

Appendices

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Appendix 1: consent letter sent to parents / carers and pupils

Dear Parent/Carer,

We currently have a group of eight PGCE (Post Graduate Certificate in Education) students working with us as part of their professional teaching experience. They are in the process of developing a compulsory research assignment to enhance pupil learning. Your son's/daughter's class have been selected to participate in the spring term. Pupils involved will contribute their feedback via group discussions, group interviews and questionnaires. This will help the PGCE students to complete their research.

We look forward to gaining valuable feedback from pupils. If you are happy for your son / daughter to take part, you do not need to do anything and we would like to thank you in advance for your support. If you would like more information or if you wish for your son's / daughter's feedback not to be used as part of this research, please feel free to email

[Redacted]

Yours sincerely

[Redacted]

Dear Pupil,

During the spring term at Olchfa, we are undertaking a number of research projects to enhance your learning. Your class has been selected to participate.

Your lessons will run as usual, but you could be asked to complete a questionnaire in class or to participate in a small group discussion during a form period. This will be with fellow pupils from your class and a teacher. Your responses will be collected and analysed - all of this information will be confidential (kept private). If any of your data is used from the lessons, questionnaires or interviews, your name will not be attached to them.

You will always be given the opportunity to withdraw from any questionnaire or interviews by your teacher, should you wish to.

To show that you understand this and are willing to participate in the research project, please write your name, form and date in the spaces provided below.

Kind regards

[Redacted]

Appendix 2: lesson plan for research lesson

Lesson Plan Phase 1



Yr Athrofa
Institute of Education
Addysg i Gymru Education for Wales



Lesson Plan – Step 1 Cynllun Gwers – Cam 1

Student-teacher	Andrew Harris & Tom Parkin	Class:	Year 7
AoLE or Subject	Science & Technology (iDiscover)	Date:	Thursday 6 Feb AND Friday 7 February 2020
Lesson Focus:	Graphing Skills with Differentiation by Task being tested for research purposes		
Meaningful links to Curriculum	Donaldson iDiscover curriculum (Pioneer School). Ambitious capable learners who: • Enjoying problem solving • Can use number effectively in different contexts • Interpret data and apply mathematical concepts Enterprising, creative contributors who: • Connect and apply their knowledge and skills to create ideas and products		
Meaningful links to: Cross Curricular Responsibilities	Numeracy – This is a numeracy focussed lesson on interpreting data and drawing graphs		
Personal Targets (Linked to QTS and identified in weekly review)			
N/A for this research lesson study			

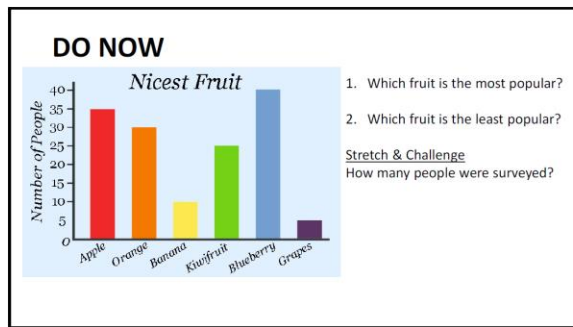
Learning Objectives (focus on Learning- use accessible vocabulary):
The pupils will: • Practice and develop their data interpretation and graphing skills

Success Criteria (clearly linked to each Learning Objective and related to the process and/or product of learning)	Assessment of Pupils' Learning Evidence (What have the learners to say/write/do/produce – to demonstrate learning)
Learners complete the tasks successfully in line with success criteria and engage in lesson / class discussion	Circulation checking progress. Class discussion. Peer Assessment. Random names for questioning.

Time	Activities/Methodology/Key Concepts (Teacher's Role – including key teaching points, differentiation strategies and key questions)	Pupil Tasks (Pupils' role –including differentiation, engagement in formative assessment and homework)	Resources (Including Health and Safety requirement)
Opening phase (with links to prior learning) 8 minutes	As the class enter the classroom give out the DO NOW mini sheet and instruct them to complete the task Complete the register whilst the learners are completing the DO NOW Quickly run through the correct answers for the DO NOW activity TIME CHECK – 09:03	Complete the DO NOW task.	PowerPoint and DO NOW paperwork
Teaching & Core Learning 40 minutes	Run through slides 2-5 to set the scene for the lesson, test Welsh knowledge and explain what it is we are going to be doing today. On slide 4 read aloud the text regarding rainfall. Whilst on slide 5 explain the task and explain the method of differentiation and that the learners have the choice of task sheets. Allow learners to collect the relevant worksheet and set them to do the task.	Listen and engage Start the first task selecting the relevant differentiated task for the learner	PowerPoint and lots of paperwork!

	Once the all learners have completed this short task, explain how the worksheets for the graphing element of the task will work and allow learners to collect the relevant sheet. Show the success criteria for drawing the graph. Allow time for learners to complete the graph. Repeat the above process for temperature data collection and graphing task.	Complete the next differentiated task	
Plenary 10 minutes!	Get learners to swap sheets and complete peer assessment against the success criteria. Peer assessors must provide feedback in the format of two stars and a wish. Sheets swapped back and learners read their feedback and respond? Calm close	Peer assess	PowerPoint and the learners worksheets

Appendix 3: PowerPoint slides for lesson

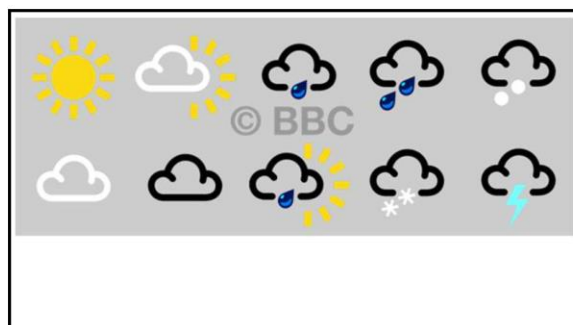


1

Graffio'r Tywydd

Graphing the Weather

2



3

Swansea Rainfall Forecast
Friday 7th February – Sunday 16 February

Over the next ten days we are going to see some wet and windy weather across Swansea so you will need your raincoats and umbrellas. The first two days of the forecast will see only light rain with 2.7mm rain on Friday (7th) and only 1.2mm rain on Saturday (8th). The wettest day of the next ten days will be Sunday (9th) with prolonged wet and windy conditions expected throughout the day. In total we can expect 21.5mm of rain on Sunday so this is definitely a day for indoor activities.

As we move into next week the rainfall levels will reduce somewhat with only 3.9mm rain forecast to fall on Swansea on Monday (10th). Westerly winds will continue through Monday to Wednesday which bring more heavy rain showers on Tuesday (11th) with 14.3mm rainfall and prolonged drizzle on Wednesday (12th) with 14.2mm rainfall.

Rain continues on Thursday (13th) but the level of rainfall is beginning to reduce with only 8.5mm rain forecast. Rainfall levels continue to reduce on Friday (14th) with 6.8mm forecast and reduce further again on Saturday (15th) with only 2.7mm rainfall forecast on that day.

Finally on Sunday 16th February, light rain is forecast with a total of 5.0mm rainfall forecast for that day. Enjoy the next 10 days and make sure you have a plan to stay dry!

4

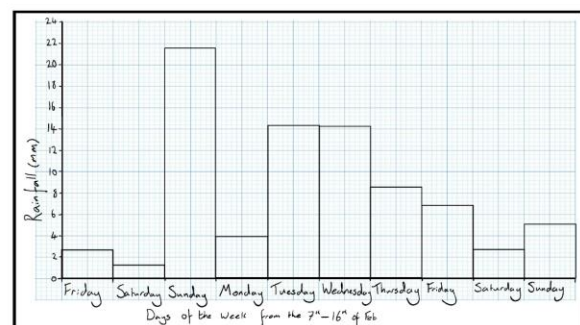
TASK Mild Medium Hot

You need to use the information in the rainfall weather forecast to complete the table on the worksheet.

Then use this table to construct a bar graph to display this data.

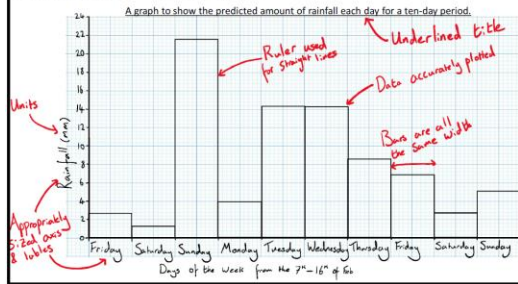
Finally, answer the questions on the sheet.

5



6

Success Criteria



7

NEXT TASK

Mild Medium Hot



Choose a city – Swansea / Cardiff / Newport
Populate the table for the daily temperature
Create a graph and answer the questions

8

Peer Assessment of line graphs

- 1) Underlined title
- 2) Data accurately plotted
- 3) Ruler used for straight lines
- 4) Appropriately sized axis and labels
(with units)

9

Final Thought

Are your plans going to change for the weekend now you know what the weather will be like?

