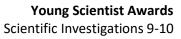


*Mandatory for prize winners

| Level | Description |
|-------|---|
| 5 | The student has provided clear and convincing evidence that they: |
| | completed a valid scientific investigation* |
| | had well-defined aims and clearly expressed the subject of the investigation* |
| | • formulated a testable hypothesis based on prior research or previous observations* |
| | identified independent and dependent variables (or two variables for correlation) and took deliberate steps to regulate and keep controlled variables constant* |
| | made relevant observations using replicated trials or gathered relevant secondary |
| | data* |
| | demonstrated a deep understanding of related science concepts* |
| | used critical thinking to synthesise information and argue the merits of conclusions* |
| | based their explanations on plausible scientific processes and causes* |
| | accurately identified and took steps to minimise potential investigative risk |
| | addressed an issue of social or scientific significance* have been innovative or creative in their approach, content, methodology or |
| | communication to the audience |
| | • identified and assessed a range of procedures and provided convincing arguments for |
| | the procedure and technology selected |
| | recorded data in an organised, sequential and logical manner using correct units |
| | • used analytical tools to evaluate trends, patterns and relationships in collected data |
| | • included a concise and comprehensive summary of relevant prior research in the field |
| | and its reliability assessed |
| | suggested creative and worthwhile directions for future research in a succinct way included a comprehensive logbook, detailing the investigative process, from |
| | brainstorming, through data collection, to the final conclusion |
| | comprehensively acknowledged the nature of all assistance |
| | • used clear, concise, consistent and meaningful language, visuals and sequencing to |
| | effectively communicate to the intended audience |
| 4 | The student has provided substantial evidence that they: |
| | • completed a well-planned scientific investigation |
| | had realistic aims and well-described the subject of the scientific investigation included a summary of current relevant information and checked its reliability |
| | proposed a hypothesis based on prior research or previous observations |
| | had a detailed understanding of the science concepts used in the investigation |
| | conducted a carefully considered risk assessment prior to experimentation |
| | had been innovative or creative in content or methodology |
| | • gathered experimental or secondary data over a number of trials using appropriate |
| | technologies |
| | recorded data in a systematic manner using correct units identified independent and dependent variables and worked to control them. |
| | identified independent and dependent variables and worked to control them analysed and explained trends, patterns and relationships in the data collected |
| | used critical thinking to derive conclusions, suggesting ideas for future research |
| | • included a logbook detailing the different stages of the investigative process |
| | acknowledged and provided details of any assistance given |
| | |



| Level | Description |
|-------|--|
| | communicated the report with effective use of language, visuals and sequencing |
| 3 | The student has provided evidence that they: |
| | completed a scientific investigation that shows evidence of careful planning had some measurable aims and the subject of the investigation was clearly described collected background research with some relevance to the subject of investigation proposed a relevant hypothesis had a good understanding of the science concepts used in the investigation had some innovative or creative ideas but did not develop them |
| | conducted a risk assessment prior to experimentation gathered primary or secondary data with replication |
| | used thorough scientific methodology including the control of variables |
| | identified obvious trends, patterns and relationships in the data |
| | formulated conclusions that were supported by experimental data |
| | provided supporting documentation in the accompanying logbook |
| | put forward some good and practical ideas for future improvements |
| | acknowledged any assistance given |
| | communicated the report with good use of language, visuals and sequencing appropriate to the intended audience |
| 2 | The student has provided evidence that they: |
| _ | · · · · · · · · · · · · · · · · · · · |
| | completed a scientific investigation with moderate planning had some tentative aims and the subject of the investigation was adequately described |
| | performed limited or general background research |
| | had minimal understanding of the science concepts used in the investigation |
| | lacked innovative or creative ideas |
| | considered experimental risks but did not conduct a formal risk assessment sethered come first hand data without replication. |
| | gathered some first-hand data without replication controlled some variables |
| | identified limited trends, patterns and relationships in the data |
| | formulated conclusions that were not fully supported by data |
| | provided limited or disorganised documentation in the accompanying logbook |
| | put forward some ideas for future improvements |
| | received some assistance but did not provide details of the assistance given |
| | communicated the report with adequate use of language, visuals and sequencing The student has provided evidence that they |
| 1 | The student has provided evidence that they: |
| | submitted a project with limited planning had no clear aim and the subject of the investigation was veguely described. |
| | had no clear aim and the subject of the investigation was vaguely described performed nominal or irrelevant background research |
| | had an inadequate understanding of the science concepts used in the investigation |
| | • failed to recognise or control variables |
| | failed to identify trends, patterns and relationships in the data |
| | manufactured conclusions lacking supporting information and scientific accuracy neglected to include a logbook |
| | neglected to acknowledge assistance given |





| Level | Description |
|-------|--|
| | • communicated the report with poor expression and inadequate use of visuals |