Presented by:
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BLOOM'S TAXONOMY

At the end of this workshop you will be able to:

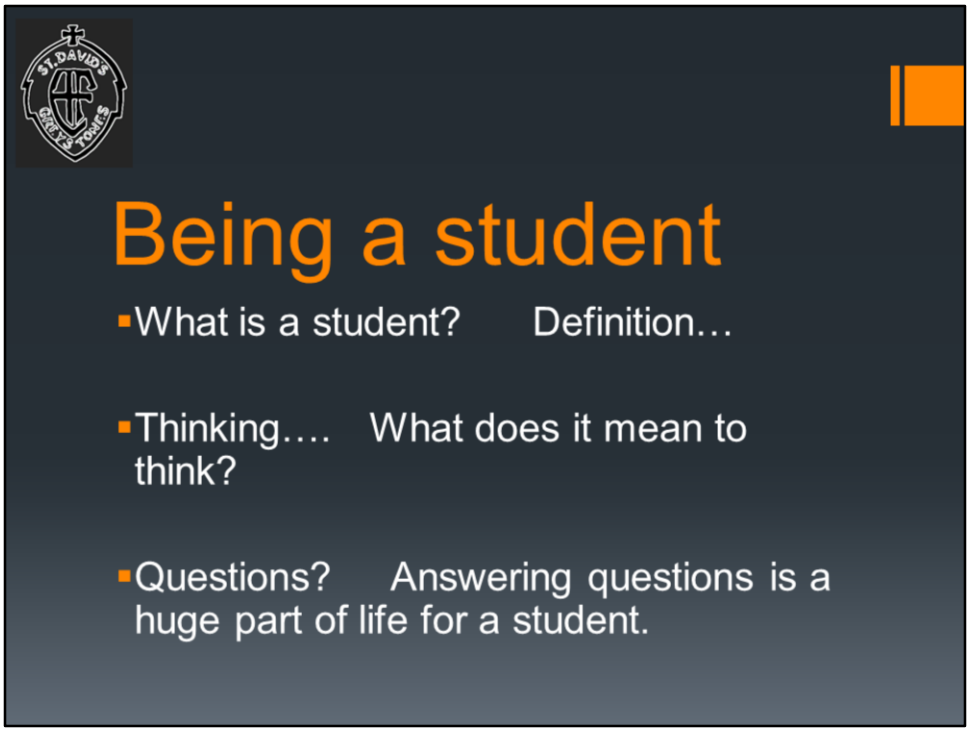
- Explain what a Taxonomy is.
- Define Bloom's Taxonomy.
- Recognise and Understand the 6 different depths of thinking in Bloom's Taxonomy.
- Understand how the structure of all exam questions draw from the 6 levels of Bloom's.
- Apply your knowledge of Bloom's taxonomy to any set of exam questions you encounter.
- Create your own subject-specific Bloom's data-set.
- Recognise that an understanding of Bloom's Taxonomy assists us with effective exam time management and greater appreciation of the amount of marks available for each question.

Before we begin…

- Think Pair Share activities
  - Letter yourself A and B
  - Work will be carried out on placemats
  - Person A writes and Person B shares feedback (alternate)
- Remember your skills:

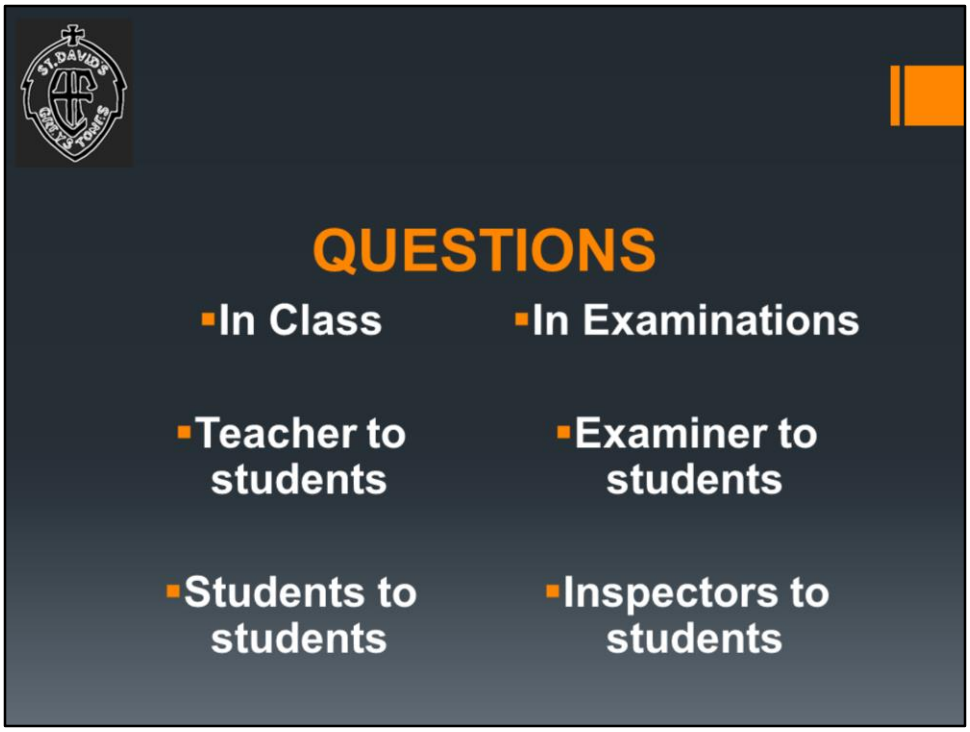
Collaborative Skills

Social -Equal voice
Communication -Ask for clarification
Critical Thinking - Consider all factors

