

Internal Assessment Resource

Education for Sustainability Level 2

This resource supports assessment against Achievement Standard 90810 version 2

Standard title: Undertake a personal action, with reflection, that contributes to a sustainable future

**Credits:** 6

Resource title: Making a difference

**Resource reference:** Education for Sustainability 2.1A v3

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| This resource:* Clarifies the requirements of the standard
* Supports good assessment practice
* Should be subjected to the school’s usual assessment quality assurance process
* Should be modified to make the context relevant to students in their school environment and ensure that submitted evidence is authentic
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| Date version published by Ministry of Education | February 2015 Version 3To support internal assessment from 2015 |
| Authenticity of evidence | Teachers must manage authenticity for any assessment from a public source, because students may have access to the assessment schedule or student exemplar material.Using this assessment resource without modification may mean that students’ work is not authentic. The teacher 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. |

**Internal Assessment Resource**

Achievement standard: 90810

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Teacher guidelines

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

Teachers 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 students against it.

Context/setting

This activity requires students to plan, undertake and critically reflect on a personal action that contributes towards a sustainable future for the Waikato River environment, and submit a report.

Conditions

It is suggested that the assessment activity take place over 8-10 weeks of in- and out-of-class time.

Resource requirements

Students should have access to:

* Internet, for research and communication.
* Technology and equipment, as and where appropriate.

Additional information

This assessment activity is based on the assumption that students have an in-depth understanding of: the principles and aspects of sustainability; research methods and data analysis; evaluation; and, wherever possible, Māori concepts and values relating to the environment.

The activity used to assess against this standard, with the choice of a suitable context, could be used in conjunction with assessment activities for EfS 2.2 (AS90811) and 2.5 (AS91734).

Other possible contexts

Although this resource is focused on a river environment, you may adapt it to other contexts more relevant to your location such as coastal and marine environments, bush, lakes, or school. You may also provide different contexts within your class depending on your students’ interests. If you change the context for the activity, you need to provide equivalent relevant resources.

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Student instructions

Introduction

This assessment activity requires you to undertake and reflect on a personal action that contributes towards a sustainable Waikato River environment.

You are going to be assessed on the critical quality of your reflection on your personal action that contributes to a sustainable Waikato River environment.

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

Teacher note: You will need to read these student instructions and modify them if necessary to meet the needs and interests of your students.

Task

Plan and carry out a personal action related to a sustainability issue that affects the Waikato River environment.

Your personal action may be an extension of action begun in previous years.

Submit a report that outlines your planning, action, critical reflection, and conclusions, as well as a log that documents your action and your findings.

You may plan and conduct your action as part of a group, but you will be assessed individually. Include evidence of your individual contributions in your log if working in a group.

You have 10 weeks to complete this assessment activity.

Develop a plan

Develop a plan for a personal action in response to a current sustainability issue for a Waikato River environment, including:

* identification of an issue that impacts on the sustainability of the Waikato River environment
* an outline of the importance of the issue with reference to at least one aspect of sustainability
* a time-frame and steps required to take action
* what equipment will be used
* what measurement methods will be used and how data will be collected.

Take action

Undertake your personal action, following your plan and modifying it if necessary. Keep a record of the strengths, weaknesses, opportunities, and threats you observe in relation to the action in your log.

Reflection

Evaluate your response to the personal action using supporting evidence and examples, including one or more of:

* stating supported opinions or judgements
* considering implications
* projecting future impacts
* evaluating options
* suggesting alternatives and next actions for personal and social responsibility.

Finalise your report

Organise your report.

Include:

* Your development and planning of the action.
* The action you undertook.
* Your reflection.
* Your conclusions about:
* the validity of the data collection and measurement methods you used
* the effectiveness of the plan, including an explanation of any modifications made
* how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan
* whether taking the action has changed your own attitudes or behaviours in relation to the issue your action addressed
* the strengths, weaknesses, opportunities and threats associated with the action in relation to the aspect(s) of sustainability.

Submit for assessment

Submit your completed report and log for assessment.

Resources

[http://www.lawa.org.nz](http://www.lawa.org.nz/)

<http://www.makearipple.co.nz>

<http://www.forestandbird.org.nz>

<http://www.doc.govt.nz>

[http://www.biodiversity.govt.nz](http://www.biodiversity.govt.nz/seas/biodiversity/index.html)

<http://www.sciencelearn.org.nz/>

<http://www.waikatobiodiversity.org.nz/educational_resources/>

<http://maungatrust.org/>

<http://www.landcareresearch.co.nz/science/plants-animals-fungi/ecosystems>.

Assessment schedule: Education for Sustainability 90810 - Making a difference

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| Evidence/Judgements for Achievement  | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| Undertake a personal action, with reflection, that contributes to a sustainable future.The student has:* Developed a plan that includes:
* An outline of the importance of an issue that impacts on the sustainability of a Waikato River environment, with reference to at least one of the aspects of sustainability.

