

Bob the Railway Dog, Trains and Minerals

Mines, Minerals of the far north of South Australia
late 1800's - early 1900's



To the teacher



About the pack

The pack is designed around Bob the railway dog, he lived from 1878 – 1895. He was famous in Australia and news of his death was reported as far away as England. He discovered the magic of travelling by train. This worksheet is relevant to the far north mines of South Australia where Bob lived and travelled. When you visit the Museum you will see trays of minerals (60 specimens) mine map, story and display.

The Worksheet

The **Worksheet** is **self-guided** and is supported with a **Museum map**, the map is available at the Shop, when you visit the Museum.

Support Material includes:

Answer sheet and Research questions and Research material

Students are also encouraged to generate their own questions, that can be used as follow-up activities, re-enforcing the positive messages obtained from their visit.

Further Support Material

'Bob the Dog, Trains and Minerals of the far North'
story by Christine Phillips

For the Student when you visit

Bring your **Worksheet** - comprised of 15 questions

Acknowledgement

SA Mineral Map, specimen mineral trays and publication were collected/compiled by Christine Phillips, Secretary of Mineralogical Society of South Australia, Amateur Mineralogist

The National Railway Museum acknowledges Australia's First Nations Peoples – the First Australians – as the Traditional Owners and Custodians of this land and gives respect to Elders past, present and emerging.

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Resource design

Has been designed in accordance with the SACSA Framework. Material is most suitable for **Primary/Middle Years - Year 4, 5, 6, 7**

History**Year 3****Historical Knowledge and Understanding**

Year 3	Elaborations
<p><i>Community & remembrance</i> ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory; for example, in relation to the areas of transport, work, education, natural and built environments, entertainment, daily life (ACHHK061)</p>	<ul style="list-style-type: none"> investigating a development in the local community from the time of European settlement to the present day (for example through the photographs, newspapers, oral histories, diaries and letters)

Historical Skills

<p>Analysis and Use of Resources Locate relevant information from sources provided (ACHHS068)</p> <p>Chronology, terms Sequence historical people and events (ACHHS065)</p> <p>Historical questions Pose a range of questions about the past (ACHHS067)</p>

Key Inquiry Questions

- How has our community changed? What features have been lost and what features have been retained?
- What is the nature of the contribution made by different groups and individuals in the community?
- How and why do people choose to remember significant events of the past?

History
Year 3

Historical Skills Elaborations
ACHHS065
<ul style="list-style-type: none"> developing an annotated timeline or representation of key stage of settlement. Features local, regional or state events and historical significance
ACHHS067
<ul style="list-style-type: none"> posing appropriate questions when investigating the contribution that individuals and groups have made to the development of the local community
<ul style="list-style-type: none"> posing appropriate questions when investigating the establishment of a local community
ACHHS068
<ul style="list-style-type: none"> analysing a range of sources (for example photographs, maps, oral histories) to locate information about the people, places and events in their community's present and past

History
Year 5

Historical Knowledge and Understanding, Historical Skills

Year 5	Elaboration
<p><i>The Australian Colonies</i> The impact of a significant development or event on a colony, for example, frontier conflict, the gold rushes, the Eureka Stockade, internal exploration, the advent of rail, the expansion of farming, drought (ACHHK095)</p>	<ul style="list-style-type: none"> investigating an event or development and explaining its economic, social and political impact on a colony (e.g. the advent of rail)
<p><i>Historical questions and research</i> Identify questions to inform an historical inquiry (ACHHS100)</p>	<ul style="list-style-type: none"> developing key questions about the local community or region
<p><i>Analysis and Use of Resources</i> Locate information related to inquiry questions in a range of sources (ACHHS102)</p>	<ul style="list-style-type: none"> finding relevant historical information about colonial Australia from primary and secondary resources

Historical questions and research

<p>Identify and locate a range of relevant sources (ACHHS101)</p> <p>Analysis and use of sources Locate information related to inquiry questions in a range of sources (ACHHS102)</p>
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Key Inquiry Questions

What do we know about the lives of people in Australia's colonial past and how do we know?

