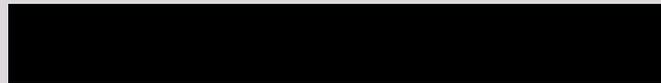


Maternity Leave Project 2020



Introduction

In no way did what I had envisage for this maternity CPD, happen. I literally chuckle to myself thinking about what I had originally planned for my short maternity leave, let alone when the pandemic hit.

My first maternity leave was idyllic for me, again it was a planned short maternity leave, returning after 12 weeks. In this short time, I completed the organisation of a teach meet, quite a large scale project that had been working on for most of the school year, something I was not prepared to let go of just because I was bringing a little human into the world. This was something I was so proud of, that I had beaten brain melt, the fear of wasting the time I was blessed with from each and every nap.

I entered my 2nd pregnancy with this same hope of working like this, getting some well earned nap time to get my “teacher nerd” on. Visiting Grandmas house and hiding in Grandads office whilst children are doted upon. The world had other ideas, grinning widely with a COVID-19 middle finger stuck up at me.

Boris called lockdown on my son's 20th day of existing, so Grandmas safe haven was out of the question. This wont be so bad, no work for anyone! Just keyworkers. Dammit! Both my husband and I are keyworkers. So I waved bye to Daddy and hello to remotely helping my team and colleagues wrestle with grading our students.

Lockdown turned very quickly into a quite lonely process with a 3 year old for company and conversation. A snack requesting, bum wipe demanding, a “play with me”, attention demanding demon 3 year old. So my first battle was to tackle , how do I CPD without sacrificing basic human care of my children...

What CPD did you complete?

In between the milky sick and chopping apples into non-choke-able sized pieces, I'm thinking how can do this before my brain melts.

I basically surmised that unless I can do it, sat down, with one hand or in the 20 minutes where my husband wasn't completely useless, it wasn't going to happen.

My inner teacher nerd had prepped, ready for mat leave, but there was little point. COVID-19 had seen to that. My main aim was to think about how I could prepare myself to take a step up the career ladder, bridging the gap. Making myself the most employable person ever.

My original action plan was as follows...



Action Plan

Action	Impact on Student/School/Professional skills Outcomes	Timeline
<p>Develop personal and professional skills in order to develop as a practitioner in preparation for taking steps up the career ladder.</p> <ul style="list-style-type: none"> • Research timetabling in a secondary school setting • Research timetable training and potentially apply for course • Improve data tracking skills • Speak to colleagues for best practice • Speak to colleagues on how they developed their career • Research assistant head jobs and what their requirements 	<ul style="list-style-type: none"> • Understand impact of timetabling • Gain insight on timetabling methods to research best possible method. • To be able to assist the current timetable at my school. Currently only 1 person that does this. • Improve personal skills and attributes creating a full and diverse CV. • Link new skills to current role, making further improvements to the department. • Develop network of likeminded peers. • Develop monitoring of curriculum delivery and outcomes 	<p>KIT DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> • Use social media to research current practice • Research possible CPD • Speak to STL about timetabling • Speak to XXX possibly interviewing her for how she developed her career • Check TES jobs for Assistant head jobs • Update cover letter <p>March</p> <ul style="list-style-type: none"> • Identify year groups needing data analysis • Research data collection methods • Research Timetabling courses • Check TES jobs for Assistant head jobs <p>April</p> <ul style="list-style-type: none"> • YouTube tutorials on T6 timetabling • Twitter research • Check TES jobs for Assistant head jobs <p>May</p> <ul style="list-style-type: none"> • Check TES jobs for Assistant head jobs • research curriculum models
<p>Develop Technology department curriculum to ensure a robust 7 year curriculum</p> <ul style="list-style-type: none"> • Create curriculum map • Audit curriculum, analyzing areas for development • Revisit SOL's • Revisit Assessments across key stages • Plot assessment timings • Create curriculum monitoring plan • Review staff training needed across all subjects • Question how "Cultural capital" enriches curriculum 	<ul style="list-style-type: none"> • Optimum outcomes come results day for students • High engagement from students in lessons • Manage exam stress for students • Encourage student curiosities within the subject • Clear vision shared with team, allowing provision of learning of high quality and outcomes • Habitual learning and expectations of students clearly understood and shown • Fully trained staff are confident in curriculum and courses they are delivering which transpires to excellent lessons • Reflect on student learning to see if curriculum design is effective, respond by adapting curriculum and achieving better outcomes. 	<p>KIT DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> •Research curriculum maps from other schools – what works well? •Meet with team and review current SOLs identifying areas for improvement •Ask staff who would like Curriculum CPD •Review assessment calendar <p>March</p> <ul style="list-style-type: none"> •Create curriculum mapping document •Create visual curriculum map with student speak •Research curriculum CPD suitable for team •Twitter research "Cultural capital" <p>April</p> <ul style="list-style-type: none"> •Review links between key stages and retrieval knowledge •Liaise with other school departments to create an assessment calendar that compliments others assessment calendars •Review links between KS3 national curriculum and KS4 courses <p>May</p> <ul style="list-style-type: none"> •Create curriculum review calendar •Link staff with potential curriculum CPD •Review recording assessment outcomes

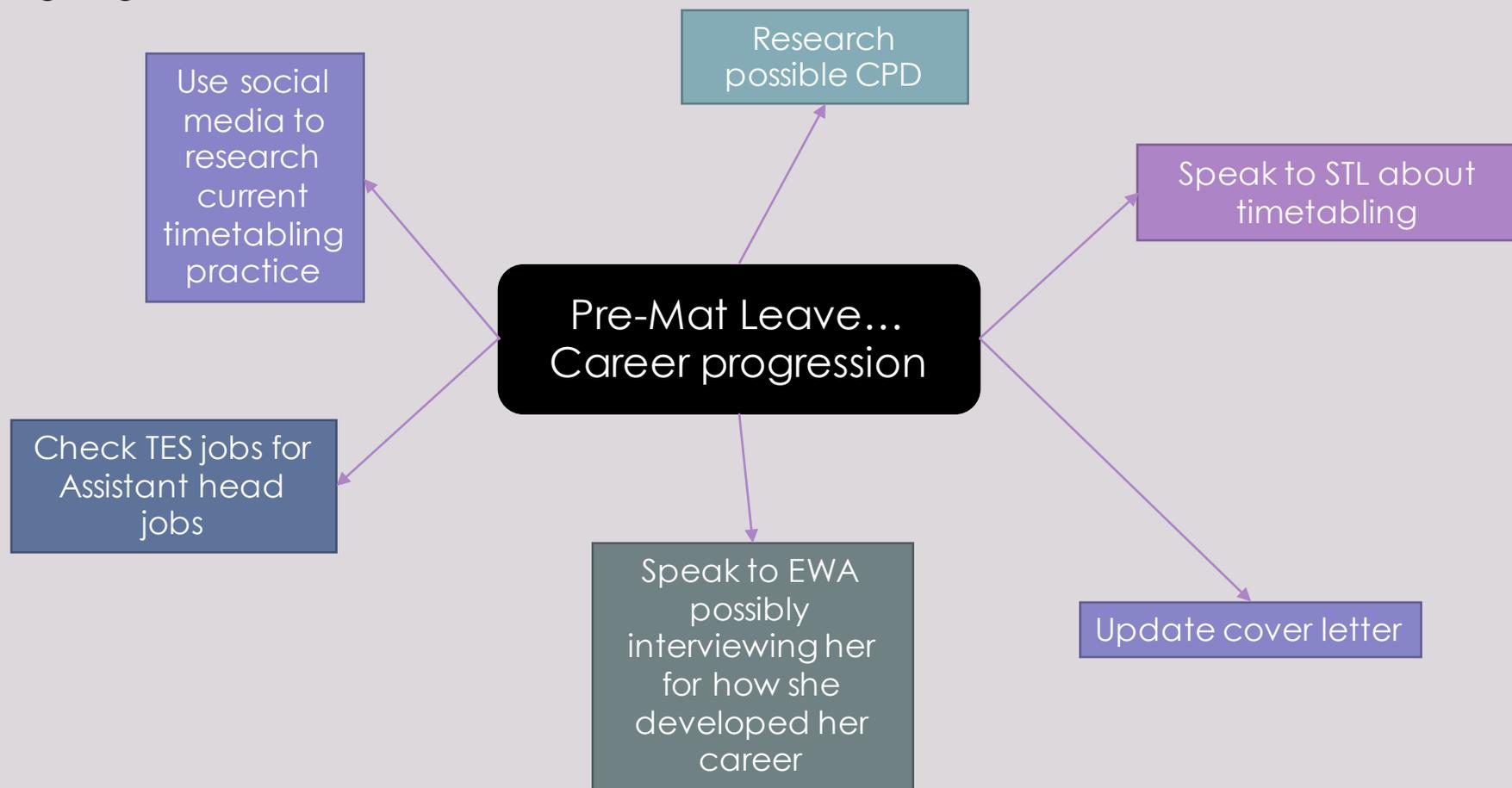
What CPD did you complete?

Pre-Maternity leave

Action plan point 1;

Develop personal and professional skills in order to develop as a practitioner in preparation for taking steps up the career ladder.

Action plan point 1 was my main focus and so motivation before mat leave was HIGH. For a while I have beginning to feel stunted and bored at my current job so it was easy to get going on this

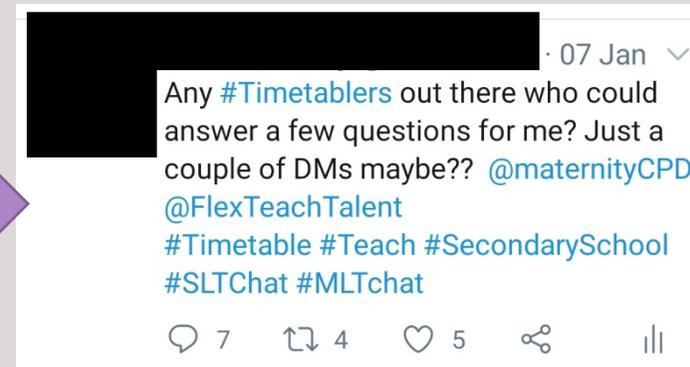


Pre-Mat Leave... Career progression

Use social media to research current timetabling practice



Tweet out for timetabling advice



Research possible CPD



What timetabling CPD is there and can I access??

Check TES jobs for Assistant head jobs



I find an opportunity that's local and very interesting.

