

## **Interactive whiteboards and collaborative pupil learning in primary science**

Interactive Whiteboards (IWBs) are generally considered to be well used during lesson introductions and plenaries but are arguably not used to their full potential by pupils during the main part of lessons. Wall, Higgins and Smith (2005) found that pupils felt they lacked opportunities to use the IWB themselves and that this would motivate them and facilitate learning. Similarly, Rudd (2007) suggests that teachers need more opportunity to experiment in order to fully utilise the interactive functionality of IWBs.

The focus of this project is therefore to gather evidence as to the potential of using an Interactive Whiteboard as a tool to support children's collaborative learning during the main part of the lesson.

I was interested in taking part in the project as I recognised the possibility for wider use of IWBs in my own practice and that of other teachers in my school and, as ICT subject leader, was keen to promote greater pupil interactivity at the IWB. I was also interested in exploring and extending the opportunities for collaborative work within my classroom.

Prior to beginning the project I had not overtly used groups of *three* children to encourage collaborative thinking and had not spent much time with my class focussing on the skills needed for effective group work. However, these did fit in well with PSHE objectives during the term before filming, offering a good opportunity to develop these skills with my class, including the writing of *Our Ground Rules for Talking in a Group* (appendix 1), which were displayed prominently by the IWB and referred to during the filmed lesson introductions. These preparatory lessons were based on activities in *Thinking Together: a programme of activities for developing speaking, listening and thinking skills*, Dawes, Mercer, and Wegerif (2004).

Also, the three children I had selected for working at the IWB during the filmed lessons were given opportunities to familiarise themselves with the IWB tools and get used to working together (see appendix 2 for more information about the group). The model of IWB in my classroom was a Promethean ActivBoard, measuring 78" diagonally.

At the time of filming, my Year 4 class's Science topic was *Teeth and Eating*, QCA unit 3A. The first filmed lesson (see appendix 3 for lesson 1 plan) fell near the beginning of the unit. The learning intention was for pupils to explore the shape and function of the teeth of various animals. Following a brief whole class discussion about how animals' teeth might be adapted in certain ways depending on what they eat, I set the class three tasks to complete collaboratively in groups of three. (The group working at the IWB completed the same tasks as the rest of the class who worked on paper.) For the first task, groups were given pictures of various animals and descriptions of what the animals eat. They were then asked to sketch and annotate what they thought the teeth of the various animals might look like. Task two involved matching pictures of the same animals' teeth to the correct animal and during task three groups were asked to look at pictures of animals' jaws and suggest what the animals could be. The lesson finished with a plenary during which all groups' ideas were discussed, using the IWB group's sketches and annotations as a focus.

The second filmed lesson (see appendix 4 for lesson 2 plan) occurred near the end of the unit of work. It began with an introductory discussion during which children's prior learning was recapped. The IWB group then undertook three tasks. The first involved completing an information grid about the number and purpose of the different types of teeth in children and adults and identifying these on a diagram. Task two was a multimedia quiz about teeth (*Say Ah!* from online content provider, *Education City*.) Task three (which the group did not have time to complete) involved them reading the descriptions of various animals' eating habits and then drawing, on simple diagrams of mouths, sets of teeth to suit them. Other groups in the class did the same first task as the IWB group. As it would not have been possible for them to complete the quiz on paper they then went on to other related tasks.

In general, the tasks undertaken during the two filmed lessons involved using the IWB interface in the following ways:

- as a means of displaying information in the form of text, photographs and diagrams;
- as a group recording tool (drawings and text);
- for movement of graphics during sorting & organisational tasks;
- to provide interactive multimedia content (sounds, animations, input buttons).

### **Critical episode 1 (Lesson 1, DVD timings: 20:10 – 27:25)**

I chose this clip as the first critical episode as it shows the group beginning to collaborate well and speed up their output of work as they master the task and begin to use the IWB tools more efficiently (see appendix 5 for clip transcript).