How did colonial settlement change the environment?

What were the significant events and who were the significant people that shaped Australian colonies?

History

Year 5

Historical Skills Elaborations
ACCHS098
<ul style="list-style-type: none">compiling an annotated timeline showing key stages in the development of colonial Australia including the date of European settlement in each state, the date the colony was established, the date of self-government
ACHHS101
<ul style="list-style-type: none">using museum (for example primary sources, such as stories, official documents)
ACHHS102
<ul style="list-style-type: none">finding relevant historical information about colonial Australia from primary and secondary sources

History

Year 6

Historical Knowledge and Understanding

Level Description

Development of Australia as a nation, particularly after 1900. Historical context facilitate an understanding through key concepts including sources, continuity and change, cause and effect and perspectives.

Key Inquiry Questions

What contribution have significant individuals and groups made to the development of Australian society?

History

Year 5

Historical Knowledge and Understanding, Historical Skills

Sequence historical people and events (ACHHS117)
Use historical terms and concepts (ACHHS118)
Identify and locate a range of relevant sources (ACHHS120)
The contribution of individuals and groups, including Aboriginal and Torres Strait Islander people and migrants, to the development of Australian society, for example in areas such as the economy, education, science, the arts, sport. (ACHHK116)
Compare information from a range of sources (ACHHS122)

History
Year 5

Historical Skills Elaborations
ACHHS117
<ul style="list-style-type: none">• placing key events, ideas, movements and people of the twentieth century in chronological sequence
<ul style="list-style-type: none">• using timelines to describe past events and changes
ACHHS118
<ul style="list-style-type: none">• using historical terms and concepts related to the content such as 'democracy', 'federation', 'empire', 'immigration', 'heritage', 'diversity', 'enfranchisement', 'suffrage'
ACHHS120
<ul style="list-style-type: none">• using internet search engines, museums, library catalogues and indexes to find material relevant to an inquiry

**Worksheet
for the Student.
Please bring this
when you visit**

- 1 Go to the thetrette, adjacent to the Bob the railway dog display (near to the entrance of the Fitch pavilion). See the South Australian interactive railway map - North map, press the button that is labelled 1900.

Record some of the stations between Peterborough and Broken Hill. Bob travelled on this railway line.

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- 2 List the major ports (refer to the mineral map)

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- 3 List 3 mining towns (refer to the mineral map)

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Minerals Tray 1



1
calcite, quartz and sphalerite
(zinc)
Broken Hill, NSW

2
calcite and galena (mixed ore)
Broken Hill, NSW

3
contact metamorphism
calc-silicate hornfels (see slip of
paper ore material)
Broken Hill, NSW

4
48 pyromorphite crystals
(lead)
Broken Hill, NSW

5/1, 5/2, 5/3
almandine garnets
Thackaringa via Broken Hill, NSW

6/1, 6/2, 6/3, 6/4, 6/5, 6/6, 6/7,
6/8
'Devils Dice' A pseudomorph and limonite
after pyrite
(iron)
*Kirkeek's Treasure
Olary Province, SA*

7
smaltite (cobalt) in diopsiole skern
*Ethudna East cobalt mine
Olary Province, SA*

8
barite (barium ore)
Mt Malvern, SA

9
galena, fluorite chalcopryite
(ore material)
Broken Hill, NSW

10
galena, garnet, bustamite, calcite
(ore from drill core)
*Plumbago Station
Olary Province, SA*

Questions relate to Tray 1 and story by Christine Phillips

- 4** Name 3 minerals mined at Broken Hill, describe their shape and colour

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- 5** What is galena?
How is it formed, describe its form, shape, colour, where else can it be found in the world, what is it used for?

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- 6** Find mineral marked 6. What shape is Devils Dice?

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This specimen was from Kirkeek's Treasure. Tell about the mine - location, does is still exist, what also was found in the mine.