School uses T6 for timetabling

Update cover letter



The above point links with this

STL is an SLT member at my school, he is in charge of timetabling, he can be a bit of a grump but I like him and have a lot of respect for him, he is more than happy to help me out and let me observe timetable construction and will always explain everything he does when we talk department timetabling. An STL quote that has stuck in my brain... "...you either have it or your don't when it come to timetabling"

Speak to STL about timetabling

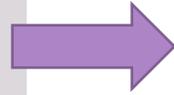
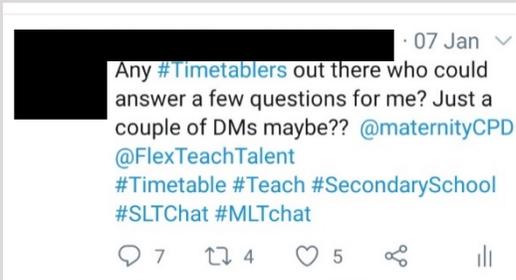


Speak to EWA possibly interviewing her for how she developed her career



Managed to get in a preliminary conversation with XXX before I left, she's a very interesting member of SLT, has 3 primary school children and is a well established, something to aspire to.

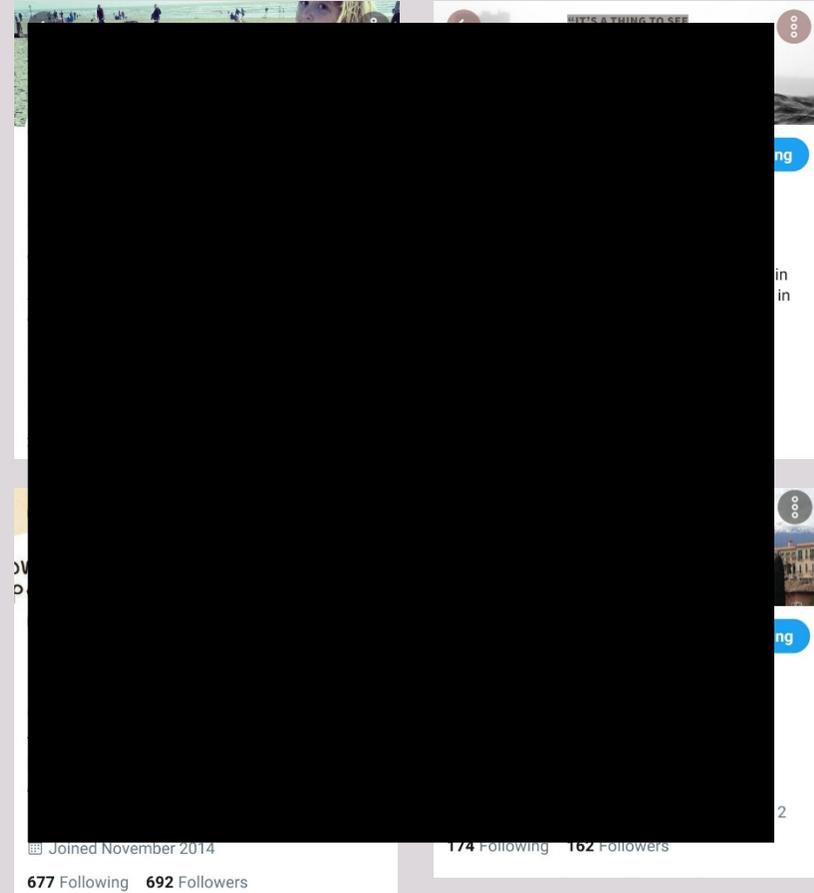
Use social media to research current timetabling practice



Hello and thanks for replying to my tweet... so I'm about to embark on my second mat leave and I'm taking part in an accreditation for mat leavers with @maternityCPD . My main aim is to make myself really employable whilst I'm off but also address my career aspirations of wanting to be SLT by the time I'm 35 (now 32) - a goal I set myself quite early on. I have always had an interest in Timetabling and have tried to be involved as much as possible departmentally. I just want some advice where to start really or what kind of questions I should be asking my timetabler at my school to help me gain better insight. He is very helpful but as a DHT he has little time and so I want to utilize every moment poss. I have been watching him and some youtube bits on T6. But where next? Something I was thinking of doing for my mat leave thing was creating a proposal for my current school on a new timetable curriculum structure... with students and staff wellbeing in mind... what do you think? Too ambitious?

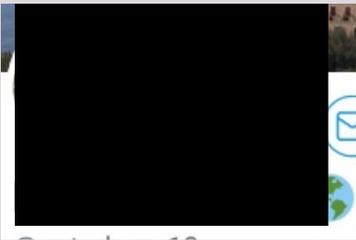
07/01/20, 19:47 ✓

Responders...



This teacher included a number of screen grabs of conversations she had had via social media. For GDPR purposes, we have not included these images in the example documentation.

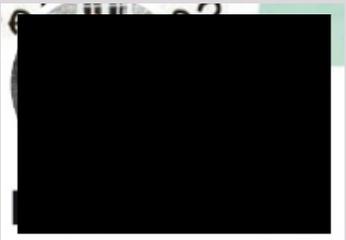
What Advice I Have Taken Away From This...



1. Get on a course for timetabling
2. Look into designing your own curriculum model
3. Practice, practice, practice.



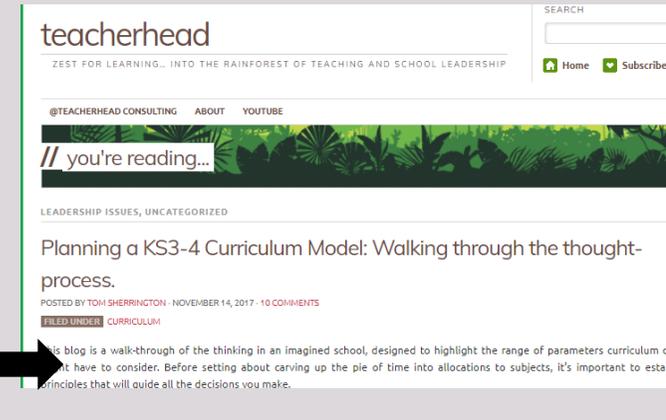
1. Work alongside your timetabler, don't try to reinvent the wheel
2. Research – read articles XXX recommended



1. Get an understanding as to the “why’s” of how your school timetable is constructed
2. Talk to the twitter community, see if you can organise a visit with another timetable.



1. Use @teacherhead resources about curriculum design
2. Be curriculum lead not financially led



Research
possible CPD

Personal research resources and starting points...

Dylan Wiliam's (2013)
Principled Curriculum Design
booklet published by the SSAT
(The Schools Network) Ltd.

Tom Sherrington's Curriculum
blogs - @TeacherHead

<http://www.edugeek.net/forums/mis-systems/186899-nova-t6-online-course.html>

Interesting thread that
suggests the widely used
Nova T6 is on its way out -
what are the alternatives?
Perhaps possible personalise
software??

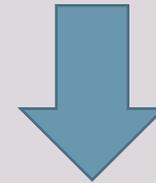
'Timetabling – A Timetabler's
CookBook' by Keith Johnson

<https://teacherhead.com/2015/05/23/the-art-of-timetabling-principles-and-priorities/>

Possible courses to attend

<https://www.capita-sims.co.uk/training/course/1366/curriculum-management-using-nova-t>

<https://www.schoolbusinessservices.co.uk/sims-training-courses/sims-nova-timetabling-3-day-course/>



Talk to CPD manager, see if this is
viable. It cost around £800, so the
school would have to want to invest in
a second person who can timetable.

Check TES jobs for Assistant head jobs

I do love a good 'nosey' on TES most of the time, the amount of times where I have fallen into a job search rabbit hole, before I know it, its 2 hours later and I'm reading the Ofsted report for a school in Guernsey, (ridiculous, as I have no intention of moving a school further than 30 minutes from my house!) During in one of my sessions, I discovered the school I attended as a child was looking for an Assistant head, (at this point I was 8 months pregnant).



I remember seeing this amazing lady, present on behalf of the MTPT project in 2017 about her first maternity leave and how she interviewed for an assistant head position whilst 8 ½ months pregnant.

Feeling inspired, I made contact with XXX and asked her advice.

I wanted to visit the school, but the fear of an 8 ½ month pregnant bump putting me at a disadvantage.

Madeleines advice was great, she said I need to get the feel of the place, I know I went to school there but it was a long time ago and its been rebuilt.

The visit was an interesting morning as, I was shown around by my old head of 6th form, XXX. Surprisingly there were quite few teacher still there 14 years later. By chatting with XXX, I was able to ascertain the direction which my application and cover letter should lead. The bump was never mentioned and I did get taken up 3 flights of stairs in one go, (I though I was going die! At this point I was regularly taking the lift at work for 1 flight, let alone 3) So part of me thought he didn't realise.

Update cover letter

Things to take away...

1. Don't restrict yourself with the norm formatting of an application – you don't need to take the traditional approach
2. Don't be afraid to ask for advise

The main aim of this process was the experience, I got to revamp my cover letter and reflect with others expectations in mind. However, what I really wanted was some real feedback that I could work with. I didn't get an interview and had to prompt the school for any kind of reply or recognition with was disappointing, but maybe a blessing in disguise.

I did get some excellent advice from a colleague at my current school, he was a deputy but had been a head in the past and so could clearly advise what he looked for in an application. His advise was to keep my application succinct and even think about formatting in a table to clearly outline my experience with what they are looking for. He though my main issue was waffling on! Unfortunately his advise came after the hand in deadline, so I have a reasonable idea as to why I wasn't successful.

