EPISODE 1: HOME LIFE
ROTARY CLOTHES HOIST

LESSON PLAN
Humanities and Social Sciences (HASS): History
Years 5–6

TOPICS
• True origin of the rotary clothes hoist
• Common laundry procedures in colonial Australia
• Effects of war on individuals
• The Great Depression
• The effects of consumer demand and buying power
• Commercial advantages of having a large network
• Sydney 2000 Olympic Ceremony

BACKGROUND
This invention has become an Australian icon and is part of our national identity. Commonly known as the Hills Hoist, it is widely believed that Lance Hills invented the rotary clothes hoist in 1946. This is a misconception though, and the true story is far more complicated.

At the beginning of the 20th century, it was common practice for housewives to set aside a full day for washing. The dirty laundry would often be simmered and scrubbed for ten to twelve hours. Then, the clean linen and clothing would need to be hung on multiple lines strewn across the yard that were propped up with sticks or pieces of wood. Hanging out the washing was particularly stressful because it was a difficult task and there was no margin for error. It was disastrous if the clean washing fell on the ground after so much time and effort.

Gilbert Toyne began a blacksmith apprenticeship in Geelong at the age of fourteen. Toyne came from a family of thirteen children, so he was very conscious of the difficulties his mother faced every washday. With fellow blacksmith Lambert Downey, Gilbert invented a clothes drying solution called the Aeroplane Clothes Hoist. In the spring of 1911, the newly patented metal rotary clothes hoist was presented in Melbourne at The Royal Agricultural Society Show. The invention really took off because it capitalised on the recent social and scientific progress of that time. It was cutting edge technology that became a status symbol.
In 1916, Toyne left his company in the hands of his wife and business manager while he went to fight in WWI. He came home three years later with Post Traumatic Stress Disorder (PTSD) to find that his wife and his business partner had started a new family together. Devastated, Gilbert Toyne moved back to Geelong and later married a young woman named Myrtle Maybella Mayall. With the support of his new wife, he patented his rack and pinion hoist in 1923. The design was reliable but the exposed gears made it dangerous. Therefore, his next model had a compact 90° crown wheel and pinion mechanism enclosed in a heavy galvanised metal casing. This model was patented in 1926 and became the definitive design for clothes hoists in the 20th century.

The same year, Toyne moved his family to Adelaide to capitalise on the manufacturing boom. After setting up a factory in his own backyard, his product quickly gained popularity, and was soon seen in many other backyards. As Lance Hill was also living in the neighbourhood, it is possible that his first sightings of the galvanised metal rotary clothes hoist were around this time.

On the back of his success in Adelaide, Toyne then moved his family to Sydney. The newly constructed Harbour Bridge promised to open the city to new suburbs, where houses with backyards would need clothes hoists. Unfortunately, the Great Depression caused one in three men to be unemployed by 1932. Sales plummeted as very few people could afford to buy more than the necessities. To make matters worse for the Toyne family, three of Gilbert’s young children tragically passed away in the same year. The family moved back to Melbourne to continue their business on a smaller scale.

In 1939, WWII broke out, once again causing huge disruption to many aspects of life in Australia, including manufacturing. Metal was in short supply so Toyne sidelined his business to help the war effort. Two years later, in the midst of war, Toyne’s 1926 patent lapsed. Thirty years of hard work and innovation had been exposed, and in 1946, Lance Hill seized the opportunity to launch his own version, the Hill’s Hoist.

While the design remained unchanged, Hill’s clever campaigning captured the nation’s imagination. There was a baby boom at the time that resulted in suburban expansion and an increased consumer demand. Hill’s timing and his marketing skills were ingenious, but the product he is most famous for wasn’t his invention. Hill took advantage of his great network of people to make the most of the opportunity. His venture was a huge success in Australia and worldwide.

In 2000, the Hills Hoist was featured in the closing ceremony of the Sydney Olympics. As popular and beloved as this invention became, it is now slowly falling out of use as blocks of land become smaller and more people use tumble dryers. Nevertheless, the rotary clothes hoist remains a national icon.
CURRICULUM POINTERS

**Year 5**

ACHASSI097  
Researching: Sequence information about people's lives, events, developments and phenomena using a variety of methods including timelines

ACHASSI099  
Analysing: Examine different viewpoints on actions, events, issues and phenomena in the past and present

ACHASSI101  
Evaluating and reflecting: Evaluate evidence to draw conclusions

ACHASSI105  
Communicating: Present ideas, findings, viewpoints and conclusions in a range of texts and modes that incorporate source materials, digital and non-digital representations and discipline-specific terms and conventions

**Year 6**

ACHASSI125  
Researching: Sequence information about people's lives, events, developments and phenomena using a variety of methods including timelines

ACHASSI127  
Analysing: Examine different viewpoints on actions, events, issues and phenomena in the past and present

ACHASSI129  
Evaluating and reflecting: Evaluate evidence to draw conclusions

ACHASSI133  
Communicating: Present ideas, findings, viewpoints and conclusions in a range of texts and modes that incorporate source materials, digital and non-digital representations and discipline-specific terms and conventions

**DURATION**

45 minutes

**MATERIALS**

Rotary Clothes Hoist segment from Episode 1: Home Life (video)  
(Go to Episode 1 segment timecode 14:14 – 19:58. Please note that this time code is only relevant when viewing the episode on demand.)