*“The Waikato River is extremely significant to tangata whenua and also to everyone who lives near it. There is a saying around here ‘healthy water healthy people’ and now our river is not so healthy we have finally realised its importance. We used to be able to fish from it, drink straight from it, swim in it. We rely on its water to drink and irrigate our crops. Now it is degrading rapidly from land use and runoff of mostly fertilisers and effluent. We have done a lot over the last 10 years to change practices about land use and protecting water ways. But a lot more needs to be done. Poor water health affects biodiversity, making the habitat uninhabitable for some species and impacts on tuna stocks.**Although all aspects of sustainability are relevant to this issue, the main one is the environmental aspect because….”** What measurement methods will be used and how data will be collected.

*“I plan firstly to gather data from the Waikato Regional Council about the health of the river and contributing waterways. I will do some of my own monitoring to understand the factors that can affect the health of the river.”* * A timeframe and steps of action.

Detail provided of how data will be gathered, what measurement methods will be used and expected timeframe.*“The data I have gathered as a base line of biodiversity showed lots of snails and worms, showing poor quality water. I went to a ‘clean stream’ to compare my findings. I found lots of mayflies and stone flies also the temperature was lower….So, my action will be to organise a planting day next to the stream that runs along our school boundary. It runs directly into the river. As the plants grow they will have a direct impact on improving the quality of the water. I will make sure we can look after the plants and prevent weeds from growing and smothering them.”** Carried out a personal action, following the plan and modifying it if necessary.

*“I had a good turnout of 37 people. We planted 450 trees along the stream. These were funded by the local council. We could have planted more as there were lots of interested people who came.”*Evidence of carrying out the action is found in the student’s log.* Drawn conclusions about:
* the validity of the data collection and measurement methods used
* the effectiveness of the plan, including an explanation of any modifications made
* how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan.

*“Overall, data showed an improvement in the quality of the water in the stream (data cited). Some of the data showed a degradation (4th data collection) owing to a heavy storm. This was explained in my chart.**Our methods of data collection were adequate because…**For projects such as this, meaningful effects will only be seen in the medium to long term….Riparian plantings are hugely beneficial as there are already existing programmes that have shown that this is an effective way of improving water quality. I believe our action was effective because…. (examples of other projects cited) even though it will take time for the plants to grow and have the impact we want on the future of the river.**By improving the quality of water in the stream we improve the river quality as well. This has implications for economic sustainability, for example….I will continue to monitor the biodiversity in the stream and see if it improves. The Waikato River is vast and is one of the main bodies of water giving life to so much of our community. If we don’t do something about it we may run the risk of not having usable drinking water in the future.”*In addition to the completed report, the student has submitted a log containing evidence of their individual contributions and of their action and findings.*The examples above are indicative samples only.* | Undertake a personal action, with in-depth reflection, that contributes to a sustainable future.The student has:* Developed a plan that includes:
* An outline of the importance of an issue that impacts on the sustainability of a Waikato River environment, with reference to at least one of the aspects of sustainability.

*“The Waikato River is extremely significant to tangata whenua and also to everyone who lives near it. There is a saying around here ‘healthy water healthy people’ and now our river is not so healthy we have finally realised its importance. We used to be able to fish from it, drink straight from it, swim in it. We rely on its water to drink and irrigate our crops. Now it is degrading rapidly from land use and runoff of mostly fertilisers and effluent. We have done a lot over the last 10 years to change practices about land use and protecting water ways. But a lot more needs to be done. Poor water health affects biodiversity, making the habitat uninhabitable for some species and impacts on tuna stocks.**Although all aspects of sustainability are relevant to this issue, the main one is the environmental aspect because….”** What measurement methods will be used and how data will be collected.

*“I plan firstly to gather data from the Waikato Regional Council about the health of the river and contributing waterways. I will do some of my own monitoring to understand the factors that can affect the health of the river.”* * A timeframe and steps of action.

Detail provided of how data will be gathered, what measurement methods will be used and expected timeframe.*“The data I have gathered as a base line of biodiversity showed lots of snails and worms, showing poor quality water. I went to a ‘clean stream’ to compare my findings. I found lots of mayflies and stone flies also the temperature was lower….So, my action will be to organise a planting day next to the stream that runs along our school boundary. It runs directly into the river. As the plants grow they will have a direct impact on improving the quality of the water. I will make sure we can look after the plants and prevent weeds from growing and smothering them.”** Carried out a personal action, following the plan and modifying it if necessary.

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* how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan
* whether taking the action has changed the student’s own attitudes or behaviours.