Cover letter updated to reflect an application for an Assistant Head position

Action Plan Point 1 – Timeline Reflection

	Target	Action completed
March	Identify year groups needing data analysis	Target on hold whilst focussing on timetabling.
	Research data collection methods	Target on hold whilst focussing on timetabling.
	Research Timetabling courses	Lots recommended by #EduTwitter, some courses found, need to speak to CPD manager on return to school – conversation face to face needed to fully present the benefits for the school
	Check TES jobs for Assistant head jobs	None suitable – looking for job within a 30 minute radius of my home
April	YouTube tutorials on T6 timetabling	https://www.youtube.com/results?search_query=nova+t6 https://www.youtube.com/user/SIMSIndependent/playlists https://www.youtube.com/user/sjwood140263 https://www.youtube.com/user/CapitaCS https://www.youtube.com/results?search_query=secondary+school+timetabling
	Twitter research	Constantly searching through twitter, regularly searching relevant hashtags
	Check TES jobs for Assistant head jobs	None suitable – looking for job within a 30 minute radius of my home
May	research curriculum models	Reading through Tom Sherrington Blogs
	Check TES jobs for Assistant head jobs	None suitable – looking for job within a 30 minute radius of my home

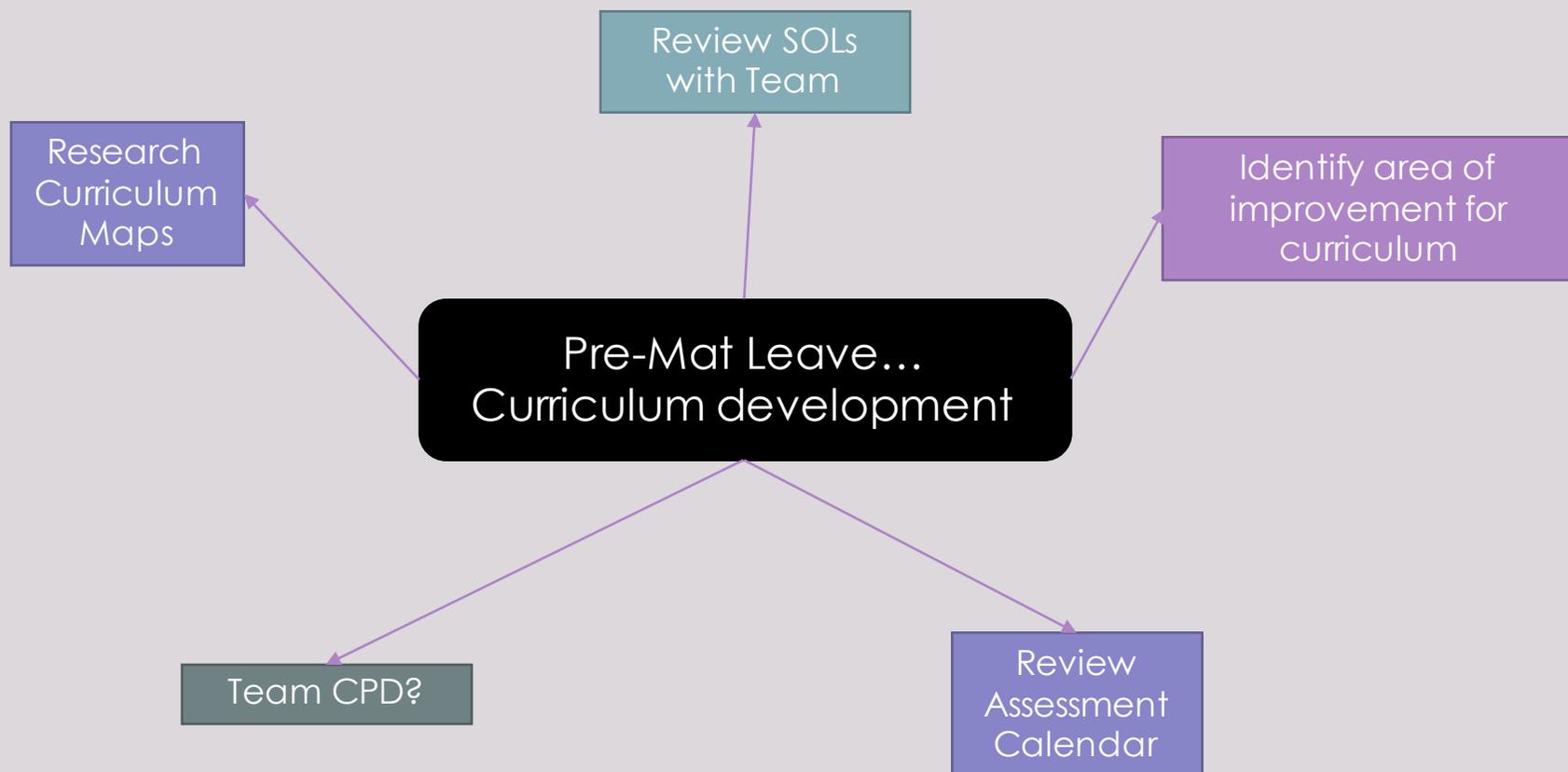
What CPD did you complete?

Pre-Maternity leave

Action plan point 2;

Develop Technology department curriculum to ensure a robust 7 year curriculum

Action plan point 2 will always be the forefront of how I work, early on in my career, improving curriculum and trying new things have always been my thing. So continuing with this in my maternity CPD made sense and would have happened regardless!



Pre-Mat Leave...
Curriculum development

I looked at soooo many examples... thoughts to follow...

Research
Curriculum
Maps

Linking up with my team was easy, I have a young team and so IT skills are pretty good and TEAMS video meetings were fine, unfortunately COVID-19 meant these meeting were dominated by Centre Awarded Grading

Review SOLs
with Team

This year would be the first completed cohort of all the course changes I have made to my schools curriculum, some attempt and minor amendments to KS3 have been made to support the changes, however , I feel further project approaches need to be adapted to reflect KS4 curriculum and not the traditional "research, design, develop, make, evaluate" model .

Identify area of
improvement for
curriculum

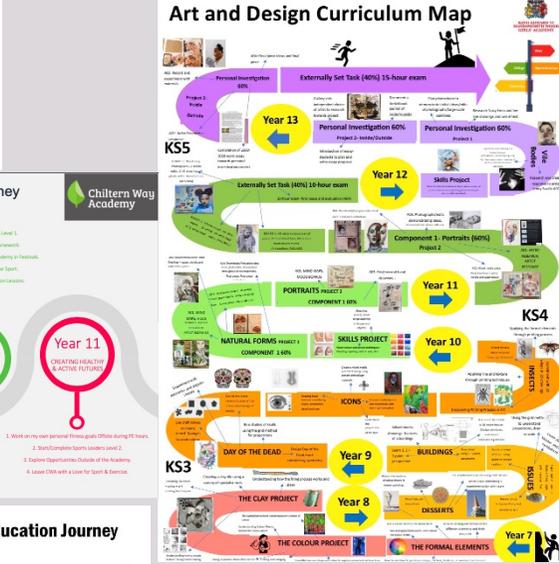
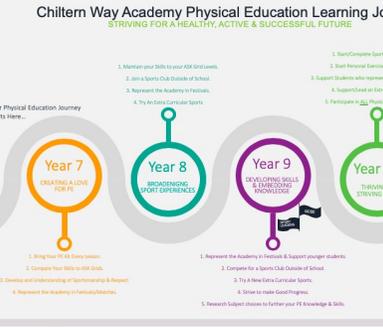
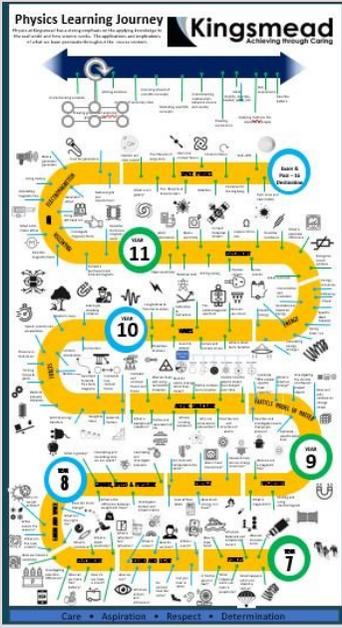
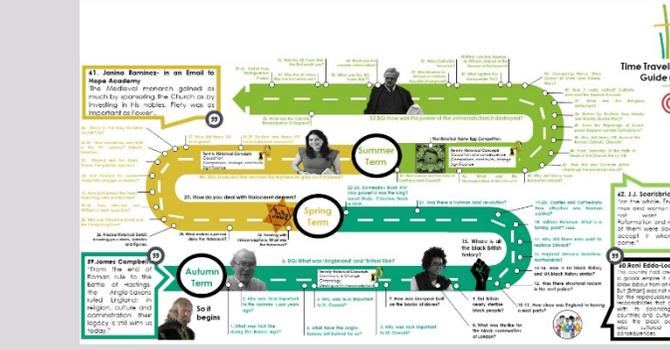
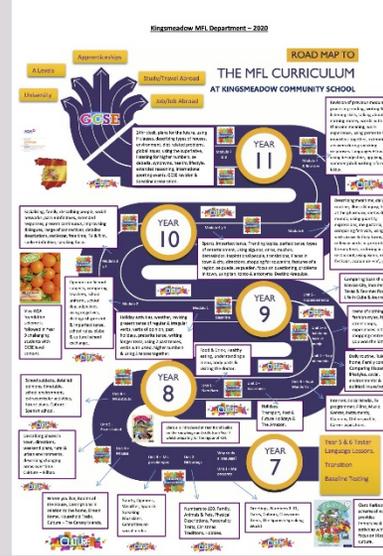
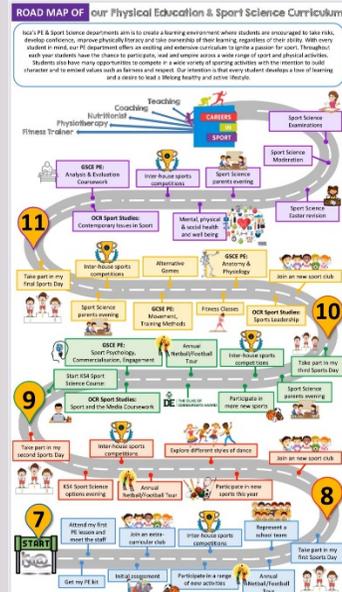
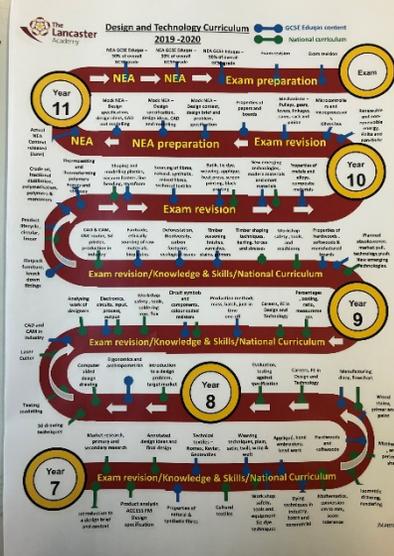
Review
Assessment
Calendar

Assessment calendar has been reasonably new to me and my school, assessments have always happened but not to a specific time period – the idea is to contribute your department calendar to the whole school one which is published to the students and parent/carers. I need a fresh look at it to see if its purpose is being addressed.