At the beginning of the episode the group start work on a new task, accessed by clicking a screen button to move onto a new page. It is immediately obvious that this IWB function enables the group to move between tasks much more efficiently than if they were working on paper. It is also apparent that the large size of the picture and text on the screen enable all members of the group to be immediately involved in the new task, without competing for a good view, worrying about paper orientation or straining to see a smaller font size.

The group begins with M reading the screen text aloud, followed immediately by suggested answers from J and N. At this point the three group members form a close circle to aid verbal communication. Very quickly, however, the IWB again becomes the group focus as J says, “*I’ve got an idea.*” He takes the pen from N and draws some sharp teeth on the board. He is able to do this confidently, knowing that if the others do not accept his idea it can be easily erased (which is actually what follows.) I did not observe any other groups in the class (who were completing the same task on paper) working in this way, suggesting another advantage of IWB functionality.

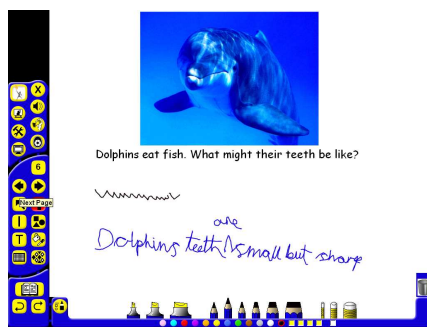
As J erases his drawing, the group re-form into a circle and their discussion continues. All group members are involved; they make good eye contact and use hand gestures and facial expression to good effect. The ease with which they are able to move between focussing on the IWB and forming a circle for effective group discussion, such as this, is very evident in the clip. This flexibility in the use of the group’s working space is a result of them working at the large IWB interface whilst standing, so that they are able to move around each other as they feel is necessary. It appears as if individuals have little trouble gaining the attention of the others as they are able to turn towards or move themselves into others’ line of sight easily. Similarly, when in possession of the IWB pen individuals have sole control of the IWB and, using the large working space available, quickly gain the attention of the group.



Screen shot of completed tiger page

Generally, the three individuals are good at sharing the attention of the group and there is very little friction caused over who is holding the IWB pen. This may be because, for most of the time, the individual who is scribing ensures they listen to the ideas of the other group members. In fact, N, who is the most knowledgeable of the three and who contributes most to the answers recorded on the IWB, handles the pen very little during this episode. Whilst N has the pen as the group move onto the new page, he is happy to let J take it from him when J says he has an idea. From then on N tends to stand

furthest back from the IWB. M has the pen for the majority of the episode. This appears to be because she is most keen to get the answers recorded and to keep up some momentum, whereas the boys are content to prolong discussions (sometimes going off on tangents). This is evident when she takes the pen off J, whilst he and N are discussing the size of their dogs' canines, and she says, "So what are we going to do?" She and N then work closely together to draw what they think a tiger's teeth might look like. M uses the pen whilst N uses his finger on the board to demonstrate his ideas. Again, the large size of the drawing aids this collaboration. J is not as involved at this point, which M appears to pick up on as she offers him the pen, saying, "Do you want to write something?" She soon seems to regret this, however, as J is not as efficient at recording the group's answer. J refuses to return the pen to her when asked to do so the first time but does a few seconds later when he is unable to spell *canines*. Despite M's attempts, at this point J is somewhat excluded as collaboration develops between herself and N with clearly defined roles: M scribes whilst N structures the sentence and provides spellings. Although J is still on task and offers some suggestions of words to be written the group dynamics are clear as M faces N and has her back towards J. This does not last long, however, and the group move onto the next page, having collaborated to answer the question in just less than three minutes.



Screen shot of completed dolphin page

The following page (which is the same task but about dolphins) is completed in just two minutes as there is less discussion and more immediate recording on the IWB. The group quickly agree that dolphins eat fish and that their teeth are small and sharp. M again draws the teeth and then offers N a turn with the pen. When N is scribing the group dynamics change. Whereas previously he was contributing most to the answers written, he now focuses on using the pen, allowing J and M to form the answer between them. N (positioned between M and J) writes their suggestions but does not turn towards either of them and so no one is excluded, as J was previously. There are no problems with spelling on this page and so the group are very focussed on the content of the sentence on the IWB and there is very little else said. Their discussion is focused on the IWB rather than on each other.

