Top tips for teaching GCSE resit: Jenny's documentation

(from https://www.ncetm.org.uk/resources/53350)

Challenges/issues identified by the teachers present:

- Using the equipment - students find protractors and compasses difficult to use.
- Constructions is tricky and time consuming - roughly 50:50 split in the group on whether it is taught or not.
- Students can find angles but don't remember why and then don't get the marks for giving reasons.

Resources/ideas:

Door protractor

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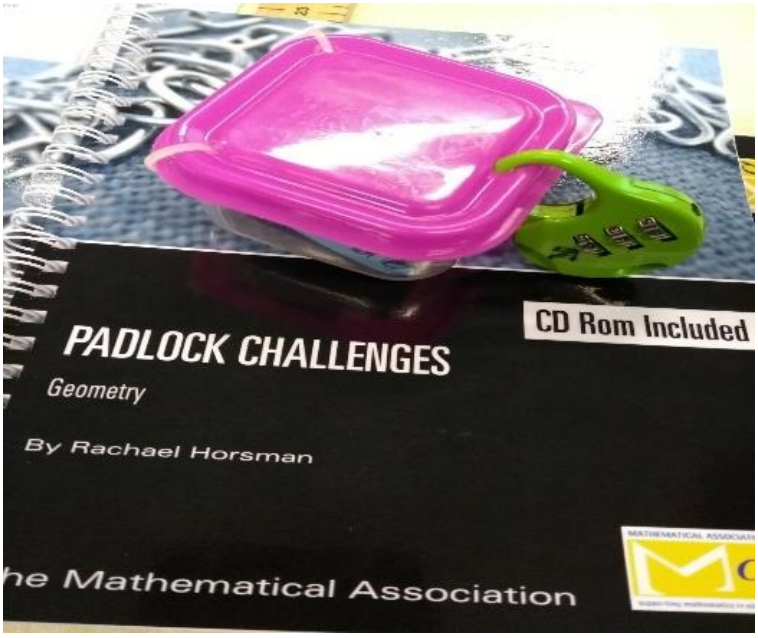
Bearings
Put a north line in gaffer tape on the floor or ceiling

Angles in parallel lines
Trellis works well for doing moving demonstrations

Go back to conceptual understanding of angles by standing up and turning or using string. Important students understand that the lines (arms) can be as long as you want but the angles don't change. This can then lead on to similar triangles

