



Educational Resource Secondary Student Activities

This project was made possible thanks to funding from WEL Energy Trust

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Welcome

Welcome to the Waikato Coalfields Museum activity resource for Secondary School students. This educational resource is aimed at students in Years 9 to 13. However teachers may wish to adapt some of the activities to cover the needs of students across a variety of levels.

The tasks outlined in this document target the Social Studies, English and Drama curricula. Some Unit Standards and Achievement Standards from the New Zealand Curriculum are listed to use in your planning. These have been taken from the Te Kete Ipurangi website.

The following activities all relate to resources held by Waikato Coalfields Museum and are indicative of the depth and quality of an experience generated by a school visit to this facility.

We look forward to your visit and will be happy to answer any queries you may have regarding the information within these pages or the facilities of the museum itself.



Huntly Wildflowers / Antique Postcard / The Pines / now Waikato Coalfields Museum
c.1925 (2006.5.11)

Waikato Coalfields Museum
26 Harlock Place, Huntly
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www.coal.net.nz



Curriculum Areas, Levels and Standards

Drama	Level Year 12	Unit Standard 14175
Drama	Level Year 11	Unit Standard 14168
Geography	Level Year 13	Unit Standard 5095
Geography	Level Year 13	Unit Standard 5097
Geography	Level Year 12	Unit Standard 11090
Science	Level Year 13	Achievement Standard 90829
Social Studies	Level Year 11	Achievement Standard 90217



Drama Unit Standard 14175

Curriculum Area: Drama	Year Level: Year 12 NCEA Level: 2
Unit Standard: US 14175	Credits: 6 Credits
<p>Unit Standard:</p> <p>Devise a dramatic text through a group process</p> <p>Elements of the Standard:</p> <p>Element 1: Explore elements contributing to the development of dramatic text Element 2: Contribute to the development of a dramatic script or performance idea within a group Element 3: Contribute to presentation of group-devised text Element 4: Reflect on group-devised text</p>	
<p>Activity:</p> <ul style="list-style-type: none"> • With reference to the Ralph Mine Disaster, compose a script to re-enact an historically accurate scene outlining the events leading up to and including the explosion and/or including the after-effects for their local community and its members. Include references to the effects on the national mining industry. 	
<p>Resources held by the Waikato Coalfields Museum:</p> <p>DVD: Work and the Challenges of Miners DVD: Early Coal Mining Methods Archives, artefacts, photographs and reports pertaining to the Ralph Mine Disaster</p>	



Drama Unit Standard 14168

Curriculum Area: Drama	Year Level: Year 11 NCEA Level: 1
Unit Standard: US 14168	Credits: 6 Credits
<p>Unit Standard:</p> <p>Participate in devising a dramatic text for presentation, aided by facilitation</p> <p>Element 1: Participate in group generation of devised work Element 2: Participate in development and realisation of devised text</p> <p>The presentation should be 10 to 15 minutes long</p>	
<p>Activities:</p> <p>Utilising the resources available at Waikato Coalfields Museum, compose a script and activity outlining the Glen Afton Mine tragedy and its effects on the Glen Afton community. Include references to the effects on the national mining industry.</p> <p>With reference to the Ralph Mine Disaster compose a script to re-enact an historically accurate scene outlining the events leading up to and including the event and/or the after-effects on the local community. Resources are available at the museum, many on open display. Include references to the effects on the national mining industry.</p>	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD: <u>Work and the Challenges of Miners</u> DVD: <u>Early Coal Mining Methods</u> Archives, artefacts, photographs and reports pertaining to the Glen Afton Mine Disaster Archives, artefacts, photographs and reports pertaining to the Ralph Mine Disaster</p>	



Drama Case Study: Glen Afton Mine Disaster 24 September 1939

Those Men
Who Lost Their
Lives in the
Glen Afton
Mine Disaster

William Rae	Bell	Electrician	37
Christopher	Blackburn	Mine Manager	40
William	Brown	Undermanager	40
James	Clark	Shiftman	50
Walter George	Cole	Deputy	45
George	Hunter	Shiftman	35
Richard	Ireland	Deputy	60
John (Jack)	Marshall	Acting Deputy	37
William	Peden	Miner	50
Raymond Vivian	Turley	Electrician	34
William	Wilcox	Underviewer	55

The Glen Afton Mining Disaster: 24 September 1939

The Glen Afton Mine Disaster was caused by an accumulation of carbon monoxide gas from a small fire caused by a short circuit. It was located at a fault between two sections of a coal seam and probably ignited sometime on the Saturday morning prior to the weekend shutdown. Miners placed mud between the seams in an effort to extinguish the fire. This was thought to have been successful but the fire continued to smoulder, causing the release of carbon monoxide gas.