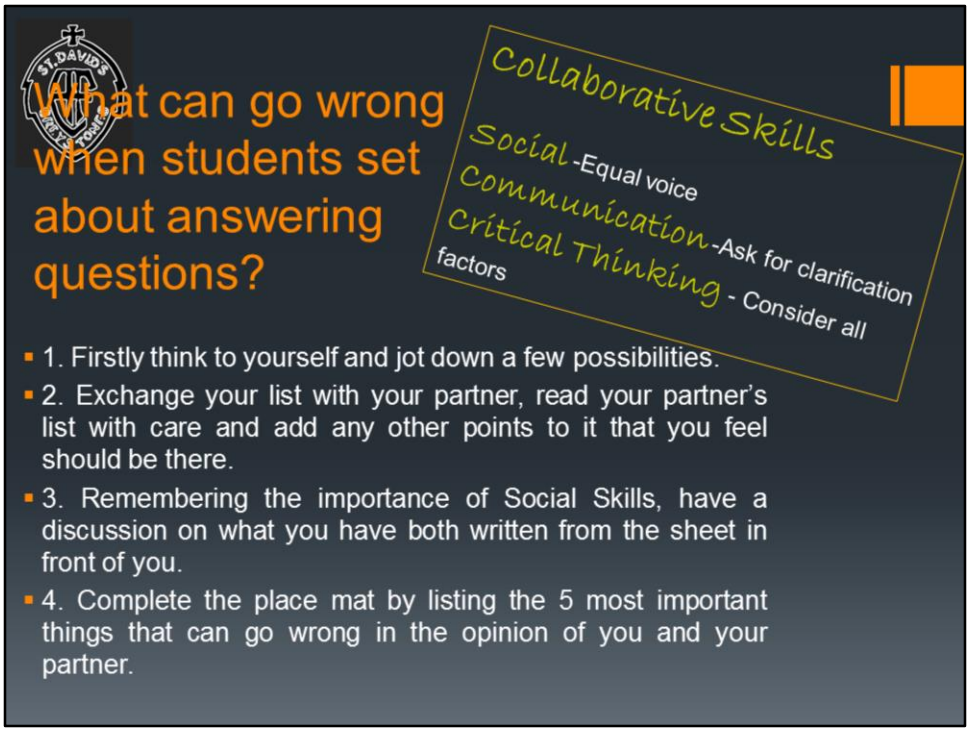


Placemat Activity:

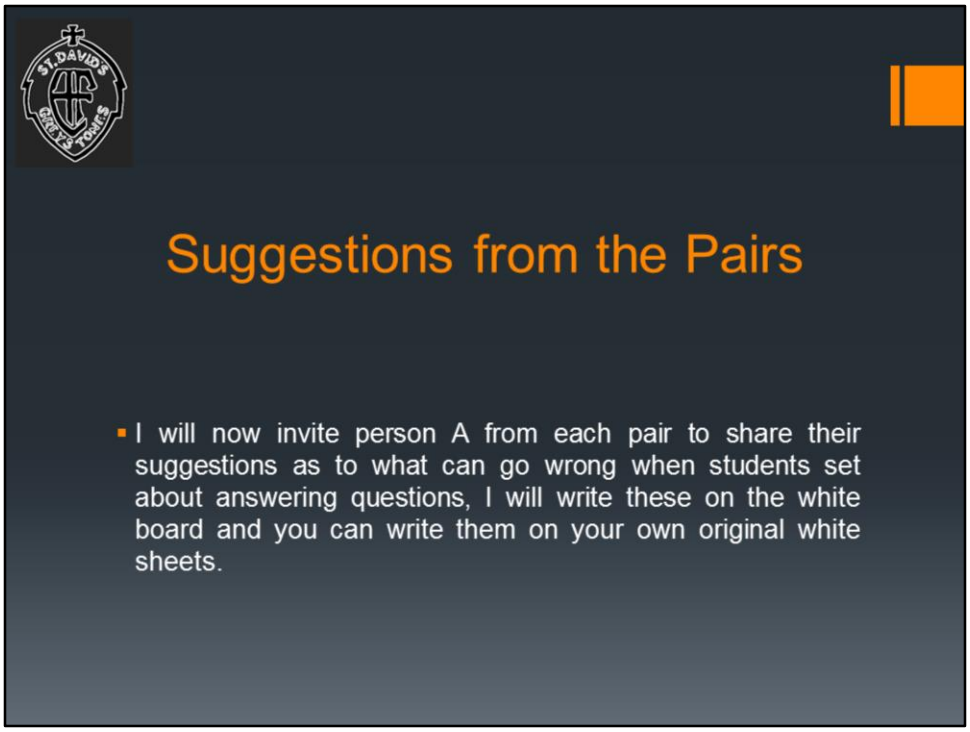
- Single words – write down – individual
- Gather words on placemat and formulate a definition / an answer



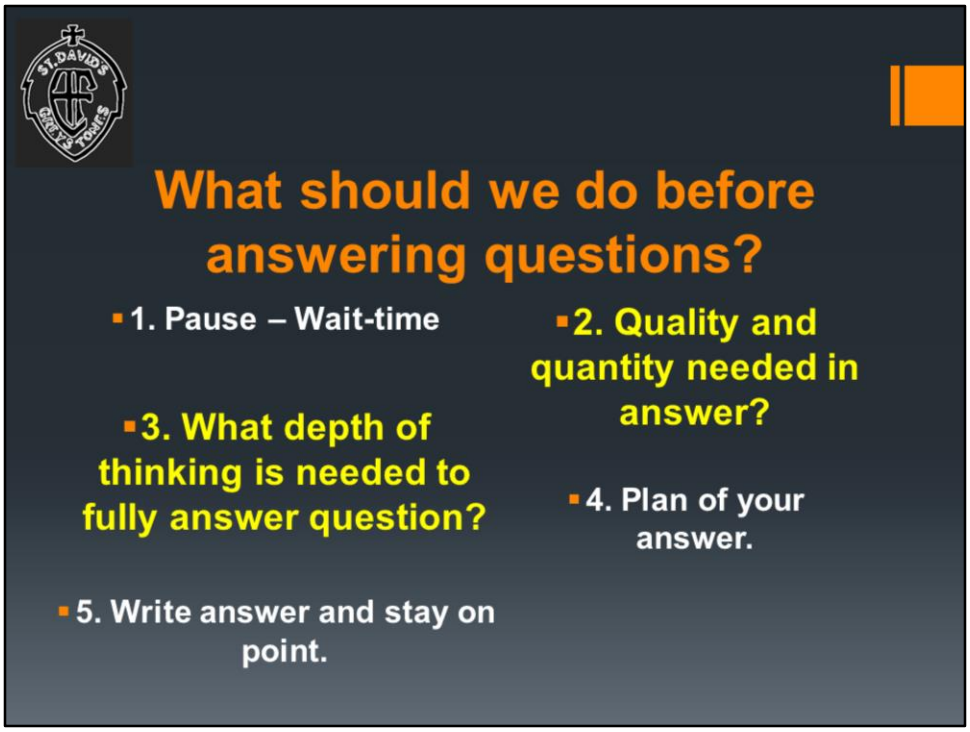
Individual – write down examples of situations where you as a student are required to answer questions. Share with your partner