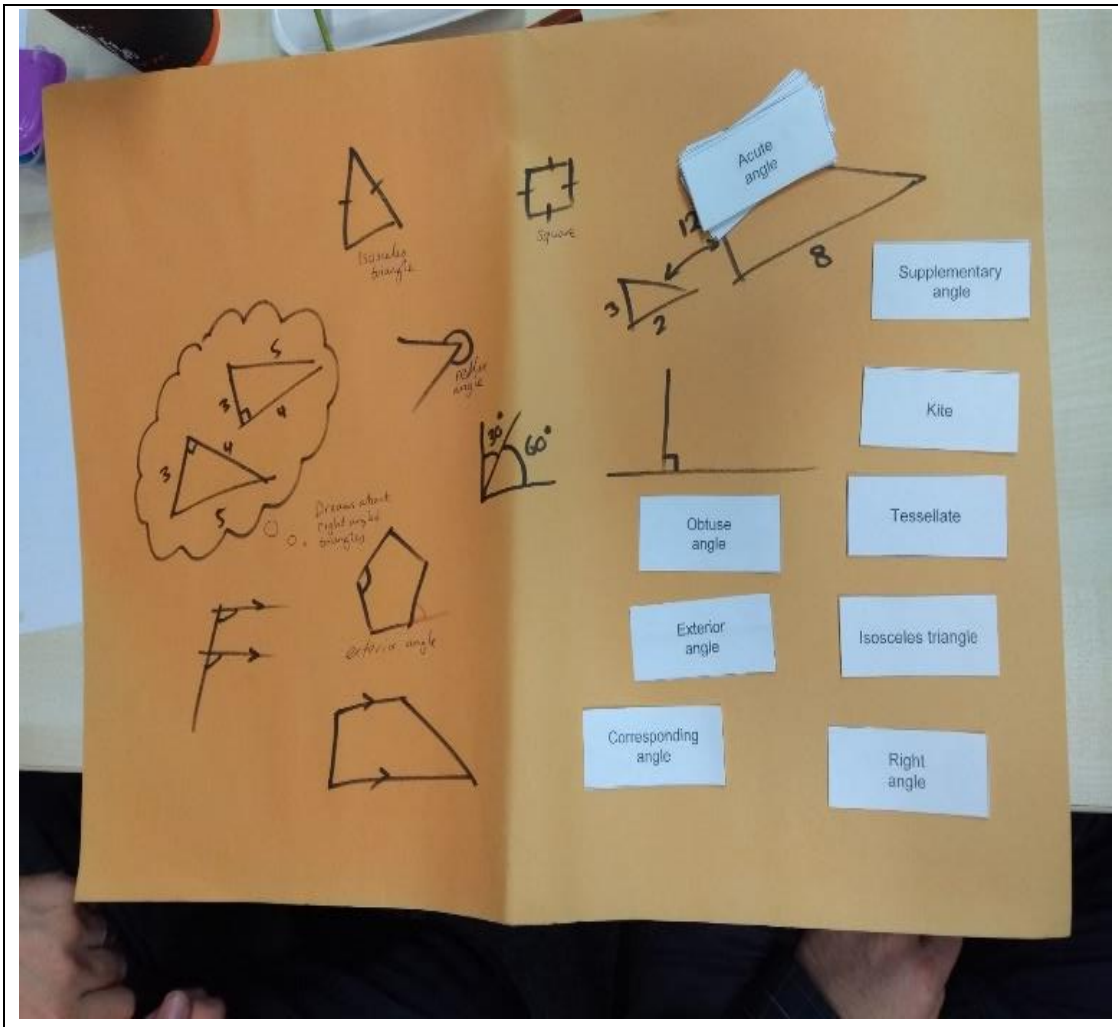
When finding area of triangles give all possible sides so students must choose which side to use. This site generates triangles that work for this and for Pythagoras' Theorem.

Unlock the box! Find the angles, add them together and use the total as the code to open the box. A few sweets inside can be surprisingly motivating. Students have to finish all the questions and are motivated to check (and correct) them if the box does not unlock. Boxes and locks are available from pound shops.

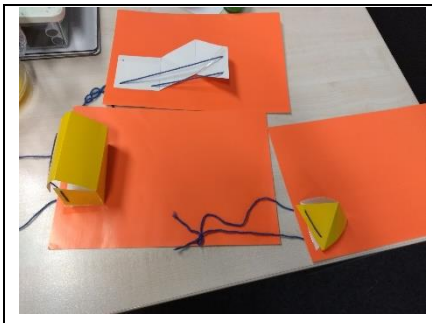


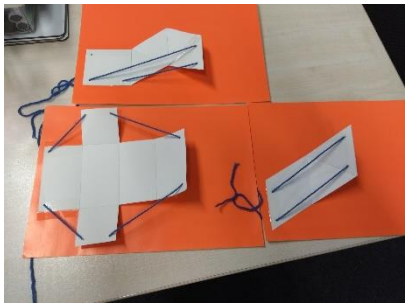
The Mathematical Association has a selection of ‘padlock challenges’ books: some of the questions are available for free from the STEM Learning library.

Jenny S brought plastic shapes that she uses to identify properties. Having something to hold and move around gives a better understanding and chance to try things.