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### **Critical episode 2 (Lesson 2, DVD timings: 29:48 – 34:40)**

This episode contrasts with the first as the task is very different. When planning lesson 2 I tried to set tasks that made use of a wide variety of IWB functionality in order to gauge how the group performed across a range of collaborative tasks. In this task (*Say Ah!* from online content provider, *Education City*.) the group answer questions by clicking on one of three multiple-choice answers. Unlike in critical episode 1 the group do not need to do any recording (see appendix 6 for clip transcript).

During the lesson introduction I had already drawn the class's attention to the *Our Ground Rules for Talking in a Group* prompt displayed near the IWB. To reinforce this, I said to the group at this point, "before you answer any of the questions, I want you to make sure that you agree on your answer, and I want you to make sure that you explain why you think that? So explain why you think something to the rest of the group, before you go onto answer the question." During the task, as a group, they did agree on their answers before selecting however individuals did not explain their reasoning to the others.

J has the IWB pen when the quiz begins. After the first question is read he says, "I know this, I know this, I know this, do you think it's canines? Yep?" before selecting the *canines* answer. He is keen to make sure there is group agreement but appears not to have understood the importance of explaining his reasoning. M, on the other hand, remembers this and tries to make J wait, saying urgently, "We need to . . ." She then shakes her head however, realising that she is too late. After the second question is read the group again jump to an answer, immediately agreeing that there are two wisdom teeth in a

full adult set. Again, no one offers any reasoning to support this and an answer is selected, this time incorrectly. This pattern continues with the following questions. Only for the final question is any reasoning offered, in the form of anecdotal evidence from M, about when her baby sister's teeth started growing.

It appears to be the nature of the task that has led the children to work in this less collaborative way. Another indicator of this is the fact that as the questions go on, the children take it in turns to click on the answer and the final decision becomes more the responsibility of the individual holding the IWB pen. This individual ownership of questions is demonstrated after the fourth question when J says, "*Yeah! I got both of mine right.*" and during the sixth question when, after the group struggle to agree on a final answer, M (whose turn it is at the IWB) takes decisive action saying, "*Premolars, I'll go for premolars.*" It may be that she later realises this is not how they are supposed to be working as before starting on the final question she says, "*Shall we all work out the last question together?*" Alternatively, this could have been said to ensure fairness as, to this point, they have held the IWB pen for three questions each. In either case, the comment also suggests a more individual approach to the task as a whole.

On completion of the ten questions the group are keen to repeat the quiz in order to improve their score of 80%. The two incorrect answers (agreed on by the whole group) were due to a misconception in the previous task about the number of types of teeth in children and in adults. Unfortunately I didn't realise this until reviewing the video. In hindsight it would have improved their understanding to not only repeat the quiz but also to revisit the first task where the original misconception was made. In future I would encourage groups to move forwards and backwards between tasks more, which would be very easy to do on the IWB.

### **Value added from IWB**

When assessing the value added provided by the IWB in supporting collaborative pupil learning the following positive aspects were evident in the critical episodes. First, the shared working space, created in front of the large vertical interface, allowed pupils to arrange themselves and move between various group configurations as best suited their mode of working from one moment to another. When they needed to focus on the IWB they were able to do so without jostling for position or the need to re-orientate paper-based resources. At other times, when the group focus was on each other, discussion was fostered by forming a circle where eye-contact and body language could be most effectively employed.