*“Overall, data showed an improvement in the quality of the water in the stream (data cited). Some of the data showed a degradation (4th data collection) owing to a heavy storm. This was explained in my chart.**Our methods of data collection were adequate because…**For projects such as this, meaningful effects will only be seen in the medium to long term….Riparian plantings are hugely beneficial as there are already existing programmes that have shown that this is an effective way of improving water quality. I believe our action was effective because…. (examples of other projects cited) even though it will take time for the plants to grow and have the impact we want on the future of the river.**By improving the quality of water in the stream we improve the river quality as well. I will continue to monitor the biodiversity in the stream and see if it improves. The Waikato River is vast and is one of the main bodies of water giving life to so much of our community. If we don’t do something about it we may run the risk of not having usable drinking water in the future.* *This activity has shown me that undertaking a personal action can make a meaningful difference in terms of sustainability. I will be much more prepared to take actions in future that can contribute to a more sustainable planet, as I know now my actions can support aspects of environmental and economic sustainability, For example…”*In addition to the completed report, the student has submitted a log containing evidence of their individual contributions and of their action and findings.*The examples above are indicative samples only.* | Undertake a personal action, with critical reflection, that contributes to a sustainable future. The student has:* Developed a plan that includes:
* An outline of the importance of an issue that impacts on the sustainability of a Waikato River environment, with reference to at least one of the aspects of sustainability.

*“The Waikato River is extremely significant to tangata whenua and also to everyone who lives near it. There is a saying around here ‘healthy water healthy people’ and now our river is not so healthy we have finally realised its importance. We used to be able to fish from it, drink straight from it, swim in it. We rely on its water to drink and irrigate our crops. Now it is degrading rapidly from land use and runoff of mostly fertilisers and effluent. We have done a lot over the last 10 years to change practices about land use and protecting water ways. But a lot more needs to be done. Poor water health affects biodiversity, making the habitat uninhabitable for some species and impacts on tuna stocks.**Although all aspects of sustainability are relevant to this issue, the main one is the environmental aspect because….”** What measurement methods will be used and how data will be collected.

*“I plan firstly to gather data from the Waikato Regional Council about the health of the river and contributing waterways. I will do some of my own monitoring to understand the factors that can affect the health of the river.”* * A timeframe and steps of action.

Detail provided of how data will be gathered, what measurement methods will be used and expected timeframe.*“The data I have gathered as a base line of biodiversity showed lots of snails and worms, showing poor quality water. I went to a ‘clean stream’ to compare my findings. I found lots of mayflies and stone flies also the temperature was lower….So, my action will be to organise a Riparian planting day next to the stream that runs along our school boundary. It runs directly into the river. As the Riparian plants grow they will have a direct impact on improving the quality of the water. The Riparian planting will have a positive effect on water quality in terms of its ability to filter out contaminants such as soil, cow dung and urine, phosphates and nitrates from organic and inorganic fertilisers, and agricultural chemicals from farm run-off. This will help improve the water quality and, as a consequence, the stock will likely benefit from improved animal health. Other spinoffs of Riparian planting could include erosion control, reduce flood impact, habitat enhancement and aesthetic enhancement, to name a few. I will make sure we can look after the plants and prevent weeds from growing and smothering them.”** Carried out a personal action, following the plan and modifying it if necessary.

*“I had a good turnout of 37 people. We planted 450 trees along the stream. These were funded by the local council. We could have planted more as there were lots of interested people who came.”*Evidence of carrying out the action is found in the student’s log.* Evaluated own response to the personal action using supporting evidence and examples, including one or more of:
* stating supported opinions or judgements
* considering implications
* projecting future impacts
* evaluating options
* suggesting alternatives and next actions for personal and social responsibility.
* Drawn conclusions about:
* the validity of the data collection and measurement methods used
* the effectiveness of the plan, including an explanation of any modifications made
* how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan
* whether taking the action has changed the student’s own attitudes or behaviours.

*“The benefits of Riparian planting are longitudinal, and will not be noticed immediately. Overall, data showed that initially the sediment load increased (data cited). However, in the long-term we should notice an improvement in the quality of the water in the stream as the vegetation will act as a filter for pollutants. Some of the data showed a degradation (4th data collection) owing to a heavy storm. This was explained in my chart.* *Our methods of data collection were adequate because…**For projects such as this, meaningful effects will only be seen in the medium to long term….Riparian plantings are hugely beneficial as there are already existing programmes that have shown that this is an effective way of improving water quality. I believe our action was effective because…. (examples of other projects cited) even though it will take time for the plants to grow and have the impact we want on the future of the river.**By improving the quality of water in the stream we improve the river quality as well. I will continue to monitor the biodiversity in the stream and see if it improves. The Waikato River is vast and is one of the main bodies of water giving life to so much of our community. If we don’t do something about it we may run the risk of not having usable drinking water in the future. I believe that if all the contributing streams were planted, the future of the Waikato River would be… and this action would contribute to a sustainable future from an environmental aspect in particular. For example, …**This activity has shown me that undertaking a personal action can make a meaningful difference in terms of sustainability. I will be much more prepared to take actions in future that can contribute to a more sustainable planet, as I know now my actions can help to change things.”** the strengths, weaknesses, opportunities and threats associated with the action in relation to the aspect(s) of sustainability addressed in the plan.

*“A SWOT analysis of our action made me conclude that although overall, in terms of environmental and economic sustainability it was a good action, there are several threats to the long term success. These include ……”*In addition to the completed report, the student has submitted a log containing evidence of their individual contributions and of their action and findings.*The examples above are indicative samples only.* |

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standard.