10

Thank you for
your input into
our research



11

Appendix 4: differentiated worksheets for research lesson 1

MILD Swansea Rainfall Forecast

Friday 7th February – Sunday 16th February

Over the next ten days we are going to see some wet and windy weather across Swansea so you will need your raincoats and umbrellas. The first two days of the forecast will see only light rain with 2.7mm rain on Friday (7th) and only 1.2mm rain on Saturday (8th). The wettest day of the next ten days will be Sunday (9th) with prolonged wet and windy conditions expected throughout the day. In total we can expect 21.5mm of rain on Sunday so this is definitely a day for indoor activities.

As we move into next week the rainfall levels will reduce somewhat with only 3.9mm rain forecast to fall on Swansea on Monday (10th). Westerly winds will continue through Monday to Wednesday which bring more heavy rain showers on Tuesday (11th) with 14.3mm rainfall and prolonged drizzle on Wednesday (12th) with 14.2mm rainfall.

Rain continues on Thursday (13th) but the level of rainfall is beginning to reduce with only 8.5mm rain forecast. Rainfall levels continue to reduce on Friday (14th) with 6.8mm forecast and reduce further again on Saturday (15th) with only 2.7mm rainfall forecast on that day.

Finally, on Sunday 16th February, light rain is forecast with a total of 5.0mm rainfall forecast for that day.

Enjoy the next 10 days and make sure you have a plan to stay dry!

Task 1

Complete the gaps in the table below to capture the forecast rainfall for the next 10 days

Day and date	Forecast rainfall (mm)
Friday 7 th February	2.7
Saturday 8 th February	1.2
Sunday 9 th February	
Monday 10 th February	
Tuesday 11 th February	
Wednesday 12 th February	
Thursday 13 th February	8.5
Friday 14 th February	6.8
Saturday 15 th February	
Sunday 16 th February	5.0

MEDIUM Swansea Rainfall Forecast

Friday 7th February – Sunday 16th February

Over the next ten days we are going to see some wet and windy weather across Swansea so you will need your raincoats and umbrellas. The first two days of the forecast will see only light rain with 2.7mm rain on Friday (7th) and only 1.2mm rain on Saturday (8th). The wettest day of the next ten days will be Sunday (9th) with prolonged wet and windy conditions expected throughout the day. In total we can expect 21.5mm of rain on Sunday so this is definitely a day for indoor activities.

As we move into next week the rainfall levels will reduce somewhat with only 3.9mm rain forecast to fall on Swansea on Monday (10th). Westerly winds will continue through Monday to Wednesday which bring more heavy rain showers on Tuesday (11th) with 14.3mm rainfall and prolonged drizzle on Wednesday (12th) with 14.2mm rainfall.

Rain continues on Thursday (13th) but the level of rainfall is beginning to reduce with only 8.5mm rain forecast. Rainfall levels continue to reduce on Friday (14th) with 6.8mm forecast and reduce further again on Saturday (15th) with only 2.7mm rainfall forecast on that day.

Finally, on Sunday 16th February, light rain is forecast with a total of 5.0mm rainfall forecast for that day.

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Task 1

Complete the table below to capture the forecast rainfall for the next 10 days

Day and date	Forecast rainfall (mm)
Friday 7 th February	
Saturday 8 th February	
Sunday 9 th February	
Monday 10 th February	
Tuesday 11 th February	
Wednesday 12 th February	
Thursday 13 th February	
Friday 14 th February	
Saturday 15 th February	
Sunday 16 th February	

HOT Swansea Rainfall Forecast

Friday 7th February – Sunday 16 February

Over the next ten days we are going to see some wet and windy weather across Swansea so you will need your raincoats and umbrellas. The first two days of the forecast will see only light rain with 2.7mm rain on Friday (7th) and only 1.2mm rain on Saturday (8th). The wettest day of the next ten days will be Sunday (9th) with prolonged wet and windy conditions expected throughout the day. In total we can expect 21.5mm of rain on Sunday so this is definitely a day for indoor activities.

As we move into next week the rainfall levels will reduce somewhat with only 3.9mm rain forecast to fall on Swansea on Monday (10th). Westerly winds will continue through Monday to Wednesday which bring more heavy rain showers on Tuesday (11th) with 14.3mm rainfall and prolonged drizzle on Wednesday (12th) with 14.2mm rainfall.

Rain continues on Thursday (13th) but the level of rainfall is beginning to reduce with only 8.5mm rain forecast. Rainfall levels continue to reduce on Friday (14th) with 6.8mm forecast and reduce further again on Saturday (15th) with only 2.7mm rainfall forecast on that day.

Finally, on Sunday 16th February, light rain is forecast with a total of 5.0mm rainfall forecast for that day.

Enjoy the next 10 days and make sure you have a plan to stay dry!

Task 1

Complete the table below to capture the forecast rainfall for the next 10 days

[illegible]

MILD

A graph to show the predicted amount of rainfall each day for a ten-day period.

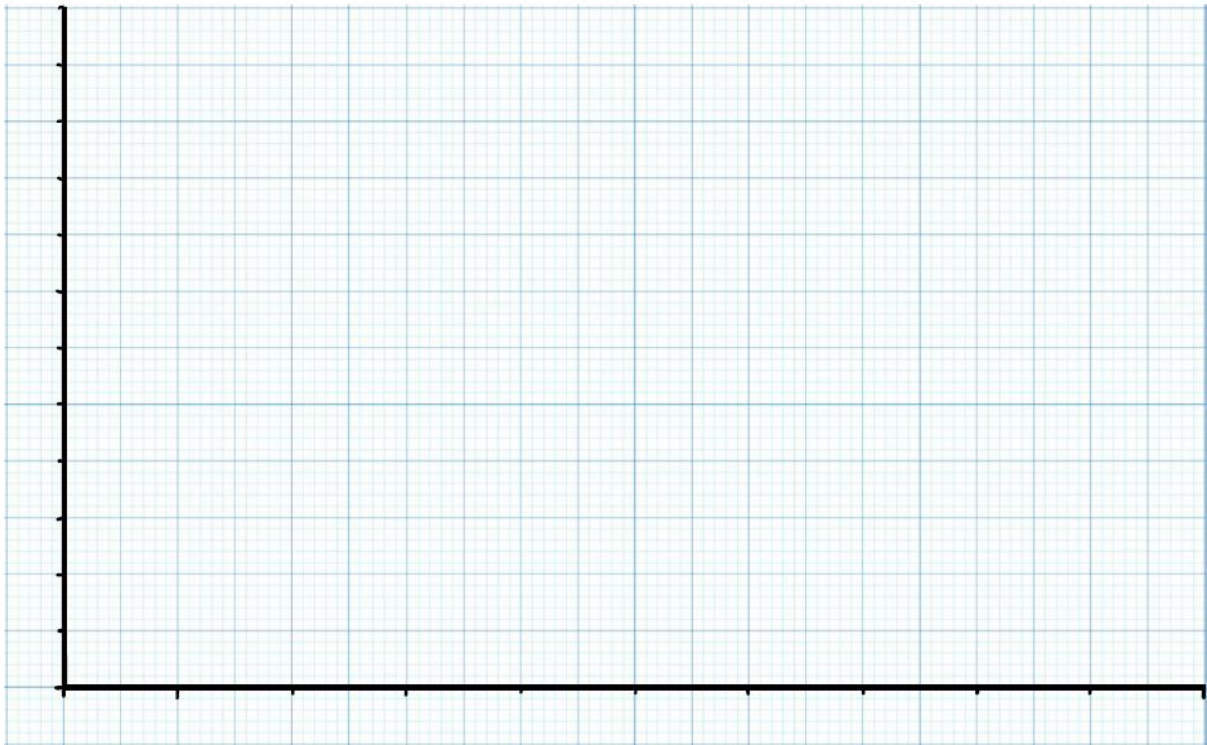


Questions:

1. Which day has the lowest rainfall in the forecast?
2. Which day is the wettest day in the forecast?
3. How many days have more than 10mm of rainfall forecast?

