**NZQA**

**Approved**

Achievement standard: 91354 Version 3

Standard title: Undertake brief development to address an issue

Level: 2

Credits: 4

Resource title: Protective gear for the farm

Resource reference: Generic Technology VP-2.1 v2

Vocational pathway: Primary Industries

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| Quality assurance status | These materials have been quality assured by NZQA. NZQA Approved number A-A-02-2015-91354-02-8244 |
| Authenticity of evidence | Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material.Using this assessment resource without modification may mean that learners’ work is not authentic. Assessors/ educators may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

Vocational Pathway Assessment Resource

Achievement standard: 91354

Standard title: Undertake brief development to address an issue

Level: 2

Credits: 4

Resource title: Protective gear for the farm

Resource reference: Generic Technology VP-2.1 v2

Vocational pathway: Primary Industries

Learner instructions

# Introduction

This assessment activity requires you to undertake brief development to address an issue relating to personal protection gear for use on a farm.

You are going to be assessed on how comprehensively you undertake brief development to address an issue relating to personal protection gear– that is, how well you describe the outcome. You will need to justify why the outcome should be developed, and justify the specifications in relation to the physical and functional attributes required for the outcome.

The following instructions provide you with a way to structure your work so you can demonstrate what you have learnt and achieve success in this standard.

Assessor/educator note: It is expected that the assessor/educator will read the learner instructions and modify them if necessary to suit their learners.

# Task

Develop a brief that is made up of a conceptual statement that describes the outcome and its purpose, and specifications that define the outcome’s requirements (its physical and functional nature).

Explore the context by researching farm-based issues. These might be, for example, associated with safety when handling chemicals or working with machinery; carrying things when mustering, comfort when shearing; or cleanliness when milking.

Evaluate the issues in order to identify one that allows you to determine a need or opportunity and associated stakeholders. Consider:

* the social environment (the people who will use and develop the outcome, such as the manufacturers and farm workers)
* the physical environment (where the outcome will be developed and used, such as type of work, exposure to the weather)
* the resources available
* the ongoing opinions of all the stakeholders connected to the outcome
* any constraints (for example resources, time and equipment).

Ensure your research is sufficient to enable you to prioritise considerations about where the outcome will be developed and situated. Write a conceptual statement.

Develop a clear set of specifications for your outcome by:

* considering the information you have gathered (such as any physical and functional requirements) and any additional information relating to your stakeholders’ needs and the social and physical environment in which the outcome will be placed
* using research of existing solutions (for example personal protection gear used on farms and in other primary industries).

As a result of this research, explain the desired:

* physical attributes (for example aesthetics)
* functional attributes (for example form of protection, ease of use).

As a result of functional modelling and ongoing key and wider stakeholder consultation and consideration of the environment, justify the specifications in relation to the physical and functional attributes required for the outcome.

Present your final brief, which includes your fully developed conceptual statement and specifications. Your conceptual statement should clearly communicate what is to be done and why. It should:

* describe the purpose of the outcome
* describe the social and physical environment (for example where the outcome will be used and who will use it)
* justify why the outcome should be developed.

Your set of specifications should clearly justify the requirements of the outcome in terms of its physical nature (what it looks like, how it is made) and its functional nature (what it can do). They must enable you to judge whether the outcome defined by your brief has the potential to be ‘fit for purpose’.

You are not required to create your outcome as part of this assessment activity.

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Assessor/Educator guidelines

# Introduction

The following guidelines are supplied to enable assessors/educators to carry out valid and consistent assessment using this internal assessment resource.

As with all assessment resources, education providers will need to follow their own quality control processes. Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material. Using this assessment resource without modification may mean that learners' work is not authentic. The assessor/educator may need to change figures, measurements or data sources or set a different context or topic. Assessors/educators need to consider the local context in which learning is taking place and its relevance for learners.

Assessors/educators need to be very familiar with the outcome being assessed by the achievement standard. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing learners against it.