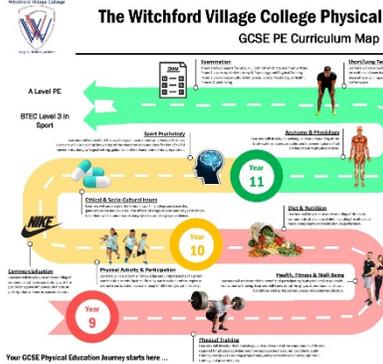
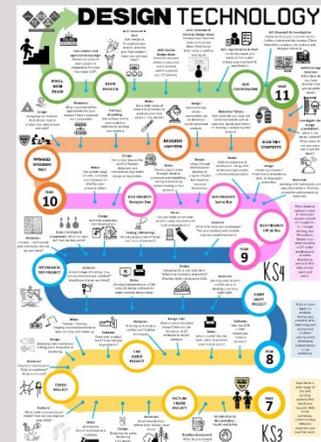
Team CPD?

Which of my team members need/want CPD and what kind?

Research Curriculum Maps



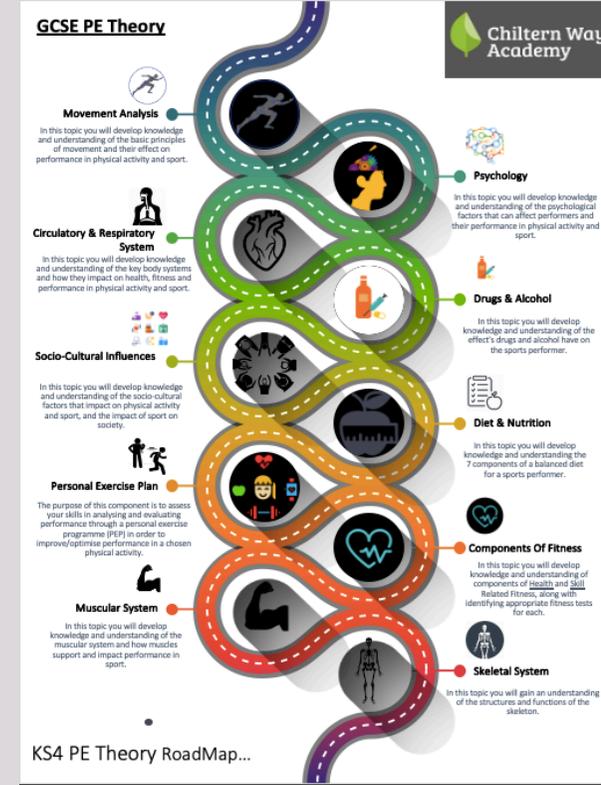
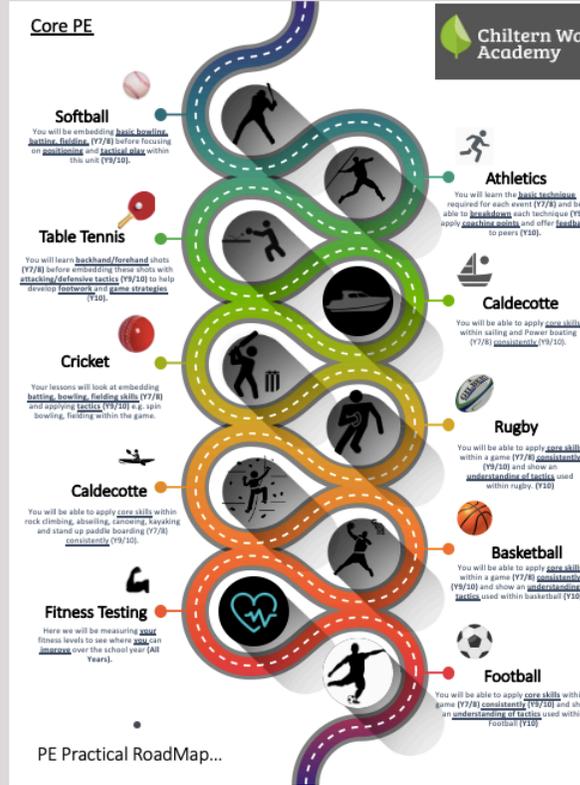
Lots of amazing examples I have found on multiple social medias. Lots of ideas and various approaches for sharing curriculum journey. Which approach is going to be best fit?



Research Curriculum Maps

Looking at all the examples, raised many points to me, made me ask several questions;

- What detail do I want?
- Do I need to separate theory and practical skills?
 - Who is this document for?
- Will I need to make it student friendly?
- How should this document effect teaching and learning?



Chiltern Way Academy Physical Education Learning Journey

STRIVING FOR A HEALTHY, ACTIVE & SUCCESSFUL FUTURE



1. Maintain your Skills to your ASK Grid Levels.
2. Join a Sports Club Outside of School.
3. Represent the Academy in Festivals.
4. Try An Extra Curricular Sports
1. Start/Complete Sports Leaders Level 1.
2. Start Personal Exercise Plan Coursework.
3. Support Students who represent the Academy in Festivals.
4. Support/Lead an Extra Curricular Sport.
5. Participate in ALL Physical Education Lessons.