MEDIUM

Title:

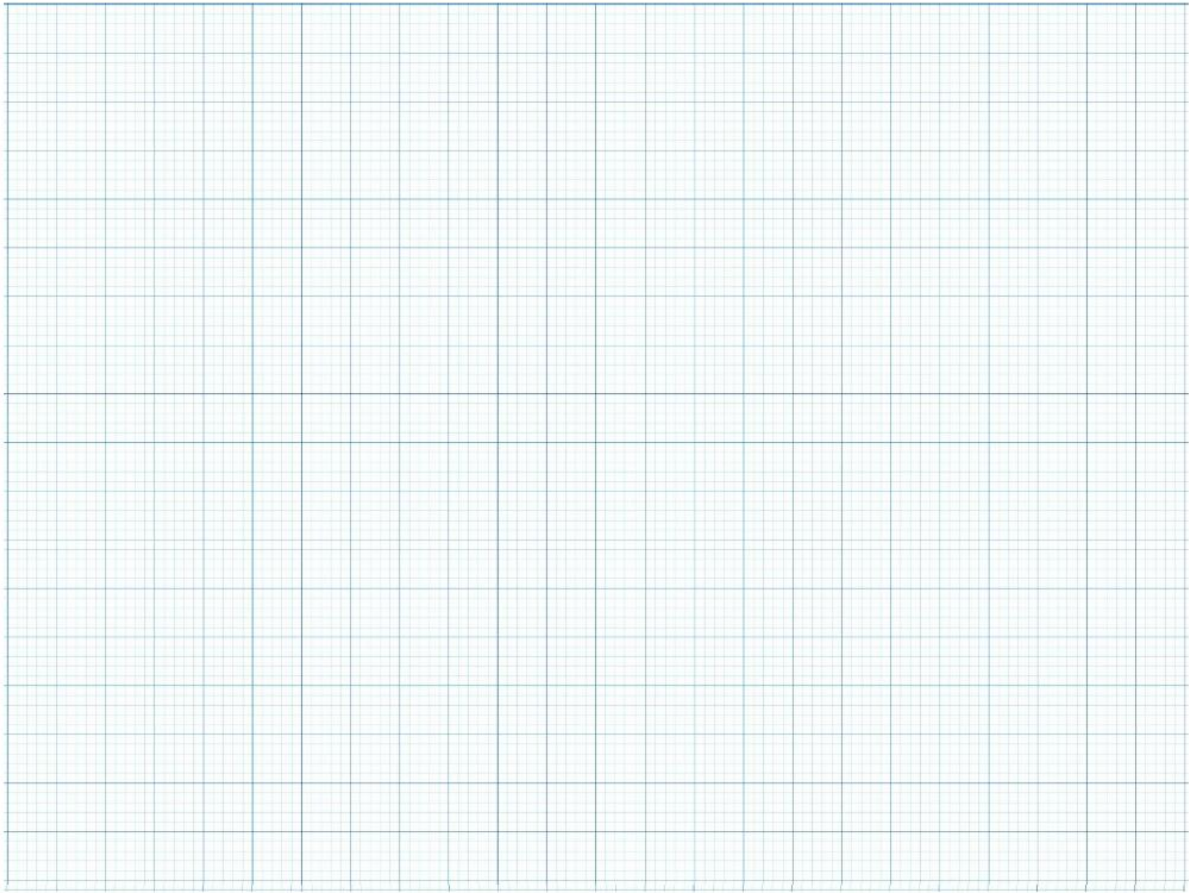


Questions:

1. What is the range of the forecast rainfall?
2. What is the average rainfall that is forecast per day?
3. Which date is the driest in the forecast?

HOT

Title:



Questions:

1. Which two consecutive days had the highest total rainfall?
2. What is the median rainfall over the 10-day period?
3. How much rainfall is forecast in total across the 10 days?

TEMPERATURE INFORMATION – NOT DIFFERENTIATED





Task 4 MILD

Choose a location on your map forecast sheet, then complete the table below with the temperatures for each day of your chosen location.

Day and date	Forecast High Temperature (°C)	(Extension) Forecast Low Temperature (°C)
Friday 7 th February		
Saturday 8 th February		
Sunday 9 th February		
Monday 10 th February		
Tuesday 11 th February		
Wednesday 12 th February		
Thursday 13 th February		
Friday 14 th February		
Saturday 15 th February		
Sunday 16 th February		

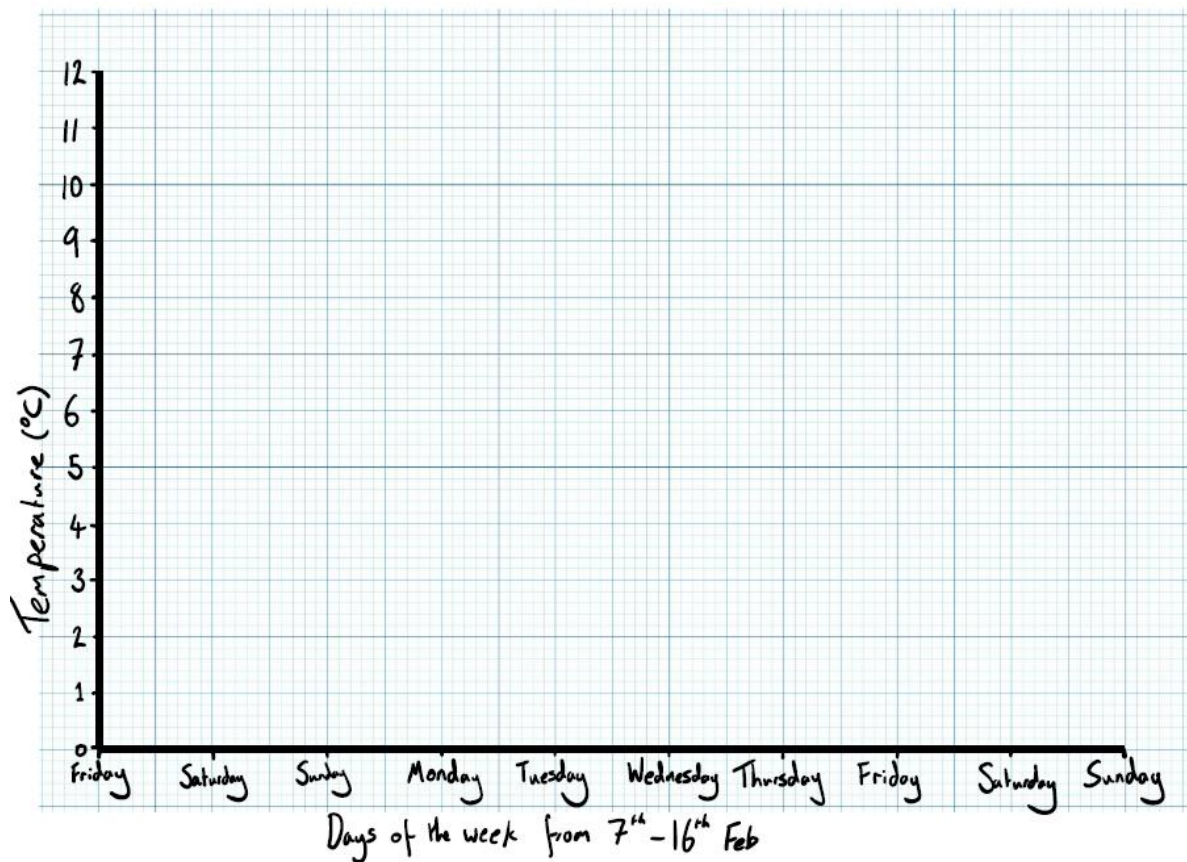
Task 4 MEDIUM & HOT

Choose a location on your map forecast sheet, then complete the table below with the temperatures for each day of your chosen location.

Day and date	Forecast High Temperature (°C)	Forecast Low Temperature (°C)
Friday 7 th February		
Saturday 8 th February		
Sunday 9 th February		
Monday 10 th February		
Tuesday 11 th February		
Wednesday 12 th February		
Thursday 13 th February		
Friday 14 th February		
Saturday 15 th February		
Sunday 16 th February		

MILD

A line graph showing the predicted temperatures of _____ over the
course of 10 days



1. Which date will be the coldest in the next 10 days?
.....
2. Which date is the warmest in the forecast?
.....
3. How many days will the maximum temperature be above 9 degrees?
.....

MEDIUM

Title:



1. What is the range of the forecast temperature (lowest minimum to highest maximum)?

.....