The group cooperated well with the IWB pen. (ActivBoards have only one pen and colours are selected on screen. They cannot be used with a finger like some other boards.) The group took turns, nearly always relinquishing control when asked, and the pen was sometimes offered to others out of a sense of fairness. The fact that the IWB had a single means of input meant that the group were aware of who was in control at any one time. They weren't working against each other by trying to access the IWB at the same time. This also led to clearly defined roles within the group (which changed when the pen was handed over). Most of the time, the pupil in control of the pen acted as scribe whilst the ideas came from the other two group members.

Whilst the facility to display colour photographs and diagrams did not, in the tasks I chose, enable tasks to be undertaken at the IWB that other groups (using black and white photocopied resources) could not access, it did appear to increase the group's engagement with, and enjoyment of, the tasks. Likewise, the ability to play sound through the IWB's speakers created task variety with a motivational effect.

The opportunity for group members to explore and share their ideas was enhanced at the IWB by the ability to undo and erase marks made, using IWB tools. Individuals demonstrated a sense of freedom to

share ideas visually, knowing that they were not committing the group to a final answer, or threatening the presentational quality of the work. Similarly, the ability to repeat and move back and forth between activities was useful.

Some IWB functionality proved to be a mixed blessing. Time was wasted by the group as they explored different thickness and colour of line, then had to erase what was drawn or written. This occurred mainly near the beginning of the lessons and appeared to be due to the novelty factor and the group's lack of experience in using the IWB. By the part of the lessons covered in the critical episodes, this had largely resolved itself and the group were working more quickly.

### **Task suitability**

When comparing the nature of the tasks in the two critical episodes it is clear that the first induced more collaborative thinking. This maybe because it required the group to record answers to more open questions using sentences and sketching. When disagreements occurred cumulative and some exploratory talk was used to resolve them and the group was generally careful to ensure everyone had an input in each part of the task. The quiz in the second critical episode however offered the children the opportunity to move through questions very quickly by simply clicking on the correct answer from a multiple choice. This set up did not seem to encourage them to consider their answers very carefully and, despite being reminded about providing reasoned explanations for answers, the group bypassed this important part of the task. The way the group took turns to answer questions in the quiz and, to an extent, started competing against each other (as J's comment would suggest) shows they viewed the task very differently, possibly relating its multimedia aspect to independently competitive computer games.

Clearly, the pupils would need more support in using exploratory talk before this type of task would be of benefit when working collaboratively. However, this would be worthwhile as, compared to the previous task, children are freed from time-consuming recording on the IWB. Also, from a teacher's point of view, the task was much quicker to set up.

Other aspects of task suitability include set up time and class organisation. Whilst the quiz activity was less successful it was much quicker to set up than the task in the first critical episode. Whilst during the first lesson the rest of the class worked on a paper-based version of the IWB activity this would not be possible with multimedia based tasks such as the quiz, without the use of laptop computers. It is probably impractical to consider always keeping the same learning objective for the IWB group as for other groups in the class, as that would mean creating an IWB version of most lessons. On the other hand, if groups took turns to work at the IWB on a separate learning objective they would miss other areas of work being covered by the rest of the class. Using an IWB in this way, over the longer term, would obviously require some creative thought in terms of effective planning and curriculum coverage. Rudd (2007) suggests a 'cost-benefit conundrum' faced by teachers wanting to utilise IWB technology. He includes in this the difficulty teachers face in balancing the desire for greater collaboration with achieving learning objectives.

Another reason for having the IWB group working on the same learning objective as groups in the rest of the class is the advantage of being able to use their completed tasks during the whole class plenary. This proved effective during both filmed sessions as the tasks provided a focus for discussion that was more interesting and relevant than simply providing the correct answers. Even mistakes and incorrect answers proved useful for eliciting children's ideas at this stage of the lesson.

### **Conclusion**

Whilst I found the IWB to be an effective tool to encourage children's collaborative thinking and learning in science this was not universal across the tasks I presented to the group. Interestingly, I found the tasks which utilised most fully the IWB's multimedia functionality did not meet this objective as well as those which involved more basic, and less fast-paced, functions such as recording with text and sketching.

