

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: Let’s switch it off!

**Resource reference:** Education for Sustainability 2.1B 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 3  To 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. |

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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 in terms of energy use in their school.

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 energy use, you may adapt it to other contexts such as sustainable transport, coastal and marine environments, rivers, or lakes, 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 sustainable energy use in your school.

You are going to be assessed on the critical quality of your reflection on your personal action that contributes towards sustainable energy use in your school.

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 that contributes towards sustainable energy use in your school.

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 energy use in your school, including:

* an outline of the importance of the sustainable use of energy 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.

Reflection

Evaluate your response to your 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.physics.otago.ac.nz/eman/hew/ehome/energyuse.html>

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

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

<http://www.mfe.govt.nz/issues/energy/>

<http://www.otago.ac.nz/csafe/research/otago055638.pdf>

<http://www.measuringchange.org.nz/assets/Uploads/energyefficientschoolsguide.pdf>

Assessment schedule: Education for Sustainability 90810 – Let’s switch it off!

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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 sustainable energy, with reference to at least one of the aspects of sustainability.   *“Energy use in our school is an issue everyone needs to be aware of. There is currently a huge waste of electricity in our school. Probably the main aspect of sustainability that will get people’s attention focussed on this issue is the economic one. Apart from wasting energy as a resource, we are also wasting money, as electricity costs the school money. Our lighting use is a high contributor to the school’s electricity bills. I often walk past classrooms with no one in them and the lights are all going. Also the use of heat pumps and air conditioning…”*   * What measurement methods will be used and how data will be collected.   *“Our group will gather the electricity bills for the school from the last year to see the trends of energy use over the seasons. This will provide base-line data from before I take action, and I can measure these again after my actions have been in place for a while. I will analyse the power bill for the next month and to see if there is any reduction……”*   * A timeframe and steps of action.   *The action I have decided on is to create covers that go around the light switches to remind people to switch them off when leaving a room. I will design some and then trial my thoughts with small groups to see which ones are most popular and would therefore be more effective. I will also hand out an information flyer to go with the installation of the covers. Each member of our group has got different roles. For example I ….”*   * Carried out a personal action, following the plan and modifying it if necessary.   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   *“I believe the data we collected was very robust as it was a direct measurement from the power company...”*   * the effectiveness of the plan, including an explanation of any modifications made   *“I believe our plan and action were very effective because we had not only noticed that lights weren’t left on as much during the day, but that the electricity bill for June showed….”*   * how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan.   *“We all need to conserve energy and we can all impact this in our behaviours. For example switching off the light when we leave the room. It does make a difference. This action has made a difference, for a sustainable future for aspects of the environment for example…, and also economically for the school by saving money. I believe we can keep this up, and maybe I will work on the heating for my next action, to make even more difference.”*  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 sustainable energy, with reference to at least one of the aspects of sustainability.   *“Energy use in our school is an issue everyone needs to be aware of. There is currently a huge waste of electricity in our school. Probably the main aspect of sustainability that will get people’s attention focussed on this issue is the economic one. Apart from wasting energy as a resource, we are also wasting money, as electricity costs the school money. Our lighting use is a high contributor to the school’s electricity bills. I often walk past classrooms with no one in them and the lights are all going. Also the use of heat pumps and air conditioning…”*   * What measurement methods will be used and how data will be collected.   *“Our group will gather the electricity bills for the school from the last year to see the trends of energy use over the seasons. This will provide base-line data from before I take action, and I can measure these again after my actions have been in place for a while. I will analyse the power bill for the next month and to see if there is any reduction……”*   * A timeframe and steps of action.   *The action I have decided on is to create covers that go around the light switches to remind people to switch them off when leaving a room. I will design some and then trial my thoughts with small groups to see which ones are most popular and would therefore be more effective. I will also hand out an information flyer to go with the installation of the covers. Each member of our group has got different roles. For example I ….”