2. What is the average maximum temperature?

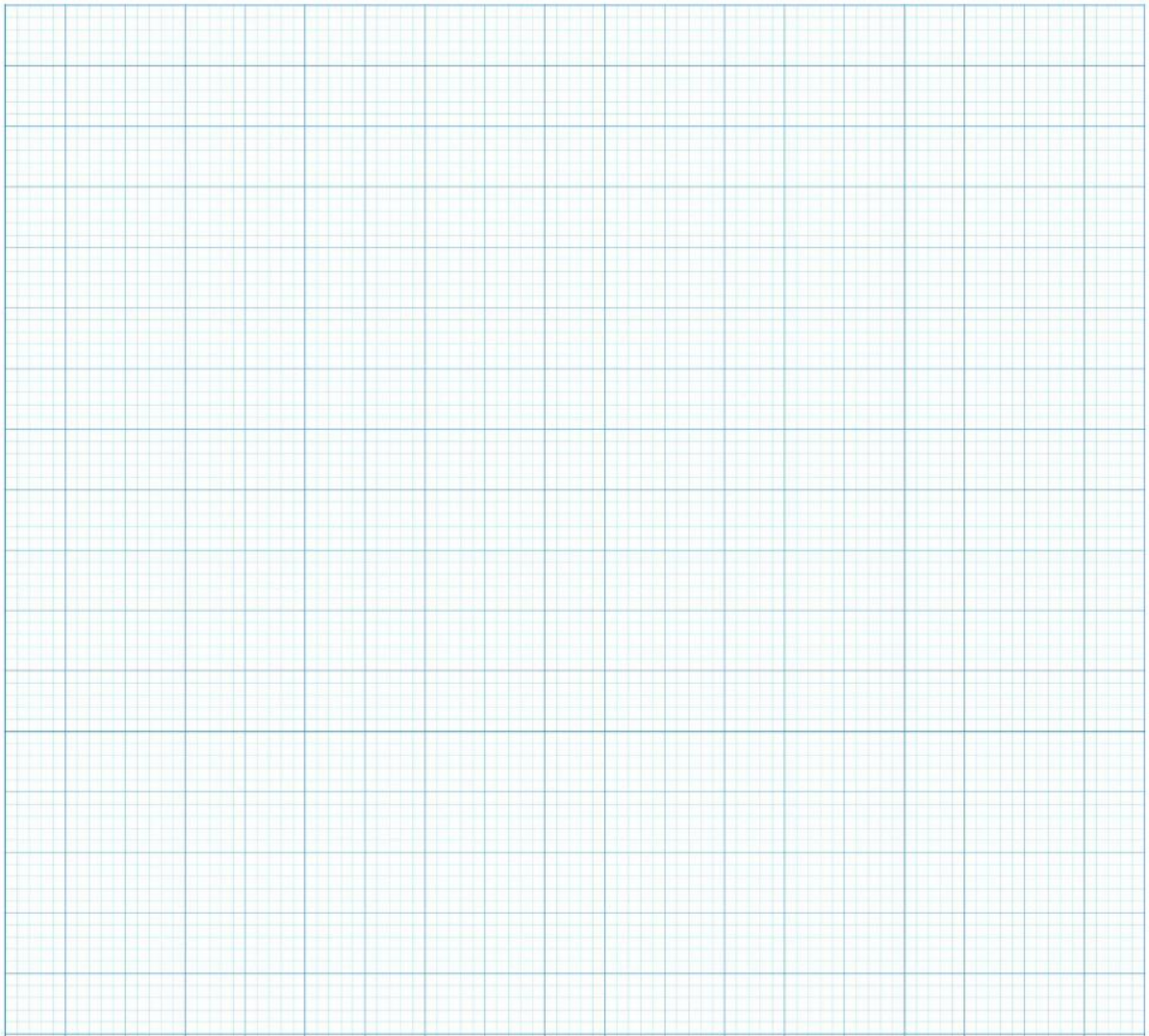
.....

3. What is the average minimum temperature?

.....

HOT

Title:



1. Which three consecutive days have the highest temperature?

.....

2. What is the median temperature over the 10-day period?

.....

3. How does rainfall (see Task 1) impact temperature in your chosen city?

.....

.....

.....

MILD South Wales Rainfall Forecast

Friday 7th February – Sunday 16th February

Over the next ten days we are going to see some wet and windy weather across South Wales so you will need your raincoats and umbrellas. The first two days of the forecast will see only light rain with **2.7mm** rain on Friday (7th) and only **1.2mm** rain on Saturday (8th). The wettest day of the next ten days will be Sunday (9th) with prolonged wet and windy conditions expected throughout the day. In total we can expect **21.5mm** of rain on Sunday so this is definitely a day for indoor activities.

As we move into next week the rainfall levels will reduce somewhat with only **3.9mm** rain forecast to fall on Swansea on Monday (10th). Westerly winds will continue through Monday to Wednesday which bring more heavy rain showers on Tuesday (11th) with **14.3mm** rainfall and prolonged drizzle on Wednesday (12th) with **14.2mm** rainfall.

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Finally, on Sunday 16th February, light rain is forecast with a total of **5.0mm** rainfall forecast for that day.

Enjoy the next 10 days and make sure you have a plan to stay dry!

Task 1

Complete the gaps in the table below to capture the forecast rainfall for the next 10 days

Day and date	Forecast rainfall (mm)
Friday 7 th February	2.7
Saturday 8 th February	1.2
Sunday 9 th February	
Monday 10 th February	
Tuesday 11 th February	
Wednesday 12 th February	
Thursday 13 th February	8.5
Friday 14 th February	6.8
Saturday 15 th February	
Sunday 16 th February	5.0

NOT DIFFERENTIATED

Task 2 – Temperature Data Capture

Choose a location on your map forecast sheet, then complete the table below with the temperatures for each day of your chosen location.

Day and date	Forecast Low Temperature (°C)	Forecast High Temperature (°C)
Friday 7 th February		
Saturday 8 th February		
Sunday 9 th February		
Monday 10 th February		
Tuesday 11 th February		
Wednesday 12 th February		
Thursday 13 th February		
Friday 14 th February		
Saturday 15 th February		
Sunday 16 th February		

Appendix 6: observation instructions and observation and reflection notes for research lesson 1

Lesson Study Observation Schedule

Question being studied:

What are the ways in which differentiated tasks can affect attitudes towards learning?

Explanation of table at top of the page

1. Involvement scale over the course of the lesson.

This is based upon an adapted version of the Leuven Scale for Involvement. Leuven scores are given for the three main parts of the lesson plan in the three boxes shown for each student.

2. Following unknown answers

This is a measure of whether the students are following and paying attention to the teacher and students answering questions that they were unable to answer themselves (split into start and end of the lesson class questioning sections). ✓ = All of the time ~ = sometimes ✕ = Not at all

3. Participation in questioning (tally)

This is a tally of the number of times that the student puts their hand up to answer the questions being posed (split into start and end of the lesson class questioning sections).

4. Relevant (on task) chatting

This is a measure of how much on task chatting there is in the three sections of the lesson. ✓ = All of the time ~ = sometimes ✕ = Not at all

5. Irrelevant (off task) chatting

This is a measure of how much off task chatting there is in the three sections of the lesson. ✓ = All of the time ~ = sometimes ✕ = Not at all

6. Student started main task in a timely manner

✓ = Yes they did ~ = 1-3 minutes ✕ = >3 minutes to start

7. During main task, student was predominantly 'on task'

✓ = All of the time ~ = sometimes ✕ = Not at all

Guidance for what we are looking for in the free text boxes:

Listening attentively when the teacher is talking

Not easily distracted

Any curiosity based questions, (vaguely linked to lesson)

Motivation to complete/ attempt stretch and challenge questions (Are they content with completing bare minimum)

Confidence and participation in questioning before and after set differentiated task:

Are they listening to answer if they didn't put their hand up?

Do they attempt to put their hand up at least once during questioning?

Leuven Scale of Involvement

THE SCALE FOR INVOLVEMENT		
LEVEL	INVOLVEMENT	EXAMPLES
1	Extremely low	The child hardly shows any activity: • no concentration: staring, daydreaming; • an absent, passive attitude; • no goal-oriented activity, aimless actions, not producing anything; • no signs of exploration and interest; • not taking anything in, no mental activity.
2	Low	The child shows some degree of activity but which is often interrupted: • limited concentration: looks away during the activity, fiddles, dreams; • is easily distracted; • action only leads to limited results.
3	Moderate	The child is busy the whole time, but without real concentration: • routine actions, attention is superficial; • is not absorbed in the activity, activities are short lived; • limited motivation, no real dedication, does not feel challenged; • the child does not gain deep-level experiences; • does not use his/her capabilities to full extent; • the activity does not address the child's imagination.
4	High	There are clear signs of involvement, but these are not always present to their full extent: • the child is engaged in the activity without interruption; • most of the time there is real concentration, but during some brief moments the attention is more superficial; • the child feels challenged, there is a certain degree of motivation; • the child's capabilities and its imagination to a certain extent are addressed in the activity.
5	Extremely high	During the episode of observation the child is continuously engaged in the activity and completely absorbed in it: • is absolutely focussed, concentrated without interruption; • is highly motivated, feels strongly appealed by the activity, perseveres; • even strong stimuli cannot distract him/her; • is alert, has attention for details, shows precision; • its mental activity and experience are intense; • the child constantly addresses all its capabilities: imagination and mental capacity are in top gear; • obviously enjoys being engrossed in the activity.

Source:

Laevers, F. et al. (2005). Sics (Zico). Well-Being and Involvement in Care a Process-Oriented Self-Evaluation Instrument for Care Settings. Research Centre for Experiential Education Leuven University: K&G.

