Ormiston Victory Academy

| Teacher | Subject | Class | No | Male | Female | Support Teacher / Assistant and <br> responsibilities within class |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Maths |  |  |  |  |  |
| Date: | Time: |  |  |  |  |  |
|  | Room: |  |  |  |  |  |

## Focus of the Lesson:

Consolidation of relationship between number machines, algebra, graphs, words, input/output tables and sequences.

## Previous Learning

Investigation into number machine, algebra, graphs, words, input/output tables and sequence that they found to all describe the same relationship.

## Learning Objective(s):

Understand that a straight line graph is a visual representation of an algebraic relationship / number machine / input/out table..

| Tiered Learning Outcomes |  |  |
| :---: | :---: | :---: |
|  | 5+ | Be able to complete an input out table by deriving number machine from given linear algebra. |
|  | 6 or C | Be able to draw a straight line graph from input out table, after deriving number machine from given linear algebra. |
|  | 7 or B | Be able to sketch straight line graphs using $y=m x+c$ where m represents gradient and c represents the y axis intercept. |

## Key Questions

What number machines does the algebra represent?

How could we draw a graph to represent this algebra / number machine / relationship?

## Keys Words/Vocabulary

$\mathrm{y}=\mathrm{mx}+\mathrm{c}$, number machine, algebra, straight line graph, input/output table, coordinate, sequence, relationship, gradient, y intercept, linear

| Students with Special <br> Educational Needs | SEN <br> Details | Learning needs met by |
| :--- | :--- | :--- |
|  |  |  |
|  |  |  |

## Boys' learning needs met by

Directed task that can be approached several ways.

| Students on the Gifted and <br> Talented Register | Learning needs met by |
| :--- | :--- |
|  |  |
|  |  |
|  |  |
|  |  |


| Assessment Opportunities |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Teacher assessment | Y | Homework |  | Questions \& answers |  | Performance |  |
| Group assessment |  | Written class work |  | Visual presentation |  |  |  |
| Self assessment | Y | Practical work |  | Oral presentation |  |  |  |
| Peer assessment |  | Physical activity |  | Text/Exam |  |  |  |


| Cross Curricular Links |  |  |  | Health Specialism |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Citizenship |  | Literacy |  |  | Science Specialism |
| Numeracy | Y | ICT |  |  |  |

Ormiston Victory Academy

| Time | Learning Activities (including differentiation and support staff tasks) | What assessment will take place (how will you/pupils know that the lesson outcomes have been achieved?) |
| :---: | :---: | :---: |
|  | Tell pupils to draw set of axes as per last slide in Relationships2.ppt. <br> Whilst they do this (or before), write on the board somewhere where it can stay all lesson - the 5 (or 6) equations as per last slide in Relationships2.ppt. | - Relationships2.ppt <br> - Copies of all but last slide of Relationship2.ppt for all students <br> - Graph paper <br> - Rulers <br> - Pencils <br> Assess graphs drawn ok. Check axes numbered properly around the origin in particular. |
| 은 | Ask pupils to suggest what the number machines could be for each of the equations. <br> Tell pupils that they are to complete an input/output table for | Assess responses, assess ease with which responses are made. Assess with regard to negative answers in particular. |
|  | Allow pupils time to do the first one and then tell them to use the input/output table to plot coordinates, and then to join with straight line all way across page. <br> Assess all is ok and then allow time to repeat for all other equations. Encourage pupils to use different coloured pencil for each graph. <br> As pupils work encourage them to look for other similarities (and/or differences) between the algebra, number machines, graphs... <br> - Gradients of graphs, parallel lines, positive gradient vs negative gradient, gradient of $1 / 2 \ldots$ <br> - $\quad M$ value in equations \& number machines vs gradient of graph <br> - Where crossing y axis vs y value when $\mathrm{x}=0$ from input/output <br> - Equations / number machines with same c values <br> - Many more ideas... | Assess first attempts before progressing to others. <br> Assess / check and amend any non straight line graphs. <br> Assess suggestions given by students re issues here |
|  | Round up, draw out and share all conclusions. <br> Write up $\mathrm{y}=\mathrm{mx}+\mathrm{c}$ with annotations for m \& c and tell pupils to copy. | Assess all responses and overall contentment with ideas put forward. |
| Resources |  |  |
| See RHS. |  |  |