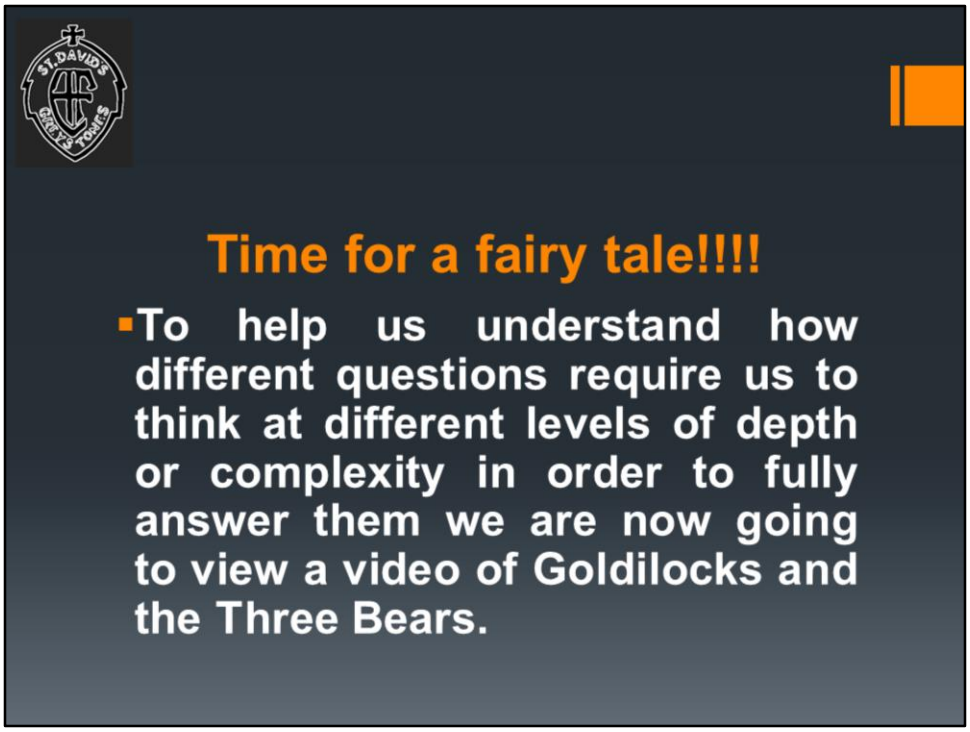
TPS – Placemat in twos
Letterhead A/B – B writes and A shares
Outline Collabortative Skills



Compile a list on whiteboard/flipchart.
From among all suggestions, zoom in on lack of appropriate thinking before answering – link to 'wait-time' and quality of answer



From all the suggestions on board/flipchart, what should we do before answering questions?
This chart is a guide and we will zoom in on 2 & 3

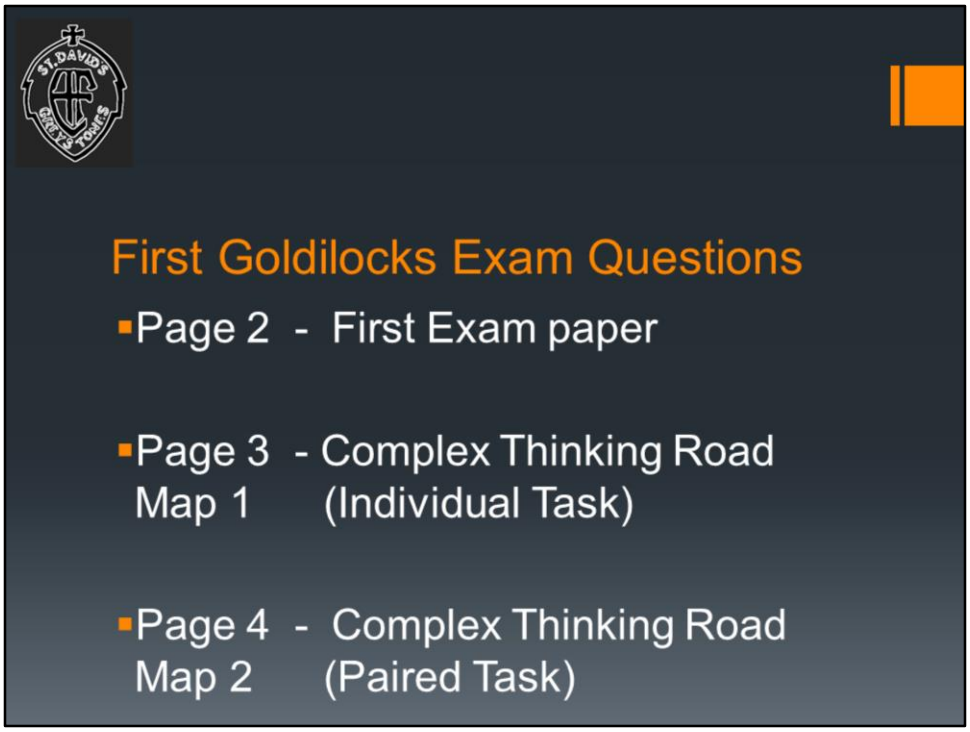


Emphasise depth of thinking and the link to quality of the answer.

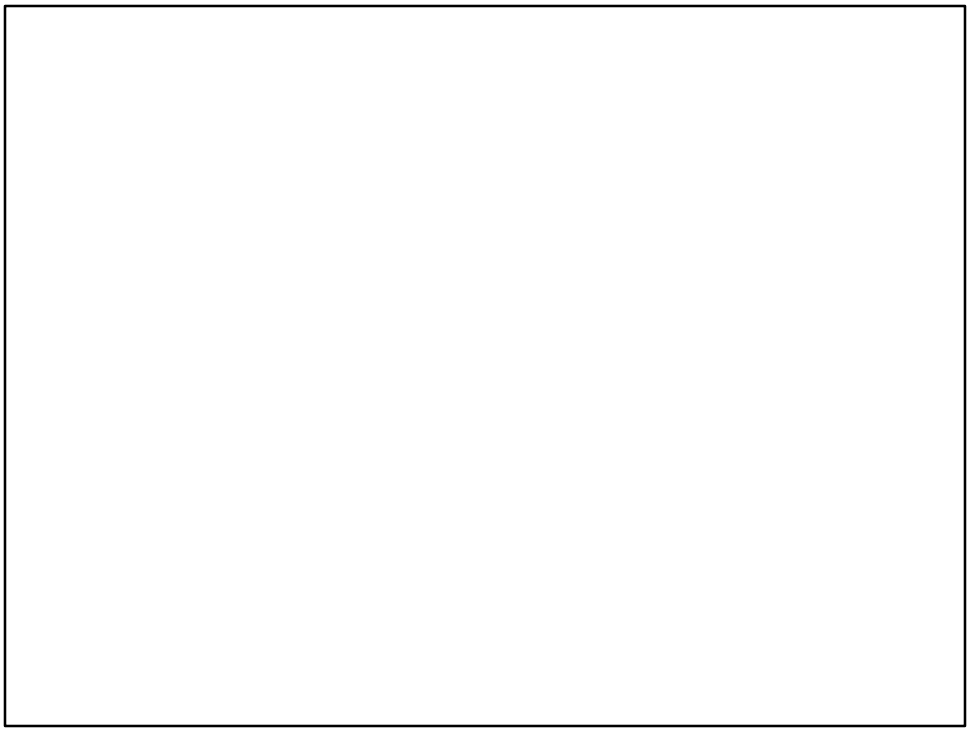
Please pay Attention!

