

# THE CURIOUS ECONOMIST: WILLIAM STANLEY JEVONS • IN SYDNEY •



## Introduction

*The curious economist* looks at the work and activities of William Stanley Jevons (1835–1882), the founder of modern economics, who lived in Sydney from 1854 to 1859. This was a time when an inquiring mind did not have to specialise, but was allowed to speculate on the wide range of ideas that make up our understanding of the world.

In Sydney, Jevons took full advantage of this intellectual freedom. This exhibition presents examples of his work in the areas of photography, economics, social and urban studies, chemistry, geography and meteorology. These examples show us that economics and science are not separate from our society and culture, but are ways of creating, understanding and changing our world.

## Syllabus links

The exhibition, together with the focus questions and activities can be easily integrated into or adapted for areas of teaching in these syllabuses:

### Primary

1. English (year 5+) — sub-strand of 'Context and text'
2. HSIE (years 5 & 6) — strands of 'Change and continuity' and 'Social systems and structures'
3. Science and Technology (years 5 & 6) — strand and sub-strand of 'Processes — Investigating'.

### Secondary

1. Mathematics (years 7+) — strand of 'Working mathematically'
2. History (years 7 & 8) — 'Investigating History'
3. Science (years 7–10) — 'The history of science', 'The nature and practice of science' and 'The implications of science for society and the environment'
4. Information and software technology (years 7–10) — 'Past, current and emerging technologies'
5. Photographic and digital media (years 9–10) — 'Critical and historical studies/interpretations'

The display has nine sections. The main text and the accompanying focus questions of each section help guide your students through the display.

### **The social map of Sydney: the machinery of the city**

Jevons spent much of his time in Sydney observing the public consequences of wealth and poverty, industry and economic activity. In an innovative exercise in the emerging field of social science, he detailed his findings in the manuscript 'Remarks upon the social map of Sydney' and in a colour-coded map which has not survived.

#### **Focus question**

- Ask a student to pick up the handset and listen to one of the excerpts from Jevons' social survey of Sydney, and then describe to the rest of the class/group Jevons' observation of the area in the 1850s.

### **At the Mint**

Jevons studied chemistry in London and came to NSW at the age of 19 to work as an assayer at the Sydney Mint. The gold rush was in full swing, and his job was to assess the quality and purity of the precious metal from the diggings. Jevons' work at the Mint put him in a unique position, at the intersection of geology, chemistry, economics and industry. It also supplied him with the time and equipment to pursue his interests in these areas.

#### **Focus questions**

- Find the cupels in the showcase. Where were these cupels found and what were they used for? Why was the Sydney Mint established?

### **An obsessive gaze**

Far from the centre of the British Empire and its traditions, Sydney gave Jevons an intellectual freedom that he could never have found in England. From his study he read all the latest theories, but the city itself was his laboratory. Jevons was obsessed with observing, collating and recording facts and objects of all kinds. In a letter to his sister Lucy he confessed, 'I have such a strong disposition to classify things as is sometimes painful'.

### **Jevons' Sydney**

Jevons was a young man in a young city. In the 1850s Sydney was a vibrant, exciting place. Gold and trade were transforming the city from its convict origins

into an international centre of industry and markets. Jevons would take long walks through Sydney, assessing the social climate and drawing up maps of the urban and economic structure of the city. Wanting to document as many aspects of life in the colony as he could, Jevons also took up photography.

#### **Focus question**

- Compare the life and interests of the young Jevons with that of most young Sydneysiders today.

### **Friends and colleagues**

Jevons often confessed his shyness and sense of isolation, nevertheless he took full advantage of the social opportunities that Sydney provided. He attended meetings of the Philosophical Society, the theatre and even the cricket. On weekends Jevons went sailing and took part in photographic expeditions with his colleagues from the Mint. He became a keen participant in Sydney social and intellectual circles, whose members were frequently the subject of his pen and camera lens.

#### **Focus question**

- The wreck of the *Dunbar* in 1857 was one of Australia's worst maritime disasters in peacetime: 121 passengers and crew died, only one survived. How would this disaster have affected life in Sydney, which was at that time still a relatively small town? Discuss.

### **Meteorologist**

The youthful Jevons enthusiastically applied himself to the study of the weather and climate. For two years he was the official meteorologist for Henry Parkes' newspaper *Empire*. In his office at the Mint, Jevons built a device for manufacturing miniature versions of different types of clouds and a gauge for measuring sunlight. Jevons also wrote a definitive analysis of the climate of Australia and New Zealand, which remained in use for many decades.

#### **Focus question**

- 'Jevons throughout life was animated by a pure and simple-hearted love for scientific labour', according to an 1883 obituary notice (see '*Further resources*'). How is Jevons' 'love for scientific labour' demonstrated in the exhibition?

### Photographer

In the 1850s photography was a brand new form of media. It was a meticulous, mechanical process involving cumbersome equipment, patience and a knowledge of chemistry. Jevons was a keen photographer, travelling around Sydney Harbour and Parramatta River with some of his colleagues from the Mint, in search of images European eyes considered 'picturesque'. Photography allowed Jevons to combine his interest in chemistry and scientific observation with a record of the urban and natural landscape.