Year 7
CREATING A LOVE FOR PE

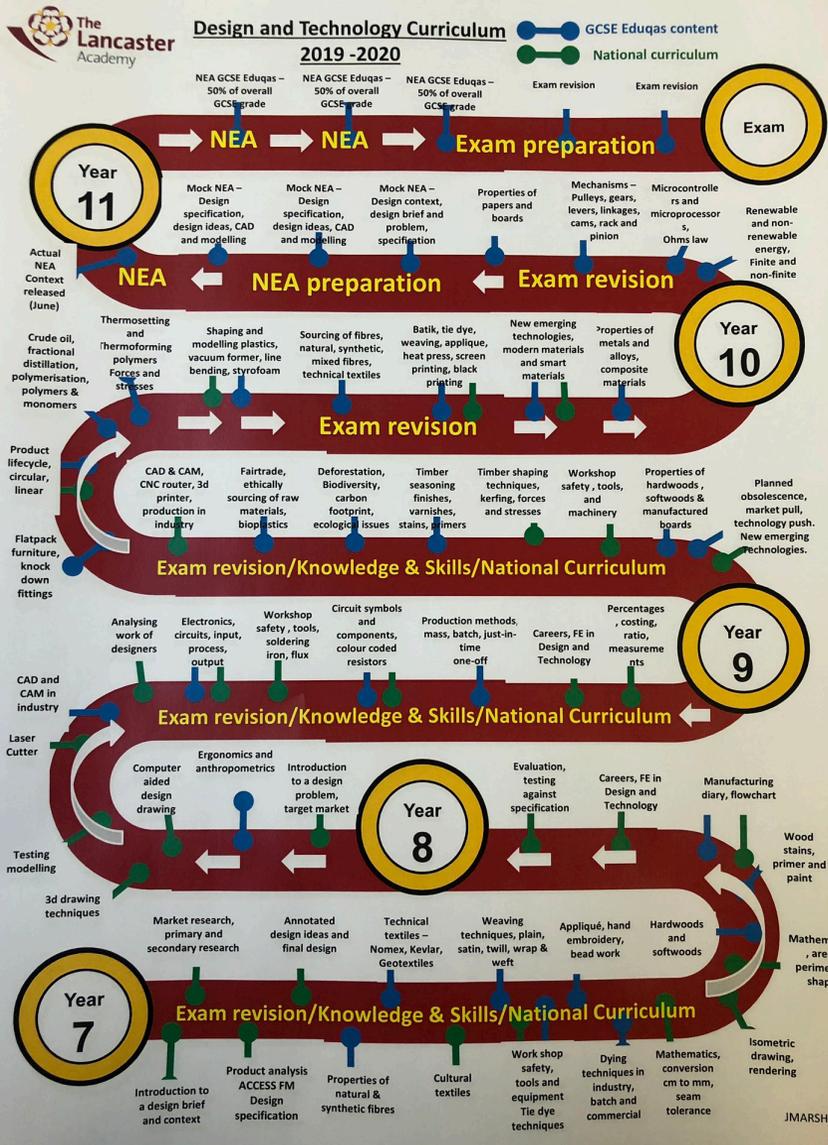
Year 8
BROADENING SPORT EXPERIENCES

Year 9
DEVELOPING SKILLS & EMBEDDING KNOWLEDGE

Year 10
THRIVING & STRIVING IN PE

Year 11
CREATING HEALTHY & ACTIVE FUTURES

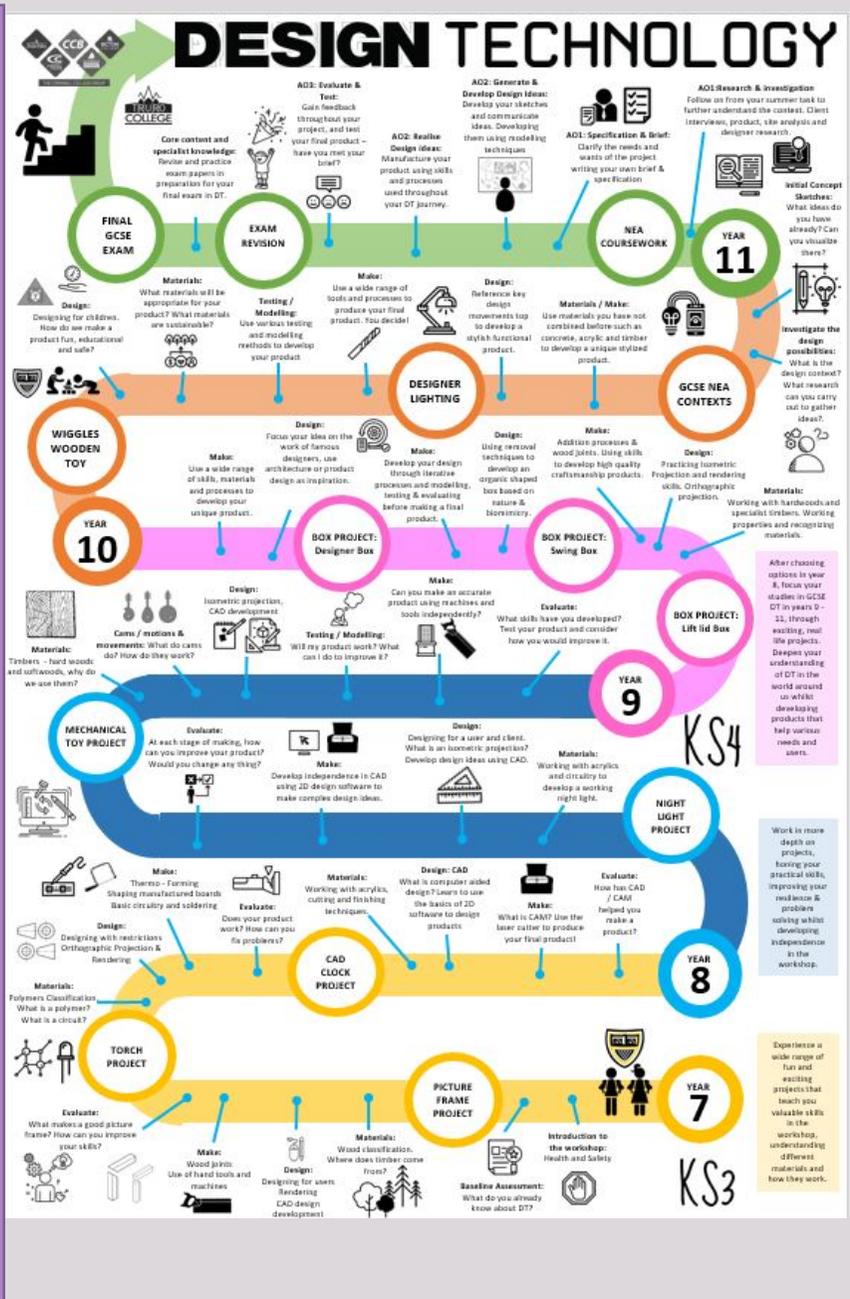




Excellent, subject relevant examples, my eye is drawn more to the right one. Lovely use of colour with an incredible amount of detail. The left, shows excellent use of branding, my fear with this method, is if the whole school uses the format will a students quick glance just presume they're all the same. Excellent use of a key to show National curriculum content and GCSE course content

Questions raised for me;

- How could this document be used?
- Can it be used in the classroom?
- Is the shape appropriate? Is it too rigid
- How could the whole technology department be linked?



Action Plan Point 2 – Timeline Reflection

	Target	Action Completed
March	Create curriculum mapping document	To support a visual map, I want to create an outline of the entire curriculum, showing the learning journey, cross curricular links also identifying areas for improvement (see appendix 1 for engineering example)
	Create visual curriculum map with student speak	Research completed and document started through sketches, have made the decision that I will need a separate map for each subject (4 in total). I have decided to include “roundabouts” in my map, I feel the linear route isn’t reflective of our curriculum.
	Research curriculum CPD suitable for team	Email sent out to all of team asking them to have a look for any courses they would like
	Twitter research “Cultural capital”	To be completed
April	Review links between key stages and retrieval knowledge	To be completed
	Liaise with other school departments to create an assessment calendar that compliments others assessment calendars	To be completed
	Review links between KS3 national curriculum and KS4 courses	To be completed
May	Create curriculum review calendar	To be completed
	Link staff with potential curriculum CPD	Curriculum course found for each team member and information shared with each individual.
	Review recording assessment outcomes	To be completed

As you can see by the timings, Covid-19 has had a huge impact on my second action point. At the beginning of April, I reviewed my Action plan and made some amendments.

What happens when a Pandemic hits whilst your on maternity leave?

Covid-19 meant that a few points were put on a back burner, amendments were needed to be made to the curriculum in order for it to be accessed at home. All of a sudden teachers are having to ensure students don't miss out on too much learning, yet not overwhelm, but also address the lack of resources at home.

To ensure I could ready myself for a return to teaching mid-pandemic and support my team, I wanted to adapt my project in order to fully aid students in accessing learning. My first steps were to reach out over twitter, to help inform an adaptation needed to my action plan

The image shows a screenshot of a Twitter post and its analytics. The tweet text is: "What has been your most effective distance learning tool?? What has achieved the most engagement?" It includes the handle @AndyMitchell14 and the hashtags #MatLeaveResearch and #DistanceLearning. The analytics for the tweet are as follows:

Metric	Value
Impressions	3,060
Total engagements	141
Detail expands	111
Profile clicks	15
Replies	7
Likes	6
Retweets	1
Hashtag clicks	1

The tweet also shows a large black redaction box covering the replies and profile picture area. The analytics panel is partially visible, showing the metrics listed above.

Action Plan Amendments

Action	Impact on Student/School/Professional skills Outcomes	Timeline
<p>Develop personal and professional skills in order to develop as a practitioner in preparation for taking steps up the career ladder.</p> <ul style="list-style-type: none"> Research timetabling in a secondary school setting Research timetable training and potentially apply for course Improve data tracking skills Speak to colleagues for best practice Speak to colleagues on how they developed their career Research assistant head jobs and what their requirements 	<ul style="list-style-type: none"> Understand impact of timetabling Gain insight on timetabling methods to research best possible method. To be able to assist the current timetable at my school. Currently only 1 person that does this. Improve personal skills and attributes creating a full and diverse CV. Link new skills to current role, making further improvements to the department. Develop network of likeminded peers. Develop monitoring of curriculum delivery and outcomes 	<p>KIT DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> Use social media to research current practice Research possible CPD Speak to STL about timetabling Speak to XXX possibly interviewing her for how she developed her career <p>March</p> <ul style="list-style-type: none"> Check TES jobs for Assistant head jobs Update cover letter <p>April</p> <ul style="list-style-type: none"> Identify year groups needing data analysis Research data collection methods Research timetabling courses Check TES jobs for Assistant head jobs <p>May</p> <ul style="list-style-type: none"> YouTube tutorials on T6 timetabling Twitter research Check TES jobs for Assistant head jobs <p>June</p> <ul style="list-style-type: none"> Check TES jobs for Assistant head jobs research curriculum models
<p>Develop Technology department curriculum to ensure a robust 7 year curriculum</p> <ul style="list-style-type: none"> Create curriculum map Audit curriculum, analyzing areas for development Revisit SOL's Revisit Assessments across key stages Plot assessment timings Create curriculum monitoring plan Review staff training needed across all subjects Question how "Cultural capital" enriches curriculum 	<ul style="list-style-type: none"> Optimum outcomes come results day for students High engagement from students in lessons Manage exam stress for students Encourage student curiosities within the subject Clear vision shared with team, allowing provision of learning of high quality and outcomes Habitual learning and expectations of students clearly understood and shown Fully trained staff are confident in curriculum and courses they are delivering which transpires to excellent lessons Reflect on student learning to see if curriculum design is effective, respond by adapting curriculum and achieving better outcomes. 	<p>KIT DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> Research curriculum maps from other schools – what works well? Meet with team and review current SOLs identifying areas for improvement Ask staff who would like Curriculum CPD Review assessment calendar <p>March</p> <ul style="list-style-type: none"> Create curriculum mapping document Create visual curriculum map with student speak Research curriculum CPD suitable for team Twitter research "Cultural capital" <p>April</p> <ul style="list-style-type: none"> Review links between key stages and retrieval knowledge liaise with other school departments to create an assessment calendar that compliments others assessment calendars Review links between KS3 national curriculum and KS4 courses <p>May</p> <ul style="list-style-type: none"> Create curriculum review calendar Link staff with potential curriculum CPD Review recording assessment outcomes
<p>April 2020</p> <p>What impact has Covid-19 had on teaching and learning, can adaptations for distance learning improve learning outcomes?</p> <ul style="list-style-type: none"> Can these new T&L delivery methods be transferred? How can we increase engagement in distance learning? How can we ensure all students can access learning? 	<ul style="list-style-type: none"> New resources made for distance learning to be incorporated into the curriculum New independent learning traits that students have forcibly developed to be utilized in further curriculum delivery Various techniques of distance learning delivery explored with increased engagement Students actively meet deadlines and maybe go above and beyond for outcomes Clear evidence of self-gratification Teachers use guidance from school for student with minimal/no internet access. Minimal impact on staff workload 	<p>April</p> <ul style="list-style-type: none"> Tweet Colleagues for advice and impact they have made #EduTwitter Review the work already being set by team at school Assess current engagement Review resources being produced on social media Research use of live lessons <p>May</p> <ul style="list-style-type: none"> Look at new T&L have tried Implement distance learning tools discovered in research Review engagement through SMHW platform Review workload impact

What ended up being your main focus?

At different stages of my project parts had more focus, initially I was completely focussed on career progression and making myself completely employable. As COVID-19 hit, plan changed to focus more on how I can better the students experience of how they can still achieve whilst distance learning. It almost felt a bit selfish to be looking in bettering only myself.

By the end of the process, I was fully engaged with developing strategies to use in lesson and content delivery. I feel I made a good choice as I can pick up career development at a later stage, but distance learning needed instant investigation.

Action Plan Point 3 – Timeline Reflection

	Target	Action Completed
April	Tweet Colleagues for advise and impact they have made #EduTwitter	Lots of suggestions given by many #EduTwitter Colleagues. From this I have decided to explore the following; <ul style="list-style-type: none"> • Online quizzes – self marking where possible • Live lessons via Zoom • As much exam practice and retrieval practice as possible
	Review the work already being set by team at school	Looking through Show My Homework, I could see my colleagues setting mini projects, much like we would in the classroom.
	Assess current engagement	Engagement was low, not that many students responding to work set. What is the barrier? How can the delivery of distance learning increase engagement?
	Review resources being produced on social media	I am always looking out for pieces shared on SM, and I like to share to get feedback on my own. See appendix 2.
	Research use of live lessons	I searched through twitter to see how teachers have used live lessons. How have they structured the lesson? What program has been used? If teachers haven't, then why have they not done live lessons? My team weren't particularly keen on doing live lessons and so I needed to lead by example.
May	Look at new T&L have tried	Reviewed not only my own implementations but the work of my colleagues, measuring the success of outcomes by level of engagement and return of work. More successful; <ul style="list-style-type: none"> • Live lessons • Use of Microsoft Forms • Practical projects sent home, with multiple progress checks Less Engagement <ul style="list-style-type: none"> • Long PPT based projects • Note taking from PPT
	Implement distance learning tools discovered in research	On my official return to work, main content delivery was live lessons and Microsoft forms based on preliminary delivery of work through KIT time.
	Review engagement through SMHW platform	To be completed
	Review workload impact	I have found workload to be huge upon my return to work, managed better as I started to deliver KS4 content online to multiple groups at the same time, and using the various auto-marking functions with forms also helped.

