Circle Theorems & Hula Hoops!!

Inspired by @MrReddyMaths' guest blog post on his blog my Y10 class have been creating Circle Theorems using Hula Hoops bought at 'Pound World' today!!

To see Mr Reddy's blog post click http://mrreddy.com/blog/2012/12/guest-blog-circle-theorems-and-hula-hoops/

To visit the 'Pound World' website go to http://poundworld.net/. This lesson/blog post is part of my experimentation with #poundlandpedagogy.

This was our 1st lesson back after the Easter holidays and with a few personnel changes to the set due to recent mock results I felt it would be a good idea to revise over a few topics this week to get the class back into the swing of things and to provide links to the topics in the Unit 2 paper that we still need to cover. Another reason for looking at Circle Theorems again is because I didn't feel the class learnt enough when we covered them the first time round, the lesson, for whatever reason, didn't seem to sink in and so we needed to do more work here - the question/s that have come up in mock papers the class have done weren't fantastically well answered, as a whole group.

So, I started the lesson by using my Mathematics 4 pics 1 word Circle Theorems resource - see my previous blog posthttp://mrcollinsmaths.blogspot.co.uk/2013/04/mathematics-4-pics-1-word-circle.html (there's a link in this post to my resource on the TES available for download). I then, using the words in the starter activity went over the circle theorems on the board. I also had, on the tables prior to the class coming in, a sheet of QR Codes that linked to my Circle Theorem videos on my YouTube Channel (mrcollinsmaths). The idea then was for the class to use the videos and the notes I had written on the board to recreate one of the Circle Theorems. I asked groups to volunteer for a particular circle theorem at this point and this created a bit of competition with certain groups wanting to do certain Theorems over others. Once the groups had their circle theorems assigned I showed them (in the style of 'Blue Peter') one I had made early to model what it was I was expecting. Having thought about it now, I should have shown them Mr Reddy's blog post (darn hindsight)!

So, here's one I made earlier...

I used a few of my other purchases at 'Pound World' including the 'Memo Cube' 'post-its' (however these aren't sticky) and the masking tape to secure the rods.

The rods I got from our awesome D&T department. I luckily caught one of the NQT teachers in the car park and told him what I was planning to do - we then went to the D&T workshops and sliced up some wooden rods they had lying around so I could use these as the tangents, chords, radii, diameters etc! These were a great help and it pays to know all the departments in your school - you never
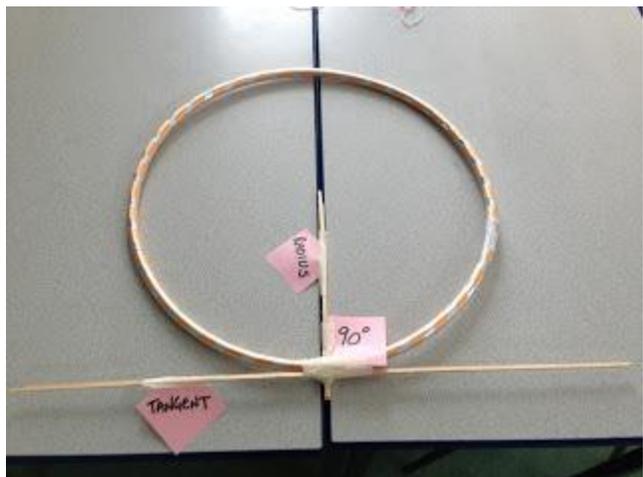
know when you're going to need to call on them for help!

This 'model' then gave the class the basis of what I was looking for. After a short health and safety warning about splinters I gave the groups their hula hoop, wooden rods and sellotape/masking tape etc. At this point I had quite a few of our faculty in the room as I had invited them in if they were free to see what we were doing (and give me a hand). A few of them went and found us some extra sellotape as the masking tape wasn't great for holding the parts in place. Nonetheless, look what the class created...

Angles drawn from the same point

Angles drawn from the same chord

Angle in a semi-circle (angle at the circumference is half the angle at the centre)
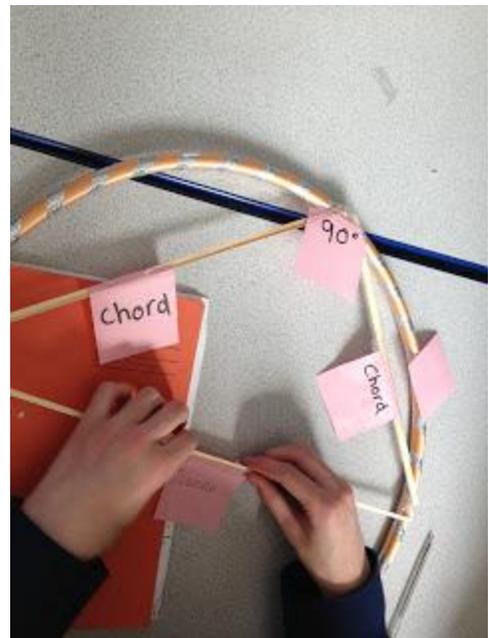
Cyclic Quadrilateral (opposite angles = 180 degrees)

Angle at the circumference is half the angle at the centre

After the class had been given 15-20 minutes to complete their circle theorem hula hoops I asked one representative from each group to explain to the rest of the class what circle theorem they had done, explain the relative parts of each etc. I then collected them all in and handed out to the class a set of circle theorem past paper questions from the 'bland.in' website. The class then used my YouTube video and all the Theorems (now on the floor of the wall at the front of the class) to answer the questions. I was particularly impressed at this point that some of the class had got our previous lessons notes out of their exercise books to refer to too!

Here's all of them at the front of the class

 All of them, at the front as a reference - I just need to 'hang'/ put these up on one of the walls in the room for future use!

I (and I hope the class) really enjoyed this lesson. I feel they were much more secure with their knowledge of circle theorems at the end of the lesson having gone over the answers to the questions in the 'plenary'.
I know need some more Hula Hoops to do a session on Venn Diagrams (as suggested by a few of my Twitter followers following my #poundlandpedagogy tweets)!