### Focus question

- Compare the photographic process during Jevons' times with that of today.

### Logician

Jevons was a major thinker and teacher in the new field of symbolic logic, a mathematical rather than a language-based system of logic. Today, symbolic logic provides the internal language used by computers. In an extraordinary anticipation of 20th-century computing, Jevons built a device for performing logical inference known as a 'logic piano'. Like much of Jevons' work, this device had its origins in his 'mechanical' understanding of human thought.

### Focus questions

- The logic piano was built by Jevons in 1869. What was this machine capable of doing? What is its significance in the development of computer science?

### Economist

Jevons developed the concept that an object's value is determined by its 'utility', or the extent to which it is desired by those who want it, rather than by its internal qualities. This was a major turning point in establishing economics as a mathematical discipline. It was during his years in Sydney that Jevons formulated key concepts which became the basis of his economic theories, many of which still govern our lives today.

### Focus question

- The scale was a key tool in the 19th century. How did it reflect Jevons' ideas about human nature and society?

### Pre-visit activities

The following activities help put the visit in context and assist in preparing your students for the visit:

1. Visit the Sydney Mint page at the Historic Houses Trust website. Students will learn more about the history of the Mint:  
[www.hht.nsw.gov.au/museums/the\\_mint/history/royal\\_mint\\_sydney](http://www.hht.nsw.gov.au/museums/the_mint/history/royal_mint_sydney)
2. Visit the online display of the *Dunbar* at the State Records NSW website. Students will learn about one of Australia's worst maritime disasters:  
[www.records.nsw.gov.au/public/gallery/dunbar/title.htm](http://www.records.nsw.gov.au/public/gallery/dunbar/title.htm)
3. Visit the Macleay Museum online exhibition, *Virtual empire: stereo photography in Britain and Australia 1851 to 1879*. Students will learn about stereo photography and the picturesque style of composition:  
[www.usyd.edu.au/su/macleay/chpc01.htm](http://www.usyd.edu.au/su/macleay/chpc01.htm)  
  
View a selection of Jevons' photographs at:  
[www.usyd.edu.au/su/macleay/hpcjevons.html](http://www.usyd.edu.au/su/macleay/hpcjevons.html)
4. Visit the Bureau of Meteorology Research Centre website. Students can read excerpts from Jevons' 1859 study of the climate of Australia:  
[www.bom.gov.au/bmrc/pubs/1998/AMM47.htm](http://www.bom.gov.au/bmrc/pubs/1998/AMM47.htm)

### Post-visit activities

These activities help consolidate students' experience and learning. They can be adapted to suit the level of your students.

1. Excerpts from Jevons' social survey of Sydney
  - a. Ultimo  
*'The irregular streets contain only a few scattered and chiefly slated cottages, entirely of the third world. They are old, wretched and probably very unwholesome from the surrounding moist, foul, flat land. They are also entirely removed from all active traffic.'*
- Compare your experience of the Ultimo area with that of Jevons in the 1850s.

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b. The Rocks

*'The inhabitants of the Rocks, especially the females, are in keeping with their habitations, and their dirty clothes, slovenly manners and repulsive countenances evidence their extremely low order. I am acquainted with some of the worst parts of London, such as Jacobs Island, Golden Square, Lambeth and Drury Lane, etc. and with the most unhealthy parts of Liverpool, Paris, and other towns. But nowhere have I seen such a retreat for filth and vice as the Rocks of Sydney.'*

- Discuss the style of the language. How is it different from that of today? In groups, rewrite the text in a language style familiar to you.

2. According to an 1883 obituary notice, William Stanley Jevons had '... not only a well furnished mind, but also a rare faculty for experiment and a taste for mechanical contrivances, he was enabled to embody the results of his intellectual labours in forms at once original and attractive ...' (see 'Further resources').

- Does the exhibition support this comment? Have a group/class discussion.

### Further resources

- The History of Economic Thought website has a biography of Jevons and links to an obituary notice by R H Harley, originally published in Proceedings of the Royal Society of London, 1883, vol 35: <http://cepa.newschool.edu/het/profiles/jevons.htm>
- Macleay Museum — *Robert Hunt: Australian pioneer photographer*. [www.usyd.edu.au/su/macleay/81106/hunta1.htm](http://www.usyd.edu.au/su/macleay/81106/hunta1.htm)
- *Colonial science and the Sydney Mint*, Megan Martin, Historic House Trust, 2004

### Please note

The websites referred to in these notes were available and suitable at the time of publication. We advise teachers to check sites before recommending them to students.

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**For more information on the exhibition**  
***The curious economist: William Stanley Jevons***  
***in Sydney, visit the Powerhouse Museum's website***  
**<http://www.powerhousemuseum.com>**

For more information about education support or your booking, contact Education and Visitor Services at the Powerhouse Museum:  
Telephone — (02) 9217 0222  
Fax — (02) 9217 0441  
Email — [edserv@phm.gov.au](mailto:edserv@phm.gov.au)

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