- This video of Goldilocks will be followed by an exam containing six questions and may possibly be followed by a repeat exam containing a further six questions…….
- Nobody wants to fail an exam on Goldilocks and the Three Bears or do they?.....
- Time to enjoy the video!

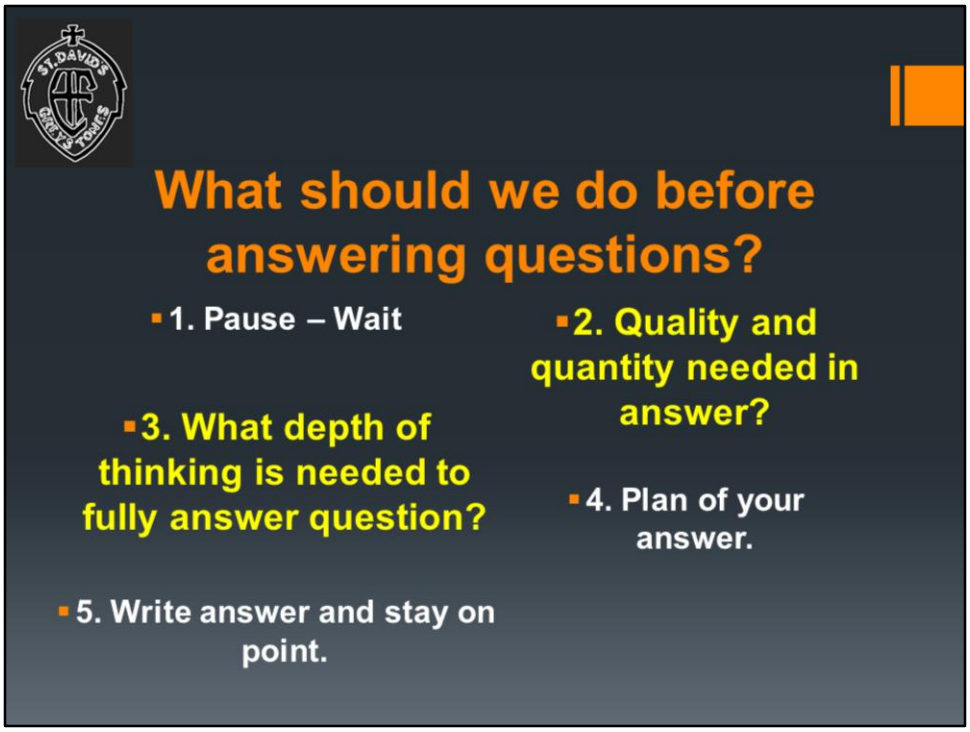
Further slides assume that Golidlocks video has been viewed.
The following slides are complemented by our in-house Blooms Taxonomy Booklet (Blooms_Taxonomy_Booklet.pdf) which is also available on the IL website.



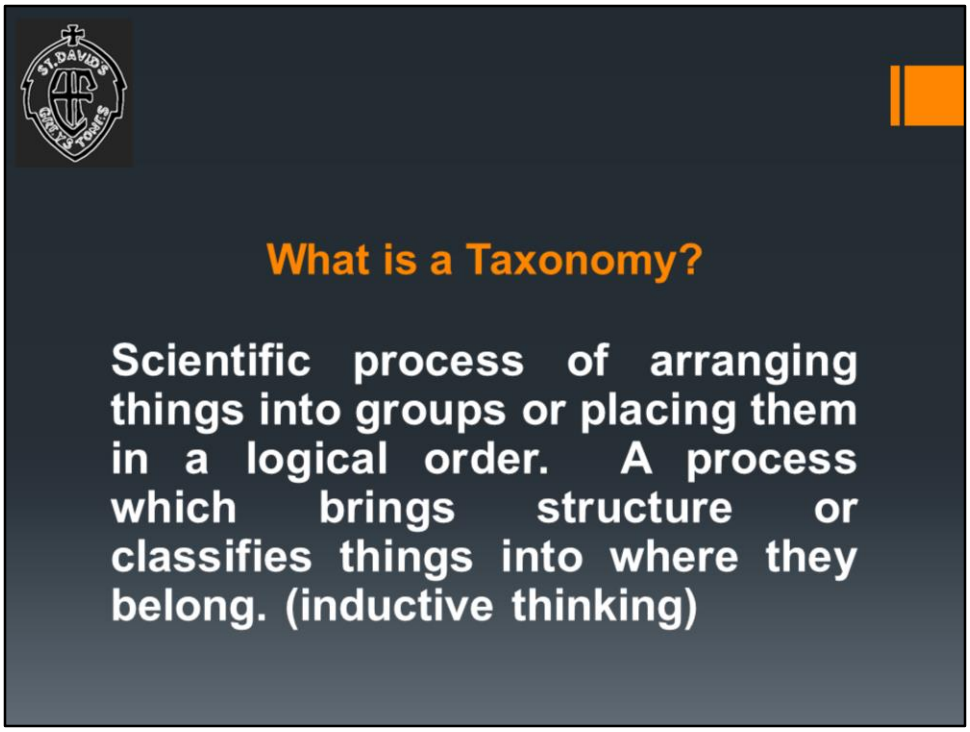
Ask how well they know the story and do they feel ready for a test?
Give page two – pens down and think about questions
Ask are there any easy questions. Which do they think is the hardest. Were the questions what they expected?
Give page 3, ask to think about the easiest to hard, time spent on answering – do individually
Give page 4 and ask them to agree their answers



Slide intentionally blank to allow for drawing of placement of questions as per page 4 of Blooms Taxonomy Booklet.
Answers on board from paired results
Reveal correct levels and ask them to write them in
Give page 5



Reminder about why we are here



Okay, have been doing a lot of thinking and sharing. Time for discussion/reflection on what we have learned so far.