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Minerals Tray 2



1/1, 1/2, 1/3
pyrite
(iron and sulphur)
Broken Hill, NSW

2/1, 2/2
ilmenite
(iron and titanium)
Olary Province, SA

3/1, 3/2, 3/3, 3/4
galena
(lead ore)
mixed locations

4
rhodonite and galena
(manganese and lead ore)
Broken Hill, NSW

5
malachite
(copper ore)
Burra, SA

6
malachite
Dome Rock
Olary Province, SA

7
azurite
(copper ore)
Thackaringa
Broken Hill, NSW

8
embolite
(silver ore)
Broken Hill, NSW

9
atacamite
malachite
(copper ore)
Mt Gunson
Stuart Shelf, SA

10
cerussite
(also known by old name -
white lead)
Broken Hill, NSW

11
hematite
(iron)
Iron Monarch
Eyre Peninsula, SA

12
malachite chrysocolla rosasite
(copper ore)
Bill Springs mine
Flinders Ranges, SA

13
sphalerite
(zinc ore)
Puttapa Gap
Flinders Ranges, SA

14
coronadite and cerussite
(manganese and lead)
Broken Hill, NSW

15
chrysocolla
(copper ore)
Plumbago Station
Olary Province, SA

16
smithsonite
(zinc)
Broken Hill, NSW

17
azurite chrysocolla
Burra Mine, SA

18
calcite and pyrite
Broken Hill, NSW

19/1, 19/2, 19/3, 19/4
native copper
(pure copper)
Broken Hill, NSW and
Moonta, SA

20
gold in quartz
location not noted

Questions relate to Tray 2 and the story by Christine Phillips

7 Describe copper and what was it used for?

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8 Where was it found?

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9 Silver and gold have similar properties. List some.

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Minerals Tray 3



1
sphalerite and bornite
Mt Gunson
Stuart Shelf, SA

2
azurite
(copper ore)
Thackaringa
Broken Hill, NSW

3
gold in quartz
location not noted

4
hematite
(iron)
Iron Monarch, SA

5
native copper
(pure copper)
Broken Hill, NSW and Moonta, SA

6
old copper whistle
found on old mine site
location not noted

7/1, 7/2, 7/3, 7/4
galena
(lead ore)
mixed locations

8
malachite (green)
calcite (white)
cuprite (silver)
(copper ore)
Billy Springs, Flinders Ranges, SA

9
smithsonite
(zinc)
Broken Hill, NSW

10
azurite and malachite
(copper ore)
Burra, SA

11
coronadite
(manganese ore)
Broken Hill, NSW

12/1, 12/2, 12/3
ilmenite
(iron and titanium)
location not noted

13
sphalerite
(zinc ore)
Puttapa Gap
Flinders Ranges, SA

14
altacamite
malachite
(copper ore)
Mt Gunson
Stuart Shelf, SA

15
malachite
(copper ore)
Burra, SA

16
cerussite
(known by old name -
white lead)
Broken Hill, NSW

17/1, 17/2, 17/3
pyrite
(iron and sulphur)
Broken Hill, NSW

18
chrysocolla
(copper ore)
Copley, Flinders Ranges, SA

19/1, 19/2,
embolite
(silver ore)
Broken Hill, NSW

20
rhodonite and galena
(manganese and lead ore)
Broken Hill, NSW

21
calcite and pyrite
Broken Hill, NSW

Questions relate to Tray 3 and the story by Christine Phillips

10 Describe Ilmonite

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11 What is it used for?

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12 Zinc is essential for all bodies? What food do you find it in?

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13 Look for the mineral smithsonite (zinc). In ancient times what was it used for?

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14 What metal is used to produce a tin shed?

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Research

- 1 Stone tools older than 40,000 years have been found in the north and east of Australia. First Nations Peoples were Australia’s first miners. Many clans went a long way to obtain the prized red ochre.
List other rocks and how were they used.

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- 2 Early colonists in South Australia were keen to expand into the vast lands of South Australia. The land was cleared for farming, animals and mining.

What impact did mining have impact on the First Nations Peoples communities?

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