# Context/setting

This activity requires learners to undertake comprehensive brief development to address an issue relating to personal protection gear for a farm-based activity.

Learners are not required to create the technological outcome as part of this assessment activity.

# Conditions

This is an individual assessment activity.

The evidence of brief development will be collected in the form of notes, drawings and photographs within a portfolio.

# Resource requirements

Learners will require access to:

* stakeholders (both key and from the wider community)
* the internet and a library
* a camera.

# Additional information

The *Technology Online* website [http://technology.tki.org.nz](http://technology.tki.org.nz/) provides useful definitions of technology terms.

# Assessment schedule: Generic Technology 91354 – Protective gear for the farm

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner undertakes brief development to address an issue by:* identifying an issue as a result of exploring the context of personal protection gear
* determining a need or opportunity and associated stakeholders
* reflecting ongoing consideration of the social and physical environment where the outcome will be developed and situated
* reflecting ongoing key stakeholders’ opinions
* describing the outcome to be developed and explaining why such an outcome should be developed
* explaining the physical and functional attributes required for an outcome
* producing a final brief comprised of a conceptual statement and specifications

For example:The learner determines through research that farm workers must be protected from chemicals when handling large quantities.Having researched and spoken with the farm manager and workers, the learner finds there is a need to provide a new protective over-garment for farm workers to use when handling chemicals.The learner considers the views of the manager and workers in relation to the handling of chemicals, familiarises themselves with the performance requirements for protective clothing, as set out in ISO (International Organisation for Standardisation) 27065:2011, and also consults experts in the community when making decisions about appropriate fabric.The learner establishes that the farmer wants an over-garment that would fit several sizes, to reduce costs and storage issues. The learner consults regularly over styles and sizes.The learner explains that a garment that could be put over existing clothes needs to be developed to protect workers from chemical spray.The over-garment must allow workers to slip it on easily and clip at the back to stop it falling open. The front of the garment should have no pockets or straps that would catch; the sleeves should be full length and with elasticised wristbands, and fit inside gloves. The selected material must have some chemical resistance and be easily cleaned by rinsing with a hose. The learner confirms the conceptual statement saying what is to be done and why, and carries out further research, functional modelling and stakeholder consultation to establish specifications that define the requirements of the outcome in terms of its physical and functional nature (e.g. is a wrap-around style, clips at the back, has full length arms with elastic at the wrists and can fit inside gloves) and allow for the personal protection gear to be judged as fit for purpose.*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner undertakes in-depth brief development to address an issue by:* identifying an issue as a result of exploring the context of personal protection gear
* determining a need or opportunity and associated stakeholders
* prioritising social and physical environmental considerations related to where the outcome will be developed and situated
* reflecting ongoing feedback from key and wider stakeholders
* describing the outcome to be developed and explaining why such an outcome should be developed
* explaining the physical and functional attributes required for an outcome
* producing a final brief comprised of a conceptual statement and specifications