What barriers did you encounter and how did you overcome these?

First and most obvious barrier has been the global epidemic, but as mentioned previously, it has also driven aspects of my CPD. It turns out a world wide crisis can do great things for your pedagogy and really engage your problem solving skills.

Something that COVID has scuppered is the ability to talk to someone face to face, to engage with an inspiring peer higher up in the food chain. Knowing the pressure they were under through out and additional pressures they maybe facing whilst working at home. These barriers and questions that I want to ask are definitely burning inside now and so I will definitely be a focus of mine come September.

Another barrier has been myself, as much as I love teaching and learning, discovering new things and developing myself. I hate writing – typical technology teacher – but also never been the most confident when it comes to writing. My first teacher training mentor said I had “horrific” literacy skills, and studying for the literacy skills test was probably the hardest I have ever prepared for anything!

Consequently, motivating myself and having confidence in my own written words takes some drive. I think much like my previous barrier, its basically caring too much what others think, which wasn't something I thought I had issue with, but realising it, made me address it.

What role did the coaching sessions play in your CPD journey?

This was not the easiest part for me, I didn't really fully enjoy it. Talking about myself and decisions I want/need to make. I understand why it exists as part of the accreditation, but its not for me really. However it did help me realise, that a mentor would work better for me. Since working at my current job, I have missed having a colleague who I could bounce ideas off of. So I do endeavour to seek out someone.

How did this CPD develop you personally or professionally?

Personally;

- It has given me the courage and push to ask more, whatever the persons appeared status, I cannot loose by having an inquisitive mind.
- Improved my cover letter
- Its made me think more about my work/life balance, I enjoy my job a lot and so the two can often merge. However, a second baby has meant I have had to plan my time, if I am meant to get any purposeful work done.

Professionally;

- The challenges of distance learning have enabled me to develop as a leader and a practitioner
- Developed distance learning curriculum, opening my eyes to a whole new world of strategies.
- I have gained the experience of applying for a senior role and was able to reflect on where my application needs work and improvements

What key learning will you take back to your educational setting?

- New teaching and learning strategies
- Ideas for timetabling
- Curriculum map

Action Plan – Module 2?

Action	Impact on Student/School/Professional skills Outcomes	Timeline
<p>Develop personal and professional skills in order to develop as a practitioner in preparation for taking steps up the career ladder.</p> <ul style="list-style-type: none"> Research timetabling in a secondary school setting Research timetable training and potentially apply for course Improve data tracking skills Speak to colleagues for best practice Speak to colleagues on how they developed their career Research assistant head jobs and what their requirements 	<ul style="list-style-type: none"> Understand impact of timetabling Gain insight on timetabling methods to research best possible method. To be able to assist the current timetable at my school. Currently only 1 person that does this. Improve personal skills and attributes creating a full and diverse CV. Link new skills to current role, making further improvements to the department. Develop network of likeminded peers. Develop monitoring of curriculum delivery and outcomes 	<p>K17 DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> Use social media to research current practice Research possible CPD Speak to STL about timetabling Speak to XXX possibly interviewing her for how she developed her career Check TES jobs for Assistant head jobs Update cover letter <p>March</p> <ul style="list-style-type: none"> Identify year groups needing data analysis Research data collection methods Research timetabling courses Check TES jobs for Assistant head jobs <p>April</p> <ul style="list-style-type: none"> YouTube tutorials on T6 timetabling Twitter research Check TES jobs for Assistant head jobs <p>May</p> <ul style="list-style-type: none"> Check TES jobs for Assistant head jobs research curriculum models
<p>Develop Technology department curriculum to ensure a robust 7 year curriculum</p> <ul style="list-style-type: none"> Create curriculum map Audit curriculum, analyzing areas for development Revisit SOL's Revisit Assessments across key stages Plot assessment timings Create curriculum monitoring plan Review staff training needed across all subjects Question how "Cultural capital" enriches curriculum 	<ul style="list-style-type: none"> Optimum outcomes come results day for students High engagement from students in lessons Manage exam stress for students Encourage student curiosities within the subject Clear vision shared with team, allowing provision of learning of high quality and outcomes Habitual learning and expectations of students clearly understood and shown Fully trained staff are confident in curriculum and courses they are delivering which transpires to excellent lessons Reflect on student learning to see if curriculum design is effective, respond by adapting curriculum and achieving better outcomes. 	<p>K17 DAYS</p> <p>Pre-mat leave</p> <ul style="list-style-type: none"> Research curriculum maps from other schools – what works well? Meet with team and review current SOLs identifying areas for improvement Ask staff who would like Curriculum CPD Review assessment calendar <p>March</p> <ul style="list-style-type: none"> Create curriculum mapping document Create visual curriculum map with student speak Research curriculum CPD suitable for team Twitter research "Cultural capital" <p>April</p> <ul style="list-style-type: none"> Review links between key stages and retrieval knowledge Liaise with other school departments to create an assessment calendar that compliments others assessment calendars Review links between KS3 national curriculum and KS4 courses <p>May</p> <ul style="list-style-type: none"> Create curriculum review calendar Link staff with potential curriculum CPD Review recording assessment outcomes
<p>April 2020</p> <p>What impact has Covid-19 had on teaching and learning, can adaptations for distance learning improve learning outcomes?</p> <ul style="list-style-type: none"> Can these new T&L delivery methods be transferred? How can we increase engagement in distance learning? How can we ensure all students can access learning? 	<ul style="list-style-type: none"> New resources made for distance learning to be incorporated into the curriculum New independent learning traits that students have forcibly developed to be utilized in further curriculum delivery Various techniques of distance learning delivery explored with increased engagement Students actively meet deadlines and maybe go above and beyond for outcomes Clear evidence of self-gratification Teachers use guidance from school for student with minimal/no internet access. Minimal impact on staff workload 	<p>April</p> <ul style="list-style-type: none"> Tweet Colleagues for advise and impact they have made #EdulTwitter Review the work already being set by team at school Assess current engagement Review resources being produced on social media Research use of live lessons <p>May</p> <ul style="list-style-type: none"> Look at new T&L have tried Implement distance learning tools discovered in research Review engagement through SMHW platform Review workload impact

Highlighted in red shows parts of my action plan I would like to revisit and complete. My main aim however will be to work towards having impact on a whole school basis through the work I have done on timetabling. What I have done is still in its infancy so I need to discuss with senior leadership how my work could help the school

Moving forward into 2020.21

Looking at my action plan and the red highlights, my focus will be the following;

1. Timetabling – I really am interested in learning this skill and this is something I would like to continue to explore as much as possible and formally train in the field. My next steps is to approach my school and see if this is something the school would like to invest in, but also meet with local schools who are timetabling differently and evaluate and compare against my current school.
2. Data – I didn't really get to touch on this during this module, I really enjoy analysing and working with data and so would like to refocus to my initial action plan and address the missing points. I found that data really was our friend when completing the CAGs and so would like to use data more effectively across the department.
3. Curriculum – I would like to continue to assess and improve the curriculum for the department. I want to ensure my department are on the same page with course delivery from year 7 upwards. Encouraging that each and every lesson is purposeful, supporting mindful learning and learners. I would like to link this with the new blended style learning strategies developed through distance learning.

Appendices

Appendix 1 – Engineering Curriculum mapping document

	Intent	Curriculum Content	Skills developed	Cross Curricular Links	Key Questions	Assessment
Year 7	Design and Technology is an inspiring, rigorous and practical subject. Technology encourages students to learn to think innovatively to solve problems both as individuals and as members of a team. At SMHS, we encourage students to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. Students are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.	<p>Racing Cars</p> <p>Students will design and make a toy racing car, their challenge is to create the fastest car by applying their knowledge of forces and aerodynamics</p>	<ul style="list-style-type: none"> Understanding motion, force and aerodynamics. Create a design that links to subject knowledge gained Develop workshop skills using the following hand tools; Tenon Saw, Coping saw, hand drill, file and sandpaper. Quality control – enabling students to show high standards of outcome 	Aerodynamics - Science Motions - Science	<p>How did you test your car? What happened during the test? Why did this happen?</p> <p>Write a definition for aerodynamics, drag, thrust and weight.</p> <p>Explain why someone might buy the toy car.</p> <p>Does this toy car meet the design brief?</p> <p>Relate the car to current ethical, social and cultural issues</p> <p>Identified the safety elements of the product</p>	<p>Design - To be able to analyse your final design, comparing against the design brief</p> <p>Make - To create your model car using a range of tools and techniques</p> <p>Evaluate - Evaluate your cars performance on race day. Identify areas for improvement and adaptations you may make for your car.</p> <p>Subject Knowledge - To be able to analyse an existing product, to show an understanding of purpose, form & function.</p>
year 8	Design and Technology is an inspiring, rigorous and practical subject. Technology encourages students to learn to think innovatively to solve problems both as individuals and as members of a team. At SMHS, we encourage students to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The students are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.	<p>Clock Project</p> <p>Students will be designing and making an Acrylic clock that is inspired by the Alessi or Memphis design groups. They are required to conduct research into both design movements and apply this knowledge within their design work. Investigation into how to manufacture a product using Acrylic is also conducted, and students will need to apply this knowledge to their design and manufacture stages.</p>	<ul style="list-style-type: none"> Understanding the properties of Acrylic, and thermoset and thermos plastics Understanding and applying knowledge of a range of design movements Ability to analyse existing products Create a design that links to the design brief Develop workshop skills using the following hand tools; Belt sander, Sand paper, Wet and Dry paper, Files, Coping Saw, Solvent cement, Heat gun and Strip/Line bender. Quality control – enabling students to show high standards of outcome. Identifying where problems may occur in order to avoid them 	Environmental Issues - Science, Geography	<p>How did you ensure your egg stand was of a high quality when making your egg stand? Analyse an existing clock using ACCESS FM.</p> <p>Does this product follow form or function? Explain your statement.</p> <p>Explain how you think this clock is made, support your statement by explaining why you think this.</p> <p>Explain how my designs reflect Alessi or Memphis</p>	<p>Design - To clarify ideas through sketching discussion and evaluation. To use your research and opinions of others to make informed decisions. To improve communication skills.</p> <p>Make - To understand how to create a clock from acrylic To be able to work with some precision and to pay attention to function & quality of finish.</p> <p>Evaluate - To learn how to test and critically evaluate your work using the views of others and suggesting improvements</p> <p>Subject Knowledge - To be able to analyse an existing product, to show an understanding of purpose, form & function.</p>