LESSON 1 6 Feb AH teaching	Student 1 <i>Higher previous attainment</i>			Student 2 <i>Lower previous attainment</i>			Student 3 <i>Mid-previous attainment</i>		
Involvement scale over the course of lesson (1-5)	5	4		4	3		3	5	3
Following unknown answers? [✓ ~ ✗]	✓			✓			✓		
Participation in questioning (tally)				II					
Relevant (on task) chatting [✓ ~ ✗]	✗	✗		✗	✓		✓	✓	
Irrelevant (off task) chatting [✓ ~ ✗]	✗	✗		✗	✓		✓	✗	
Student started main task in a timely manner [✓ ~ ✗]	✓		✗	~		✗	✓		✓
During main task, student was predominantly 'on task'	✓		✗	~		✗	✓		✓

Free text observation sections

Student 1 *xxxxxxx previous attainment*

- MILD GRAPH
- Not sat next to anyone
- Stayed focussed even when finished
- Fiddling with pen, has finished work, kept quiet about it
- Turned pen in "blow gun" to shoot paper

Student 2 *xxxxxxxxx previous attainment*

- Not really chatting to people next to him (they told him to "shut up")
- Needed help starting the task – more help required to complete the first few data points on the table.
- Wanting to change to medium (from mild)
- Sings, dances and "zones out" – eventually settles down
- Throws work in the bin and grabs a new medium sheet – then got work back out of the bin
- Sings while he works "I did it"
- Demands a lot of attention – goes to the toilet.

Student 3 *xxxxxxxxx attainment*

- Fiddling & drumming with pen – finished the DO NOW activity early
- Not sat with anyone.
- Finished table immediately
- Extended enquiries
- Moves onto next task with some other MAT learners sat nearby
- Out of seat chatting to girls - answering their questions for them. Walking around the room "helping" others.

General Comments

- None of the three focus pupils were listening when the next task was being explained.
- A number of learners swapped sheets
- Some learners finished bar chart early but not moved onto next task
- Consider next lesson just moving them on even if others have not yet finished task 1
- Temp 2-9 °C looks like MINUS 9 °C!

LESSON 1 6 Feb 2020 AH Teaching	Self	Peer	Student
Description What happened?	- Explanation of task. - MAT students took up a lot of teacher attention. - Focus pupil 2 attention in flux.	- How clear the tasks are understood - MAT students appear to be intentionally problematic (not working through problems). - Focus pupil 2 too energetic, lively, temperamental learner.	- Learners, on the whole, found work easy. - Some learners struggled plotting the results on the scale on the graph. - Learners decided to help others who were struggling instead of completing extension tasks.
Feelings What were you thinking?	- Lack of clarity and some delays for learners who had completed the tasks quickly. - Wishing I had prepared a larger extension task to keep MAT learners engaged. - Frustration with not knowing how to maintain pupil 2's attention.	- Tasks were explained more clearly at beginning of lesson but became less clear as teacher tried to rush towards the end of the lesson. - How can we make these MAT learners more resilient to challenges / imperfect questions. - Unintentionally distracting others, a lot of effort to keep this learner on task but very willing to comply.	- Learners had spare time between tasks after they had finished. - They were unclear on how to manage this issue and needed support. - Learner was probably "turned off" from the lesson & wanted to extenuate and communicate frustration by helping others with the task.
Evaluation What was good and bad about the experience	+ive – All understood the task in the end. -ive – Progress was delayed, others misunderstood +ive – Completed work well -ive – Left with not much to do towards end of the lesson -ive – Refused to complete the last question due to imperfection in the question. +ive – When pupil 2 is focussed he works hard. -ive – When he isn't focussed he is potentially distracting others.	+ive – Every learner had a task and knew what to do. +ive – Modelling of exemplar graph. -ive – Some learners missed nuances of requirements -ive – Difficult to deal with learners working on different tasks at the same time. +ive – MAT learners got through the tasks quickly and wanted more work to do. -ive – MAT learners not cooperative with the rest of lesson once they identified an issue with final question. +ive – Great rapport between teacher and learner. -ive – Learner relies a lot on 1-2-1 interactions with teacher.	+ve – learners are ambitious and confident. -ive – learners are not pro-active with their learning and don't take the initiative to start a new task. +ive – challenged the learners. -ive – some learners slowed down / stopped progress. +ive – Student "helping" and explaining to others will reinforce their own understanding. -ive – Learner was simply giving peers answers rather than helping peers come to the correct answer.

Appendix 7: observation and reflection notes for research lesson 2

Lesson 2 7 Feb TP Teaching	Student 1 Higher previous attainment			Student 2 Lower previous attainment			Student 3 Mid-previous attainment		
Involvement scale over the course of lesson (1-5)	4	4	4	4	4	4	4	5	4
Following unknown answers? [✓ ~ ✗]	✓		✓	✓		~	✓		✓
Participation in questioning (tally)	I		I				I		
Relevant (on task) chatting [✓ ~ ✗]	~	✓	~	✗	✓	~	✗	~	~
Irrelevant (off task) chatting [✓ ~ ✗]	✗	~	✓	✗	~	✗	✗	✗	✗
Student started main task in a timely manner [✓ ~ ✗]	✓		✓	✓		✓	✓		✓
During main task, student was predominantly 'on task'	✓		✓	✓		✓	✓		✓

Free text observation sections

Student 1 Higher previous attainment

- **DO NOW** activity – boys either side of participant learner chatting to each other but participant remained on task.
- **TASK 1** – quick to collect relevant sheet (**HOT**) and straight into completing the task
- Helpful to both neighbours who had completed the scale on graph incorrectly.
- Did not complete the questions for task 1 but focussed on shading in the graph instead. Direct quotation – “*In primary school it took us an hour to complete a bar chart. We just did this one in 20 minutes*”.
- **TASK 2** – Started Task 1 questions when instructed to start Task 2 but teacher quickly identified this and moved learner onto Task 2.
- Some off task chatting with neighbours but still making good progress on the task whilst talking quietly.
- Learner missed the instruction to shade in the range on the graph. Observing researcher advised when learner questioned what to do next.
- Quality of work appears high. Finished all tasks approximately 2 minutes before peer assessment.
- **PEER ASSESSMENT PLENARY** – Provided two stars and a wish feedback to neighbour
- All **HOT** tasks selected and completed.

Student 2 Lower previous attainment

- **DO NOW** – focussed on activity. Struggled a little with the calculation of how many people were surveyed but managed to get the correct answer.
- **TASK 1** – Quickly went to get worksheet (**MEDIUM**) and highlighted key information on the text to help populate the table.
- Working quite slowly but steady progress being made. When teacher advised that the class had 3 minutes to complete the graph Student 2 progressed more quickly and had almost completed the graph in time.
- When teacher was explaining the success criteria for the graph for self assessment Student 2 continued to work on finishing off the graph so may not have listened and understood the success criteria. That said, graph drawn was of good standard and met majority of success criteria.
- **TASK 2** – straight into task quickly. Completed the table, extracting the relevant data from the graphs, quickly.
- Approached teacher to ask a question – teacher clarified quickly.
- Neighbour unsure where the Task 2 table was located and Student 2 assisted neighbour with this.
- Focussed on the task and made good progress.
- Finished graph with 5 minutes to go. Went back to bar chart to shade in the bars rather than attempting the questions on Task 2.
- Observing researcher pointed out that graph had no title or labelled axes and learners corrected quickly.
- Did not swap graphs for **peer assessment**.
- Overall good quality graphs created by this learner. All **MEDIUM** tasks selected and completed

LESSON 2 7 Feb 2020 TP Teaching	Self	Peer	Student
Description What happened?	- Lesson was quick paced. - Repeated myself a lot during circulation. - No proper plenary or calm close.	- Explanation of task – both tasks were explained clearly and appropriately early in the lesson to ensure learners were all aware of next task. - Scale on the graph was difficult for some learners to plot accurate results on AND there was some confusion about where to plot the days on the line graph x axis. - Learners finished all tasks.	- Higher ability learners finished all work that was set (just) before the end of the lesson. - Question to calculate mean/ median – learners found “boring”. - Liked the fact worksheets were differentiated and how the worksheets were presented to them in separate labelled trays.
Feelings What were you thinking?	- It maybe felt a little rushed - Issues could probably be solved en-mass allowing more time to help with less common issues. - Only real AFL can be done by looking through work after.	- Learners were clear on requirements and got on with tasks quickly. - How can this task be simplified? - This was only a minor issue because the quickest learners finished the final questions around 2 minutes before the end of the lesson.	- Learners stated that they would like more / extra questions so that they couldn't finish all tasks. - They enjoyed plotting the graph but not the mathematical questions. - Learners able to select appropriate level of challenge.
Evaluation What was good and bad about the experience	+ive – learners got through almost all of the work +ive – learners worked at a fast pace. -ive – some learners had two half completed graphs at the end of the lesson. +ive – enabled me to clearly see where the pitfalls were. -ive – showed some possible lack of clear explanation. +ive – stand alone lesson, so not strictly necessary. -ive – hard to tell which learners struggled with the tasks.	+ive – High level of engagement from learners throughout the class. All clear on requirements. Any minor confusions clarified quickly by the teacher. -ive – Some learners did not finish the tasks. +ive – the scale provided a challenge for the learners. -ive – this issue slowed some learners progress. +ive – right amount of work for >90% of learners in the class. -ive – some learners finished all tasks.	+ive – sense of achievement in finishing all of the tasks. -ive – not challenged for every minute of the lesson. +ive – these are important numeracy skills being practiced. -ive – risk a reduction in engagement with questions that the learners find boring.. +ive – able to select the right difficulty for them. -ive – some learners may not challenge themselves when they have the option to choose the level of difficulty.

