Design

Criterion A: Inquiring and analyzing

Maximum: 8

At the end of year 1, students should be able to:

1. explain and justify the need for a solution to a problem
2. state and prioritize the main points of research needed to develop a solution to the problem
3. describe the main features of one existing product that inspires a solution to the problem
4. present the main findings of relevant research.

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| **Achievement Level** | **Level Descriptor** |
| 0 | The student **does not** reach a standard described by any of the descriptors below |
| 1-2 | The student:   1. **states** the need for a solution to the problem 2. **states** the findings of research. |
| 3-4 | The student:   1. **outlines** the need for a solution to a problem 2. **states some** points of research needed to **develop** a solution, **with some guidance** 3. **states** the main features of an existing product that inspires a solution to the problem 4. **outlines some of** the main findings of research. |
| 5-6 | The student:   1. **explains** the need for a solution to a problem 2. **states** and **prioritizes** the main points of research needed to **develop** a solution, **with some guidance** 3. **outlines** the main features of an existing product that inspires a solution to the problem 4. **outlines** the main findings of research. |
| 7-8 | The student:   1. **explains** and **justifies** the need for a solution to a problem 2. **states** and **prioritizes** the main points of research needed to **develop** a solution, **with minimal guidance** 3. **describes** the main features of an existing product that inspires a solution to the problem 4. **presents** the main findings of research. |

Criterion B: Developing Ideas

Maximum: 8

At the end of year 1, students should be able to:

1. develop a list of success criteria for the solution
2. present feasible design ideas, which can be correctly interpreted by others
3. present the chosen design
4. create a planning drawing/diagram which outlines the main details for making the chosen solution.

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| **Achievement Level** | **Level Descriptor** |
| 0 | The student **does not** reach a standard described by any of the descriptors below |
| 1-2 | The student:   1. **states one** basic success criterion for a solution 2. **presents one** design idea, which can be interpreted by others 3. **creates** an incomplete planning drawing/diagram. |
| 3-4 | The student:   1. **states a few** success criteria for the solution 2. **presents more than one** design idea, using an appropriate medium(s) or labels key features, which can be interpreted by others 3. **states** the key features of the chosen design 4. **creates** a planning drawing/diagram or **lists** requirements for the creation of the chosen solution. |
| 5-6 | The student:   1. **develops a few** success criteria for the solution 2. **presents a few** feasible design ideas, using an appropriate medium(s) or labels key features, which can be interpreted by others 3. **presents** the chosen design **stating** the key features 4. **creates** a planning drawing/diagram or **lists** the main details for the creation of the chosen solution. |
| 7-8 | The student:   1. **develops a list of** success criteria for the solution 2. **presents** feasible design ideas, using an appropriate medium(s) and outlines the key features, which can be correctly interpreted by others 3. **presents** the chosen design **describing** the key features 4. **creates** a planning drawing/diagram which **outlines** the main details for making the chosen solution. |

Criterion C: Creating the solution

Maximum: 8

At the end of year 1, students should be able to:

1. outline a plan, which considers the use of resources and time, sufficient for peers to be able to follow to create the solution
2. demonstrate excellent technical skills when making the solution
3. follow the plan to create the solution, which functions as intended, list the changes made to the chosen design and plan when making the solution
4. present the solution as a whole.

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| **Achievement Level** | **Level Descriptor** |
| 0 | The student **does not** reach a standard described by any of the descriptors below |
| 1-2 | The student:   1. **demonstrates minimal** technical skills when making the solution 2. **creates** the solution, which functions **poorly** and is presented **in an incomplete form.** |
| 3-4 | The student:   1. **lists** the main steps in a plan that contains some details, resulting in peers having difficulty following the plan to create the solution 2. **demonstrates satisfactory** technical skills when making the solution 3. **creates** the solution, which **partially** functions and is **adequately** presented 4. **states one change** made to the chosen design **or** plan when making the solution. |
| 5-6 | The student:   1. **lists** the main steps in the plan, which **considers** time and resources, resulting in peers being able to follow the plan to create the solution 2. **demonstrates competent** technical skills when making the solution 3. **creates** the solution, which functions **as intended** and is presented **appropriately** 4. **states one change** made to the chosen design **and** plan when making the solution. |
| 7-8 | The student:   1. **outlines** a plan, which **considers** the use of resources and time, sufficient for peers to be able to follow to create the solution 2. **demonstrates excellent** technical skills when making the solution 3. follows the plan to **create** the solution, which functions **as intended** and is presented **appropriately** 4. **lists the changes** made to the chosen design and plan when making the solution. |

Criterion D: Evaluating

Maximum: 8

At the end of year 1, students should be able to:

1. outline simple, relevant testing methods, which generate data, to measure the success of the solution
2. outline the success of the solution against the design specification
3. outline how the solution could be improved
4. outline the impact of the solution on the client/target audience.

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| **Achievement Level** | **Level Descriptor** |
| 0 | The student **does not** reach a standard described by any of the descriptors below |
| 1-2 | The student:   1. **defines** a testing method, which is used to measure the success of the solution 2. **states** the success of the solution. |
| 3-4 | The student:   1. **defines** a **relevant** testing **method**, which generates data, to measure the success of the solution 2. **states** the success of the solution against the design specification based on the results of **one relevant** test 3. **states one way** in which the solution could be improved 4. **states one way** in which the solution can impact the client/target audience. |
| 5-6 | The student:   1. **defines** **relevant** testing **methods**, which generate data, to measure the success of the solution 2. **states** the success of the solution against the design specification based on **relevant** product testing 3. **outlines one way** in which the solution could be improved 4. **outlines** the impact of the solution on the client/target audience, **with guidance**. |
| 7-8 | The student:   1. **outlines** **simple**, **relevant** testing methods, which generate data, to measure the success of the solution 2. **outlines** the success of the solution against the design specification based on **authentic** product testing 3. **outlines** how the solution could be improved 4. **outlines** the impact of the solution on the client/target audience. |