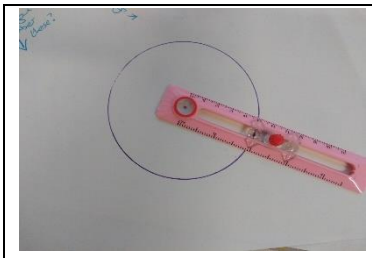
Tony brought an activity where students draw things from descriptions



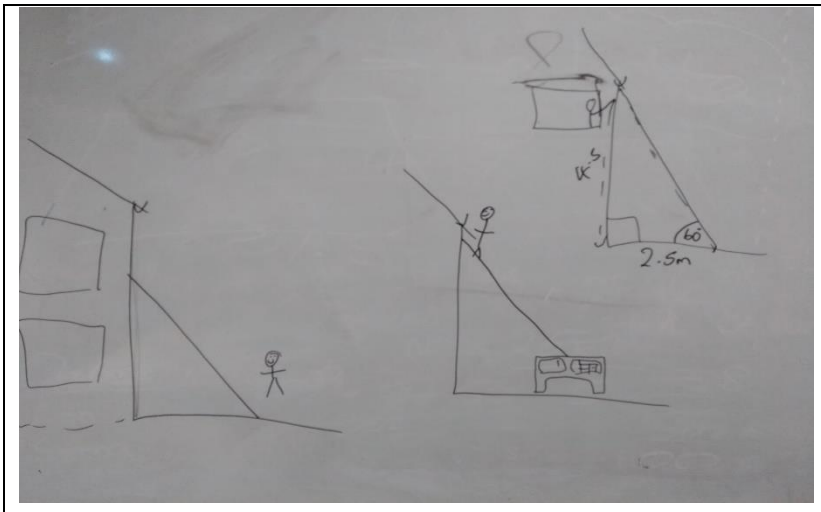


One of Richard's NQTs made nets that fold up into the shapes when you pull the string.

There is an article about making them in the ATM journal.

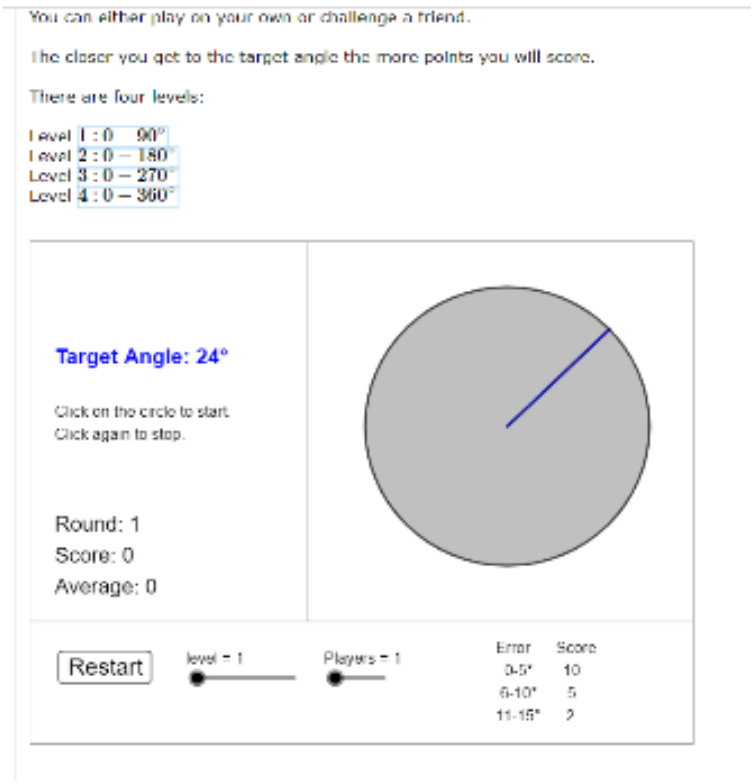


At the last meeting someone mentioned compasses without a point. Everyone got one to take away and try out.



Pythagoras story from Jenny S

Here is my friend at his 2-storey house and he's got guttering. He got his ladder and he leans it against the wall and it's too short. He got a rabbit hutch and balanced the ladder on top of the rabbit hutch to get to the top of the house. It flipped the rabbit hutch and he fell off. If he'd have understood Pythagoras' Theorem he would have known which size ladder he needed.



[NRICH angle generator]

Richard’s advice: Works well on the whiteboard in teams but have a student click so you don’t get blamed for the delay!