Rotary Clothes Hoist Recap Quiz (one A4 copy per student)  
Rotary Clothes Hoist Recap Quiz Answer Sheet (one A4 copy for teacher)
ACTIVITIES

**Video** [25 minutes]
Hand out a copy of the Recap Quiz to each student.
View the segment on the Rotary Clothes Hoist from Episode 1: **Home Life**.
Give students five minutes to complete the quiz before going through the answers as a class.

**Summarising** task [15 minutes]
Give the students 10–12 minutes to summarise Toyne’s life story using no more than one A4 page. With the class, briefly run through the summary in the ‘Background’ section above so students can check for any gaps in their own work.

**Discussion and vote** [5 minutes]
Tally a class vote for each of the following questions:

1. Was Toyne really unlucky?
2. Does Hill deserve to be publicly known as an inventor?
3. Did timing and the broader events of History play a major role in the struggle or success of Toyne and Hill?

Allow the votes to naturally become mini-discussions.

**HOMEWORK ASSIGNMENT**

Please see the complementary Extra Activities for this lesson to assign homework based on other segments from Episode 1: **Home Life**.

**LEARNING OUTCOMES**

**ACHASSI097/ACHASSI125**
Researching: Students will have practised sequencing by summarising the life story of Gilbert Toyne.

**ACHASSI099/ACHASSI127**
Analysing: Students will have examined different viewpoints on the true story of the rotary clothes hoist.

**ACHASSI101/ACHASSI129**
Evaluating and reflecting:
Students will have practised evaluating evidence by drawing conclusions from historical information to explain Gilbert Toyne’s failure and Lance Hill’s success.

**ACHASSI105/ACHASSI133**
Communicating:
Students will have had a chance to communicate orally their opinions of Toyne, Hills and the impact that major historical events had on the story.
EPISODE 1: HOME LIFE
DUAL FLUSH TOILET

EXTRA ACTIVITIES

Humanities and Social Sciences (HASS): History
Years 5–6

INVENTION: DUAL FLUSH TOILET
INVENTION: STEVEN CUMMINGS & BRUCE THOMPSON
YEAR: 1981

TASK
Describe an alternative course of history

MATERIALS
• Internet access
• Pen and paper OR word processing program/application (e.g. Microsoft Word)

INSTRUCTIONS
Watch the Dual Flush Toilet segment from Episode 1: Home Life. (Timecode: 43:43 - 49:56. Please note that this time code is only relevant when viewing the episode on demand.)

Since its induction in 1981, the dual flush toilet has saved an average of 300GL of water in Australia every year. That is equal to 60% of Sydney Harbour or 120,000 Olympic swimming pools, every year!

Imagine if all that water had gone to waste. Would Australian life have turned out differently today?

Have a class discussion on other ways of saving water. List the possibilities on the board. Give the list a title.

Ask each student to make an eye-catching poster of the list. These posters can either be displayed in your classroom and/or around your school.
1. Why was washing so difficult at the beginning of the 20th century?
   a. Dirty laundry would need to be simmered and scrubbed for hours by hand
   b. Sticks and wood were used to prop up washing lines so they were unstable and could drop washing onto the ground
   c. Low hanging lines didn’t dry washing as quickly as up high, and would hang in the way of children and household animals
   d. All of the above

2. Who invented the rotary clothes hoist in 1911 and patented its definitive design in 1926?
   a. Lance Hill
   b. Gilbert Toyne
   c. Lambert Downey
   d. Paul Van De Loo

3. What was the main challenge the 1926 version of the hoist needed to overcome?
   a. Making a consistent supply of spare parts
   b. Delivery of the product to the buyer
   c. The exposed gears were dangerous for fingers, especially children’s
   d. Finding a suitable hole for the hoist to sit in
4. The rotary clothes hoist overcame its main challenge by:
   a. Opening more factories
   b. Bubble wrap
   c. Designing a tool to dig suitable holes
   d. A compact wheel and pinion mechanism enclosed in a metal casing that safely wound the washing line up and down

5. How did people react to the rotary clothes hoist when it was invented in 1911?
   a. Initially it was a status symbol for wealthy people
   b. People were influenced to buy because of the high-tech sound of the company name, The Aeroplane Clothes Hoist Company
   c. Business was good in the early years before World War One, and then later before the Depression when Australians saw the clothes hoist as part of the way to create their suburban dream
   d. All of the above

6. What legacy has this invention left us?
   a. None, because it was never sold overseas
   b. It has become a national icon
   c. None, because it never really became popular
   d. It led to many other new inventions in mechanical engineering
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1. d. All of the above

2. b. Gilbert Toyne

3. c. The exposed gears were dangerous for fingers, especially children’s

4. d. A compact wheel and pinion mechanism enclosed in a metal casing that safely wound the washing line up and down

5. d. All of the above

6. b. It has become a national icon