Later a fault was noted the Huntly Power Station which was traced to the line supplying electrical current to Glen Afton Collieries. Management at Glen Afton were advised of this and men searched for the source of the problem on Saturday afternoon. As they were unable to locate the problem, they decided to return the following morning. Extraction fans had been turned off for the weekend and this led to a buildup of carbon monoxide in the mine. On Sunday morning Christopher Blackburn, the Mine Manager, and a group that included engineers, electricians and mine deputies returned to the mine. When Blackburn discovered that the two deputies and two electricians were trapped in the mine, he sent an urgent message for the extractor fans to be started. He then led a party of four other men into the mine, followed by two others who were sent to a different part of the mine.

Following this, another four men entered the mine. Subsequently, several others ventured in, as those on the surface realised something was wrong. Whilst some of the men were lucky and managed to get out, eleven of the men died. As a result of the order to turn the fans on gas was forced through the mine hastening the death of the rescuers.

Peckett Steam Locomotive, Glen Afton Railway Yards
(2010.176.1)



Drama Case Study: Ralph Mine Disaster

Miners Who Lost Their Lives in the Ralph Mine Disaster

William	Allen	18
Thomas	Baker	37
Thomas	Berry	29
William	Blenkinsop	37
John	Bowler	23
William Snr	Brocklebank	52
Hutchinson	Burt	19
William	Burt	28
William	Burton	27
Thomas	Casson	22
James	Darby	57
John	Dixon	-
William	Gowans	43
John	Greener	48
William	Hinchco	37
James	Holden	58
Fawcett Seymour	Hopper	31
Alexander	Izatt	17
Henry	Jackson	24
John	Jackson	26
Samuel	Jackson	54
John W	Jones	49
William	Kelly	36
Daniel	Lyons	62
Charles	Maloney	21
John	Martin	29
William Jnr	Mayland	18
Theophilus	Molesworth	29
Robert	Munsey	63
David	Paterson	36
William	Patterson	44
Henry (Harry) Snr	Peckham	45
Hugh	Ransome	39
John (Jack)	Robinson	28
William	Roper	36
Arthur	Ruston	28
John	Skellern	36
William	Slavin	18
William	Smith	62
John	Steele	40
Fred	Taylor	29
Jacob	Thompson	18
John	Whorskey	36

Those Who Survived the Ralph Mine Disaster

William Jnr	Brocklebank
Joseph	Brownlie
Thomas	Earby
Arthur	Farrar
Daniel	Fletcher
Bernard	Healey
Thomas	Hughes
Patrick	McGill
Alexander	McIntosh
William	Mitchell
Glen	Mottram
Joseph	O'Brien
Alfred	Peckham
James	Richards
Joseph	Ritchie
Albert	Stewart
John	Tallon
John	Wilkie
James	Young



Skellern Family

Ruth, Thelma and Elsie Skellern, whose mother Euphemia had died previously in childbirth, were raised by their grandfather Richard Skellen. Following the death of her mother and twin sister, baby Mavis was adopted by neighbour Mavis Greenacre.



Wedding of John and Euphemia Skellern
(2010.164.7)



Ruth, Elsie and Thelma Skellern
(2010.164.8)

Patterson Family

The Patterson children were not as 'lucky' as the Skellerns. William at 14 was regarded as an adult and able to fend for himself. Eileen (3), Bridget (5), Lil (6) and Kathleen (8) spent an unhappy childhood in an Auckland orphanage. At 11 years of age Maria was considered capable of housework and escaped the fate of her sisters.