Appendix 8: group interview transcripts

Interview 1 transcript

Ok right so this shouldn't take more than 5 or 10 minutes. There are no wrong or right answers, we just want to know what you thought of lesson ok? Usha, do me a favour, come a bit closer otherwise we will never be able to hear you, alright? Mr [REDACTED] are you going to taking notes as well are you?

Yeah just for reference

Ok, so, who did the mild worksheet? You two ah great, ok. So, how challenging did you find it?

Umm...

[REDACTED], go on then. How challenging did you find it?

Not really hard, I found it easy.

Yeah? Oh Good. Ermm, anything that you found difficult on it?

No

Have a look at it here. No?

No

Questions alright?

Yeah

[REDACTED], what did you think of it?

Umm I thought it was an easy task which is then why I moved on to the medium worksheet, and that the medium worksheet was the right temperature for me like.

Ok great.

That was the good one for me

Umm so, who did the, so you did the medium worksheet for the second part yeah? Ok great and that was the right temperature for you was it?

Yeah

So anything you found particularly difficult or easy on that sheet? Have a look at it.

I did find the point 5 values like you know where it says like 2.2 or 2.7 I found measuring the 7 part the hard bit like cos the two was right out in the open. Uuh and the 7 part wasn't. it was kind of difficult to measure exactly how to get to the 2.7.

Alight yeah, that was really clearly explained issue, [REDACTED] yeah the 2 was easy but the 2.7 working out that was more difficult, that's really clear.

And [REDACTED] you did the hot worksheet yeah?

Mmhhmm

So how challenging was it for you?

Easy

Easy was it? Was it too easy for you?

Yeah

Were you bored?

Yeah

Ok umm, anything you found difficult?

No

Did you do the last question on the last worksheet?

Yeah

And was that easy as well?

Yeah

Ok good. Amazing. Umm so question for all of you then, were there any part of the lesson today that you enjoyed?

Umm the graphing part, I like the drawing the graphs because normally like umm like writing it not my thing cos it just boring, and calculated maths it also not my thing because that's also boring but the drawing part of it was fun because as much of a challenge as it was it was still fun to do.

Ok good.

■, what did you enjoy about it?

I also enjoyed the graph the drawing the bars.

Ok Anything else?

Umm, I only enjoyed that.

Ok that's fine.

And ■ anything you enjoyed about today's lesson?

Ummm, after I finished I went around helping people I quite enjoyed that, because some people didn't get it.

Ok good. Anything else?

No

Ok fine

Umm so today, so we don't always have lots of different worksheets with hot, medium, or mild do we? Do you think that's a good way of kind of providing work for you guys, so you've got a choice of mild medium or hot?

Yeah

And why's that?

Because if it's like was only hard then people struggle and people should get to choose what difficulty they should have their work.

Ok good

■ what do you think?

I solidly agree with ■, I like like if it's just one worksheet everyone is going to have that sheet and some people may not find that sheet for them. Like but with the new mild and medium and hot, that actually sets the right thing for you. And you can decide whether it's good for you. And the best

part is you can change in-between. Like with the one sheet it's just one sheet you have to do it, however with the hot medium mild if I started at hot, I was like mmm nah this isn't for me. I can go back to mild I mean to medium and then if medium wasn't the right one for me then I could go to mild. Then mild, well hopefully its right one for me.

Ok good. And [REDACTED] what do you think, is good to have different difficulty tasks?

I think its good, I think there should be like, an extension like a stretch and challenge or whatever on there because me and some other girls were finished quite quickly.

You were very quick So perhaps extra extra hot as well as well as hot. It's a good idea. Umm so you might repeat yourself here, but I will ask the question what do you think was good about the lesson? Not necessarily all about the work what was good about today's lesson?

[REDACTED]?

Umm, I don't know really there were multiple different good parts of the lesson I can't really determine between.

[REDACTED] can you think of anything that was good today or interesting?

Umm I don't know.

[REDACTED]?

Umm not really no.

Ok right let's turn that question on its head, uhh what do you think was bad about the lesson today? So let's go the other direction, Ruby, what do you think?

Well umm, some of the questions weren't exactly like proper, because like the last question was how does rainfall see task one impact temperature in your chosen city, and task one was all about Swansea so if you didn't choose the Swansea then you don't have anything to do. And one of my friends got a bit upset about that.

Yeah,

So

Yes, you're right, that was a good point to make it wasn't a perfect comparison between Swansea rainfall and Cardiff temperature. [REDACTED], anything you thought was bad today?

no

Anything that could improve?

I think everything in this lesson was alright

[REDACTED]?

Umm personally, I wouldn't put so much text cos like on the Swansea rainfall forecast it has like a whole bunch of words

Yeah there was a lot of information

Lot of information and like if there's too much information it slows the person down they keep thinking oh I saw this somewhere so they read over again and then they are like oh I saw this as well, bluhbluhbluhbluhbluh and then it's just repetition.

Well then that interesting, what about then, do you think it might have been better if the text had been medium and mild as well? Perhaps...

Yeah

Ok we can think about that. And you can't just say what I've just said to you [REDACTED], I will ask Omar this question first. What changes would you make to today's lesson to make it more engaging?

Like umm a bit more work because like umm I don't know actually.

A bit more work you think is it?

Yeah

Ok umm [REDACTED]?

Ummm I don't really know, I think there should have been a task 3 and 2 that's all I can really improve about today's lesson.

Ok yeah that's a good point because really task 2 was drawing the bar chart umm but yeah then that was to be task 3. Confused about what number task they were on yeah make that a bit clearer because it was a bit confusing jumping from task 2 to task 4 then wasn't it? Ruby?

Umm, yeah I think there should be harder work. So, yeah.

So, some kind of extra hot or vindaloo flavour or extension stretch and challenge yeah?

Yeah.

Ok Mr [REDACTED] have you got anything to add

No, I think that's great, thank you very much for helping

Yes, thank you, really really useful and really clear answers.

Interview 2 transcript

Ok so, what do we have. So, who did the mild work sheet, so the green one? Did any of you do the green one?

No

No, no one? Ok uhh, who did the medium one?

Me

Did either of you do the medium one?

No

No

Ok, so, How challenging did you find the medium worksheet would you say?

Umm, I found it quite easy.

Quite easy?

Yeah

Yeah? Ok, ummm so, were there any aspects you found harder than others?

Umm

You can have a look through your work, if you wanna try and remember.

Probably not.

No? You found it all easy, ok that's great. Umm, so what aspect of it did you find the most easy?

Umm, Finding the information.

Right so the very first work sheet is it?

Yeah

Yeah, that's just a reading task, just picking information from it isn't it? Ok so, you two did the hot work sheet was it?

Yes

Yes

Ok, so how challenging did you find that?

Fairly easy

yeah

Fairly easy?

Yeah

Yeah

Did you find any aspects of it harder than others?

Not really but...

I found the 3rd question a little bit hard

3rd question, right what was the 3rd question?

Yeah I found it.

The how much, no wrong one.

This one was it?

Yeah, I found this one quite hard because I didn't really get it, so I just did the day with the highest temperature had the most rain.

That's what I did!

Right excellent, well that's a good observation. Well done you two. Right so, that's the bit you found the hardest, that last question.

Yeah

Yeah, it was quite hard to be fair

So what did you find easiest out of, out of everything?

Reading the data.

Just reading the data from that sheet?

And this was really easy, the do now.

Yeah, the do now yeah.

Yeah that was fun.

Fun, you like that one did you?

Yeah

Nice and colourful. Umm, for reading the data, did you find the text to table or the umm the map to table harder? Or were they about the same?

Probably this one,

The text.

just because it was more like you had to find more numbers.

Right ok.

Yeah, because I just wrote down single digits numbers but on this one you had to do decimals and stuff.

Yeah that's fair enough.

Lily, which one, did you find the text to table harder or the map table?

Ummm, this one was harder, well it wasn't that hard but it was just harder than the other one.