Bloom's Taxonomy

Simply put it is one organizer of thinking levels in terms of the depth of thinking a student has to fully engage with, before or in order to answer a particular question or carry out a specified task to the standard required in any area of learning activity.

Benjamin Bloom

American educational psychologist

Benjamin Samuel Bloom was an American educational psychologist who made contributions to the classification of educational objectives and to the theory of mastery learning. Wikipedia

Born: February 21, 1913, Lansford, Pennsylvania, United States

Died: September 13, 1999, Chicago, Illinois, United States

Employer: American Educational Research Association

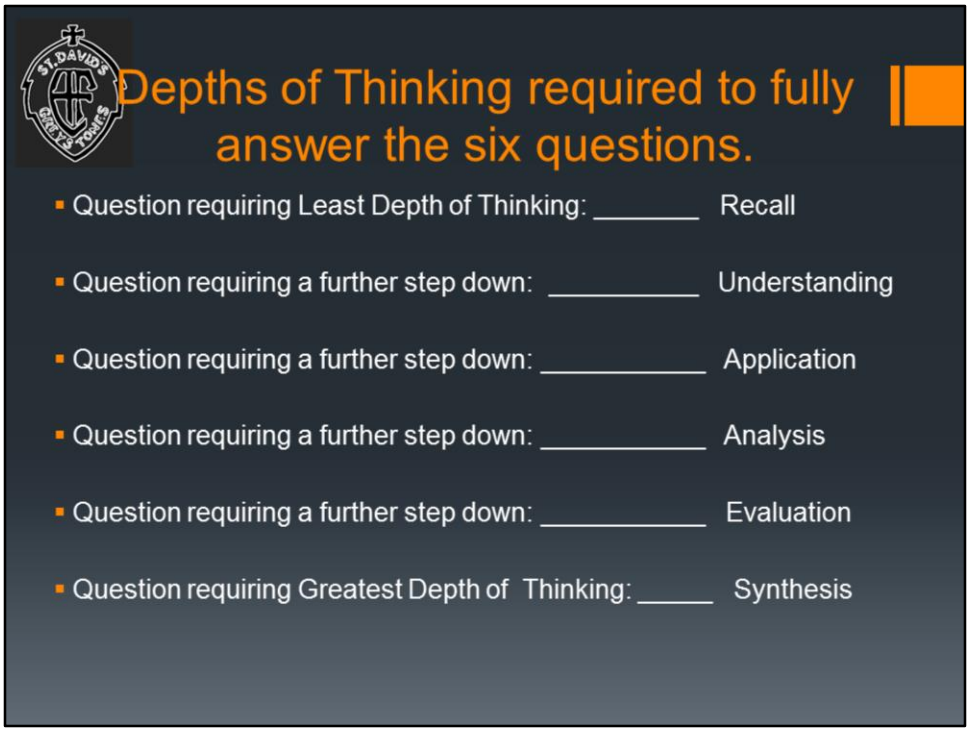
Education: Pennsylvania State University, University of Chicago

A Taxonomy of Thinking:

Assists the student in determining the level and depth of thinking which he/she has to engage with, before taking an action such as fully answering a given question, or participating in any prescribed activities, in any learning situation.

Questions – Depth of Thinking

- Any question we are asked can be categorised into one of six different groups in terms of the depth of thinking we have to engage with in order to answer it fully.
- What does answering a question fully mean?
- Some questions require relatively shallow thinking to fully answer and do not require much time to fully answer.
- Other questions require a great depth of thinking before we set about answering them fully and may consume a lot of our time in order to fully answer.



This is our approach to teaching Bloom's, emphasising the depths of thinking that are required to answer each type of question. Later, we show students the revised taxonomy that inverts the structure. We would also teach the students that in order to answer "higher-order questions", really deep levels of thinking are required, i.e. Analysis, Evaluation and Synthesis. We would also emphasise that some theorists interchange the position of Synthesis and Evaluation in the structure and provide examples of this.

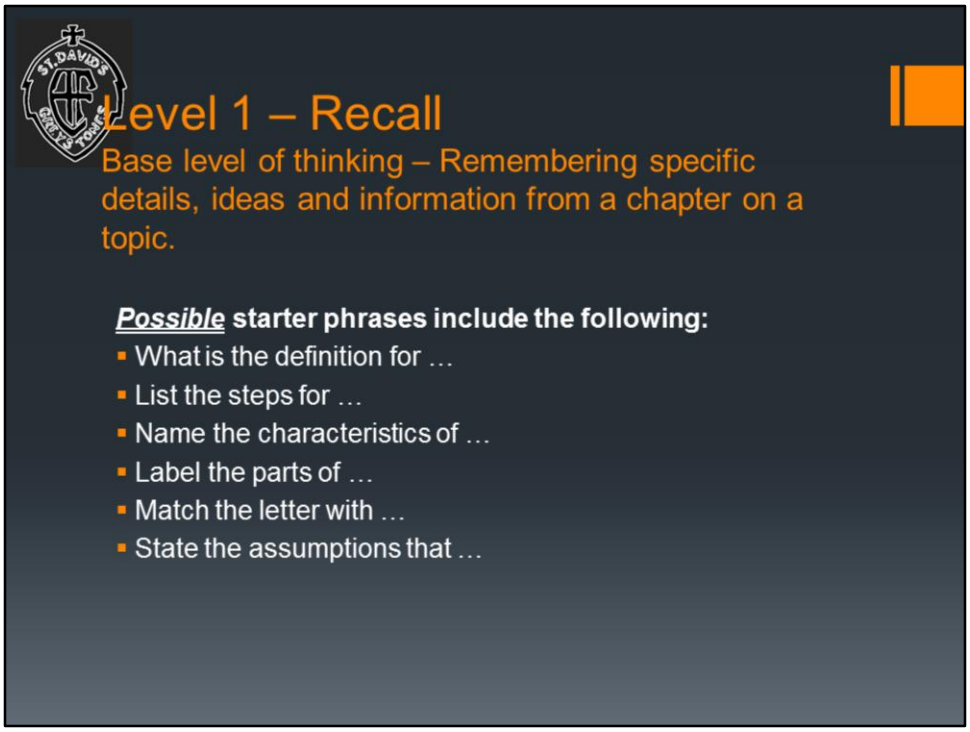
Bloom's Taxonomy

- Categories into which questions can be placed in terms of the Depth of Thinking they require us to work to, in order to fully answer them.