For example:The learner determines through research that farm workers must be protected from chemicals when handling large quantities.Having researched and spoken with the farm manager and workers, the learner finds there is a need to provide a new protective over-garment for farm workers to use when handling chemicals.The learner considers the views of the manager and workers in relation to the handling of chemicals and familiarises themselves with the performance requirements for protective clothing, as set out in ISO (International Organisation for Standardisation) 27065:2011, and also consults experts in the community when making decisions about appropriate fabric. They determine that because the chemical spraying is done with tractor boon sprayers, there is a low level of spray drift landing on the operator – therefore making it acceptable for cotton or polyester cotton fabric to be used (rather than having to use a more expensive liquid-tight fabric). Experts in the community give further advice on appropriate fabrics.The learner also considers where the over-garment would be stored when not in use. The manager does not want to store separate garments for each worker, so the learner considers the workers’ sizes and develops an over-garment that can be fastened at the back for larger workers and wrapped and fastened for smaller workers. All stakeholders agree on this idea.The learner explains that a garment that could be put over existing clothes needs to be developed to protect workers from chemical spray.The over-garment must allow workers to slip it on easily and clip at the back to stop it falling open. The front of the garment should have no pockets or straps that would catch; the sleeves should be full length and with elasticised wristbands, and fit inside gloves. The selected material must have some chemical resistance and be easily cleaned by rinsing with a hose.The learner confirms the conceptual statement saying what is to be done and why, and carries out further research, functional modelling and stakeholder consultation to establish specifications that define the requirements of the outcome in terms of its physical and functional nature (e.g. is a wrap-around style, clips at the back, has full length arms with elastic at the wrists and can fit inside gloves) and allow for the personal protection gear to be judged as fit for purpose.*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner undertakes comprehensive brief development to address an issue by:* identifying an issue as a result of exploring the context of personal protection gear
* determining a need or opportunity and associated stakeholders
* prioritising social and physical environmental considerations related to where the outcome will be developed and situated
* reflecting ongoing feedback from key and wider stakeholders
* describing the outcome to be developed and justifying why that particular outcome should be developed
* justifying the specifications in relation to the physical and functional attributes required for an outcome
* producing a final brief comprised of a conceptual statement and specifications

For example:The learner determines through research that farm workers must be protected from chemicals when handling large quantities.Having researched and spoken with the farm manager and workers, the learner finds there is a need to provide a new protective over-garment for farm workers to use when handling chemicals.The learner considers the views of the manager and workers in relation to the handling of chemicals and familiarises themselves with the performance requirements for protective clothing, as set out in ISO (International Organisation for Standardisation) 27065:2011, and also consults experts in the community when making decisions about appropriate fabric. They determine that because the chemical spraying is done with tractor boon sprayers, there is a low level of spray drift landing on the operator – therefore making it acceptable for a cotton or polyester cotton fabric to be used (rather than having to use a more expensive liquid-tight fabric). Experts in the community give further advice on appropriate fabrics.The learner also considers where the over-garment would be stored when not in use. The manager does not want to store separate garments for each worker, so the learner considers the workers’ sizes and develops an over-garment that can be fastened at the back for larger workers and wrapped and fastened for smaller workers. All stakeholders agree on this idea.The learner explains that the farmer had purchased a lot of protective gear in the past and how the workers found this gear unsatisfactory, i.e. not always of a size that would fit, uncomfortable to work in, time consuming to put on and take off etc. The workers were not always wearing the gear when they should be and therefore the farm was not complying with legal requirements. A garment that could be put over existing clothes needs to be developed to protect workers from chemical spray.The learner develops specifications for an over-garment based on a surgeon’s gown that allows workers to slip it on easily and clip at the back to stop it falling open. The front of the garment should have no pockets or straps that could catch; the sleeves should be full length and with elasticised wristbands, and fit inside gloves; so that potential risk of contamination (as specified in ISO standards) is then minimised. The garment needs to fit a range of sizes because storage is limited and the manager wants more than one worker to be able to use the garment. The learner tests the performance limits (i.e. chemical resistance) of a material in controlled conditions and is able to demonstrate to all stakeholders that being able to hose down the garment instead of washing or dry cleaning is an added bonus and it is worth the extra cost. The learner confirms the conceptual statement saying what is to be done and why, and carries out further research, functional modelling and stakeholder consultation to establish specifications that define the requirements of the outcome in terms of its physical and functional nature (e.g. is a wrap-around style, clips at the back, has full length arms with elastic at the wrists and can fit inside gloves) and allow for the personal protection gear to be judged as fit for purpose.*The above expected learner responses are indicative only and relate to just part of what is required.* |

Final grades will be decided using professional judgement based on an examination of the evidence provided against the criteria in the Achievement Standard. Judgements should be holistic, rather than based on a checklist approach.