**Task 45 – Twisted Building**

**Information about the task**

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| **Question** | **Level of difficulty** | **National curriculum mathematical context** | **Text type** | **Question types** |
| 45. Twisted Building | Trial:High (Q45.1)High (Q45.2)High (Q45.3)High (Q45.4) | Shape, understand and use position and movement, understand and use measures, area, estimation, analyse and interpret data, scale. | Longer length continuous text with pictures and diagrams to interpret. | Multiple choice, calculation with longer length written justification and explanation, diagrammatical representation of ideas. |

**Skills assessed by the task**

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| **Thinking skills** | **Literacy & communication skills** |
| **Plan*** Asking questions
* Activating prior skills, knowledge and understanding
* Gathering information

**Develop** * Generating and developing ideas
* Thinking about cause and effect and making inferences
* Thinking logically and seeking patterns
* Considering evidence, information and ideas

**Reflect*** Reviewing outcomes and success criteria
* Reviewing the process/method
* Evaluate own learning and thinking
* Linking and lateral thinking
 | **Reading*** Locating, selecting and using information using reading strategies
* Responding to what has been read

**Writing*** Organising ideas and information

**Wider communication skills*** Communicating information
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| **Numeracy Skills** |
| **Using mathematical information*** Using numbers
* Gathering information

**Calculate*** Using the number system
* Using a variety of methods

**Interpret & present findings*** Comparing data
* Recording and interpreting data and presenting findings
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**Scoring**

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| Twisted building SCORING 45.1Full credit: Accept answers from 50 to 90 metres if a correct explanation is given.*•* One floor of the building has a height of about 2.5 meters. There is some extra room between floors. Therefore an estimate is 21 x 3 = 63 metres.*•* Allow 4 m for each story, so 20 of these gives 80 m, plus 10 m for the ground floor, so a total of 90 m.Partial credit: Correct calculation method and explanation, but using 20 stories instead of 21.*•* Each apartment could be 3.5 metres high, 20 stories of 3.5 metres gives a total height of 70 m.No credit:- Other responses, including answer without any explanation, answers with other incorrect number of floors, and answers with unreasonable estimates of the height of each floor (4 m would be the upper limit).*•* Each floor is around 5 m high, so 5 x 21 equals 105 metres.*•* 60 m.- Missing.To answer the question correctly students have to draw on skills from the connections competency cluster.  |
| Twisted building SCORING 45.2Full credit: C. From the East.No credit: Other responses and missing.To answer the question correctly students have to draw on skills from the connections competency cluster. |
| Twisted building SCORING 45.3Full credit: D. From the South East.No credit: Other responses and missing.To answer the question correctly students have to draw on skills from the connections competency cluster. |
| Twisted building SCORING 45.4Full credit: A correct drawing, meaning correct rotation point and anti-clockwise rotation. Accept angles from 40° to 50°.Partial credit: One of the rotation angle, the rotation point, or the rotation direction incorrect.No credit: Other responses and missing.To answer the question correctly students have to draw on skills from the connections competency cluster. |