- Recall
- Understanding
- Application
- Analysis
- Evaluation
- Synthesis

Depth of Thinking: Recall

- Enables us to take a follow up action so as we can recollect previously learned material without too much effort.
- Examples would include demonstrating an ability to remember the names of characters in a novel, identifying the words a particular set of letters represent for instance PRSI or m/s, recognising the location where a particular film is set, recalling the dates of a significant event for instance the second world war.
- It's all about thinking sufficiently deep so as to be able to quickly recall information we have previously learned.



We would emphasise that these starter phrases do not guarantee a particular level of Bloom's and provide examples. Students need to be wary of this. In terms of action words, i.e the '-ings', we continue to teach the depth of thinking as the key to understanding Bloom's as opposed to focusing on action words ending in '-ing'

Depth of Thinking: Understanding (Comprehension)

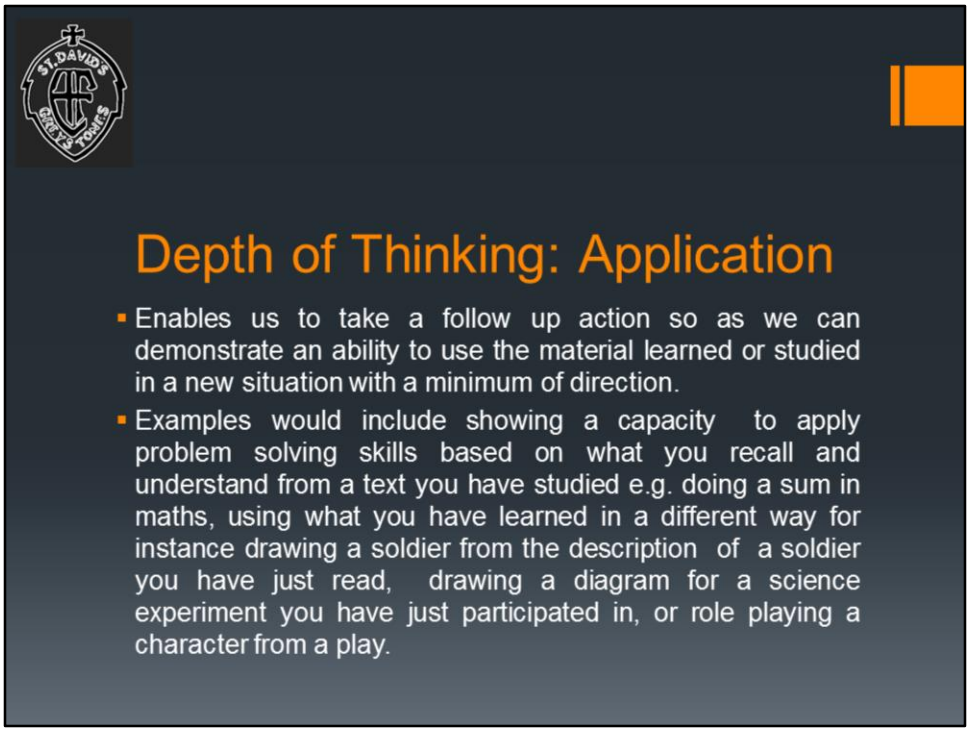
- Enables us to take a follow up action so as we can make sense of the material or topic we have studied.
- Examples would include demonstrating an ability to re-phrase the material or topic studied in your own words, to clearly identify examples of a concept contained in the text studied for instance what are the steps which John takes which clearly indicate he avoids impulse buying?
- It's all about thinking sufficiently deep so as we can see and figure out what are the links or what is going on in the material studied.

Level 2 – Understanding

Explain, Provide examples, Tell why, Role play what happened - To appreciate, know or realize the meaning of something

Possible **starter phrases include the following:**

- Tell why these ideas are similar …
- Provide some examples of … in the course of your answer
- Draw a picture to …
- Why were the …
- Summarize the …
- Give examples to …
- Translate the following …
- In your own words …



Emphasise that Application is about using your knowledge in a real or practical situation. Emphasise that this is not just mechanical and that there can be no proper Application without Understanding (We don't believe in learning mathematical formulae by heart and trying to solve problems using the formula without full understanding of the components in the formula and their links to each other).

Level 3 – Application

Demonstrating an ability to act on understanding

Possible **starter phrases include the following:**

- Tell what might have happened if …
- Graph the data …
- Demonstrate the way to …
- Calculate the …
- Using the information from … set out …

Depth of Thinking: Analysis

- Enables us to take a follow up action so as we can demonstrate an ability to break the studied material down into component parts or groups which contribute to a clearer understanding of its structure.
- Examples would include demonstrating an ability to break complex concepts into constituent parts so as to be clearly able to show how these parts are related to each other e.g. what two concepts have in common, seeing patterns in a topic studied or recognising hidden meanings in what is said, identify characteristics which distinguishes something or sets it apart from something else.

Level 4 – Analysis

Comparing, contrasting, pulling apart, a deep study of available options with a view to eventually forming a judgement, carving up

Possible **starter phrases include the following:**

- If … then …
- Which steps are important in the process of …
- What are the components of …
- The solution would be to …
- What is the relationship between … and …
- How would you make a …
- Identify parts of the … that could …
- What is the pattern of …

Depth of Thinking: Evaluation

- Enables us to take a follow up action so as we can demonstrate and ability to judge the value of the material studied based on certain criteria.
- Examples would include making a judgement on the worth of a concept for a particular purpose, should I switch the centre forward to a new position or replace him, which move is likely to improve team performance and how? Resolving differences of opinion, e.g. opportunity cost style evaluation before making a purchasing decision, verifying the value of evidence, being able to recognise subjectivity in a news report and recognise any bias that may be present as a result of this.

Level 5 – Evaluation

Probing, weighing up, to make judgements based on criteria, taking a stand after deep consideration with your view supported by evidence

Possible **starter phrases include the following:**

- In your opinion …
- What solution do you favour and why …
- Which systems are best … worst …
- Grade or rank the …
- Appraise the chances for …
- Rate the relative values of these ideas to …

Depth of Thinking: Synthesis

- Enables us to take a follow up action so as we can demonstrate an ability to combine the elements in the material or topic studied into a pattern which was not clearly present in the material as we studied it.
- Examples include putting parts together to devise or form a plan which is new to the learner or student, re-arranging ideas or parts to form a new whole e.g. studying the history of the first world war and then imagining you are a soldier in the trenches who writes a diary of your typical day in that situation, designing a racing car which has as its objective winning the Formula 1 in Schools World Championship.