Ok umm, right, so. Did you, what were any aspects of the lesson that you really enjoyed if there were any? I know you said the do now section.

Yeah, I like just being able to draw it.

You like being able to draw the graphs?

I enjoyed colouring in the graph.

Ah you like the shading did you?

Yes.

I see you have gone a little bit over board with that, I'm surprised you haven't gone through to the other side! Haha, no I'm joking. What, did you enjoy any aspects of it?

Drawing the graph

Drawing the graph, that bit was the funnest? Ok, what aspects of the lesson didn't you really enjoy, anything you might of found boring or anything you just didn't really like?

Not really

Go on you can be honest, no I'm not going to be insulted.

Yeah I actually didn't find anything.

No like, I genuinely didn't.

OH, maybe adding up all the data I felt was a little bit boring.

Well a bit tedious was it?

Yeah.

Yeah ok.

What about yourself, any bits you did really like?

No

No?

Right ok, what else have we got. Do you like having tasks where you have a choice of different difficulties? So we've got...

Yes, I really like that

What do you like about it.

I like the different people can ummm what's it called? Challenge themselves.

Right, so everyone can get the appropriate challenge level?

Yeah

So

If we just all do the same sheet, then some people would find it really easy and some could find it harder

Right yeah, anything else? Go on, do you like having lots of different work sheets?

Yeah

Yeah?

Yeah

What don't you like, are there any draw backs of having lots and lots of worksheets or having lots of different difficulty ranges or..

Some people might pick something that might be too easy for them

Right so...

If they only think they can do like the mild, but they might actually be able to the hot even.

Yeah that's a good point. Right. Oh yeah, most important question, we will go one by one for this. What changes would you make to today's lesson, to make it more engaging? So more interesting, or you know, more challenging, something that keeps you more focused, we'll go one by one, Lily?

Umm maybe, making the data a bit harder to like work out?

Ok so making more of a challenge to get the data in the first place? Ok. What would you change?

Umm more questions.

More questions?

So people won't stop and just chat.

Ah, did you fly through the work and had nothing to do?

Kind of yeah.

Yeah ok more questions so that's a good point.

Yeah again more questions, and harder questions too.

Harder questions ok, excellent. Well anything else you guys want to add?

No

no

Umm I'm fine

No? Excellent. Well thank you very much, you have been very useful.

Appendix 9: research ethics form

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity.
Please see Checklist for details of process for different categories of application.

Delete the Guidance Notes at the end of the form BEFORE submitting your application

SECTION A: About You (Principal Researcher)

Full Name:	Andrew Harris			
Tick all boxes which apply:	Member of staff:	☐	Honorary research fellow:	☐
Undergraduate Student	☐	Taught Postgraduate Student	☒	Postgraduate Research Student

Faculty/School/Centre:	UWTSD – Yr Athrofa
Campus:	Swansea SA1
E-mail address:	1903471@student.uwtسد.ac.uk
Contact Telephone Number:	07838 261 287
For students:	
Student Number:	1903471
Programme of Study:	PGCE (Secondary)
Director of Studies/Supervisor:	Catherine Morgan (ECAD7004)

SECTION B: Approval for Research Activity

Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
			Date	
If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
	Faculty Research Committee	☐		
	Other (write in) Rebecca Salmon (Senior Mentor @ School x)	☒	13/12/2019	

SECTION C: Internal and External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines.	
<u>UWTSD Research Ethics & Integrity Code of Practice</u>	☒
UWTSD Research Data Management Policy	☒
<i>Bera – Ethical Guidelines for Educational Research (2018)</i>	☒
<i>EWC – Code of Professional Conduct and Practice (2019)</i>	☒

SECTION D: External Collaborative Research Activity

Does the research activity involve collaborators outside of the University?	YES	☐	NO	☒	
Institution					
Contact person name					
Contact person e-mail address					
Has this individual consented to sharing their details on this form?	YES	☐	NO	☐	
Are you in receipt of a KESS scholarship?	YES	☐	NO	☐	
Is your research externally funded	YES	☐	NO	☐	
Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
	Employed	YES	☐	NO	☐
Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐
Permission to undertake the research has been provided by the partner organisation	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

Does this organisation have its own ethics approval system?	YES	☐	NO	☐
If Yes, please attach a copy of any final approval (or interim approval) from the organisation				

SECTION E: Details of Research Activity

Indicative title:	Lesson Study to examine the question: What are the ways in which differentiated tasks can affect attitudes towards learning?		
Proposed start date:	28 January 2020	Proposed end date:	21 February 2020
Introduction to the Research (maximum 300 words) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the three points below: • <i>Purpose of Research Activity</i> • <i>Proposed Research Question</i> • <i>Aims of Research Activity</i> • <i>Objectives of Research Activity</i> Demonstrate, briefly, how <u>Existing Research</u> has informed the proposed activity and explain • <i>What the research activity will add to the body of knowledge</i> • <i>How it addresses an area of importance.</i>			
Purpose of Research Activity Differentiation by task is an approach to setting work for learners where a variety of tasks are provided, and individual learners select the tasks to complete depending upon how confident they are with the topic. This approach is aimed at ensuring that all learners in a mixed ability class can be suitably challenged whilst avoiding the potential social implications of the teacher explicitly setting different tasks for learners with different previous attainment.			
Research Question How can differentiated tasks, where learners self-select the level of difficulty, affect attitudes towards learning?			
Aims of Research Activity This research aims to identify and develop improved methods of implementing differentiation by task to improve attitude to learning in lessons.			
Objectives of Research Activity The aim of this research will be achieved through completion of the following steps: • Engagement with academic literature to understand the current preferred methods of implementing differentiation by task. • Completion of a lesson study (see <i>Proposed Methods</i> section) to initially implement existing best practice approaches and secondly, to identify potential improvements to refine this approach further.			

Proposed methods (maximum 600 words)

Provide a brief summary of all the methods that **may** be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed.

This research will be completed using the "lesson study" approach to educational research. This approach was pioneered in the UK by Dudley (2015). A lesson study is a form of classroom action research focusing on improving teaching practice. It requires groups of teachers collaborating in the planning, teaching and observing of lessons in order to identify ways of improving teaching and learning.

During a lesson study cycle a group of teachers (in this case a pair) will:

1. Identify a focus for pupil learning (achieving good attitude to learning across the entire class)
2. Jointly identify a teaching technique to develop (differentiation by task)
3. Identify three "case pupils" who will be observed during research lessons
4. Jointly plan a research lesson
5. Teach and observe the lesson focussing on the case pupils learning and progress
6. Interview the case pupils to understand their perception of the lesson
7. Hold a post research lesson discussion to analyse how effective the teaching was and how well the case pupils progressed
8. Repeat points 4-7, refining the lesson plan using the information provided from the first lesson. Repeat the lesson with a different class (same year group and subject) and interview learners again to further refine the approach.
9. Formally share the outcomes with other teachers in order to help colleagues benefit from the research completed.

The lesson observation will assess attitude to learning of the participants using a number of methods, including the Leuven Involvement scale (Laeyvers, 2005).

Following the research lesson and group interview the researchers will complete detailed reflection activity. A proforma has been developed using the ideas of Gibbs (1988) and Brookfield (2005).

As described above three participants in each lesson will be observed during the research lesson. They will be aware that they are being observed during the lesson and consent from parents and assent from learners will have been obtained. Participants will be regularly reminded that they can withdraw from the research at any point. To withdraw from this research the participant simply has to tell the researchers or their normal classroom teacher of their wish to withdraw and this will be actioned immediately.

Interviews will be carried out with participants after completion of the research lessons. This will be in the form of a group interview. At the start of the interview participants will be reminded that they can withdraw from the research at any point. In addition, participants will be advised that they do not have to answer any questions that they do not wish to.

Interviews will be recorded using a digital voice recorder. Immediately after the interview, the recordings will be transposed into digital text format. Once the interview has been transposed into digital text the audio recording will be permanently deleted. At no point will the digital voice recorder be removed from the possession of the researchers.

Location of research activity Identify all locations where research activity will take place.		
This research will be conducted in a large secondary school in Swansea during the PTE1 placement of the PGCE students conducting the research. There will be two classes that will be observed. Both classes will be Year 7 (pupil age 11-12) and the class size of both classes is around 30 pupils.		
Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants.		
Not applicable		
Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☒
	YES	☐
If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with prevailing data protection law of the country in question and England and Wales.		

