DESIGN TECHNOLOGY

BUNGEE

Brief summary of activity:

In this puzzle the user has to formulate an hypothesis relating to a bungee jumper falling from a steel bridge. The puzzle concentrates on assessing the tensile strength of alternative components that the bungee jumper could make her rope from. Once the best component is chosen, the user can alter variables to obtain the best outcome.

Specific Curriculum Area:

Key Stage 3 Technology

Assessment Method:

Although there are other methods that can be used, one superb method for this activity would be to take a screen shot (using 'print screen') once the bungee jumper has dropped. If the user presses the 'graph' button, a graph will depict the factors involved in the decent of the bungee jumpers. The teacher could use this to ascertain the accuracy of the decisions made by the pupil.

Differentiation:

The introductory screens can be bypassed by pupils who do not need to go over the explanation of Young's Modulus. The competition has different levels of difficulty and pupils can choose the level that is most appropriate for their own ability.

Learning Outcomes:

Children will be able to: change variables to formulate an hypothesis; understand the principles behind Young's Modulus; know what is meant by 'tensile strength'.

Use of Activity in a Lesson:

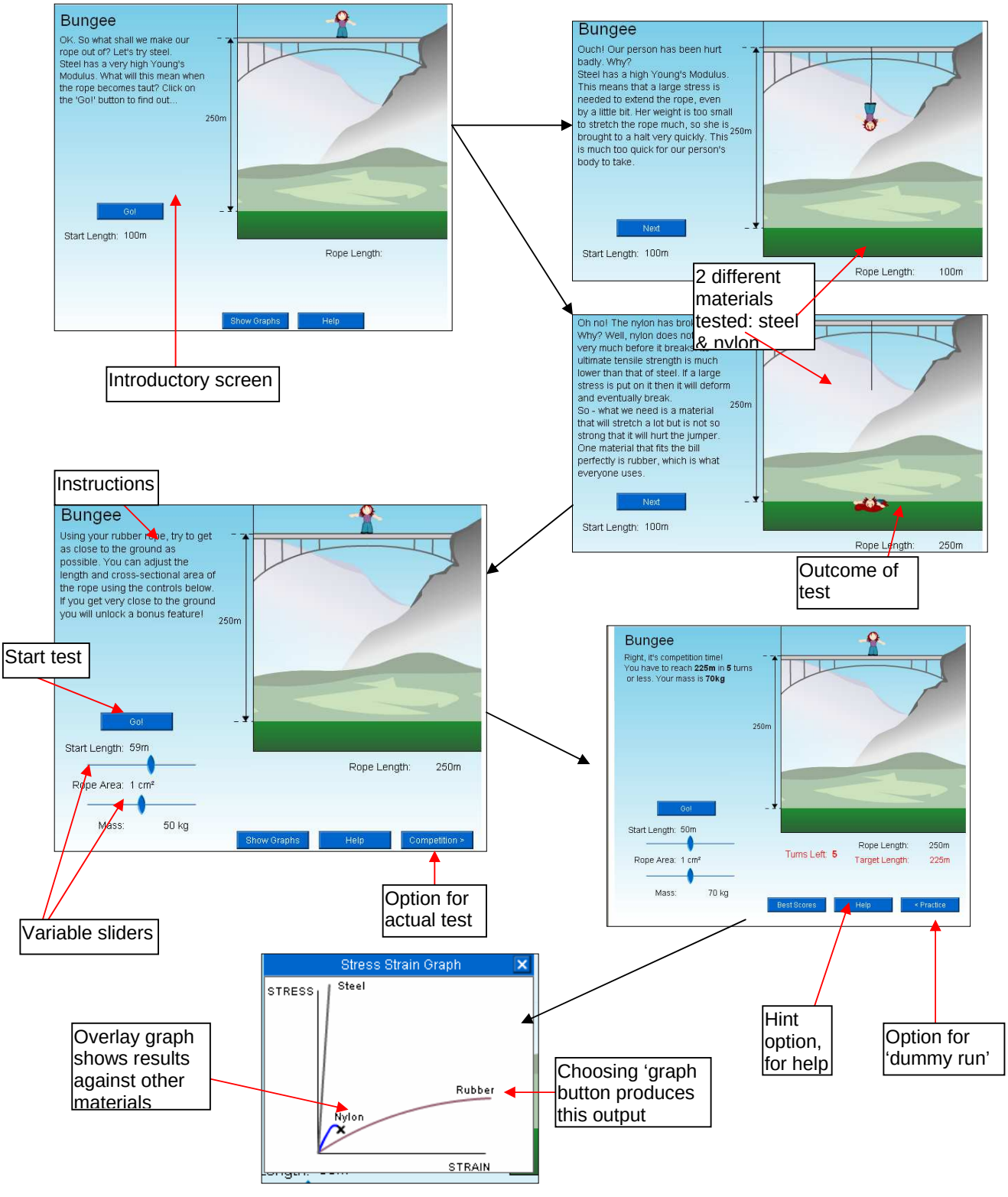
This activity could be demonstrated on an Interactive Whiteboard prior to pupils working on the tasks themselves. It would be a good way to allow pupils to become familiar with Young's Modulus. They could also be shown how to alter the variables before being given the opportunity to work on the tasks individually.

The activity would also be of use in ICT lessons as an exercise in formulating a hypothesis.

Hints and Tips for Teachers:

1. Ensure pupils are aware that the initial help screens can be bypassed if necessary.
2. Ensure pupils are aware that they should move the 'start length' and 'rope area' sliders to vary the outcome of the activity.
3. Analysis of the 'graphs' (accessible with the 'graph' button) will help to pupils to make informed decisions.
4. Work through an example as a demonstration before asking the class to tackle the task themselves.

URL:



Troubleshooting:

If pupils cannot progress beyond the initial screens they need to be shown the 'competition' button.

Other Links:

http://www.ae.msstate.edu/vlsm/materials/strength_chars/youngs.htm