DESIGN TECHNOLOGY

Gears

Brief summary of activity:

In this puzzle the user is presented with the theory behind the way gears work in the form of labelled diagrams and text. The user is then required to apply this knowledge to construct a working system of gears to fulfil a particular brief.

Specific Curriculum Area:

Key Stage 3 Technology

Assessment Method:

The teacher will be able to see the working model on screen and thereby determine the success of the student. Screen dumps could be used to record the construction of the gear system at various stages. If pasted into a document this could forma log showing the decisions the pupil made in the course of the activity.

Differentiation:

The introductory screens can be bypassed by pupils who do not need to go over the explanation of the way gears work.

Learning Outcomes:

Children will be able to: change variables to formulate an hypothesis; understand the principles behind the ways that gear systems work; construct a working gear system to fulfil a given function.

Use of Activity in a Lesson:

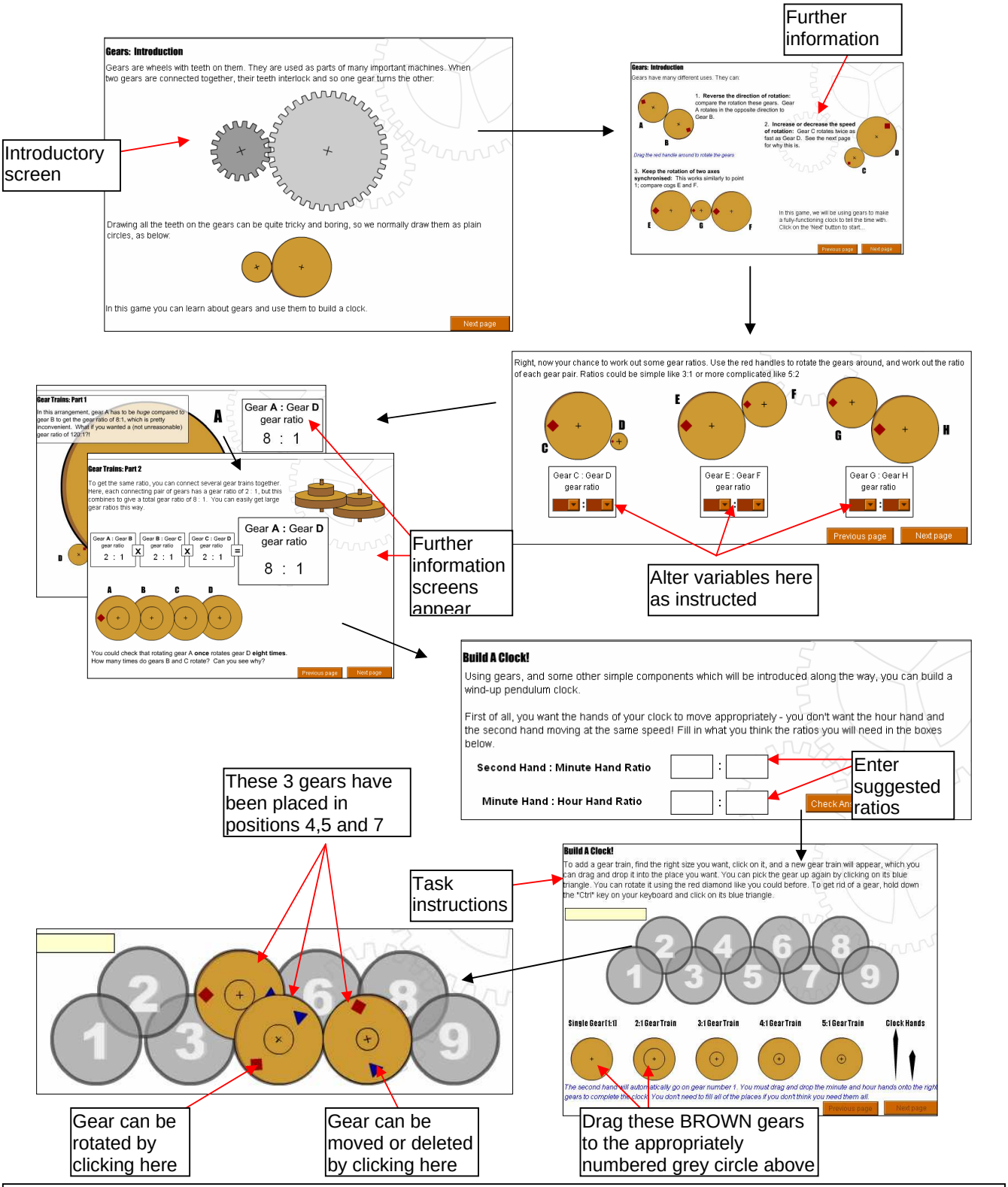
This activity could be demonstrated on an Interactive Whiteboard prior to pupils working on the tasks themselves. Teachers could use the introductory screens as summary, revision material or as means of teaching the topic for the first time. The clear diagrams are informative and would help the understanding of this process. Pupils could then attempt the task on their own, or alternatively it could be carried out as a group activity.

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 the introductory screens contain most of the information they need to attempt the task.
3. The introductory screens will allow pupils to become familiar with the graphics and the interface used in the activity.
4. It may be useful to have access to a set of real gears in the classroom on which hypothesis can be tested first-hand.

URL:



Troubleshooting:

When building the gear gears need to be dragged ONTO the appropriate position number. Gears can be picked up by clicking on the TRIANGLE and rotated by clicking on the DIAMOND on the gears once in position, whilst pressing CTRL while clicking on the TRIANGLE deletes an unwanted gear.

Other Links:

http://www.technologystudent.com/gears1/gearat3.htm , http://www.cabaret.co.uk/