

Glossary

Attributes and Specifications — attributes are descriptive aspects of the physical and functional nature of a technological outcome. Specifications define the requirements of the physical and functional nature of the outcome in a way that is measurable.

Brief — a description of a desired outcome that would meet a need or realise an opportunity.

Conceptual Design — a description of a proposed technological outcome, using media such as scaled plans or drawings, scale models, computer simulations, written descriptions, lists of components and assembly instructions.

Context — the 'context' of a technological development refers to its wider physical and social environment.

Critical Evaluation — the objective analysis and evaluation of an issue or an opportunity in order to form a judgement.

Stakeholder Feedback — receiving feedback from people whose views are considered helpful.

Deconstruct — to interpret a text (or artwork) by discovering, recognising and understanding the underlying (unspoken and implicit) assumptions, ideas and frameworks.

Practical Reasoning — practical reasoning focuses on 'should we make it happen?' and 'should it be happening?'



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PETONE SETTLERS MUSEUM EDUCATION TEAM

Technology, Invention and Industry

ESTIMATED TIME: 1.5 HOURS



BACKGROUND INFO

The first European immigrants settled at Pito-one (“the umbilical cord at the end of the sandy beach”), now known as Petone. The settlers were mostly working-class men and their families, with the skills to build a new life and create Wakefield and the New Zealand Company’s dream of a colony known as Britannia. In the early nineteenth century, conditions in Britain were such that thousands set off for the New World in search of a better life. The United Kingdom was in the middle of the world’s first Industrial Revolution. In rural areas, common areas were becoming enclosed, depriving people of their livelihood, and the introduction of machinery reduced the demand for workers.

Factory production replaced the old rural cottage industries. The number of factories was growing and people were moving from the countryside to towns, looking for better paid work. The wages of a farm worker were very low, and with new inventions such as thresher machines and increased use of technologies, there were fewer jobs. In 1831, England saw riots as labourers took their axes to threshing machines. In the Scottish Highlands, crofters were driven off their lands, and in Ireland, the potato famine of the late-1840s brought a million to their deaths. In the cities, thousands of new workers were needed to work machines in mills and the factory owners built houses for them.

Some fled to the city, causing cities to become filled to overflowing; London was particularly bad—by 1851, half the population of the country had set up home in London. London, like most cities, was not prepared for this great increase in people.

Post-Visit Activities

- Design a vehicle for the future: what do you need to consider? What impact will these considerations have on environment, jobs, industry and technology?
- Look around the classroom for invention and design. How could we improve things? Could we redesign a pencil so that we never have to sharpen it? Could we create a crane to lift the chairs for the cleaners? Could we create a faster way to get a message to the office?
- Have a look online at different styles of planes; use this research to make a magnificent paper plane and see which type flies fast, far or can perform a stunt.

Further Resources

Web: Digital book, *Petone’s First 100 Years* (1940) on library.huttcity.mebooks.co.nz

Books: *Petone: A History*, by Susan Butterworth

The journey to a new Britannia, free from starvation, overcrowding and disease, was attractive, and soon the first immigrant ships were on their way. The settlers moved quickly to establish themselves, creating a newspaper, two churches, taverns, major warehouses, a police force, a jail, hotels, a wharf, a riverside boulevard, a shipwright, a blacksmith, timber merchants and a bank.

Later, flooding led many settlers to leave Petone for a new site at Thorndon. Those who stayed had to cope with regular floods until 1900, when the completion of a series of stop banks reduced flooding. Petone then flourished and soon became an important industrial centre. Until the 1980s, Petone and neighbouring Gracefield had woollen mills, the railway workshops, meat processors and car assembly plants.

THE SESSION

Learning Experience

Students will complete a STEAM activity and explore the impact that industry has on people, places and ideas.

Curriculum Links

Social Science: The Economic World

Achievement Objective:

Students will investigate a context to develop ideas for feasible outcomes and build a functional model.

Cross-Curricular Links: Technology, Social Science, Science

Key Competency

Thinking / Participating and Contributing

Key Concepts

We are learning to develop ideas and build functional models, exploring the impact that industry has on people, places and ideas.

Lesson Sequence

- Discover the history of industry in Petone.
- Explore ideas, innovations, technology and challenges.
- Design and build a model, contributing ideas, overcoming challenges and exploring materials.

Pre-Visit Activities

- Get students to draw a car and label all of the different parts a car needs. Draw a road mapping the infrastructure a car needs to be able to do its job: a road, petrol station, parking, mechanic, etc.
- Draw a map of your classroom. Ask teachers, grandparents and parents what things looked like in their school days. Draw a map to reflect their memories and compare.
- Make a story factory where everybody contributes a word and discuss all the different people and parts that go into building, designing and innovating.