Level 6 – Synthesis

Reinvent, Look at in a new way, Project, Create, imagining different outcomes if certain aspects were different

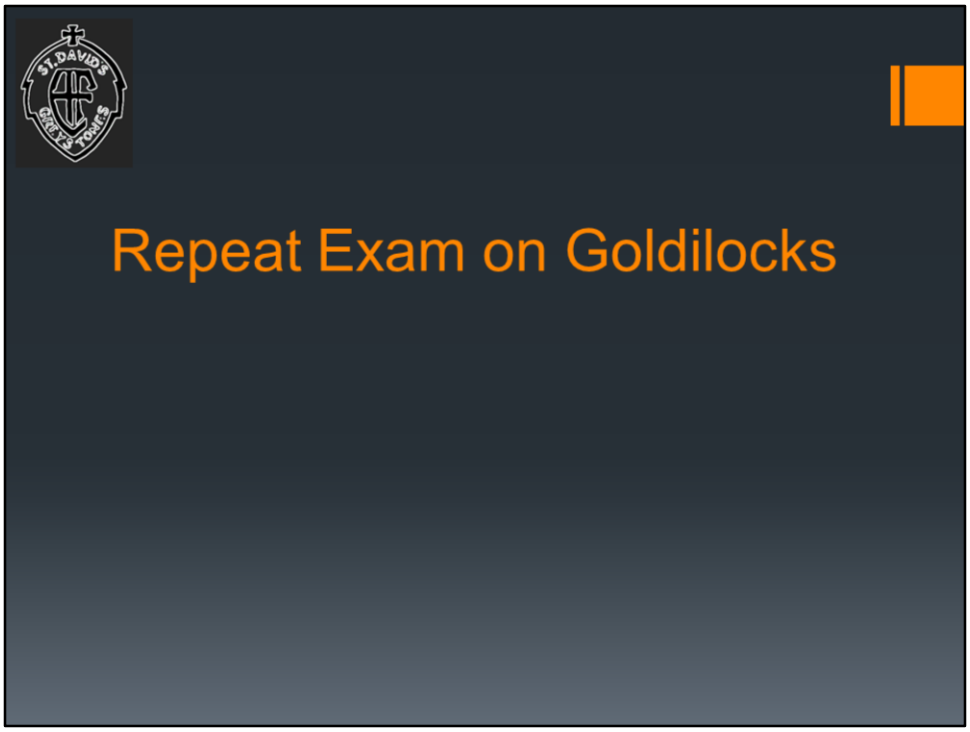
Highest level of thinking - Greatest amount of complex thinking required to answer the question.

Possible **starter phrases include the following:**

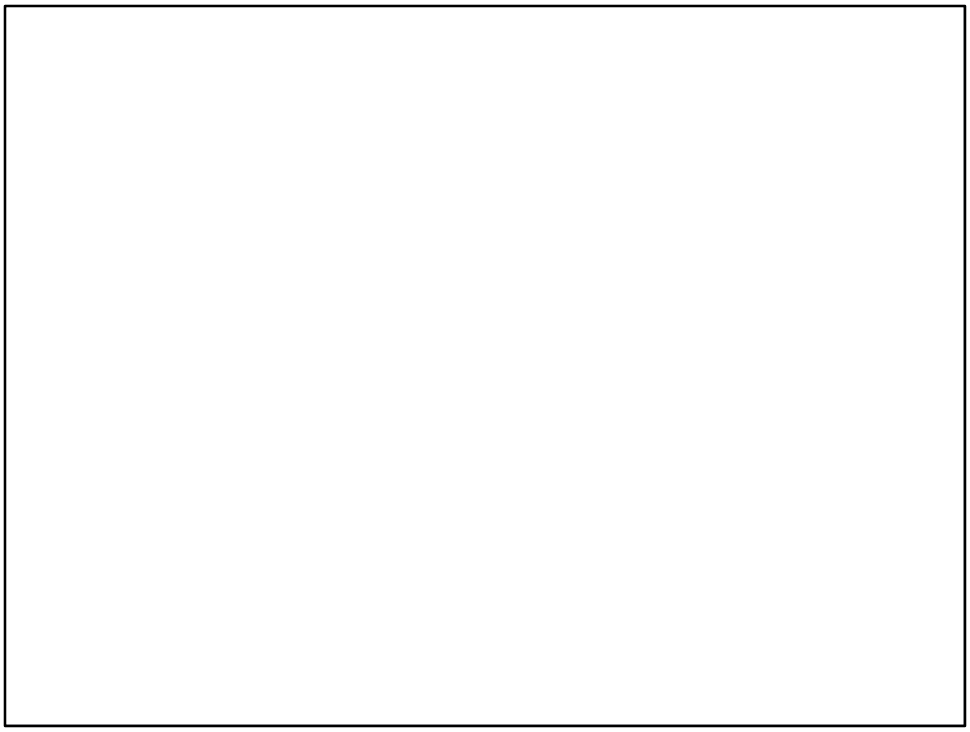
- Devise an original plan or experiment for …
- Finish the incomplete story so that …
- Prescribe a new way to …
- Change … so that it will …
- Make a hypothesis about …
- Create a model that shows you new ideas …

Depths of Thinking required to fully answer the six questions.

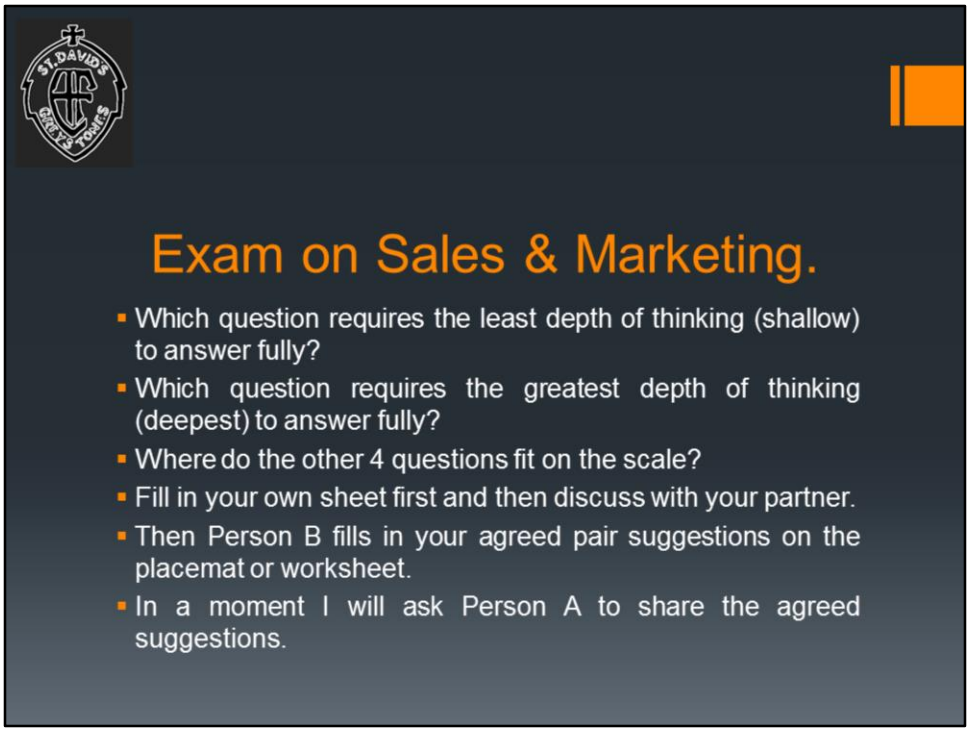
- Question requiring Least Depth of Thinking: _____ Recall
- Question requiring a further step down: _____ Understanding
- Question requiring a further step down: _____ Application
- Question requiring a further step down: _____ Analysis
- Question requiring a further step down: _____ Evaluation
- Question requiring Greatest Depth of Thinking: _____ Synthesis