	Intent	Curriculum Content	Skills developed	Cross Curricular Links	Key Questions	Assessment
9	<p>In Year 9 Design and Technology, students are given the opportunity to develop their analysis, designing, manufacturing and evaluative skills further. They will be working with a range of materials, including natural wood and cement. Students will complete 2 main projects; a box project focussing on wood joints and finishes and a Pop Art Lamp project whereby students will experience using cement to manufacture a product. Both projects touch upon topics such as environmental and social issues within design. Students are also given the opportunity to develop their self and peer assessment skills, including how to provide effective and specific feedback to others. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art.</p>	<p>Box Project Students will be manufacturing a pine box, with a specific focus on manufacturing finger/comb joints and a lap joint. All students will be developing their accuracy and maths skills during this project, as well as problem solving.</p>	<ul style="list-style-type: none"> Understanding the properties of different wood Understanding and practicing the manufacture of wood joints <ul style="list-style-type: none"> Ability to understand and provide feedback to others Develop workshop skills using the following hand tools; Belt sander, Sand paper, Files, Coping Saw, Tenon Saw, bench hook, try-square, steel ruler, hammer, centre punch Quality control and checks – enabling students to show high standards of outcome. Identifying where problems may occur in order to avoid them <ul style="list-style-type: none"> Problem solving Measuring and accuracy skills <ul style="list-style-type: none"> Understanding of environmental issues involving the use of natural wood 	<p>Environment al Issues - Science, Geography Marking out - Maths</p>	<p>Explain what tool is used and why? What woods are most sustainable? Which method of Joinery is most effective? How have you ensure high quality? How will you remain safe using the machinery? How does manufactured board effect the environment? How can you ensure accuracy?</p>	<p><u>Assessment 1 - Subject Knowledge</u> - To complete test showing understanding of sustainable forestry <u>Assessment 2 - Make</u> - To demonstrate marking out and accurate measurements <u>Assessment 3 - Make</u> - To show basic joinery though creating a box with finger joints and lap joints <u>Assessment 4 - Evaluate</u> - reflect on skills shown and outcome of box made</p>
		<p>Pop Art Lamp Students will investigate the Pop Art design movement, and use this as inspiration to design and manufacture an Acrylic and Cement LED/USB powered lamp. Students will also be given the opportunity to use CAD/CAM.</p>	<ul style="list-style-type: none"> Revisiting existing knowledge of polymers and their manufacturing methods and properties <ul style="list-style-type: none"> Understanding how to correctly mix cement/how to use cement/ properties of cement Measuring and accuracy <ul style="list-style-type: none"> Problem solving Develop workshop skills using the following hand tools; Belt sander, Sand paper, Files, Coping Saw, steel ruler, soldering iron, strip heater, het gun and wet and dry paper. <ul style="list-style-type: none"> Understanding influential designers of the Pop Art era Technical and Isometric sketching skills Developmental skills and analysis of developments <ul style="list-style-type: none"> Cultural, environmental, social and moral issues within design Understanding the uses and purpose of electrical components (LEDs) Understanding and practicing soldering skills 	<p>Environment al Issues - Science, Geography Art - Pop Art Movement</p>	<p>Name a Pop Art Artist Link your material to sustainability What are the raw materials of a polymer? How will you ensure your safety in the workshop? How do you produce an accurate CAD drawing?</p>	<p><u>Assessment 1 -Subject Knowledge</u> - Existing Products-To be able to analyse an existing product, to show an understanding of purpose, form & function. <u>Assessment 2 - Design</u> - Initial Ideas - To learn to communicate alternative ideas effectively. To be creative and stretch your imagination. To learn to be confident when expressing ideas <u>Assessment 3 - Design</u> - Design development - To clarify ideas through sketching discussion and evaluation To use your research and opinions of others to make informed decisions To improve communication skills. <u>Assessment 4 - Design</u> - Final Idea - To be able to clarify through sketching and discussion to produce an accurate and annotated final solution. <u>Assessment 5 - Make</u> - To create your lamp design using CAD/CAM To create a cement base <u>Assessment 6 - Evaluate</u>To critically evaluate your work using the views of others and suggesting improvements</p>

	Intent	Curriculum Content	Skills developed	Cross Curricular Links	Key Questions	Assessment
10	<p>In Engineering Design, all students are given the opportunity to develop their knowledge of the design cycle, through identifying, designing, optimising and validating skills further. Pupils will be working with a range of materials, including timbers and polymers, as well as developing their existing skills and knowledge when using hand and machine tools. Students are given the opportunity to express their creativity through the designing and optimising phase of the coursework, and will be encouraged to push the boundaries of design. Engineering will also teach information regarding industrial manufacturing methods, environmental issues, ergonomics and influential products. Students are also given the opportunity to develop their self and peer assessment skills, including how to provide effective and specific feedback to others. We aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art.</p>	Pizza Wheel project	<ul style="list-style-type: none"> Analysis of Ergonomics and Anthropometrics of everyday products Modelling and prototyping ergonomic pizza wheel handle Material testing and material analysis Hand and machine tool practice Understanding various drawing skills and when to choose the appropriate method, including third angle projections Presentation of ideas including analysis 	<p>Data collection - maths modelling and drawing skills- art analysis of data collection</p> <p>CAD - ICT</p>	<p>how does ergonomics relate to your product? What anthropometric data do you need? How will you test the product durability? Which tool is most appropriate for the task? How will you ensure a high quality product? How can you communicate your design?</p>	<p>Assessment 1 Know how commercial production methods, quality and legislation impact on the design of products and components Assessment 2 Be able to research existing products Assessment 3 Be able to analyse an existing product through disassembly Assessment 4 Be able to generate design proposals using a range of techniques Assessment 5 Know how to develop designs using engineering drawing techniques and annotation</p>
Pizza Wheel project- Manufacture		<ul style="list-style-type: none"> Independently and confidently using machine and hand tools to manufacture Ability to identify quality control checks in order to produce a high quality outcome Understanding the use of solvents and resins Accuracy of manufacture Understanding how to effectively evaluate a finished product and suggest further developments 				
Unit R106 – Electric Drill Analysis		<ul style="list-style-type: none"> Understand how commercial production methods, legislation and standards impact on design. Research existing products and produce a detailed analysis Analyse an existing product through disassembly 				
Unit R107 - Developing and presenting engineering design		<ul style="list-style-type: none"> Developing and presenting design proposals Developing designs using engineering drawing techniques, including third angle projections and exploded drawings Produce and communicate design proposals using Computer Aided Design Designing using a range of 3D and 2D computer software (CAD) 				

	Intent	Curriculum Content	Skills developed	Cross Curricular Links	Key Questions	Assessment
11	<p>In Engineering Design, all students are given the opportunity to develop their knowledge of the design cycle, through identifying, designing, optimising and validating skills further. Pupils will be working with a range of materials, including timbers and polymers, as well as developing their existing skills and knowledge when using hand and machine tools. Students are given the opportunity to express their creativity through the designing and optimising phase of the coursework, and will be encouraged to push the boundaries of design. Engineering will also teach information regarding industrial manufacturing methods, environmental issues, ergonomics and influential products. Students are also given the opportunity to develop their self and peer assessment skills, including how to provide effective and specific feedback to others. We aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art.</p>	Unit R107 - Developing and presenting engineering design	<ul style="list-style-type: none"> Understanding of technical drawings and idea presentation Analysis of design decisions made Ability to use Computer Aided Design 	CAD - ICT Marketing analysis - Business Graphs and technical drawing - Maths	<p>What does a technical drawing bring to your project?</p> <p>What legislation might you need to adhere to?</p> <p>How will you test the product durability?</p> <p>Why is planning important in design?</p> <p>How can you communicate your design?</p> <p>What is the environmental impact of your design?</p>	<p>Assessment 6 - Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals</p> <p>Assessment 7 - Know how to plan the making of a prototype</p> <p>Assessment 8 - Understand safe working practices used when making a prototype</p> <p>Assessment 9 - Be able to produce a prototype</p> <p>Assessment 10 - Be able to evaluate the success of a prototype</p>
Exam Preparation		<ul style="list-style-type: none"> Understanding of the design cycle and design needs Understanding/ retrieval of existing knowledge of manufacturing methods and product requirements Retrieval of knowledge of regulations and legislation Understanding ergonomics and user needs 				
Exam Preparation		<ul style="list-style-type: none"> Understanding market pull and technology push Life cycle analysis, sustainability and environmental pressure Understanding new and emerging technology Identifying inspirational and iconic products Understanding production costs and scales of manufacture 				
Unit R108 – 3D Design Realisation		<ul style="list-style-type: none"> Understand how to plan for a prototype, including the use of planning tools Understand how to identify quality control checks Identifying and understanding risks in the workshop Understanding and practicing safe manufacturing methods Production of a prototype, including the use of computer aided manufacturing Evaluation and validation of the finished product 				

Appendix 2 – Resources found on social media

Trivial Pursuit Natural Hazards Assessment Feedback Edition

Can you win all of the pieces of the Superpower pie?
For each piece of pie, read the questions and answer them in the connected section.
When completed and verified, colour in the piece of pie. First person to six wins.

Arguing for secondary effects

Q: a) What are secondary effects?
b) Give five examples of a secondary effect from an earthquake you have studied.
c) Give two arguments why secondary effects have the worst damage to Low Income Countries (LICs).

Convection currents

Q: a) Where do convection currents come from?
b) How do they rise and fall?
c) How do convection currents move tectonic plates?

Plate boundaries

Q: a) What is the key difference between destructive and constructive plates?
b) What is the name of the third plate boundary?
c) How does the third plate boundary move and create earthquakes?

Earthquakes

Q: a) What are primary effects?
b) Give five examples of a primary effect from an earthquake you have studied.
c) Give two arguments why primary effects have the worst damage to Low Income Countries (LICs).

Volcanoes

Q: a) Name a plate boundary that can create volcanoes.
b) Explain 'subduction'.
c) How volcanoes can form after two plates collide?

Setting Homework



Quizzes & Tests



Creating Online Tutorials



Podcasts & Audiobooks



Livestreams or Online Lessons



Has it stuck?