I also found that there is a good deal of preparatory work to be done before children are able to utilise the benefits of working at the IWB. As Mercer (2006) points out, they have to be well grounded in what constitutes a good discussion before collaborative talk can be effectively employed. Tasks need framing so that collaboration is remembered as an objective in their working. They also have to be very familiar with the IWB tools and interface in order for these not to distract from their learning.

Whilst I plan to make more use of the IWB in my teaching as a collaborative learning tool this has by no means become embedded in my practice since being involved in this project. Whether or not there can be found the space to prioritise this and make it a reality in a busy classroom with lots of other demands remains to be seen.

## References

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## Appendices

### Appendix 1: Our Ground Rules for Talking in a Group

<u>Our Ground Rules for Talking in a Group</u>
1. Show you are listening to the person talking, without interrupting.
2. Respect other's opinions and ideas.
3. Ask everyone in the group what they think and why.
4. Give reasons for your opinions and ideas.
5. Don't be bossy or try to do it all yourself.
6. Try to reach agreements <u>as</u> a group.

### Appendix 2: Pupil group information

The same children formed the IWB group for both filmed sessions. They were not used to working with each other previously and didn't have much practice at using the IWB.

N

Above average scientific knowledge and vocabulary. New to school in Year 3, Summer term. He completed the unit of work *Teeth and Eating* at his previous school (which I didn't find out until after starting the unit). Quite an independent thinker. Has a fascination about snakes.

M

Good social/group work skills. Average scientific ability.

J

Average scientific ability. Less mature than other group members. Smaller height might be an issue when using IWB.

Appendix 3: Lesson Plan – 1<sup>st</sup> Filming session – 28.2.08

- Objective: To consider what the teeth of various animals are like and why.
- Introduction: Short whole class discussion about how animals are adapted depending on what they eat.
- Task 1: Discuss, sketch and annotate what the teeth of various animals (cow, tiger, dolphin, heron) might look like.
- Task 2: Match pictures of the animal' teeth to the correct animal, giving reasons for group's decisions.
- Task 3: Discuss photos of teeth and the animals they might belong to.
- Plenary: Whole class discussion about tasks, using IWB group's sketches and annotations as focus.

Appendix 4: Lesson Plan – 2<sup>nd</sup> Filming session – 13.3.08

- Objective: To consider the types and function of teeth in adults and children.
- Introduction: Short whole class discussion recapping prior learning about teeth, inc. visit from dentist.
- Task 1: Complete chart detailing function and number of types of teeth in adults and children.
- Task 2 (*IWB group only*): Complete *Say Ah!* (Online quiz from *Education City*).
- Task 3 (*Extension activity*): Draw what sets of animal teeth might look like based on written descriptions.
- Plenary: Whole class discussion about tasks, using IWB group's sketches and annotations as focus.

Appendix 5: Transcript of Critical episode 1 (Lesson 1, DVD timings: 20:10 – 27:25)