Give page 9 and fill in pairs



Give out page 10 and allow groups to complete the task
Get paired answers and put on board (intentionally blank slide)
Reveal answers and give page 11



Now we put this into a subject-specific context. Students don't need to have a background in Business to assess the depth of thinking in this exercise.
The real exam lies in aligning the questions with their appropriate level of Bloom's.
Give out page 12

Three key points on Bloom's

- If I as a teacher set a question that tests you at the analysis level of Bloom's in terms of your required depth of thinking, please remember that I am automatically testing you at the Recall, Understanding and Application level at the same time.
- There can be no meaningful application without understanding, try learning off a mathematical formula that you do not really understand and attempt to use it to do a problem in a maths exam and see what happens.
- Questions that begin with identical keywords may not always relate to a particular level of Bloom's.

Consider the following please:

- List three currencies in use in the European Union.
- The above is a straightforward RECALL question in terms of the Depth of Thinking it requires relative to Bloom's to answer fully.
- List three currencies in use in the European Union in terms of their economic importance to the European Union and justify your chosen order.
- The above question is an EVALUATION question in terms of the Depth of Thinking it requires relative to Bloom's to answer fully.
- Do not focus on what are called typical question words in order to determine the required depth of thinking for Bloom's.
- In addition to the 'INGS' just THINK, as deeply as it takes……

Science Questions

- Which question requires the least depth of thinking (shallow) to answer fully?
- Which question requires the greatest depth of thinking (deepest) to answer fully?
- Where do the other 4 questions fit on the scale?
- Fill in your own sheet first and then discuss with your partner.
- Then Person B fills in your agreed pair suggestions on the placemat or worksheet.
- In a moment I will ask Person A to share the agreed suggestions.

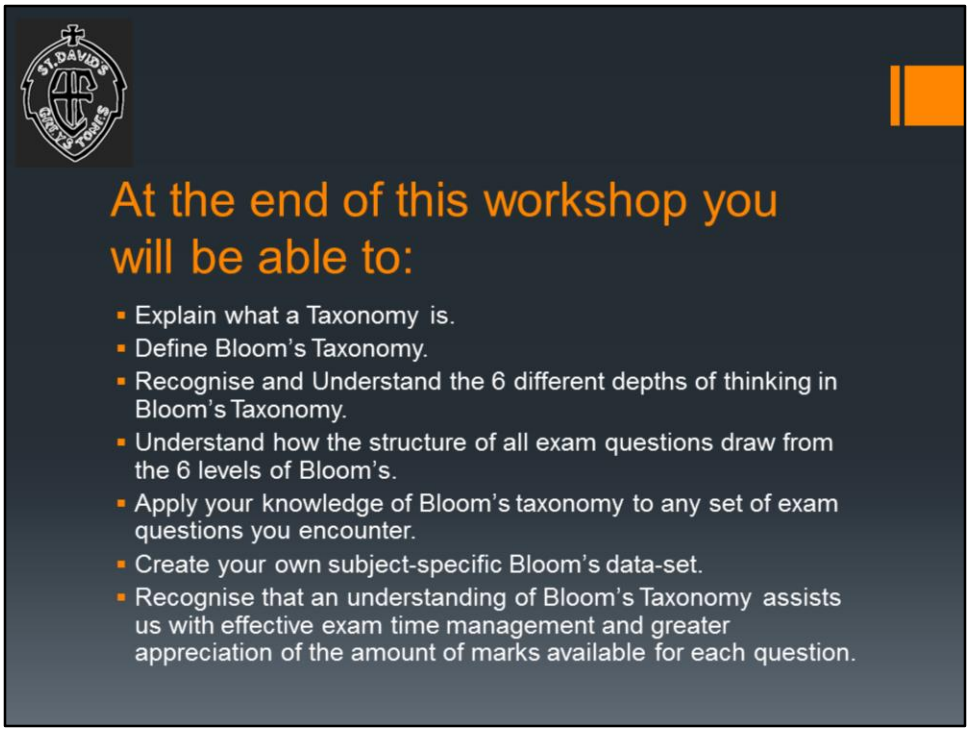
Bloom's Taxonomy represents KNOWLEDGE

- If you can answer a six question Bloom's Taxonomy style examination on any topic that you have studied then you can be sure that you probably have a very good in depth knowledge of that topic and are on the road to writing full exam answers anytime you do a test on that topic.

- As a follow up to this presentation, in two weeks time choose a topic that you have studied in a particular subject e.g. 'Personal Finance' and design your own Bloom's Taxonomy style exam on this topic, Just make sure you think at as complex and as deep a level as is required to complete this task…. Enjoy!

Reflection

- Design a mind map or poster to summarise the 6 levels of Blooms Taxonomy of Thinking


At the end of this workshop you will be able to:
Explain what a Taxonomy is.
Define Bloom's Taxonomy.
Recognise and Understand the 6 different depths of thinking in Bloom's Taxonomy.
Understand how the structure of all exam questions draw from the 6 levels of Bloom's.
Apply your knowledge of Bloom's taxonomy to any set of exam questions you encounter.
Create your own subject-specific Bloom's data-set.
Recognise that an understanding of Bloom's Taxonomy assists us with effective exam time management and greater appreciation of the amount of marks available for each question.