The Skellern Family
(2010.164.6)



Geography Unit Standard 5095

Curriculum Area: Geography	Year Level: Year 13 NCEA Level: 3
Unit Standard: US 5095	Credits: 4 Credits
<p>Unit Standard:</p> <p>Describe and explain the interacting natural processes operating within a geographic environment</p> <p>Elements of the Standard:</p> <p>Element 1: Describe how interacting natural processes operate within a geographical environment</p> <p>Element 2: Explain spatial variations of natural processes within a geographic environment</p> <p>Element 3: Explain the extent to which natural processes have been modified by human actions within a geographic environment</p>	
<p>Activity:</p> <ul style="list-style-type: none"> • Investigate the Weavers Opencast Mine (now Puketirini) and its rehabilitation from an industrial mining site to a recreational reserve. The mine began operation in 1956. By 1993 it had become uneconomic and subsequently closed. Flooding of the opencast excavation began in 1993 and the rehabilitated recreational reserve was finished by 2004. Stage One of the new development of the Waikato Coalfields Museum is currently under construction at Puketirini. • Analyse an event or era from the history of the Weavers Opencast mine. Your focus may be on either what was required to get it to a functioning mine or the rehabilitation of the site after its closure as an opencast mine. 	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD: <u>Coal – Fueling the Future Part 1: Coal and the Environment</u></p> <p>DVD: <u>Mining Stockton</u></p>	



Geography Unit Standard 5097

Curriculum Area: Geography	Year Level: Year 13 NCEA Level: 3
Achievement Standard: US 5097	Credits: 4 Credits
<p>Achievement Standard:</p> <p>Describe and explain planning and decision-making within a geographic context</p> <p>Elements of the Standard:</p> <p>Element 1: Describe a geographical problem, issue or need Element 2: Explain the value positions of groups and individuals interested in a geographical problem, issue or need Element 3: Describe the planning and decision-making process involved in a geographical problem, issue or need</p>	
<p>Activities:</p> <ul style="list-style-type: none"> • Discuss the environmental impact of each of the mining methods used in the Huntly region. Both the underground and opencast methods have been used in this area. How did these affect both the natural environment and the social morale of the community? • Compare and contrast – with examples from each – the rehabilitation of Waikato Carbonisation Limited and the Weavers Opencast Mine. Outline the issues that made each unique with reference to their history of use by product, timeframe of operation, governmental legislation of the time of operation etc. What can be learned from this experience? 	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD : <u>Coal – Fueling the Future Part 2 : Rotowaro The Closure of the Rotowaro Township and Interviews with Past Residents</u></p> <p>DVD: <u>Coal – Fueling the Future Part 1: Coal and the Environment</u></p> <p>DVD: <u>Mining Stockton</u></p>	

WEAVER'S LAKE PROJECT

SOLID ENERGY
Coal of New Zealand

"the changing face of Waikato Coal Mining"

SOMETHING FOR EVERYONE

Mining 1989



From this:

Mine Completion 1993



Lake Filling 1995



A SOLID ENERGY REHABILITATION PROJECT

Weaver's Lake Brochure
(2003.615.13)

Geography Unit Standard 11090

Curriculum Area: Geography	Year Level: Year 12 NCEA Level: 2
Unit Standard: US 11090	Credits: 4 Credits
<p>Unit Standard:</p> <p>Profile a resource management issue in New Zealand</p> <p>Elements of the Standard:</p> <p>Element 1: Describe why an issue requires resource management Element 2: Describe the interests of the stakeholders in an issue Element 3: Describe how laws and guidelines are relevant to an issue and Element 4: Describe sustainable management policy relevant to an issue</p>	
<p>Activities:</p> <ul style="list-style-type: none"> • Discuss the environmental impact of each of the mining methods used in the Huntly region. Both underground and opencast methods have been used in this area. How did these affect the natural environment and the social morale of the community? • Evaluate the rehabilitation of Waikato Carbonisation Limited and the Weavers opencast mine (now Puketirini) at Rotowaro Road. Were these successful? Why/why not? 	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD : <u>Coal – Fueling the Future Part 2 : Rotowaro The Closure of the Rotowaro Township and Interviews with Past Residents</u> DVD: <u>Coal – Fueling the Future Part 1: Coal and the Environment</u> DVD: <u>Mining Stockton</u> Book: <u>Lake of Coal: The Disappearance of a Mining Township</u> Archives, artefacts, photographs and reports pertaining to Rotowaro/Waikato Carbonisation Limited</p>	