M: Right yeah I was going to type in that one. Tigers eat meat, what do you think their teeth look like?#  
N: That's obvious.#  
J: Sharp.#  
N: Yeah they're going to have big cyanine, BIG.#  
J: Oh I've got an idea.#  
N: Me seen tiger teeth, they are big.#  
(One student starts to draw on the smart board)#  
N: No they don't look like that.#  
J: No they don't do they?#  
M: I think tigers teeth might have like some, a few flat ones and then just like quite spiky.#  
N: Yeah like very short flat ones.#  
J: Like these ones are spiky.#  
N: Yeah very short, flat ones.#  
M: Those ones are quite spiky.#  
N: Yeah those, the canines are really big like they're related to dogs.#  
J: Big.#  
N: I've got a dog who's canines are about that big.#  
J: I've got a puppy and his canines are about that big.#  
N: Yeah they'll get to that big.#  
M: Ok right. Oh by the way you've still got in on rubber, like this.#  
N: But they become quite blunt.#  
J: Oh highlighter.#  
M: Will it write?#  
J: Is my head in the way?#  
M: So what are we going to do?#  
J: Shall we do like?#  
N: Lets do it, lets do it from the top (inaudible) big fangs, fangs.#  
M: Shall we like do a few flat ones and then big sharp ones?#  
N: Yeah, yes, yeah got two there, four. Yeah like that's what they'll look like.#  
(Students are drawing a picture of tiger teeth on the smart board)#  
M: And then. So tigers.#  
N: It doesn't say we have to (inaudible). They're not pussy cats though. (inaudible)#  
J: Meow.#  
N: What are you, a pussy cat? Or a tiger possibly?#  
J: I might be.#  
M: Do you want to write something?#  
(Students take it in turn to write and draw on the smart board)#  
J: Tigers teeth.#  
M: Tigers teeth are quite, are sharp in some places.#  
N: Sharp, sharp. No, no the canines, tiger's teeth; tiger's canines.#  
M: Tigers canines. So get the rubber, rub the teeth out.#  
N: Don't put cay, don't put cyanine but.#  
J: Tigers.#  
M: Oh can I write canines?#  
J: No.#  
N: You're in rubber still.#  
J: Oh yeah.#  
M: That one, the second one.#  
J: My own heads in the way.#  
M: Ok you can like move to (inaudible).#  
N: I'm going to stand on the steps. No that's not how, no that's the wrong one, that's the wrong one.#  
J: Oh (inaudible), I put KG.#  
N: That's not even a K.#  
M: Shall I write canines for you?#  
N: There's a C, there's a C. CAI, CAI.#  
M: Do you want me to write it?#



N: (inaudible) before. CAI.#  
M: Tigers have canines. Tigers canines are sharp.#  
N: CAI.#  
J: CAI.#  
N: Um what is it?#  
*(Students find the spelling for Canines from the other side of the classroom)#*  
N: AES, AES.#  
J: AES.#  
N: Are big, are large.#  
J: Are.#  
N: Yeah because they're related to dogs. Cats don't have such.#  
M: Are large and sharp.#  
N: No actually they're really blunt.#  
M: Are they?#  
N: Yeah.#  
M: Right shall we go onto the next page?#  
J: Next.#  
M: Oh dolphins eat fish.#  
N: Fish, fish!#  
M: What might their teeth be like?#  
N: Sharp, sharp, sharp.#  
J: Fish is meat.#  
N: No they have large teeth, I've seen them. Sharp. They're very short, they're very stubby and sharp like that. Although they're very stubby, like that.#  
*(Students draw a picture of dolphin's teeth on the smart board)#*  
N: Dolphins are toothed, (inaudible) whales.#  
J: Dolphins have sharp little teeth.#  
M: Do you want to have a go? Because you haven't had a go.#  
N: Ok.#  
*(Students swap around taking it in turns to write and draw on the smart board)#*  
N: Yellow. Ahh, thank you. Um, ok I can't see. Ok.#  
M: You might want to do it in like blue or something. If you do it in blue or something, because that's quite a dark colour.#  
N: Ok.#  
J: Dolphins teeth.#  
M: Dolphins teeth.#  
N: God my arms are really aching.#  
M: Are sharp but, are small but sharp.#  
J: Are small and sharp.#  
M: Small but sharp. Are small but sharp.#  
N: There we go.#  
M: Ah no, no, no. Need to go on small but sharp.#  
N: Just put an arrow, just put an arrow.#

Appendix 6: Transcript of Critical episode 2 (Lesson 2, DVD timings: 29:48 – 34:40)

TEACHER: Right you need to (inaudible) the next activity. Ok which is here. When you're ready you can press the start button. It's going to ask you some questions. Listen, before you answer any of the questions, I want you to make sure that you agree on your answer, and I want you to make sure that you explain why you think that? So explain why you think something to the rest of the group, before you go onto answer the question, ok?#

J: Pen, start.#

M: The question will come up. Yeah. "Choose the bowl with the correct answer".#  
(Students start the next task on the smart board)#

J: Bowl.#  
"What is the name of the teeth used for tearing and ripping food?"#

J: I know this, I know this, I know this, do you think its canines? Yep?#

M: We need to.#  
(One student is pressing the answers into the smart board)#

J: Yeah I got it right.#

N: Next.#  
"How many wisdom teeth are in a full set of teeth?"

