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|  |  | Resources | Syllabus/Exam refs |
| Set up | Team Formation – Human Rectangles |  | JC – 3.4 Length of perimeter |
| Warm-up  | Names / Leaders? |  |  |
| Investigate | Given you have 20m of wire, what is the maximum rectangular shaped area that you can enclose?Work it out with matchsticks | 20 match-sticks | JC – 3.4 Length of perimeter |
| Planning | Make a table | Table worksheet. W/L/A | (Width -> X axis) |
| Create | 1: Read from table. Identify that a square is the best combination. |  | Multi-representational |
|  | 2: Make graphs. Both Linear and Quadratic. |  | Multi-representational |
|  | 3: Generalise. Find formulas showing the relationships between Width versus Length and Width versus Area. |  | Multi-representational |
| Present | Questions:1. What type of pattern are the numbers in the length column?
2. What type of pattern are the numbers in the area column?
3. Length/Width graph. What type of graph is it? Calculate the slope?

(Teacher: Why do you think it’s negative?)1. Using your table, find the maximum area of the rectangle?

(Teacher: When does this happen?)1. Using your graph, find the maximum area of the rectangle?

(Teacher: When does this happen on the graph?)1. Are all squares rectangles? Are all rectangles squares?
2. What do you notice about the changes of the numbers in the area column?
3. Why didn’t we give you 20m of wire?
4. Dependence: What dependent variables & independent variables are used in this problem?
 |  | Communicate mathematics verbally and in written form (throughout the syllabus) |

Exam question samples?