Removing sludge from storage pond



Active treatment pond

(Environment Waikato)

Science Unit Standard AS 90829

Curriculum Area: Science	Year Level: Year 13 NCEA Level: 3
Achievement Standard: AS 90829	Credits: 4 Credits
<p>Achievement Standard:</p> <p>Investigate the interrelationship between humans and the biophysical environment in relation to a sustainable future.</p> <p>Explanatory Notes:</p> <p>A sustainable future includes but is not limited to:</p> <ul style="list-style-type: none"> • Maintainance of biodiversity, ecological processes and life support systems • An economy relative to its ecological life support system • A fair distribution of resources and opportunities • Looking beyond direct consequences of activities to explore attitudes, values and moral issues that create particular stress on the use of natural resources • Personal and social responsible responsibility <p>Investigate requires students to carry out research and/or a practical inquiry to give an account or characteristics of:</p> <ul style="list-style-type: none"> • A biophysical environment • The reciprocal nature of the interrelationship between people and the biophysical environment using aspects of sustainability 	
<p>Activities:</p> <p>With reference to the mining methods and the environmental impact of each on both the natural and social environment evaluate the mining methods used in the Huntly region using reference to the history of the area. References must include:</p> <ul style="list-style-type: none"> • Opencast mining • Underground mining • New methods of underground coal gasification • Rehabilitation of opencast mines – for example Weaver’s Opencast Mine (now known as Puketirini) 	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD: Coal – Fueling the Future Part 1: Coal and the Environment DVD: Mining Stockton</p> <p>Resources available Online</p> <p>World Coal Institute http://www.worldcoal.org/coal/uses-of-coal/underground-coal-gasification/ Solid Energy plans Underground Coal Gasification http://www.scoop.co.nz/stories/BU1006/S00289.htm</p>	

Social Studies Achievement Standard AS 90217

Curriculum Area: Social Studies	Year Level: Year 11 NCEA Level: 1
Achievement Standard: AS 90217	Credits: 6 Credits
<p>Achievement Standard:</p> <p>Conduct a social studies inquiry in order to communicate conceptual understandings about society.</p> <p>Explanatory Notes:</p> <ul style="list-style-type: none"> • State a focus for the inquiry (either individually selected or provided by teacher) • Develop research questions and data gathering questions • Apply methodology for collecting, recording and processing relevant information • Students may be provided with a template for their framework • This may be a report, essay, speech, audio tape or video tape supported by evidence. • Evidence may consist of graphs, timelines, maps visuals, diaries, transcripts and artefacts 	
<p>Activity:</p> <p>Investigate the social, cultural and economic effects on the Rotowaro community following the decision to relocate the community in 1979.</p>	
<p>Resources held by Waikato Coalfields Museum:</p> <p>DVD - <u>Coal – Fueling the Future Part 1: Coal and the Environment</u> DVD - <u>Coal – Fueling the Future Part 2 : Rotowaro The Closure of the Rotowaro Township and Interviews with Past Residents</u> Book: <u>Lake of Coal: The Disappearance of a Mining Township</u> Archives, artefacts, photographs and reports pertaining to Rotowaro</p>	



Rotowaro Residents Shane Nepe and Tawera Nikau, 1984
(2010.144.11)

Photo Analysis/Ralph Mine Disaster

Name: _____

This is a photo of one of the funerals following the Ralph Mining Disaster. The first funeral was held on 14 September 1914.



Ralph Mine Disaster Funeral
(1997.47.1)

1. What was the date of the Ralph Mine disaster?

2. How many miners died in the explosion?

3. What gas ignited to cause the explosion?

4. How was this gas ignited?

5. What was the location of the Ralph Mine – is it still there?

6. What does the preceding photo tell you about the Huntly community spirit at the time of the Ralph Mining Disaster?

7. How does Huntly look different to the way it looks today (the photo shows the main street of Huntly) – look at the road, buildings, people, clothing etc.

