**The Use Of Video Cameras Within**

**Mathematics Lessons\***

**(Truly Kinaesthetic Lessons)**

Activity: This approach can be used with many kinaesthetic investigational activities. The use of camcorders brings a new dimension to the report back; as other pupils can **see** each pupil’s working.

This will improve your students’ understanding of mathematics because most pupils are used to “seeing” things happen, and using the video approach allows pupils to “show” their working to the problem set. The pupils’ video can then be shown on the classroom white board allowing class discussion to take place on the merits of the mathematics shown in the video.

Video cameras have been used very successfully on two occasions:

**Build a bridge to carry a weight of a toy car using just two sheets of A4 paper.** Pupils first found that a triangle was a “stable” shape, and then made their bridge from triangular prisms. This exercise emphasised the properties of shapes, not only the triangle, and then used the maths practically.

**An exploration produce a pyramid of a given height,** was a “Trial and Improvement” Task, but equally could be used as a 3D Pythagoras tool. Pupils were given A4 card with the base of the pyramid printed on, they were also given a stick which indicated the required perpendicular height. This exercise emphasised the need to show how to get to the answer.

Outcomes: The approach produced a large amount of discussion about what was required to be included and what helpful to be included in the mini-videos. This discussion easily led pupils into realising what is required to achieve full marks in written answers to exam questions.

Follow-up/extension: Most “Flip” type mini-camcorders have their own software to edit the footage. Pupils can use this to produce a video which can be used in other lessons.

Specific Instructions:

* It is easier to manage the use of the camcorders if they are all the same type.
* Ensure that the camcorder software is uploaded onto the laptops before the lesson.
* The pupils should take short (10 – 15 seconds) clips of their work; this makes editing easier.
* Ask pupils to remove unwanted clips before they link to the laptop.
* Remember that the connection is USB; you must ensure that pupils connect, and particularly, disconnect the camcorders correctly, by using the “remove/eject” function.
* The optimum length of each video is between 60 – 90 seconds; if they are longer the pupils attention may wain.
* Slower laptops will require lower standard definition camcorders; faster camcorders will work better with 720 lines high definition.

Prior knowledge: A little prior knowledge of the use of the camcorders is required but this is easily

 acquired by using a camcorder and linking it to a laptop or computer.

Key questions: The pupils’ videos will produce discussion; remember to use the whole range of

 questioning styles to enrich this discussion.