SECTION F: Scope of Research Activity

Will the research activity include:	YES	NO
Use of a questionnaire or similar research instrument?	☐	☒
Use of interviews?	☒	☐
Use of diaries?	☐	☒
Participant observation with their knowledge?	☒	☐
Participant observation without their knowledge?	☐	☒
Use of video or audio recording?	☒	☐
Access to personal or confidential information without the participants' specific consent?	☐	☒
Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
Investigation of participants involved in illegal activities?	☐	☒
Use of procedures that involve deception?	☐	☒
Administration of any substance, agent or placebo?	☐	☒
Working with live vertebrate animals?	☐	☒
Other primary data collection methods, please explain in this box For example, 'focus groups'. Please indicate the type of data collection method(s) in this box and tick the accompany box.	☐	☒
Details of any other primary data collection method: (this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

Who are the intended participants:	YES	NO
Students or staff at the University?	☐	☒
Adults (over the age of 18 and competent to give consent)?	☐	☒
Vulnerable adults?	☐	☒
Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☒	☐
Prisoners?	☐	☒
Young offenders?	☐	☒
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
People engaged in illegal activities?	☐	☒
Others (please identify specifically any group who may be unable to give consent) please indicate here and tick the appropriate box.	☐	☒
Other – please indicate here: (this box should expand as you type)		

Participant numbers and source

Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?

How many participants are expected?	6 Consent and assent will be sought from all pupils in both classes involved in this research. This means that, should any participants choose to withdraw from this research, that the researchers can select an alternative participant.
Who will the participants be?	The participants will be Key Stage 3 (Year 7) learners in Science lessons (aged 11 & 12).
How will you identify the participants?	Participants will be selected from the entire class. The researchers will engage with the class teacher to identify three learners from both classes who have prior attainment levels of high, medium and low.

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.

If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.

Full risk assessment completed and appended?

Yes

☐

No

☒

Risks to participants

For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information

Risk to Participant:

1. There could be a risk of participant personal information provided during the interview process being inadvertently released into the public domain
2. There could be a risk of emotional distress to the participants if they decide that they no longer want to participate in the research or answer questions in the interview
3. Participants may feel under pressure to answer questions "correctly" in the interview

How will you mitigate the Risk to Participant

1. All information collected during interview will be anonymised for the purposes of further analysis. Interviews will be recorded through note taking on paper. Notes will be converted into anonymised electronic format documents as quickly as possible after the interview. The paper notes will be destroyed (shredded) immediately after they have been converted into anonymised digital documents.
2. Participants will be provided with a very simple process to withdraw from the research at any point. They can request that they withdraw with the researchers or with their normal class teacher. Participants will be reminded that they are free to withdraw regularly throughout conducting this research.
3. Participants will be reminded at the start of the interview that there are no right or wrong answers to the questions and we are just interested in whatever they have to say.

If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities

Not applicable

Risks to investigator

For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest

Risk to Investigator:

1. There is a very low risk to the investigators in terms of personal safety and risk of accusation of harm / impropriety. The interview process could potentially result in these negative outcomes
2. Accusation of fabrication of data
3. Possible bias due to teachers relationship with pupils

How will you mitigate the Risk to Investigator:

1. The risk is mitigated by the researchers never performing their research unaccompanied. At all times during the research a teacher from the school where the research will be carried out will be present
2. All data will be verified by the both researchers on this project.

	3. Observations will be completed by the researcher who does not know the pupil
University/institutional risks For example: adverse publicity, financial loss, data protection	
Risk to University: Risk is very low of adverse publicity from this research	How will you mitigate the Risk to University: This will be mitigated by the researchers acting professionally and sensibly at all times.

Disclosure and Barring Service			
If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
Does your research require you to hold a current DBS Certificate?	☒	☐	☐

SECTION I: Feedback, Consent and Confidentiality

Feedback

What de-briefing and feedback will be provided to participants, how will this be done and when?

Immediately after the interviews have taken place the participants will be thanked for their input into the research. The researcher will explain how the information provided will be analysed and used in future and remind participants that they can still withdraw from the research at any time.

Informed consent

Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.

Written consent will be obtained from the parents of the participants and assent from the participants themselves. Within the documentation requesting consent the research being carried out will be explained using suitably accessible language for the parents and participants. A copy of this information sheet for parents and participants is provided with this ethics form.

Participants will be regularly reminded throughout the research (prior to lesson and prior to interview) that they can withdraw from the research at any point and that this will be actioned immediately.

Confidentiality / Anonymity

Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

No participant names will be included within the final research documentation. Any documentation that includes the participants names that is used in the research (e.g. participant name on the completed worksheet) will have the name and any other identifiable features permanently redacted from any electronic images.

Any paper notes taken during the completion of the research will be kept in a locked drawer and will be destroyed (shredded) once the information has been converted into electronic format.

All electronic information will be stored on a Microsoft OneDrive folder that can only be accessed by the two researchers.

Whilst the actions and what is said by the participants will be used and discussed within the research, anonymity will be maintained throughout.

The school where the research has been carried out will be referred to as school x. Participants will be referred to as pupil A, pupil B etc.

Participants will be regularly reminded that they can withdraw from the research at any point. To withdraw from this research the participant simply has to tell the researchers or their normal classroom teacher of their wish to withdraw and this will be actioned immediately. If a participant chooses to withdraw from the research all information gathered in relation to their actions and what they have said will not be used as part of the research and will be redacted from any inputs in the group interview.

All actions and decisions made in regard to confidentiality and anonymity will be completed in line with the Bera Ethical Guidelines for Educational Research (2018).

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
<i>"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.</i>	☒	☐
If YES, provide a description of the data and explain why this data needs to be collected:		
Consent forms completed by the parents of participants will include names. The information collated will be secured adhering to data protection policies and will be destroyed once the research is complete. Any data collection and storage will adhere to the University's Research Data Management Policy.		
Does it involve special category data (as defined by the GDPR)?	YES	NO
<i>"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes),</i>	☐	☒
If YES, provide a description of the special category data and explain why this data needs to be collected:		
<i>(this box should expand as you type)</i>		
Will the research activity involve storing personal data and/or special category data on one of the following:	YES	NO
Manual files (i.e. in paper form)?	☒	☐
University computers?	☒	☐
Private company computers?	☐	☒
Home or other personal computers?	☐	☒
Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
"Cloud" storage or websites?	☒	☐
Other – specify:	☐	☒
For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of password protection, encryption, anonymisation and pseudonymisation:		
All data held in paper form will be stored in a locked drawer until such time that it is scanned / digitised, at which point the paper copy will be destroyed (shredded)		

All electronic data will be held on a Microsoft OneDrive folder that is only accessible by the two researchers working on this research project.

All Data Storage

Will the research activity involve any of the following activities:	YES	NO
Electronic transfer of data in any form?	☐	☒
Sharing of data with others at the University?	☐	☒
Sharing of data with other organisations?	☐	☒
Export of data outside the European Union or importing of data from outside the UK?	☐	☒
Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
Publication of data that might allow identification of individuals?	☐	☒
Use of data management system?	☐	☒
Data archiving?	☐	☒

If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and DPA (and/or any international equivalent):

List all who will have access to the data generated by the research activity:

Myself and my research partner

List who will have control of, and act as custodian(s) for, data generated by the research activity:

Myself

Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.

All information related to this research will be stored in a Microsoft OneDrive folder which can only be accessed by the researchers. This data may also be shared with the UWTSD markers of the assignment. When the research is completed and assignments have been marked and confirmed as passing requirements, all information related to this research will be permanently deleted.

Please indicate if your data will be stored in the UWTSD Research Data Repository (see <https://researchdata.uwtsd.ac.uk/>). If so please explain. (Most relevant to academic staff)

Not stored in UWTSD Research Data Repository

Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
	NO	☐
Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒
	NO	☐

SECTION K: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.

In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's [Research Ethics and Integrity Code of Practice](#)

Signature of applicant:	<i>Andrew Harris</i>	Date: 17/12/2019 <i>Updated 13 Jan 2020</i>
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For STUDENT Submissions:

Director of Studies/Supervisor:	Catherine Morgan (ECAD7004)	Date:
Signature:		

For STAFF Submissions:

Head of School/Assistant Dean:		Date:
Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (and have NOT completed Section H of this form) (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Head of School.
☒	I have deleted the guidance notes before submitting the PG2 for consideration

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk , with the title 'Ethical Approval' followed by your name.

You will be informed of the outcome of your claim by email; therefore it is important that you check your University and personal email accounts regularly.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

This form is available electronically from the Academic Office web pages:

<http://www.uwtsd.ac.uk/academic-office/>

Application Process

All staff research projects and all research students must submit the Ethical Approval Form to the **University Ethics Committee** via the Academic Office (pgresearch@uwtsd.ac.uk). Staff research directly in relation to personal study for taught undergraduate or Masters programmes should be submitted via the Faculty procedures explained below.

Taught masters and taught undergraduate research Ethical Approval Forms are considered **within Faculties**. Faculties will provide details of the specific processes for this. Where the Ethical issues within any single ethical application are of particular concern the Faculty will refer these to the University Ethics Committee. Any student activity that involves the collection of primary data needs to undergo Ethical approval, this includes assignment work as well as dissertations.