8. How does funeral transport differ to what we might use today?

9. Why is there is more than one coffin in the funeral procession?

10. What was the surname of the family with three members killed in the disaster?

11. Write down some of the ways that you might express your feelings about the Ralph Mine Disaster if you had been living in Huntly at that time.

12. Pretend you are at school with some of the children who lost their fathers in the disaster. How might you support them during this dreadful time?

Poetry: Huntly Mining Disasters

Name: _____

Pictures in the Fire

When you sit in retrospection in the evening's failing light,
 'Ere the falling shades of sunset merge into the dark of night,
 And you're musing and you're dreaming, 'twixt the Heavens and the mire,
 And in fancy seeing pictures being painted in the fire.

And you've wondered why those pictures always reek of blood and strife;
 Do you know that every picture represents a human life?
 And there's blood on every piece of coal that makes each little flame,
 The blood of human sacrifice to our undying shame.

Do you know that every moment, quickly as a moment flies,
 A man's life has paid the toll to cross the bridge of sighs,
 Has paid the toll to nature's laws far down beneath the earth,
 Whilst comrades maimed have lived to curse the day that gave them birth.

So in the future when we're dreaming let us also kneel and pray,
 For those poor souls condemned to toil far from the light of day;
 And we'll send a prayer to Heaven that will rouse the angels' ire;
 For there's blood on every brush that paints those pictures in the fire.

Teddy Johnson (Pukemiro Junction)

Activity	
What?	Write a poem about one of the following disasters in Huntly's mining history: • Ralph Mine disaster • Glen Afton disaster
Where to find information?	You can find information on each of these in the Coal Hall at the museum. Look at the emotions of the people shown in the displays, photos, letters etc
Ideas about poetry styles	You can choose your own style of poem. For example you may choose to write a quatrain or a diamante. Quatrains: Quatrains are made up of four lines. The rhyming pattern can be AABB or ABAB (ie either the first two and the last two lines rhyme or the first and the third and the second and the forth lines rhyme). Diamante: The words in a diamante form the shape of a diamond. Line 1: Noun or subject - one word Line 2: Two adjectives that describe line 1 Line 3: Three 'ing words that describe line 1 Line 4: Four nouns - the first two are connected with line 1; the last two are connected with line 7 Line 5: Three 'ing words that describe line 7 Line 6: Two adjectives that describe line 7 Line 7: Noun synonym for the subject

Think about:

- Emotions of the miners and their rescuers during the disaster
- Emotions of the family and friends left behind
- What happened before, during and after the disaster
- The effect on the people involved and the community in general

A brainstorm will help to organise your ideas. You can use the box below.

Brainstorm ideas about the disaster you have chosen:

Write your poem here:



Letter Writing: Huntly Mining Disasters

Name: _____

Here is an opportunity to think about safety issues in coal mines between the years 1900 to 1950. Use details on display in the Coal Hall at the museum to gather information relating to the Glen Afton and Ralph mines during this era.



Mines Rescue Unit: 1942
(2004.81.1)

Activity	
<p>What?</p>	<p>Imagine that you are a miner working in the Huntly District somewhere between the years of 1900-1950. You are aware that there are problems in the mine and you would like to let the Minister of Mining know that he should be concerned about the safety issues endangering miners working in your mine.</p>
<p>Where to find information?</p>	<p>In Coal Hall exhibits at the museum. You will need to collect information from photos, displays, letters and reports about the Glen Afton and Ralph mining disasters.</p>
<p>Think about:</p>	<ul style="list-style-type: none"> • How to voice your opinion about the safety issues and make your argument sound by providing examples • The cleanliness of the workplace • How you access the mine. Are the shafts easy to get in and out of? How stable are they? • How is your workplace illuminated? Is this safe? What safety gear is available to miners at this time? • Anything else you find which is relevant to concerns you might have about safety in the mine or your working conditions • Any suggestions you might wish to argue for the improvement of the working environment



Write your letter here