Work your way through the post it note questions. Lets see what knowledge has stuck. Any gaps should guide your revision.
GREEN – Core Knowledge **AMBER** – Good Knowledge **RED** - Advanced

Give two reasons why Phillip II would be angry with Elizabeth I

Give two features of the religious settlement.

How did Elizabeth solve religious division?

Who led the raid of Cadiz?

Give two features of the Spanish Armada.

Explain why the colonization of Virginia failed.

Explain why the Northern Rebellion took place in 1596

Describe the Ridolfi plot

What Religion was Elizabeth I?

What year was the Treaty of Nonsuch signed?

Explain why Elizabeth naming herself Supreme Governor was important.

How did education improve under Elizabeth I?

Describe the Throckmorton plot

What was the name given to strict Protestants

Who was Elizabeth's cousin and why was she a threat?

Describe the Babington plot



Early Elizabethan England 1558-1588

What is the Privy Council?

Mary Queen of Scots was Elizabeth's greatest threat. How far do you agree?

FOR THE 'GRAM



Instagram



12,000 likes #hashtags

Instagram

12,000 likes #hashtags

Instagram

12,000 likes #hashtags

Instagram

12,000 likes #hashtags

Draw it

Caption it

Hashtag it

Comment

Emoji it

Finite resource

#bad #nonrenewable #crudeoil #runout #gas #coal #notsustainable #fossilfuels

Finite resources come from the Earth's crust, oceans and atmosphere, examples of finite resources are gas, coal and oil. In time, finite resources will eventually run out.

🇬🇧 🌍 🕒

JMARSHALL

SPEEDING TICKET

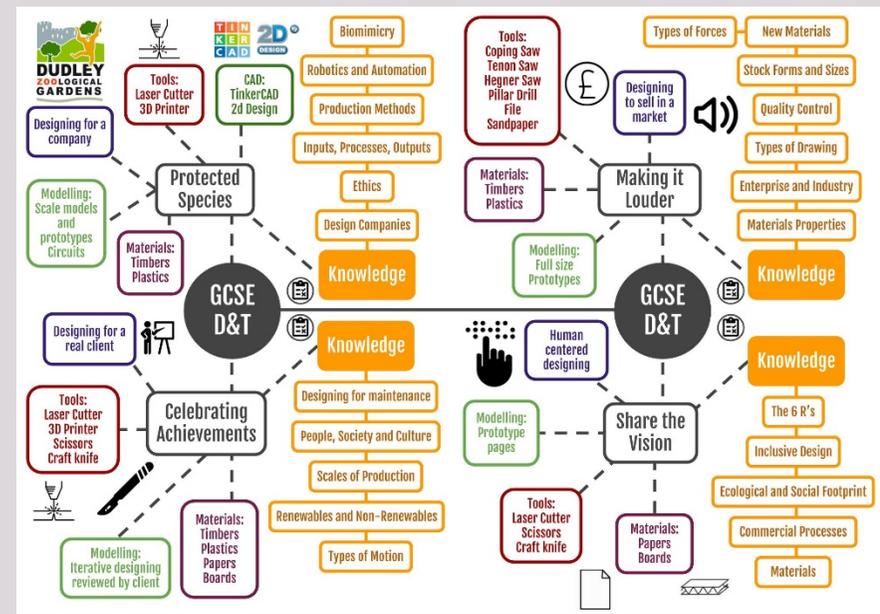
After marking your book, I have noticed that you need to slow down and take much more care over the presentation and organisation of your English work.

This ticket is issued to: _____ for: _____

- Not writing the date/title.
- Not underlining the date/title.
- Wasting space in your book.
- Not taking care with your handwriting.
- Making careless mistakes with spelling/punctuation.
- Not writing in full sentences.

Your fine:

- First offence – no fine required.
- Show you have a complete set of equipment before the lesson starts.
- Check your sentences with a partner/Miss Paton.
- Multiple offences – break detention.



B&Q You can do it when you B&Q it!

GLIOM
 Explain why polypropylene is a suitable plastic for tubing connectors. (3 marks)

GLIOM
 Explain why spruce is a suitable wood to use for cladding. (2 marks)

JUTE
 Explain why Jute is a suitable material to make string from. (2 marks)

State the name of the board shown in the image. (1 mark)

Explain how cross-sectional stability is used in this board. (2 marks)

State the name of the board shown in the image. (1 mark)

Give an example of a product that is made from this board. (1 mark)

JMARSHALL

The Lancaster Academy

DESIGN & TECHNOLOGY NUMERACY SUPPORT

MEASURING Measuring in millimetres is more accurate than measuring in centimetres. In the workshop you will frequently use the steel rule.

1mm = 0.1cm 50mm = 5cm 100mm = 10cm
 10mm = 1cm 57mm = 5.7cm

CONVERT mm to cm $\div 10$
 cm to mm $\times 10$

LINES What do each of the following lines mean?
 Parallel Horizontal Arc Vertical Bisect Diagonal Perpendicular

SHAPES How to measure different shapes.
 Diameter (d) Radius (r) Circumference $C = 2\pi r$ Area length x width Volume length x width x height Volume $\pi r^2 h$

ANGLES Use the right tool to get the right angle.
 90°: A try square is used to mark a 90° angle.
 45°: A mitre square is used to mark a 45° angle.
 30°: A sliding bevel is used to mark irregular angles.

MEASURES OF AVERAGES This help you draw conclusions from data.
Mean $\frac{M + e + a + n}{4}$
 The mean is the most common measure of average. To calculate the mean add the numbers together and divide the total by the amount of numbers.
 Mean = sum of numbers \div amount of numbers
Median
 If you place a set of numbers in order, the median number is the middle one.
Mode Most
 The mode is the value that occurs most often.
Range
 The amount, number, or type of something between an upper and a lower limit: The price range is from £100 to

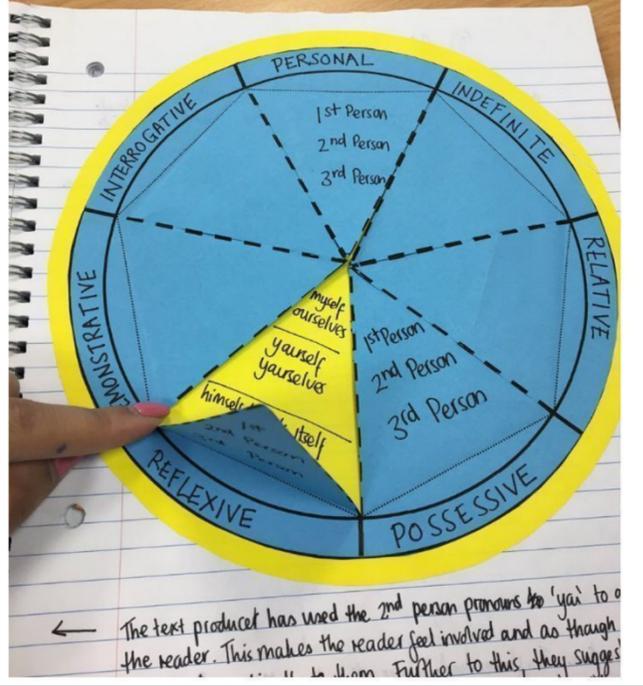
MATH 1 2 3

THE EAT SEASONABLY CALENDAR

EAT SEASONABLY

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FOR TIPS, RECIPES AND MORE VISIT EATSEASONABLY.CO.UK



4 IN A ROW: PD

Write into each counter a key term / question on the topic you have been studying. You then have to take alternate turns to answer question or definition of the key term to win the counter. Colour each counter as you win them to get 4 in a row.

Materials that absorb light.	When a product is developed by a team.	The way of showing the weight or cost.	Materials that contain iron.	When technology allows the development of new products.
A cavity that makes a hole.	When a product is only made once the design is final.	Study of body measurements.	The group of people you work for.	Designed only a computer.
Family of metals that each belongs to.	Manufactured using a computer.	Checks that are made to products to ensure they meet.	Used to protect a product from dirt or damage and improve its look.	Makers of metals.
A cavity that comes from a computer.	A cavity that is used to identify the item.	Materials that are made to products to ensure they meet.	Materials that are made to products to ensure they meet.	A product that is made to be used.
Using materials that are used to make a product.	A potential danger to the environment.	When there is a problem with a product it is made on a production line.	Something that always goes wrong.	
The way of making a product.	The list of materials that a product should be made from.	A resource that will eventually run out.	Working model made to test a product before it is made.	A material that changes its properties when it is used.

Making components using Techsoft 2D Design

In this tutorial we will use the rotate function in 2D Design to make a cog or gear. You could use the same techniques to make holes in discs to catch coins and move them around.

Start by using the circle tool to draw a circle. If grid lock is on it makes it easier to snap to a nice round number. Remember that the number in the bar for distance is the radius so the diameter will be twice this amount. In this case we have chosen 30mm to give us a 60mm diameter circle.

Abs: 200.00mm 170.00mm Rel: 30.00mm 0.00mm Distance: 30.00mm Angle: 0.00°

Next we draw a triangular shape with a flat top for the teeth on the cog and select it. Choose the rotate object tool and put in the details. In this case we want 12 teeth so that's 30 degrees between each and choosing REPEAT with 11 gives us an additional 11 teeth so 12 in total.

Rotate Settings
Angle of rotation: 30.00°
 Replace Repeat
No. repeats: 11

Rotate the selected object(s)

You should now have something like the picture on the left but we need to remove all of the lines that are not needed. Using the DEL option below you can click on all the lines you dont need until it begins to look like the cog on the right. Continue until all the little lines are removed.

Delete part of an object between the nearest two intersections

That's it, your cog is finished and all that is left to do it draw a circle in the middle for it to rotate. You can make as many copies as you need and even change the size of them before they are sent to the laser cutter.

Using a similar technique, but with circles instead of triangles, you can make coin catchers like the one below instead of cogs.

PRODUCT ANALYSIS : CONNECT 4

STARTER
Connect 4 by analysing the products – either vertical, horizontal or diagonal.

AESTHETICS
How it looks – Shape, Colours, Texture, Materials (Adjectives!)

CONSUMER
Who its aimed at – Age, Gender, Hobbies, Interests

FUNCTION
How it works or what it does – is it fit for purpose?

MATERIALS
What is it made from? Are the materials environmentally friendly?

AESTHETICS	CONSUMER	FUNCTION	MATERIALS