*   * Carried out a personal action, following the plan and modifying it if necessary.   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   *“I believe the data we collected was very robust as it was a direct measurement from the power company...”*   * the effectiveness of the plan, including an explanation of any modifications made   *“I believe our plan and action were very effective because we had not only noticed that lights weren’t left on as much during the day, but that the electricity bill for June showed….”*   * how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan   *“We all need to conserve energy and we can all impact this in our behaviours. For example switching off the light when we leave the room. It does make a difference. This action has made a difference, for a sustainable future for aspects of the environment for example…, and also economically for the school by saving money. I believe we can keep this up, and maybe I will work on the heating for my next action, to make even more difference.”*   * whether taking the action has changed the student’s own attitudes or behaviours.   *“I have learned a lot about how important using energy sustainably is, and how easy it is to make a small difference. I thought about it before, which is why I thought this issue was a good one to act on, but I thought it would be harder to get people to change. I now always switch off the lights every time I leave a room, and remind other people to do so too. I am also very keen to work on another action that will make the impact even greater.*  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 sustainable energy, with reference to at least one of the aspects of sustainability.   *“Energy use in our school is an issue everyone needs to be aware of. There is currently a huge waste of electricity in our school. Probably the main aspect of sustainability that will get people’s attention focussed on this issue is the economic one. Apart from wasting energy as a resource, we are also wasting money, as electricity costs the school money. Our lighting use is a high contributor to the school’s electricity bills. I often walk past classrooms with no one in them and the lights are all going. Also the use of heat pumps and air conditioning…”*   * What measurement methods will be used and how data will be collected.   *“Our group will gather the electricity bills for the school from the last year to see the trends of energy use over the seasons. This will provide base-line data from before I take action, and I can measure these again after my actions have been in place for a while. I will analyse the power bill for the next month and to see if there is any reduction……”*   * A timeframe and steps of action.   *The action I have decided on is to create covers that go around the light switches to remind people to switch them off when leaving a room. I will design some and then trial my thoughts with small groups to see which ones are most popular and would therefore be more effective. I will also hand out an information flyer to go with the installation of the covers. Each member of our group has got different roles. For example I ….”*   * Carried out a personal action, following the plan and modifying it if necessary.   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   *“I believe the data we collected was very robust as it was a direct measurement from the power company...”*   * the effectiveness of the plan, including an explanation of any modifications made   *“I believe our plan and action were very effective because we had not only noticed that lights weren’t left on as much during the day, but that the electricity bill for June showed…. This compared with…”*   * how the action has contributed to a sustainable future, based on the aspect(s) of sustainability addressed in the plan   *“We all need to conserve energy and we can all impact this in our behaviours. For example switching off the light when we leave the room. It does make a difference (reference specific data). This action has made a difference, for a sustainable future for specific aspects of the environment (i.e. socially: a behavioural change due to raised awareness), for example …, and also the overarching economic aspect, not only for the school (by saving money) but also the flow on effect of this on the environment. This can contribute to a sustainable future by ......*  *I believe we can keep this up, and maybe I will work on the heating for my next action, to make even more difference”*   * whether taking the action has changed the student’s own attitudes or behaviours   *“I have learned a lot about how important using energy sustainably is, and how easy it is to make a small difference. I thought about it before, which is why I thought this issue was a good one to act on, but I thought it would be harder to get people to change. I now always switch off the lights every time I leave a room, and remind other people to do so too. I am also very keen to work on another action that will make the impact even greater. It is very important that we all learn the importance of conserving electricity. I thought we could suggest to some of the teachers that they include aspects of sustainability related to energy into their teaching programmes and….”*   * the strengths, weaknesses, opportunities and threats associated with the action in relation to the aspect(s) of sustainability addressed in the plan.   *“We did a SWOT analysis of our action and came to the following conclusions: The two main strengths were that the action was simple and easy to carry out, and that we had really good data to show how effective it was, by comparing before and after. It was effective in saving the school money (refer to data) The main weaknesses were…..”*  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.