

Euclidean and non-Euclidean Geometry (MA3101)

WELCOME!

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Lecture 1: The window-taping experiment

- 1 Assign a **director** in your team. Everyone else is a **taper**. Get a roll of tape and go to your team's designated area.
- 2 Pick a spot for your director, with a view of some straight lines through a window. Mark it with your team number.
- 3 Director: stand at the director's spot, cover one eye and look out the window. Try not to move your head! Direct the tapers to make a picture with tape of the outline of some features that you see. Stick to features with straight edges if possible.
- 4 **Tapers**: follow the director's instructions as closely as you can. Do what they tell you, don't look at the scene outside!
Directors: give very clear instructions, loudly if necessary!
Remember the tapers can't see what you can, they are relying on you.
- 5 Spend 15 minutes on this artwork, then we will admire it (details of that on next slide).

Is it mathematics? Is it art?

- 1 Take a few photographs of your team's work, including one from the director's position.
- 2 Take the director's marker away (but remember where it was).
- 3 Wander around and admire the work of the other teams. Figure out where their director was positioned.
- 4 Think about the following questions.
 - If a line outside is parallel to the window, what can you say about its taped image?
 - If lines outside are parallel to each other, (when) are their taped images parallel on the window?
If the taped images are not parallel, where is their intersection point on the window (in relation to the position of the director's eye?)