

PHYSICS

BORED BILLY

Brief summary of activity:

This task requires the user to determine the centre of mass for a stack of books piled on a desk. The stack has to be extended beyond the desk without toppling over.

Specific Curriculum Area:

Year 9 — Unit 9J: Gravity and space, Section 1: What is gravity?

Assessment method:

Pupils could log the number of attempts it took them to succeed at each level.

Differentiation:

The task has four levels of complexity, each with more books than the previous level. Less able pupils could turn on the 'centre of mass line' to help them.

Learning objectives:

Children should learn: that gravity is an attractive force which acts on the Earth towards the centre of the planet; that gravity is an attractive force between objects with mass; about how the idea of gravity was related to empirical observations

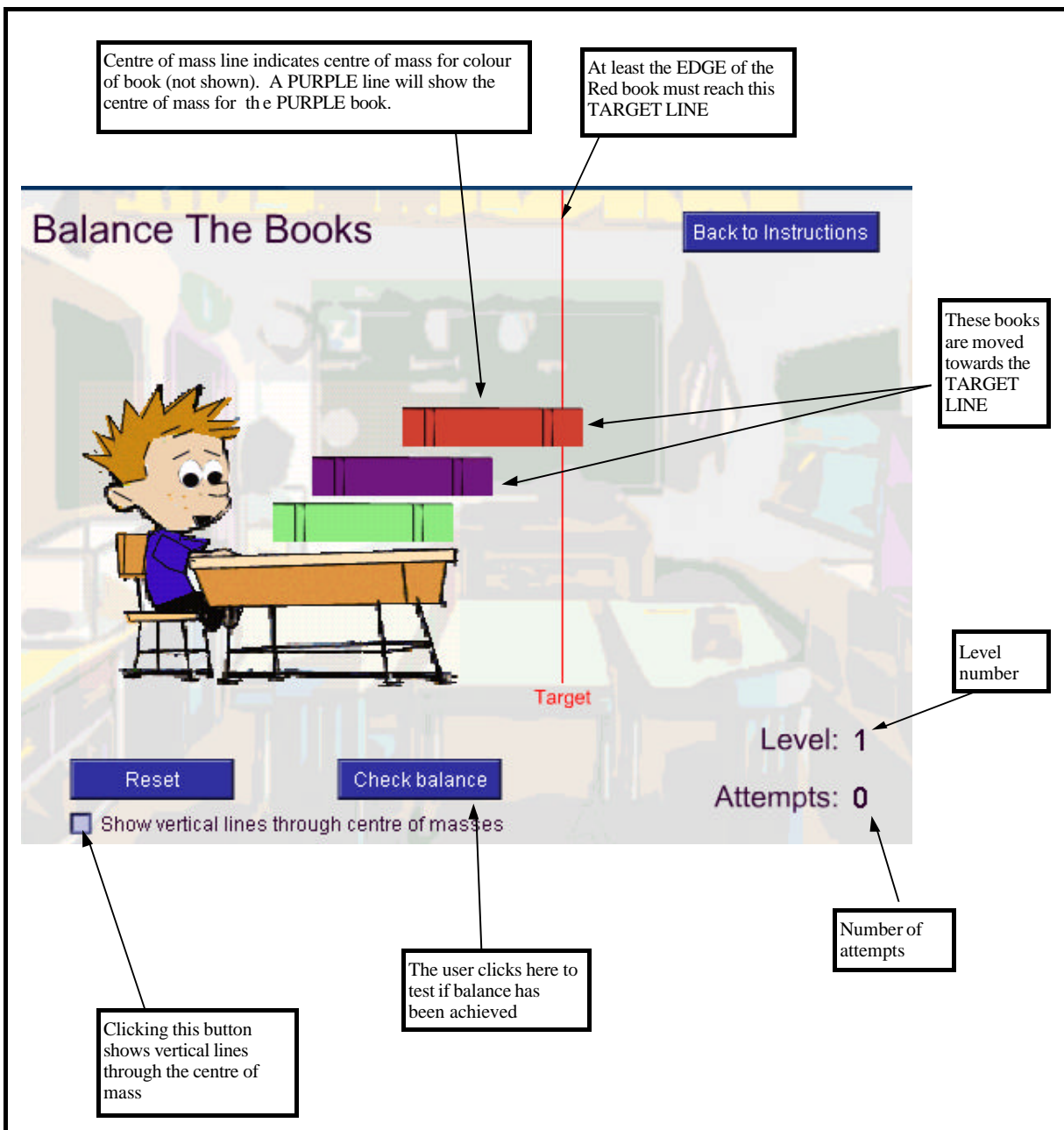
Use of Activity in a lesson:

This task could be shown using real books on a desk first of all. The computerised version of the task could be set as a homework activity, assuming Internet access is possible. Alternatively, the teacher could demonstrate the task to the class (via an Interactive Whiteboard) and the pupils could then repeat the first level as shown by the teacher, thereafter trying levels on their own.

Hints and tips for teachers:

1. Tell pupils not to get frustrated if they do not succeed until having had many attempts—encourage trial and error.
2. Remind pupils that only the edge of the books needs to cross the line in order to succeed.
3. The centre of mass lines can be turned on or off depending on pupil ability.

URL:



Troubleshooting:

Other links:

http://www.standards.dfes.gov.uk/schemes2/secondary_science/sci09j/09jq1