the proper way is to always use three digits - 081 degrees.

OK, look I'll take it from here.

Right, I know how to work out a bearing.

You need to give all the instructions clockwise from north.

First of all let's find north.

So start with north. Great that's north.

Now we've got to turn clockwise.

Clockwise is always turning to the right.

The circle is split up into 360 degrees.

Let's see if we can find 081 degrees.

There we go.

So from north to 081.  Way to go!

Oh no I hate dogs!

(DOG GROWLS)

They look quite vicious.

(DOG GROWLS)

Well, if they weren't on a lead.

I know all about this.  It's loci that's what it is.

Because of the length of the rope,  the dogs can only move

a set distance from the post and from the fence.

The path they follow is the locus.

So if I imagine this as a plan with the post and a fence and me here.

Dog one has a lead of say four metres, he can run round and round the post.

So the path that defines his locus is a circle.

On the other side the lead of Dog two can slide up and down this section of fence.

So the locus of the line between the two fence posts would in theory be this.

But in the real world the fence will keep the dog in this area.

So if they both rush me at once.

There's still a small corridor for me to get through.

Slowly does it...

(DOG GROWLS)

careful there...

(DOG GROWLS)

Stay where you are.

(DOG GROWLS)

Phew!

Right then, let's get to that gig.

Wahey!

(ROCK MUSIC)

(DOG GROWLS)