N: Two.#

J: Yeah.#

M: Two.#

J: That's twelve.#  
(Students press the wrong answer on the smart board)#

M: Oopsie.#

J: Four anyway.#

N: Oh well.#

J: Oh N. Dolly M's turn. You electrocuted him.#  
"How many premolars are in a full set of teeth?"#

N: Twelve.#

M: Twelve.#

J: Twelve.#

N: Yeah twelve, twelve.#

M: Yeah twelve.#

J: Twelve.#  
(Students press twelve but that is the wrong answer)#  
"There are eight premolars in a full set of teeth"##

J: No there are eight.#

M: Ah!#

J: My go. Um see if I can get this one right.#  
"What is the name of the teeth used for biting and cutting food?"#

N: Incisors.#

J: Yep. Come on.#  
(Students choose incisors as their answer)#

J: Yeah! I got both of mine right.#

N: Yeah I got all of mine wrong.#

J: So have you.#

M: Right.#

J: I think I'm lucky, my body's lucky.#  
"How many teeth does a newborn child have?"#

N: Um.#

M: None. A newborn child doesn't have any teeth.#

N: Oh yeah.#  
(Students press zero for their answer)#

J: Yeah well done M.#

N: Yeah because you haven't.#

J: You are M and you haven't got any teeth. No if she hasn't got any teeth she wouldn't be able to talk properly.#  
"What is the name of the big teeth that have ridges?"#

M: Um.#  
J: Oh I know.#  
N: Oh molars, molars.#  
M: Yeah.#  
J: No its.#  
N: Premolars.#  
J: Premolars, not its incisors, no it's definitely not canines. Its premolars, its incisors.#  
M: Premolars, I'll go for premolars.#  
N: Yeah premolars.#  
J: I think its incisors, I think its incisors.#  
*(Students choose premolars as their answer)#*  
J: Oh I'm wrong. My go.#  
*"How many canines are there in a full set of teeth?"#*  
J: Four.#  
*(Students choose four as their answer)#*  
J: Yeah!#  
N: Yeah because you've got two at the top and two at the bottom.#  
J: Yeah I know, (inaudible).#  
M: J no!#  
N: J!#  
*"What is the name of the teeth used for crushing and grinding food?"#*  
J: Canines.  
*(Student presses premolars on the smart board as his answer)#*  
N: What are you doing here?#  
J: Just watching.#  
M: Pen please.#  
N: We're just watching)#  
*(The two boy students are looking at the screen on the laptop)#*  
J: Look you come and watch? Its cool watching.#  
TEACHER: J stay in front of the board please?#  
*"Of all the types of teeth, which are the toughest?"#*  
N: Ah premolars, molars.#  
M: Molars.#  
J: Click on it.#  
*(Students click on molars as their answer, which is correct)#*  
N: Yeah but all of them are because they've all got enamel.#  
J: I get the last question. Oh no.#  
M: Shall we all work out the last question together?#  
J: Ok.#  
M: So rough.#  
*"Roughly at what age do milk teeth start to come through?"#*  
M: At about one and a half.#  
J: Six.#  
M: What about. No, no that's years.#  
J: Oh yeah.#  
M: Six to twelve months.#  
N: Yeah about that.#  
M: Probably say about six to twelve months.#  
*(Students press six to twelve months as their answer, which is correct)#*  
M: My sister is six months and she's got teeth through.#  
J: Come on, click, click.#  
M: Yeah.#  
J: Oh there's no point, we're finished.#  
N: Are we?#  
J: Yeah. Mr Fish? Lets play again, see if we can beat our score?#  
*(The smart board displays that they have scored)#*